Self Study Report (SSR)

For NAAC Accreditation of

Zagdu Singh Charitable Trust's

Thakur College of Engineering and Technology

Submitted to

The National Assessment and Accreditation Council
Bangalore

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Abbreviations

4H	Head-Heart-Hands-Health
5W1H	What-Why-Where-When-Who-How
A/C	Account (For Bank Account)
AC	Air Conditioner
ACA	Academic
ACM	association of Computing Machinery
ACT	Accounts
ADBMS	Advanced Database Management Systems
ADLI	Approach-Deploy-Learning-Integration
ADMN	Administration
ADSL	Asymmetric Digital Subscriber Loop
AI	Artificial Intelligence
AICTE	All India Council For Technical Education
AMC	Annual Maintenance Contract
AO	Administrative Officer
AOP	Academic Orientation Programme
APQO	Asia Pacific Quality Organization
ARM	Ashton Raggatt McDougall
ASCE	American Society of Civil Engineering
ASME	American Society of Mechanical Engineering
ATE	Automatic Test Equipment
ATKT	Allowed To Keep Terms
ATR	Action Taken Report
AY	Academic Year
BAI	Builders Association of India
BARC	Bhabha Atomic Research Center
BCUD	Board of College and University Development
BE	Bachelor of Engineering
BMC	Brihan Mumbai Muncipal Corporation
BOAT	Board of Apprenticeship Training
BOS	Board of Studies
BOSM	BITS Open Sports Meet
BRNS	Board of Research in Nuclear Sciences
BSc	Bachelor of Science
BSI	British Standards Institution
BT	Blooms Taxonomy
CAD	Computer Aided Design
CAE	Computer Aided Engineering
CAM	Computer Aided Manufacturing
CAP	Centralised Assessment Process
CAP	Centralised Admission Process
CAT	Common Admission Test
CBCS	Choice Based Credit System
CBSE	Central Board of Secondary Education
CCNA	Cisco Certified Networking Associate
CCNP	Cisco Certified Networking Professional

CCTV	Closed Circuit Television
CD	Compact Disk
CEO	Chief Executive Officer
CET	Common Entrance Test
CII	Confederation of Indian Industry
CII-EEF	Confederation of Indian Industries - Education Excellence Forum
CIPL	Chanakya Institute of Public Leadership
CMPN	Computer Engineering
CO	Course Outcomes
COE	Controller of Examinations
CoE	Center of Excellence
CONCOL	Constituent Colleges
COO	Chief Operating Officer
CRO	Cathode Ray Oscilloscope
CSI	Computer Society of India
CSIR	Council of Scientific and Industrial Research
CSR	Corporate Social Responsibility
CV	Curriculum Vitae
DA	Dearness Allowance
DAB	Department Advisory Board
DAE	Department of Atomic Energy
DBMS	Database Management Systems
DEPT	Department
DIV	Division
DOAJ	Directory of Open Access Journal
DOC	Document
DOT	Department of Technology
DPR	Detailed Project Report
DRDO	Defense Research & Development Organization
DST	Department of Science and Technology
DTE	Directorate of Technical Education
EBC	Economically Backward Class
EDC	Entrepreneurship Development Cell
EPABX	Electronic Private Exchange
EPF	Employees' Provident Fund
EQ	Emotional Quotient
ERP	Enterprise Resource Planning
ETRX	Electronics Engineering
EVS	Environmental Studies
EXAM	Examination
EXT	External
EXTC	Electronics and Telecommunication Engineering
FAQ	Frequently Asked Questions
FDP	Faculty Development Programme
FE	First Year of Engineering
FIC	Faculty In-Charge
FICCI	Federation of Indian Chambers of Commerce and Industry

FOSS	Free and Open Source Software
FPGA	Field Programmable Gate Array
FRM	Form
GA	Graduate Attributes
GATE	Graduate Aptitude Test in Engineering
GB	Governing Body (GB)
Gbps	Giga Bits Per Second
GEPT	General English Proficiency Test
GMAT	Graduate Management Admission Test
GOI	Government of India
GRE	Graduate Record Examination
H&S	Humanities and Sciences
HAL	Hindustan Aeronautics Limited
HCL	Hindustan Computers Limited
HDD	Hard Disk Drive
HOC	Higher Education and Online Certification
HOD	Head of the Department
HPC	High Performance Computing
HR	Human Resource Management
HSC	Higher Secondary Certificate
IAB	Industry Advisory Board
IAS	Indian Administrative Services
IBM	International Bussiness Machines
ICCP	Infosys Campus Connect Program
ICCR	Indian Council for Cultural Relation
ICSE	Indian Council of Secondary Education
ICT	Information and Communication Technology
ICWET	International Conferenec & Workshop in Engineering & Technology
ID	Identity Card
IEDC-DST	The Innovation and Development Centre - Department of Science & Technology
IEEE	Institute of Electrical and Electronics Engineers
IET	The Institution of Engineering & Technology
IETE	Institution of Electrical & Telecommunication Engineering
IIA	Indian Institute of Astrophysics
IIM	Indian Institute of Management
IISc	Indian Institute of Science
IISER	Indian Institute of Science Education & Research
IIT	Indian Institute of Technology
IITB	Indian Institute of Technology, Bombay
IITK	Indian Institute of Technology, Kanpur
IITM	Indian Institute of Technology, Madras
IJACSA	International Journal of Advanced Computer Sciencs & Applications
IJAIS	International Journal of Applied Information Systems
IJCA	International Journal of Computing Applications
ILL	Inter Library Loan Service
ILL	Internet Leased Line
IMC- RBNQA	Indian Merchant Chambers - Ramakrishna Bajaj National Quality Award

INCOIS	Indian National Centre for Ocean Information Services
INTEL	Integrtaed Electronics
IOM	Inter Office Memorandum
IOT	Internet of Things
IOW	Industry Oriented Workshop
IP	Internet Protocol
IP	Institutional Processes
IPR	Intellectual Property Rights
IQ	Intelligence Quotient
IQAC	Internal Quality Assurance Committee
IQAS	InternalQuality Audit System
IRQS	Indian Register Quality System
IS	Indian Standards
ISO	International Organization for Standardization
ISR	Institutional Social Responsibility
ISRO	Indian Space Research Organization
ISTE	Indian Society for Technical Education
IT	Information Technology
ITES	Information Technology Enabled Services
ITP	Induction Training Programme
IV	Industrial Visit
JEE	Joint Entrance Examination
KGP	Kharagpur
KVA	Kilo Volt Ampere
L&T	Larsen & Toubro
LAB	Laboratory
LAN	Local Area Network
LCD	Liquid Crystal Display
LIB	Library
LIC	Local Inquiry Committee
LMC	Local Management Committee
LO	Learning Outcomes
LOR	Letter Of Recommendation
LRC	Learning Resource Center
MBPS	Megabites per Second
MCGM	Muncipal Corporation of Greater Mumbai
MCHI	Maharashtra Chamber of Housing Industry
MCM	Merit-Cum-Means
MCQ	Multiple Choice Questions
MD	Managing Director
ME	Master of Engineering
MECH	Mechanical Engineering
MESA	Mechanical Engineering Student Association
MH-CET	Maharashtra State Common Entrance Test
MHRD	Ministry of Human Resource & Development
MIN	Minority
MIT	Massachusetts Institute of Technology

MNC	MultiNational Company
MODROB	Modernization and Removal of Obsolescence
MOOC	Massive Open Online Courses
MoU	Memorandum of Understanding
MP	Management Processes
MPPT	Maximum Power Point Tracking
MPSC	Maharashtra Public Service Commission
MR	Management Representative
MRM	Management Review Meeting
MS-SQL	Microsoft - Structured Query Language
MULTICON-W	Multiple Conferences and Workshops
MUN	Model United Nation
MVS	Mission Vision Statement
NA	Not Applicable
NAAC	National Assessment & Accreditation Council
NASA	National Aeronautical and Space Administration
NASSCOM	The National Association of Software and Services Companies
NBA	National Board of Accreditation
NC	Non Conformance
NCP	Non Conforming Product
NCR	Non Conformity Report
NEN	National Entrepreneurship Network
NGO	Non-Governmental Organization
NITTTR	National Institute of Technical Teachers Training and Research
NOC	No Objection Certificate
NPTEL	National Programme on Technology Enhanced Learning
NSDC	National Skill Development Center
NSS	National Service Scheme
NT	Nomadic Tribes
NVDA	Non-Visual Desktop Access
OBC	Other Backward Class
OBE	Outcome Based Education
OD	Out Door Duty
OFI	OpportunityFor Improvement
OHP	Over Head Projectors
ONGC	Oil and Natural Gas Corporation
OOM	Outcome Oriented Model
OPAC	Online Product Access Catalogue
ORG	Organization
PAC	Programme Assessment Committee
PC	Personal Computer
PCD	Planned Completion Date
PCM	Physics, Chemistry, Mathematics
PD	Personality Development
PDCA	Plan-Do-Check-Act
PEO	Program Educational Objectives
PG	Post Graduate

PhD	Doctor of Philosophy
PLA	Placement
PLM	Product Life Cycle Management
PM	Procedure Manual
PNS	Pravesh Niyantran Samiti
PO	Program Outcomes
PPT	Pre-Placement Training
PRDP	Perfromance Review & Development Program
PRI	Primary Rate Interface
QA	Quality Assurance
QIP	Quality Improvement Programme
QMS	Quality Management System
QM	Quality Manual
R&D	Research and Development
RAB	Research Advisory Board
RAM	Random Access Memory
REF	Reference
REG	Register
REV	Revision
RFID	Radio Frequency Identification
RRLE	Result Reserved for Lower Examination
S&T	Science & Technology
SAE	Society of Automotive Engineers
SAMEER	Society for Applied Microwave Electronics Engineering & Research
SBC	Special Backward Class
SC	Scheduled Caste
SDP	Student Development Programme
SE	Second Year of Engineering
SEE	Semester End Examinations
SEM	Semester
SFI	Scope For Improvement
SGS	State Government Scholarship
SLET	State Level Eligibility Test
SME	Small & Medium Enterprises
SOP	Semester Orientation Programme
SSC	Secondary School Certificate
SSR	Self Study Report
SSW	Students and Staff Welfare
ST	Scheduled Tribe
STTP	Short Term Training Programme
SW	Software
SWOC	Strength, Weakness, Opportunity, Challenge
SWOT	Strength, Weakness, Opportunity, Threat
T&D	Training & Development Cell
T&P	Training & Placement
TCET	Thakur College of Engineering and Technology
TCS	Tata Consultancy Services

TE	Third Year of Engineering
TEG	Thakur Education Group
TET	Thakur Educational Trust
TI	Texas Instruments
TIFR	Tata Institute of Fundamental Research
TLP	Teaching Learning Process
TOEFL	Test of English as Foreign Language
TPO	Training and Placement Officer
UG	Under Graduate
UGC	University Grants Commission
UML	Unified Modeling Language
UoM	University of Mumbai
UPS	Uninterrupted Power Supply
UPSC	Union Public Service Commission
URL	Uniform Resource Locator
USA	United States of America
VJNT	Vimukta Jati , Nomadic Tribes
VLSI	Very Large Scale Integration
VP	Vice Principal
VTCAD	Visual Technology Computer Aided Design
WDC	Womens Development Cell
w.e.f.	with effect from
Wi-Fi	Wireless Fidelity
YR	Year
YRS	Years
ZCT	Zagdu Singh Charitable Trust

Preface

The Thakur College of Engineering & Technology (TCET), a self-financed and linguistic minority institute was established in AY 2001-02 and managed by Zagdu Singh Charitable Trust with a clear objective of providing quality technical education in tune with international standards and contemporary global requirements. To ensure the compliance the institute has opted for ISO 9001 certification in 2005. Thereafter steps were taken to improve the quality of technical education, faculty development programme, improved technology, research development and interaction with industry on continual basis. This led to NBA accreditation of eligible programmes in AY 2011-12 and 2016-17 respectively for 3 years and accreditated by 70+ industries for the campus placement. The institute is also recipient of quality awards at national and international level and has the well-established linkages with industry through CII-EEF (Confederation of Indian and Industry - Education Excellence forum). In continuation of our endeavour to achieve excellence in providing quality technical education, TCET consider it as a privilege to submit this Self Study Report (SSR) to the National Assessment and Accreditation Council (NAAC), Bengaluru for assessment and accreditation of the institute. The SSR is comprised of two sections: The first section includes the preface, information about institute, executive summary, and SWOC analysis of the institute, profile of the institute, criterion wise analytical reports and evaluation reports of seven departments. The second section includes annexures consisting of recognition, approval and affiliation documents. Wherever possible information is furnished with facts and figures and also supported with examples to enrich the SSR. Wherever process based information are presented, institute has taken care of compliance to PDCA (Plan, Do, Check and Act) based process cycle.

The NAAC steering committee with help of Heads of all departments / sections, faculty and staff put indefatigable efforts in preparation of the SSR. Valuable suggestions and critical reviews by Deans, the undersigned and the Management helped the committee to fine tune the SSR. Every one of us has contributed in one way or the other in preparing the SSR. While preparing the SSR we had brain storming, discussion, and deliberation to arrive at conclusion and develop the content which is precise and accurate with the best of our understanding of the various questions that have been asked under the seven criteria. Finally we worked as a team chasing a common goal of complying the NAAC requirements to prepare the SSR. Working as a team was a wonderful experience which underlined the very important fact that everyone had a role to play in the team and no role was less important than the other. Moreover, it has highlighted the new dimension to the institutional working philosophy required for quality education viz. extension programmes, institutional social responsibility, documentation and recognition of faculty/student research work etc. The undersigned is also happy to share that the institute has also made decision to apply for autonomy in this academic year (i.e. A.Y.2016-17).

We would like to express our deep appreciation for NAAC for inspiring us to take up the SSR with such well document and structured institutional Accreditation Manual for SSR for affiliated college because of which we were able to compile SSR. This all has been possible because of the continuous support and encouragement from the management particularly the Chairman of the Institute who is the strong believer of quality education. We express our sincere gratitude with humility. The undersigned feels proud to lead this team which has put its sincere and collaborative efforts towards preparing the SSR. I hereby take opportunity to extend my gratitude to Deans, member of steering committee, senior leaders at institute and department, faculty, staff. Also express my sincere thanks to all who directly or indirectly contributed in preparation and compilation of the SSR.

Dr. B. K. Mishra
Principal
ZCT's Thakur College of Engineering and Technology
Kandivali (E), Mumbai.

About Institute

Success for an Institute of higher education, in general, is measured by its ability to impart quality education to create employable graduates with professional skill-sets. However, success for an institute of technical education is measured by more demanding parameters: does it transform its students into professionals who are ready to face challenges posed by an ever-changing industrial scenario? Does it continually upgrade its infrastructure, innovative teaching methodologies, and seamlessly integrate changing technologies into its curriculum? Does it, in short, adapt itself to the needs of the fast-paced modern era through its educational design? Does it create ample opportunities for research & consultancy?

Thakur college of Engineering & Technology intends to attain success through these parameters by virtue of the flexibility and freedom to give quality education. We, at TCET have taken the task upon ourselves to provide all round education that meets quality standards. At the same time, we also endeavour consistently to achieve a symbiosis of technical development and human values. We provide the best academic ambience, quality education and stat-of-the-art infrastructural facilities of international standards in keeping with our mission statement. We believe that with the credibility created through our competence in the past, we are rightly positioned to successfully practice, nurture and implement academic rigor as per international standards.

Our strengths are the continuous process of modernisation of facilities, enhancement of faculty qualification, opportunity for R & D and consultancy as well as industry connect, innovation, teaching technology, improved assessment process, pre-placement training etc.

The Thakur College of Engineering & Technology (TCET) was established in academic year 2001-02 with a clear objective of providing quality technical education in tune with international standards and contemporary global requirements. TCET is private self-financed Linguistic (Hindi speaking) minority institute since its inception. Institute is located in the western suburb of city at Thakur Village, Kandivali (E) Mumbai. It is well connected by western express highway, western railway and the domestic airport.

The Institute has to date produced more than 4000 engineering graduate in 12 batches. TCET has an enviable record in placement of students. The Institute has been accredited by major companies like Infosys, Tata Consultancy Services, Accenture, IGATE and Tech-Mahindra etc. At present more than 70 companies are visiting for campus recruitment every year and almost all eligible students are placed through campus, Special effort are also taken to place the non-eligible students.

The Thakur College of Engineering & Technology (TCET) affiliated to the University of Mumbai (UOM), currently ranks amongst the top ten colleges in Mumbai. It is proud to be one of the best Institutions in the Western suburbs of Mumbai. The Institute is managed by the Zagdu Singh Charitable Trust, Mumbai, under the Thakur Educational Group (TEG) led by the visionary leader and Chairman, Mr. V. K. Singh. TCET believes in Student Centric Teaching- Learning Process (TLP) with proactive support for student and faculty development. Thus, within a short span of 14 years, TCET has carved out a niche for itself as a leading engineering college in Mumbai.

Imparting Quality Technical education is the guiding principle at TCET. The approach to performance improvement is by continuous learning and innovation using the PDCA cycle to improve the effectiveness and efficiency of the various processes. Improvement opportunities are identified through the following 4 processes: (1) Annual strategic planning & curriculum planning (2) Ensuring Accreditation of all programs offered and attainment of Program Educational Objectives (PEO), (3) Internal and external ISO audits and (4) Formal and informal feedback (5) Monitoring, control and improvement of the various programs offered and attainment of processes as per their schedule and deriving improvement targets.

With dedicated efforts spanning over a decade, college has made excellent progress and has emerged as one of the top ranking colleges in the state of Maharashtra. Our First Year result is consistently higher than University result. Final Year B.E. results more than 85%. With 80% or more students

pass with Distinction/First Class. Success rate is 85%. Around 20% qualify in competitive examinations viz. GMAT /GRE/TOFEL/GATE/CET/CAT every year.

TCET is a self-financed, private, linguistic minority college and competes with 64 engineering colleges affiliated with UOM, who offer similar programs. Of these 64 colleges, 24 are in the minority category similar to TCET's status, two government aided colleges and 62 un-aided (private) institutions. Besides these local colleges in Mumbai, the Institute competes with national level IIT's and REC's with respect to attracting JEE rank holders. The college competitive rank is amongst the top 10 private engineering colleges affiliated to UOM, measured with respect to program accreditation, industry tie-ups, DTE compliance, University results, placement, research based programs and innovative centre.

TCET has developed a systematic approach to develop first generation entrepreneurs through curriculum, awareness, motivation programmes and industry interaction. Entrepreneurship is adopted as one of the process to prepare students as a leader to take global challenges and opt for self-employment. TCET providing various facilities like IEDC, Start-up & Internship etc.

TCET has established Higher Education, Online Course & Certification Cell (HOC Cell) in order to help student to understand their final dream and make the right career decision in a sensible manner. The objective of the HOC Cell is to encourage students for higher qualification such as pursuing master level program, graded online course and certification courses.

1. Programmes Offered:

The institute is recognized by AICTE & Govt. of Maharashtra and is affiliated to the University of Mumbai. The institute offers 6 UG, 3 PG and a Ph.D. (Engg.) programme as illustrated in following table:

Sr. No.	Branch	UG (Bachelor of Engineering B.E.)		PG (Master of Engineering M.E.)		Ph.D. (Engg.) (Doctor of Philosophy)	
		Current Intake	Year Course initiated	Current Intake	Year Course initiated	Current Intake	Year Course initiated
1	Electronics & Telecommunication Engineering (EXTC)	120	2001	18	2008	10	2014
2	Computer Engineering (CMPN)	120	2001	18	2011	-	-
3	Information Technology (IT)	120	2001	18	2011	-	-
4	Electronics Engineering (ETRX)	60	2008	-	-	-	-
5	Mechanical Engineering (MECH)	120	2012	-	-	-	-
6	Civil Engineering (CIVIL)	120	2014	-	-	-	-

Four UG programmes are also given permanent affiliation as illustrated in following table:

Sr. No.	Programme	w.e.f. Academic Year
1	Electronics & Telecommunication Engineering (EXTC) - UG	2015-16
2	Computer Engineering (CMPN) - UG	2015-16
3	Information Technology (IT) - UG	2015-16

Sr. No.	Programme	w.e.f. Academic Year
4	Electronics Engineering (ETRX) - UG	LIC Committee visited our institute on 08-02-2017. Result awaited

Programmes with NBA Accreditation:

Sr. No.	Programme	1st Cycle		2nd Cycle	
		Duration	From Date	Duration	From Date
1	Electronics & Telecommunication Engineering (EXTC) - UG	3 Years	16-09-2011	2+1 years*	01-07-2016
2	Computer Engineering (CMPN) - UG	3 Years	16-09-2011	2+1 years*	01-07-2016
3	Information Technology (IT) - UG	3 Years	16-09-2011	2+1 years*	01-07-2016
4	Electronics Engineering (ETRX) - UG	2+1 years*	01-07-2016	-	-

Provisionally accredited for 2 years. Additional 1 year extension was given as per revised NBA norms.
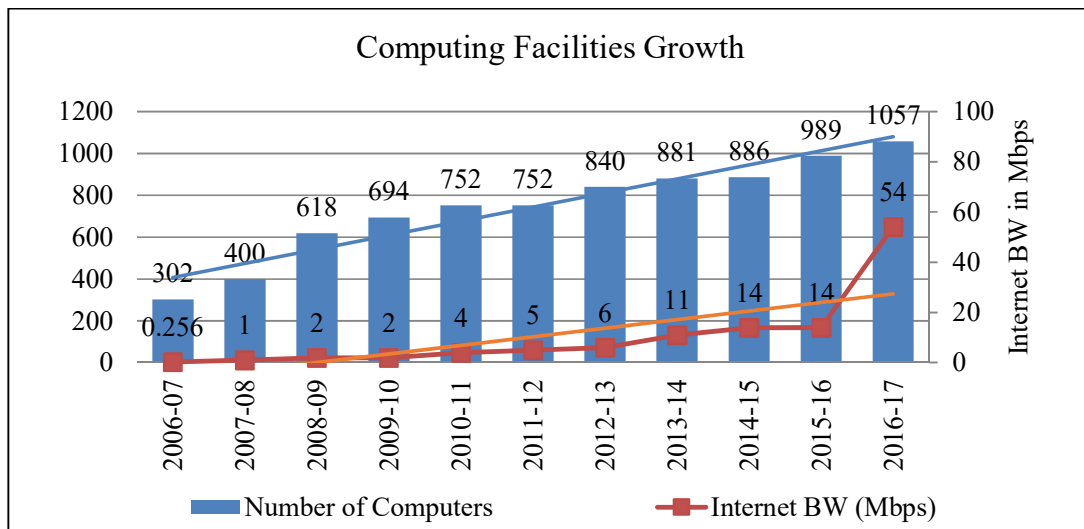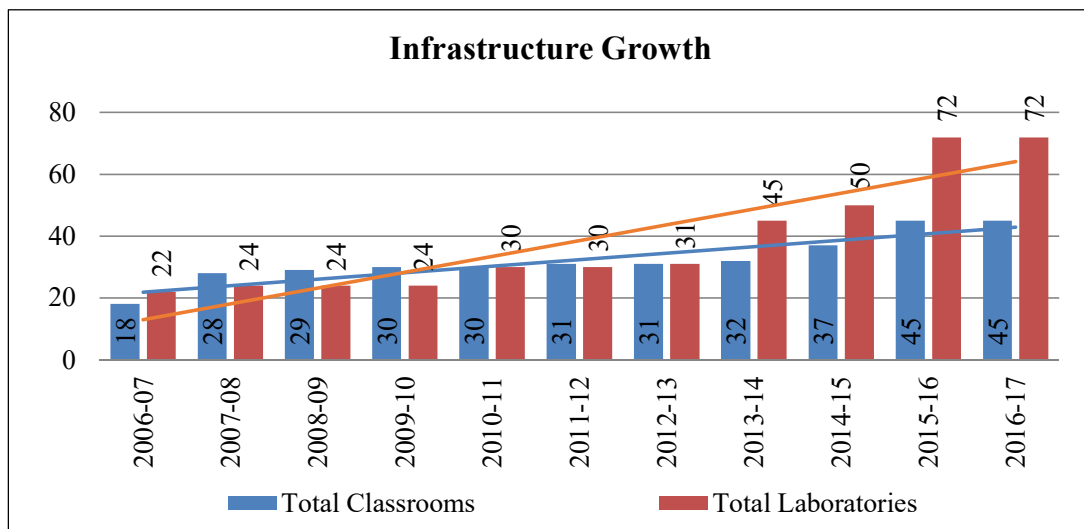
2. Achievements
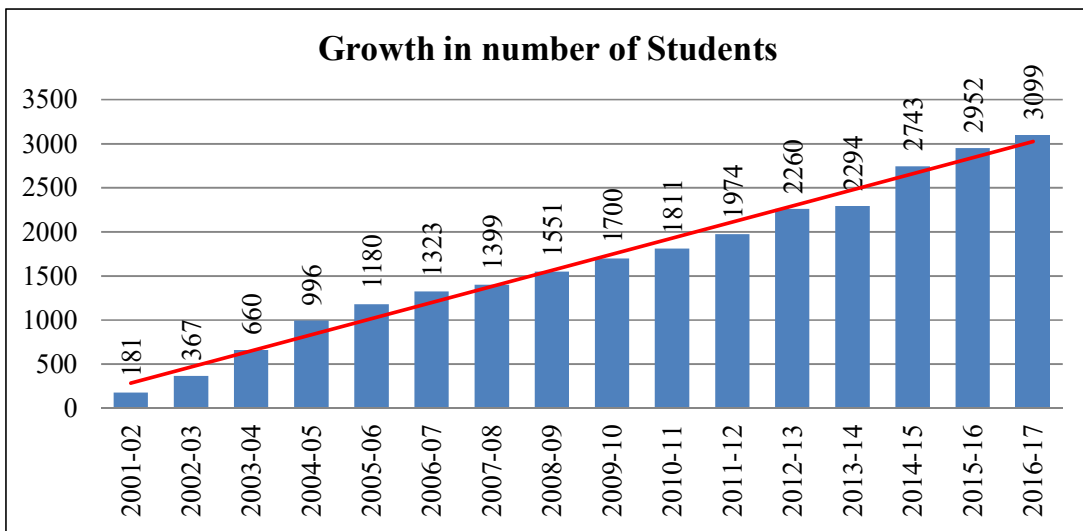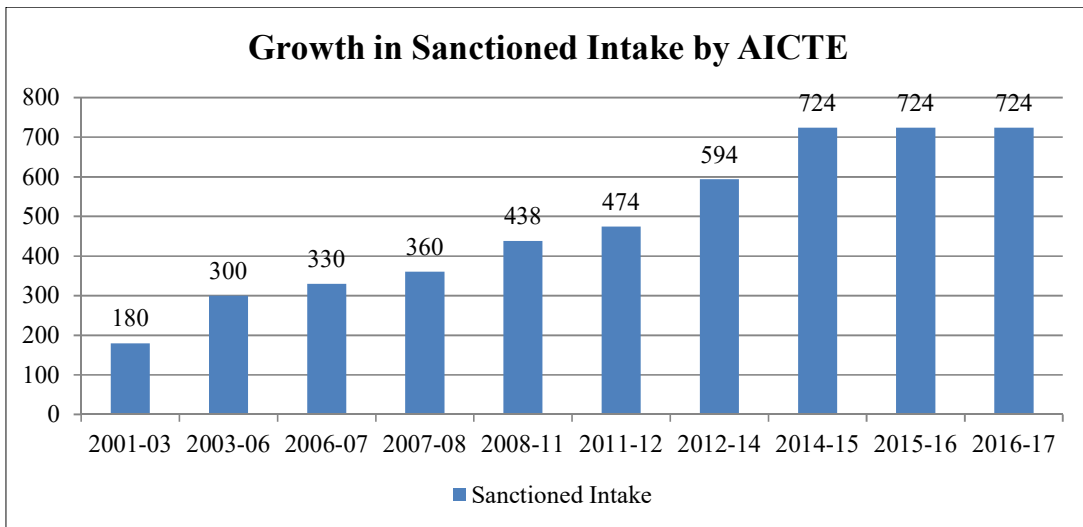The college has been accredited /certified by various agencies as given below:

Accreditation/ Certification Agency	Institute / Department Accreditated or Certified	Period / Details
RvA Through IRQS	ISO9001:2008 certification with accreditation from RvA Through IRQS as per DTE compliance of result framework document (RFD) which need to be submitted every year since A.Y.2012-13	ISO Re-certification has been completed. Current ISO certificate issued date:**21/12/2014** **Valid Till Date: 20/12/2017**.
NBA	NBA for all eligible programmes (IT,CMPN, EXTC, ETRX)	• 1st time accredited UG programmes :- CMPN/EXTC & IT • 2nd time Accredited UG programmes:- CMPN/EXTC/IT/ETRX (3 years w.e.f.:01/07/2016)
UoM	Permanent Affiliation UG Programmes (CMPN/EXTC/IT)	Institute got Permanent Affiliation for CMPN/EXTC/& IT courses from University of Mumbai. vide letter No-Aff.II/ICD/15-16/398 dated 02/6/2016.
Published list of AICTE CII Survey	AICTE-CII rated EXTC, IT and CMPN with overall rating of the institute as one of emerging institute	Status for last academic year- 1) EXTC & ETRX – *Amber 2) CMPN & IT- *Amber Note:-* Institute performance meeting standards
Certificate & Citation issued by IMC-RBNQA Quality Award on 4th March 2016	IMC-RBNQA Quality Award 2015	TCET is the first Institute from Maharashtra to win the Indian Merchants Chamber's IMC RBNQA Award 2015in Education Category
Recognition from Infosys Campus Connect	Infosys Campus Connect	Outstanding contribution in rolling out campus connect offering foundation programme during January 2015 to December 2015 and our institute has stood first. The result is announced on 30.3.16

Accreditation/ Certification Agency	Institute / Department Accreditated or Certified	Period / Details
Recognition from Asia Pacific Quality Organization (APQO), Chicago, IIIinois, USA	Asia Pacific Quality Award	Institute has received Asia Pacific Quality Organization (APQO) World Class Global Performance Excellence Award 2016 on 21st November 2016 in New Zealand. TCET is selected for Best in Class Award (Second Highest) in education category.
Recognition from NMEA	(National Maharashtra Education Award)	Institute has received National Maharashtra Education Summit & Awards 2016 on 26th September 2016 at Convocation Hall, University of Mumbai in the category of Excellent Performing & Innovative Engineering Institute

3. **Institutional Growth**
   Details of Sanctioned Intake and number of students of UG/PG/ Ph.D. Programmes

Infrastructure Growth

Computing Facilities Growth

Growth in Sanctioned Intake by AICTE

Year	Sanctioned Intake
2001-03	180
2003-06	300
2006-07	330
2007-08	360
2008-11	438
2011-12	474
2012-14	594
2014-15	724
2015-16	724
2016-17	724

■ Sanctioned Intake

Growth in number of Students

Year	Number of Students
2001-02	181
2002-03	367
2003-04	660
2004-05	996
2005-06	1180
2006-07	1323
2007-08	1399
2008-09	1551
2009-10	1700
2010-11	1811
2011-12	1974
2012-13	2260
2013-14	2294
2014-15	2743
2015-16	2952
2016-17	3099

Executive Summary

21st century engineering education is found to be evolutionary in nature which demands the development of critical thinking, problem solving and innovative skills from the engineering graduates. These skills must develop the capability in them to design and develop various products and services to simplify the human life with eco-friendly environment and global career. This demands the institution that can provide quality education at various levels viz. UG, PG and Ph.D. (Technology) with competitive edge in the global market. The management perceived the ever increasing demand of quality education for these programmes and therefore, TCET was established in A.Y.2001-02 to offer these programmes. A journey of quality education started with building the state-of-the-art-infrastructure facilities and faculty with the potential to grow and excel. It is followed by introducing ISO 9001:2000 in A.Y.2005-06 and has been revised to 9001:2008 in A.Y. 2009-10 based quality management system to make the education a system driven and student centric. NBA accreditation of eligible programmes in A.Y.2011-12 through which the outcome based education is implemented and followed by implementation of Malcom Balridge criteria for performance excellence.

First five years of the establishment was mainly to attain the academic maturity followed by next five years to attain the competitive edge for campus placement. In the 3rd phase of five year plans, the institute has taken the initiative to integrate the rigorous training programmes to increase the employability and entrepreneurial skills of the students and also the smooth transition from campus to corporate. The effort has also enabled students to get placement independently as per the market trends and needs. The current five years of plan starting from the current academic year is to develop the R & D culture in the campus so that the teaching learning process should become more innovative. The faculty and student should develop the capability for developing the product and services and the technology transfer to the industry. The efforts may also lead to the enhanced employment opportunities in the sector which needs highly skilled task force and also to develop the entrepreneurs who can create the job. The learning and the experience developed from the journey of imparting the quality education in the students has prompted us to write the self-assessment report for NAAC accreditation. We are glad to present the criteria-wise executive summary of the same.

Criteria 1: Curriculum Aspects

The criteria highlights the Vision, Mission Statement along with the quality policy and objective that has been implemented at the institute level to impart the quality technical education at UG, PG and Ph.D. (Technology) to the aspiring engineering students. The institute also ensures proper alignment of various activities with the MVS by deploying PDCA cycle based on ISO quality manual system. Being the affiliated institute, the institute does not have much academic flexibility. However, looking into the requirement of industry and studying the gap between the industry requirements and university curriculum, institute has taken the initiative to introduce bridge courses and other supplementary learning platforms. This flexibility also provides the enriching curriculum by incorporating value added courses leading to the certifications and keeping the high learning motivation, ethics and moral value courses. To understand the stakeholder's sentiments and the expectation, the institute has well established feedback and survey system. The effort has provided an opportunity to the students to become competent professionals by the end of programme which is possible by the highly motivated and dedicated faculty and staff members.

Criteria II: Teaching - Learning and Evaluation

The institute is the Hindi Linguistic Minority and student admission is done as per guidelines of Directorate of Technical Education (DTE), Govt. of Maharashtra. After the admission process, the students are enrolled by the affiliating university. Institute is able to attract good students with 100% admission. Students are validated at entry level through the review process. Accordingly the students are categorized as Excellent, Good and Average. Students are regularly oriented through various orientation programmes. Various learning platforms are created for effective implementation of teaching learning process as per the quality standards. The institute has the mechanism to identify the advance learner and slow learner through student validation process. To implement the various academic activities and to ensure the success of the students, institute has qualified, experienced and committed faculty and staff members. The faculty and staff members are trained frequently for performance excellence and meeting the requirement of stakeholders w.r.t. academics and other support

services meant for students. To ensure the success of students, the institute has well established system for direct and indirect assessment. The result of student performance helps the students, faculty and department to measure the learning outcomes based on OBE model and finally to check the attainment of programme outcome. Because of the set processes and committed faculty members, the institute has given the consistent academic results with the graduation rate upto 95%.

Criteria III: Research Consultancy and Extension
To promote the research culture, the institute has taken the initiatives to develop the research facility in the coming five years to match the R & D facility at par with the premier institutions in the country. In this direction, the institute has developed the incubation centre, centre of excellence and is in the process of developing the advanced laboratory to provide the research facility looking into the requirement of various academic programmes. In this regard, the institute has the budgetary provision up to 5% of the income for the mentioned period. Faculty and students are encouraged for creating the IPR and the publication of technical/research papers through various platforms. Being the private organization, the institute has their own constraints having the consultancy and therefore it is at the primitive stage. However, the institute is intended to generate revenue up to 20% of the yearly budget through consultancy and the R & D services. This is possible only by acquiring the brand through well-established R & D activities, accreditation and autonomy. This will help the institute in subsidizing the education cost. At the same time it will enhance the partnership with the stakeholders. The institute is pro-active to carry out the extension programmes through the university approved student chapter of NSS established in the A.Y. 2005-06, followed by the establishment of Student Extension Chapter in the current academic year. Currently there are 150 students enrolled for NSS and 101 students for extension chapter. For each of the student chapter, dedicated faculty coordinators along with students organize various educational, cultural and social programmes in the adopted areas and village. These activities have brought fruitful engagement of the faculty, staff and students by reducing gap in the relationships of student, faculty and society.

Criteria IV: Infrastructure and Learning Resources
The institute strives to provide infrastructure and facilities with the conducive learning environment. Therefore, the institute has not only complied with regulatory requirement but exceeded the compliance. This is an effort to make institute at par with the premier institutions at the national and international level.   Moreover, it leads to fast adoption to corporate culture during the transition of the students from campus to corporate.   The institute widely uses the latest technology in the classrooms as well as laboratories for effective teaching learning. Library resources are made available to all the students well in time and meet the requirement of regulatory and affiliating body and also fulfill needs of the faculty and students for their active research. The institute widely uses the digital platforms for learning resources such as NPTEL, Course era and various databases available from leading publication houses relevant to the engineering programmes. The infrastructural facilities and the learning resources available at the institute make the institute as one of the leading institutes in the city to provide quality education.

Criteria V: STUDENT SUPPORT AND PROGRESSION
To ensure the effective communication for the academic support, all the relevant information and schedules are put up on the notice board and college website. The orientation is also carried out for detailing of the activities to be conducted during the semester through Semester Orientation Programme. Currently the institute has six professional bodies and two student chapters of social wing. All these forums come under the Students' Council which is formed as per University guidelines. Co-curricular and extracurricular activities are conducted as per the orientation conducted during SOP and the activity orientation given time to time. The co-curricular and extra-curricular events are conducted with certain themes with well-defined objectives and outcomes which help the institute to measure the attainment of programme educational objectives aligned with the MVS. To ensure the success of the students in academics, the institute monitors the academic progress of the students on continuous basis by notification of their performances and attendance in the key performing areas, holding the meetings with the parents and sharing the weak areas with an opportunity for improvement. The institute has well established mentoring system by implementing teacher-guardian scheme where the student performance, counselling and guidance records are maintained with faculty members and helps the faculty to understand the growth of the students during the programmes w.r.t. curricular, co-curricular,

extra-curricular activities. To provide the natural justice to the students, the institute has the grievance redressal committee and to safeguard the interest of the women faculty, staff and students, the institute has the Women Development Cell. Other institute committee includes: anti-ragging committee, unfair means committee and other student relevant committees. These arrangements at the institute have helped the students to get timely justice.

Criteria VI: Governance, Leadership and Management

The institutional vision is to make TCET internationally renowned premier institute of engineering and technology which demands high core values, core competencies, achievement of strategic objectives which are stated in the criteria. To meet the requirement, the institute has well defined perspective plans and its deployment in A.Y.2013-14. To comply with perspective plan, the institute's top management and the Principal should ensure the sustainable model for the institute by effective implementation of quality policy and plans. Quality Policy includes the institutional processes, management process and quality objectives and the effective utilization of the financial resources to make the education cost effective. As a result institute has 100% compliances of regulatory and statutory bodies, satisfied stakeholder and empowered faculty. The institute organogram has well defined structure with roles and responsibilities. The top management is regularly available for taking fast decision related to the infrastructure development, equipment and other academic needs. The progress of the institute is reviewed on regular basis for the effective implementation of quality policy and plans. Principal has been given the freedom for day to day functioning of the institute with regard to curricular, co-curricular and extra-curricular activities and ensure the sustainable growth of the institute. The institute has well established quality assurance system to become the institute of repute and preferred destination for campus placement.

Criteria VII: Innovations and Best Practices

The institute takes the pride to maintain the campus clean and green. The consciousness for environment friendliness is reflected in our belief stated as "Cleanliness is next to Godliness". The institute through social forums creates the various awareness programmes and takes up the project related to environment such as tree plantation, pollution control, Ganapati Visarjan in artificial ponds created by BMC, etc. The wet waste management awareness is spread through seminars and talks by experts and at the same time, the institute has set up compo station. Along with many other initiatives, EVS course at first year level also helps in creating awareness of environment and surrounding amongst the students and faculty. The institute is system driven with the effective implementation of OBE and Performance Excellence model. Continual improvement is the inherent characteristic of system which leads to innovative and best practices such as student centric, innovative resource book, student mentoring, etc. These practices lead to effective teaching learning and student services.

Writing the SSR as per the format of NAAC has given us the opportunity to compile and understand the various aspects of quality education. To the best of our knowledge and understanding the report has been prepared and hopes to meet the expectations of NAAC committee for accreditation process.

SWOC Analysis

Strengths

1) The Institute has the advantage of an established brand name and better placement notwithstanding market forces.
2) There is also a high level of acceptability of students for admission, good feedback from employers. Good results lend the institute a competitive advantage.
3) Strong faculty qualification, talented and dedicated, knowledgeable and cooperative faculty, and good communication among faculty. Every Year Institute has met the faculty requirement ratio i.e 1:15 as per AICTE guidelines.
4) Financial Support is offered by the management as and when required.
5) There is a total transparency in all academic and administrative processes.
6) The technical support staff is well-qualified and committed.
7) Working Environment – i) Strong leadership, good department chair ii) Strong department level support for faculty research activities iii) Supportive working environment among department members iv) Excellent administrative support
8) Research and Instructional Facility – i) Good computing environment (labs and server) ii) Adequate lab facilities iii) Excellent infrastructure meeting the needs for AICTE requirements.
9) We have achieved a planned vertical growth by adding three PG Programs and one Ph.D. programs in the last five years.
10) Dedicated Training & Placement Cell & Entrepreneurship Development Cell for the benefit of students.
11) Centres of Excellence in collaboration with industry

Weakness

1) Shortage of senior faculty members
2) Non-availability of faculty with industry background/research scholar and low contribution to R & D
3) Limited promotional avenues
4) Regulatory and affiliating bodies limitations for enhancing the course curriculum
5) Limitation of infrastructure for developing industry consultancy centre at par with the requirement of industry
6) Pressure on non-recurring expenditure for replacement of obsolete equipment/machinery/computers
7) Limitation on FDPs for faculty to keep pace with the advancement in industry
8) Scarcity of funds for organising academic and professional programme as the source is only student tuition fees
9) Being the self-finance private engineering college brand visibility is not at par with the premier institute in spite of investment and committed work

Opportunities

1) Strong Internship program for students and faculty.
2) Strengthen Industry-Institute interaction cell to increase interaction and networking for fruitful engagement.
3) Constructively use alumni base viz. improving teaching learning progress, campus placement, industry connect etc.
4) Develop infrastructure for Research and Development to have institutional sustainability model to mitigate risk of negative trend of admission.
5) Advanced facilities for learning to broaden student and faculty knowledge, skills and employability.
6) Higher Education, Online courses & certification cell.

Challenges

1) Private Institution- No central or state grant hence dependant mainly on student fees for meeting the ever increasing cost of running the institute and programmes
2) Pressure from regulatory bodies to keep full faculty cadre and strength on regular basis leading to increasing salary bill.
3) Fees cannot be increased beyond certain level to keep on attracting students
4) Market trend of falling admission in the engineering and technology courses.
5) Changing scenario of education, competing with international players
6) Changing level of aspirations of students /parents /stakeholders and inability to match these requirements
7) Fluctuations in the job market and placement due to recession
8) Limitation on international collaboration due to lack of resources
9) Admissions are regulated in the age of marketing the programmes
10) Creating environment for R & D and consultancy at par with industry expectation, national and international standards and societal and environmental need.

Profile of the Affiliated / Constituent College

1. Name and Address of the College:

Name:	Thakur College of Engineering and Technology				
Address:	A Block, Thakur Educational Campus, Shyamnarayan Thakur Marg, Thakur Village, Kandivali (E)				
City:	Mumbai	PIN:	400101	State:	Maharashtra
Website:	www.tcetmumbai.in				

2. For Communication:

Designation	Name	Telephone with STD code	Mobile	FAX	Email
Principal	Dr. Braj Kishore Mishra	O: 022-67308000 R: 022-29652727	9821285825	022-28461890	tcet.principal@thakur education.org
Vice-Principal		O: R:			
Steering Committee Coordinator	Dr. R. R. Sedamkar	O: 022-67308000 R: 022-28428526	9920640772	022-28461890	rr.sedamkar@thakure ducation.org

3. Status of the Institution:

    Affiliated College | ✓ |

    Constituent College | |

    Any other (specify) | |

4. Type of Institution:
    a. By Gender

        i.   For Men | |

        ii. For Women | |

        iii. Co-Education | ✓ |

    b. By Shift

        i.   Regular | ✓ |

        ii. Day | |

        iii. Evening | |

5. It is a recognized minority institution?

    Yes | ✓ |

    No | |

    If yes specify the minority status (Religious/linguistic/ any other) and provide documentary evidence. | Hindi-Linguistic |

6. Source of Funding:

    Government | |

    Grant-in-Aid | |

Self-financing	✓
Any other (specify)	

7.
a. Date of establishment of college: 30/06/2001.
b. University to which the college is affiliated /or which governs the college (If it is a constituent college)

University of Mumbai

c. Details of UGC recognition

UnderSection	Date,Month&Year (dd-mm-yyyy)	Remarks (Ifany)
i.2(f)	NA	NA
ii.12(B)	NA	NA

(Enclose the Certificate of recognition u/s 2 (f) and 12 (B) of the UGC Act)

d. Details of recognition/approval by statutory/regulatory bodies other than UGC (AICTE, NCTE, MCI, DCI, PCI, RCI etc.)

Under Section/ clause	Recognition/Approval details Institution/Department Programme	Day, Month and Year (dd-mm-yyyy)	Validity	Remarks
AICTE	Current Extension of Approval for the Academic Year 2016-17	(AICTE Letter No-Western/1-2809808254/2016/EOA dated 05.04.2016)	1 Year	
University of Mumbai	Grant of Permanent Affiliation of Engineering Faculty from Academic Year 2014-15 for UG Programs (Computer Engg., EXTC., & IT)	(University Letter No-Aff-II./ICD/15-16/398 dated 02.06.2016)	Permanent	
University of Mumbai	Continuation of Recognition for Ph.D.(Technology) in EXTC from 2015-16 to 2019-20	(University Letter No. Th./ICD/2015-16/5127 dated 09.10.2015.)	5 Years	

(Enclose the recognition/approval letter)

8. Does the affiliating university Act provide for conferment of autonomy (as recognized by the UGC), on its affiliated colleges?

Yes | ✓ | No | |

If yes, has the College applied for availing the autonomous status?

Yes | | No | ✓ |

9. Is the college recognized
a. By UGC as a College with Potential for Excellence (CPE)?

Yes | | No | ✓ |

If yes, date of recognition: …………………… (dd/mm/yyyy)

b. For its performance by any other governmental agency?

Yes | ✓ | No | |

If yes, Name of the agency, AICTE-CII SURVEY OF INDUSTRY-LINKED TECHNICAL INSTITUTES 2016
and Date of recognition: 14-09-2016

10. Location of the campus and area in sq.mts:

Location *	Urban
Campus area in sq. mts.	10117.15 sq.mts.
Built up area in sq. mts.	20261.78 sq.mts.

(* Urban, Semi-urban, Rural, Tribal, Hilly Area, Any others specify)

11.   Facilities available on the campus (Tick the available facility and provide numbers or other details at appropriate places) or in case the institute has an agreement with other agencies in using any of the listed facilities provide information on the facilities covered under the agreement.
-    Auditorium/seminar complex with infrastructural facilities
-    Sports facilities
    *   play ground - Yes
    *   swimming pool - No
    *   gymnasium - Yes
-    Hostel
    *   Boys' hostel
        i.   Number of hostels - 1
        ii.   Number of inmates - 54
        iii.   Facilities (mention available facilities) – Common room, Geyser, Water-Cooler, Bed, Table etc.
    *   Girls' hostel
        i.   Number of hostels - No
        ii.   Number of inmates - Nil
        iii.   Facilities (mention available facilities) - NA
    *   Working women's hostel - No
        i.   Number of inmates - Nil
        ii.   Facilities (mention available facilities) - NA
-    Residential facilities for teaching and non-teaching staff (give numbers available - cadre wise) - Yes
-    Cafeteria - Yes
-    Health center – No (Sick room available)
    First aid, Inpatient, Outpatient, Emergency care facility, Ambulance - Yes
    Health center staff – (Available on call basis.)

Qualified doctor:	Full Time	No	Part Time	No
Qualified Nurse:	Full Time	No	Part Time	No

-    Facilities like banking, post office, book shops - Yes
-    Transport facilities to cater to the needs of students and staff – Public Transport
-    Animal house - No
-    Biological waste disposal - Yes
-    Generator or other facility for management/regulation of electricity and voltage - Yes
-    Solid waste management facility - No
-    Waste water management - No
-    Water harvesting - Yes

12.   Details of programmes offered by the college (Give data for current academic year)

Sl. No.	Programme Level	Name of the Programme / Course	Duration	Entry Qualification	Medium of instruction	Sanctioned /approved Student strength	No.of students admitted
1	Under-Graduate	Computer Engineering	4 Years		English	120	120+ (01-J&K)+06 TFWS)
2		Electronics & Telecommunication Engg.	4 Years	Minimum 50% in 12th PCM & CET Must.	English	120	120+(06 TFWS)
3		Information Technology	4 Years		English	120	120+(01-J&K)+ (06 TFWS)

Sl. No.	Programme Level	Name of the Programme / Course	Duration	Entry Qualification	Medium of instruction	Sanctioned /approved Student strength	No.of students admitted
4		Electronics Engineering	4 Years		English	60	60+(01-J&K)+(3 TFWS)
5		Mechanical Engineering	4 Years		English	120	120+(01-J&K)+(05 TFWS)
6		Civil Engineering	4 Years		English	120	120+(01-J&K)+(06 TFWS)
1	Post-Graduate	M.E. Computer Engg.	2 Years		English	18	6
2		M.E. Electronics & Telecommunication Engg.	2 Years	GATE & CET must.	English	18	5
3		M.E. Information Technology	2 Years		English	18	1
2	Ph.D.	Ph.D.(Technology) in Electronics & Telecommunication Engineering Branch.	3 Years	Al least GATE / PET exam appearing or 5 Years University Approval.	English	10	9

13.   Does the college offer self-financed Programmes?

　　　Yes [✓]　　　No [   ]

　　　If yes, how many?　　　[10]

14.   New programmes introduced in the college during the last five years if any?

　　　Yes [✓]　　　No [   ]　　　Number [3]

15.   List the departments: (respond if applicable only and do not list facilities like Library, Physical Education as departments, unless they are also offering academic degree awarding programmes. Similarly, do not list the departments offering common compulsory subjects for all the programmeslike English, regional languages etc.)

Faculty	Departments (eg. Physics, Botany, History etc.)	UG	PG	Research
Science				
Arts				
Commerce				
Any Other (Engineering)	Computer Engineering	✓	✓	X

Faculty	Departments (eg. Physics, Botany, History etc.)	UG	PG	Research
	Electronics & Telecommunication Engg.	✓	✓	✓
	Information Technology	✓	✓	X
	Electronics Engineering	✓	X	X
	Mechanical Engineering	✓	X	X
	Civil Engineering	✓	X	X

16.   Number of Programmes offered under (Programme means a degree course like BA, BSc, MA, M.Com…)
   a.   annualsystem
   b.   semestersystem   10
   c.   trimester system

17.   Number of Programmes with
   a.   Choice Based Credit System   10
   b.   Inter/Multidisciplinary Approach
   c.   Any other (specify and provide details)

18.   Does the college offer UG and/or PG programmes in Teacher Education?

   Yes [   ]   No [✓]

   If yes,
   a.   Year of Introduction of the programme(s)………………… (dd/mm/yyyy) and number of batches that completed the programme   [   ]

   b.   NCTE recognition details (if applicable)
        Notification No.: ……………………………………
        Date: ……………… (dd/mm/yyyy)
        Validity:………………………..

   c.   Is the institution opting for assessment and accreditation of Teacher EducationProgramme separately?

        Yes [   ]   No [✓]

19.   Does the college offer UG and/or PG programmes in Physical Education?

   Yes [   ]   No [✓]

   If yes,
   a.   Year of Introduction of the programme(s)………………… (dd/mm/yyyy) and number of batches that completed the programme   [   ]

   b.   NCTE recognition details (if applicable)
        Notification No.: …………………………….……

Date: ……………… (dd/mm/yyyy)
Validity:………………………..

c. Is the institution opting for assessment and accreditation of Physical Education Programme separately?

Yes [ ]   No [✓]

20. Number of teaching and non-teaching positions in the Institution

Position	Teaching Faculty						Non-Teaching Staff		Technical Staff	
	Professor		Associate Professor		Assistant Professor					
	*M	*F	*M	*F	*M	*F	*M	*F	*M	*F
Sanctioned by the UGC / University / State Government Recruited	4	2	7	3	38	51	0	0	0	0
Yet to recruit	0	0	0	0	0	0	0	0	0	0
Sanctioned by the Management/ society or other authorized bodies Recruited	0	0	0	0	0	0	0	0	0	0
Yet to recruit	0	0	0	0	0	0	0	0	0	0

*M-Male *F-Female

21. Qualifications of the teaching staff:

Highest Qualification	Professor		Associate Professor		Assistant Professor		Total
	Male	Female	Male	Female	Male	Female	
Permanent Teachers							
D.Sc./D.Litt.	-	-	-	-	-	-	-
Ph.D.	5	3	4	4	3	9	28
M.Phil.	-	-	-	-	1	-	01
PG	-	-	4	1	48	50	103
TemporaryTeachers							
Ph.D.	-	-	-	-	-	1	1
M.Phil.	-	-	-	-	-	1	1
PG	-	-	-	-	15	10	25
Part TimeTeachers							
Ph.D.	-	-	-	-	-	-	-
M.Phil.	-	-	-	-	-	-	-
PG	-	-	-	-	-	-	-

22. Year of Introduction of the programme(s) **30/06/2001** and number of batches that completed the programme

[12]

23.   Furnish the number of the students admitted to the college during the last four academic years.

Category	2012-13		2013-14		2014-15		2015-16	
	Male	Female	Male	Female	Male	Female	Male	Female
SC	3	2	7	4	5	6	9	8
ST	0	0	0	1	0	0	0	0
OBC	16	4	13	6	21	4	18	06
General	1434	624	1787	655	2013	636	1122	255
Others (Minority)	710	226	914	249	1038	271	1089	346

24.   Details on students enrollment in the college during the current academic year:

Type of students	UG	PG	M.Phil.	Ph.D.	Total
Students from the same state where the college is located	681	12	-	10	703
Students from other states of India	17	0	-	0	17
NRI students	0	0	-	0	0
Foreign students	0	0	-	0	0
Total	698	12	-	10	720

25.   Dropout rate in UG and PG (average of the last two batches)

UG | ≤10 | PG | Nil |

26.   Unit Cost of Education
        (Unit cost = total annual recurring expenditure (actual) divided by total number of students enrolled)

        a.   Including salary component: Rs.125091/-

        b.   Excluding salary component: Rs.66451/-

27.   Does the college offer any programme/s indistance education mode (DEP)?

        Yes | | No | ✓ |

        If yes,

        a.   Is it a registered center for offering distance education programmes of anotherUniversity

              Yes | | No | |

        b.   Name of the University which has granted such registration.

              | |

        c.   Number of programmes offered | |

        d.   Programmes carry the recognition of the Distance Education Council.

              Yes | | No | |

28.   Provide Teacher-student ratio for each of the programme/course offered : 15:1

29.   Is the college applying for

Accreditation: Cycle 1   [✓]   Cycle 2   [   ]   Cycle 3   [   ]   Cycle 4   [   ]

Re-Assessment: [   ]

(Cycle 1 refers to first accreditation and Cycle 2, Cycle 3 and Cycle 4 refers to re-accreditation)

30.   Date of accreditation* (applicable for Cycle 2, Cycle 3, Cycle 4 and re-assessment only): NA

Cycle 1: ……………… (dd/mm/yyyy)   Accreditation Outcome/Result ………………
Cycle 2: ……………… (dd/mm/yyyy)   Accreditation Outcome/Result ………………
Cycle 3: ……………… (dd/mm/yyyy)   Accreditation Outcome/Result………………

* Kindly enclose copy of accreditation certificate(s) and peer team report(s) as an annexure.

31.   Number of working days during the last academic year.

[168   ]

32.   Number of teaching days during the last academic year
       (Teaching days means days on which lectures were engaged excluding the examination days)

[Upto 160   ]

33.   Date of establishment of Internal Quality Assurance Cell (IQAC)
       IQAC   15/11/2005

34.   Details regarding submission of Annual Quality Assurance Reports (AQAR) to NAAC. : NA

AQAR (i)   ……………… (dd/mm/yyyy)
AQAR (ii) ……………… (dd/mm/yyyy)
AQAR (iii) ……………… (dd/mm/yyyy)
AQAR (iv) ……………… (dd/mm/yyyy)

35.   Any other relevant data (not covered above) the college would like to include. (Donot include
       explanatory/descriptive information)

Nil

Criterion- I: Curriculum Aspects

1.1   Curriculum Planning and Implementation

1.1.1   State the vision, mission and objectives of the institution and describe how these are communicated to the students, teachers, staff and other stakeholders.

Vision: *Thakur College of Engineering and Technology will excel in Technical Education to become an internationally renowned premier Institute of Engineering and Technology.*

Mission: *To provide state-of-the-art infrastructure and right academic ambience for developing professional skills as well as an environment for growth of leadership and managerial skills to students which will make them competent engineers to deliver quality results in industry.*

Institutional objective: To provide quality education at undergraduate (UG)&postgraduate (PG) level by developing Programme Educational Objectives (PEOs) and Program Outcomes (PO's) based on the graduate attributes (GA's) prescribed by National Board of Accreditation (NBA) on completion of course.

Strategic objectives: To become institute of repute. To become preferred destination for recruitment by industry.

Programme Objectives: All programmes at the institute have well defined programme educational objectives and well documented process at department level with proper dissemination to the students at various levels.

Quality Objectives:

1)   We shall ensure that the errors in admission process are negligible.
2)   We shall strive to improve students' performance quantitatively and qualitatively.
3)   We shall strive to attain top position amongst the renowned Engineering Institutes (in Maharashtra).
4)   We shall provide adequate number of books to students.
5)   We shall attain better results in placement of students.
6)   We shall provide material in time so as to minimize any loss of instructions.
7)   We shall organize Industrial visits/vacation placement (industry) for students to increase their practical knowledge.
8)   We shall commit ourselves to maintain healthy and clean environment.
9)   We shall attempt to make students socially aware and responsible.
10)   We shall strive to maintain the accreditation status of the accredited courses and to get the accreditation of unaccredited courses as and when eligible.

The Mission and Vision statements are published on various publicity platforms and prominent places in the Institute and Department viz.

a)   Department and Institute Notice boards
b)   College website: http://www.tcetmumbai.in/
c)   Admission Brochures and other Institute publications viz.Souvenirs, proceedings, college magazines, faculty diary, etc.

Apart from this, the Mission and Vision is disseminated to the primary stakeholders (Students, Parents, Faculty and Staff) through Induction Training, Academic Orientation Program and the Principal's inaugural address. It is also disseminated to Industry, R&D organizations, Statutory and Regulatory bodies through submission of returns and during various interactions and presentations.

All activities related to curricular/co-curricular/extra-curricular are mapped with mission statements and attainment is checked through various PEOs defined at department level.

1.1.2   How does the institution develop and deploy action plans for effective implementation of curriculum? Give details of the process and substantiate through specific example(s)

Teaching Learning Procedure is based on proper planning and effective delivery of Lecture / Practical / Tutorial as per Time table, academic calendar and semester plan. In case of any shortcoming in learning process, necessary remedial work is to be carried out in coordination with HOD. Learning of the student is monitored by the faculty members on the basis of continuous evaluation.

Effective development and deployment of action plan for implementing curriculum is as follows:

Development / Planning:

a)   The HOD submits the Semester plan and deployment strategy to the Principal well in advance:

    i. Load and subject allocation of upcoming semester during 10th or 11th week of the running semester. The arrangement is done to ensure the completion of the resource book of the next semester in advance and also to bring the learning effectiveness during the semester.

    ii. Important event dates for department activities so that it can be included in academic calendar three weeks before the commencement of the semester.

b) The Principal designs academic calendar at least fifteen days before the commencement of the semester.

c) Time-table is designed as per subject requirements at least seven days before the commencement of the semester with the following inputs such as availability of classrooms, laboratories, faculty etc.

d) Each faculty maintains faculty diary which consists of various records regarding planning / completion of lectures / practical along with load adjustment (if any). Students' attendance and many such records are also maintained in faculty diary.

e) Once the subjects are allotted, faculty designs the Semester Plan-Theory and Semester Plan – Practical / Tutorials. Design takes the following inputs.

    i. University prescribed syllabus

    ii. Earlier semester plan

    iii. Content plan and methodology

    iv. Use of teaching aids

    v. Timetable

    vi. Academic calendar

    vii. References

f) Faculty members prepares the modules, question banks, hand-outs, question paper sets, experiment write-up for effective conduct of lectures / practical. Ideal time for such preparation is vacation period.

g) Records can be maintained in appropriate academic file which will be checked by HOD and cross-checked by Principal.

Deployment / Implementation:

a) Faculty conducts lectures / practical as per Semester Plan and time-table. Course materials should be given to the students well in time to enhance the lecture delivery in class.

b) Daily work report is checked on weekly basis by HOD and cross-checked by the Principal on fortnightly basis. Handbooks can be submitted to Principal for cross-check signature as per schedule.

c) If a faculty is absent or is on leave on the day of lecture / practical / tutorials, HOD / Concern faculty member required to do alternative arrangement. Faculty member who has been assigned the load required to engage the class as per time table. Moreover, academic loss in the subject due to the leave of the faculty members shall be compensated by arranging extra lecture. In both the cases, records are maintained.

d) Faculty members if they are required to take an extra lecture on account of covering the syllabus, it can be arranged on Saturday / Holidays / mutual understanding and recordsare maintained.

e) Lectures are made effective by involving the student interaction, group activities, class work, realisation for self-learning etc.

f) Based on the syllabus coverage and academic calendar faculty members gives assignment to the students and evaluate the same as per the schedule. Assignments covers entire syllabus.

1.1.3   What type of support (procedurals & practical) do the teachers receive (from the university and /institution) for effectively translating the curriculum and improving teaching practices?

For effectively translating the curriculum in improving teaching practices the teachers receives the support from IITs under MHRD, Govt. of India schemes conducted for teachers, AICTE/UGC sponsored STTP, ISTE approved FDPs, Industry linked training programmes and institute conducted training programmes for teachers.

Teachers of our institute are actively participating in all above FDPs and training programmes. The following is the list of faculty who have undergone theoretical and practical trainings.

Table 1.1: Training programmes by IITs under MHRD, AICTE/UGC, ISTE

Sr. No.	Workshop	Number of Participants	Duration
1	Introduction to Research Methodologies	47	25th June 2012 to 4th July 2012
2	2 Days ISTE Workshop on Aakash for Education	22	10th November 2012 to 11th November 2012
3	2-Day ISTE Workshop On Research Methods In Educational Technology	44	2nd February 2013 and 9th February 2013
4	4-Day Aakash Android Application Programming Workshop for Students	54	23rd, 24th February 2013 and 2nd, 3rd March 2013
5	Two-Week ISTE workshop on "Database Management Systems"	17	21st May 2013 to 31st May 2013
6	Two-Week ISTE workshop on 'Analog Electronics' conducted by IIT-Kharagpur	16	4th June 2013 to 14th June 2013
8	Two week ISTE workshop on Engineering Mechanics	13	26th November 2013 to 6th December 2013
9	Two week ISTE workshop on Signal and Systems conducted by IIT-Kharagpur	27	2nd January 2014 to 12th January 2014
10	Two week ISTE workshop on Fluid Mechanics	18	20th May 2014 to 30th May 2014
11	Two week ISTE workshop on Computer Networking	33	online during 11th May to 15th June 2014 At remote centre 16th June to 21st June 2014
12	Two week ISTE workshop on Computer Programming	23	Online during 22nd May to 29th June 2014 At remote centre 30th June to 5th July 2014
13	Two week ISTE workshop on Cyber Security	30	10th July 2014 to 20th July 2014
14	Two day ISTE-CSI e-Seminar on Steps 2 Research	41	19th September 2014 to 20th September 2014
15	Two week ISTE workshop on Control Systems	19	2nd December2014 to 12th December2014
16	Two week ISTE workshop on Pedagogy for Effective use of ICT in Engineering Education	26	Online during 8th January to 18th January 2015 and 22nd January to 31st January 2015. At remote center 5th January to 7th January and 19th January to 21st January 2015
17	Two week ISTE workshop on Introduction to Design of Algorithms	29	25th May 2015 to 30th May 2015
18	Two week ISTE workshop on Environmental Studies	29	2nd June 2015 to 12th June 2015
19	Two-Week ISTE STTP on Technical Communication	39	Online during 8th October 2015 to 11th November 2015 At remote center 30th November 2015 to 05th December 2015
20	Two-Week ISTE STTP on Engineering Physics	29	8th December 2015 to 18th December 2015
21	Two-Week ISTE STTP on Introduction to Structural Engineering	10	4th January 2016 to 9th January 2016

Table 1.2: Short Term Training programmes by institute

Sr.No.	Year	Name of program
1	2012-2013	STTP cloud computing Ethical Hacking Network security
2	2012-2013	IMC RBNQA training
3	2013-2014	NBA Training SAR Writing
4	2014-2015	STTP on Integration of R and D Consultancy with academic activites
5	2014-2015	STTP on Data Mining And Analytics Advanced Techniques and Research Opportunities
6	2014-2015	STTP on Embedded Systems & Microcontrollers
7	2014-2015	STTP on Recents trends in WSN & Simulation
8	2014-2015	STTP on Enhancing Educational Productivity
9	2014-2015	STTP on CATIA V6 DASSAULT System

Sr.No.	Year	Name of program
10	2014-2015	STTP on Academic excellence in campus of 21st
11	2014-2015	STTP on IOT - recent trends and multi-disciplinary Applications
12	2015-2016	STTP on Multimedia Processing and Security
13	2015-2016	STTP on Technical communication for engineers & scientist
14	2015-2016	One week ISTE approved STTP on Recent trends in Wireless Sensor Networks and its simulation using NS2
15	2015-2016	Two week ISTE approved STTP on Tools and Technology
16	2015-2016	STTP on Design and development of smart city in association with INTEL & TEXAS Instruments

Table 1.3: Industry Institute Partnership Programmes with Confederation of Indian Industry (CII)

Programme	Objective	Number of participants from TCET	Date	Speakers
Starting Your Own Start-Up	To encourage students to become entrepreneurs	620+	20th October 2014	Prof Mohan B. Rao, Associate Dean, Indian Education Society-MCRC Mr. Vandan Shah, Managing Director, SipraDiecastings Mr. Juggal Kapadia, Director, Kris Aero Services Mr. Debartha Banerjee, Director, Sampurn(e)arth Environment Solutions Mr. Ravi Dighe, Executive Vice-President, Aptech Ltd.
Interactive Session with Czech Universities Delegation	To explore possibilities for cooperation with Indian Universities, as well as study opportunities for Indian students and knowledge sharing.	3 Faculty	4th November 2014	Delegation of Presidents / Vice-Chancellor from Czech Republic Universities
6th CII Global Summit on Skill Development 2014	To bring in a more realistic, holistic view of the skill and talent landscape in India	7 Faculty	10th November 2014	Dr Peter Ebell ,Central Institute of Technology, Australia, Jayant Krishna, Regional Head TCS DilipChenoy , MD and CEO , NSDC NinadKarpe, CEO and MD , AptechDr.SandhyaChintala, Vice President , NASSCOM
3rd India Australia skills Conference: SKILLS FOR BETTER BUSINESS	To prepare both Australian and Indian delegates for mutually addressing various skills and workforce development issues facing both countries	7 Faculty	11th November 2014	Ian Macfarlane, Industry Minister , Australia Anita Rajan, COO Tata Strive Mr Phil Cox,CEO Hunter Tafe Mr AtulBhatnagar(COO-NSDC) Mr. Stephen Conway (CEO-TAFE) Mr.Lary Davies(CEO-ACPT)
Latest Development in Cloud Computing	To discuss the latest trends in Cloud computing and to help identify research areas in the field.	64 Faculty	11th November 2014	Mr. Deepak Mane, Cloud Consultant, TCS

Programme	Objective	Number of participants from TCET	Date	Speakers
CII Green Conclave 2014 A Step toward Greener Tomorrow	Making all the stakeholders environment conscious emphasizing on the need for recycling, saving energy, new way for generating energy, water conservation, solar power & biomass usage and green energy solution.	5 Faculty	18th November 2014	Ms.MeherPudujee, Chairperson, CII Pune Zonal Council and Chairperson, Thermax Ltd. Mr. Nitin Chalke , Conclave Chairman and Convenor. Mr. Pradeep Bhargava , Chairman, CII Environment & Recycling Council and Director Cummins india Ltd.
Women in Leadership	To support women throughout their careers - to empower; engage and enable them to rise to the best of their capabilities through training, mentoring and the creation of an associative model that all professional women can benefit from.	5 Faculty	20th November 2014	Ms. Nikki Randhawa Haley, Governor of South Carolina, U.S.A. and Ms.PankajaMunde (Minister for Rural Development & Water Conservation, Women & Children Development, Government of Maharashtra)
Integration of R & D and consultancy with academics	Industrial visit to L&T (Power Lab and Heavy Engineering Fabrication facility) for the faculty members as part of the STTP	45 faculty	15th December 2014	Ms SangeetaVazirani Ms.NimitaRaut
Meeting with Dr.Mvuyo Tom, Vice Chancellor of Fort Hare University (UFH), South Africa	To exchange views/opinions on the state of Education in India and South Africa	2 Faculty	27th January, 2015	Delegation from UFH, South Africa
Industrial visit to Bluestar manufacturing facility (AC/ Refrigeration), Wada	To expose students to manufacturing processes for teaching-learning enhancement	40 (37 students and 3 faculty)	16th February 2015	Mr. Ajay Devpujari, Plant Head, Bluestar
MULTICON 2015	Chief Guest address aimed at making participants aware of industry requirements and expectations.	1200+	27th February 2015	Mr.Sunil Khanna, President, Emerson Network Power Systems, India

Programme	Objective	Number of participants from TCET	Date	Speakers
EEF IWN mentorship programme	Mentorship sessions for female students under the initiative called '100 hours of change'. It is the first of its kind programme that connects senior and successful women executives with students	100+	13th March 2015	1. Jayashree Shetty, Chief Compliance officer, Janssen India 2. RajaniAthreya, Head, Human Resources for Thomson Reuters (I) Pvt Ltd
CII, Western region Annual Meeting, Make in India: Achieving growth and creating social impact	To facilitate discussions on industrial policy leadership and sustainability.	3 Faculty	16th March 2015	Sanjay C Kirloskar Deputy Chairman – CII Western Region Chairman & Managing Director Kirloskar Brothers Ltd. Ajit Singh Consul General Consulate General of Singapore, Mumbai. Apurva Chandra, IAS Principal Secretary Industries Department Government of Maharashtra Ashish Kundra, IAS Administrator Daman & Diu, Dadra & Nagar Haveli Prof. Tan Kong Yam Co-Director Asia Competitiveness Institute Lee Kuan Yew School of Public Policy National University of Singapore Dr Radhakrishnan Pillai Author, Corporate Chanakya and Director Chanakya Institute of Public Leadership (CIPL)
Importance of Financial Planning for Women	Tailored advice that would help women become confident and knowledgeable about financial matters		19th March 2015	Forthcoming

1.1.4   Specify the initiatives taken up or contribution made by the institution for effective curriculum delivery and transactions on the curriculum provided by the affiliating universities or other statutory agencies

The initiatives taken by the institution for effective curriculum delivery are as follows. At every department to identify the curricular gaps and offer bridge courses at the 2nd year (basic technology and value education), 3rd year (advance technology and industry linked) and 4th year (specialized and management). At the beginning of the semester the institute conducts 8 days academic orientation programme comprising of 3 days foundation programme and 5 days semester orientation programme.

Table 1.4: Bridge Courses offered by the departments

Sr.No.	Department	Bridge Courses offered	Type of bridge course
1	IT	"Ethics in Engineering and Value Education: (SE IT)	basic technology and value education
		"Data Virtualization": (TE IT)	advance technology and industry linked
		"R-Programming and Operational intelligence	specialized and management
2	CMPN	C/C++ for SE	basic technology and value education
2	CMPN	Data Mining and Ms Office	advance technology and industry linked

| Sr.No.	Department	Bridge Courses offered	Type of bridge course
		NS2 and Shell Scripting	specialized and management
		Programming with Python	basic technology and value education
		Android App Development	basic technology and value education
3	EXTC	Professional Ethics and Value Education	basic technology and value education
		Embedded systems	basic technology and value education
		Product design & implementation	basic technology and value education
		Computer Networks	advance technology and industry linked
		Antenna design simulation software	specialized and management
		Wireless Ad Hoc and sensor networks	specialized and management
4	ETRX	PCB design using CAD Soft Eagle(2015-16)	basic technology and value education
		MATLAB Programming for Numerical Computation(2016-17)	basic technology and value education
		Principle of communication system-1	basic technology and value education
		Ethics in Engineering & Value Education(2015-16)	basic technology and value education
		Prototyping with Arduino Uno(2016-17)	advance technology and industry linked
		Summer Industrial Training on "Arm Mbed and IoT Training(2015-16)	advance technology and industry linked
		Computer Architecture(2016-17)	advance technology and industry linked
5	MECH	Introduction to FEA and Optimization	Basic technology
		Introduction to I-C Engines and Automobiles	Basic technology
		Introduction to rapid prototyping	Advance technology
		Pspice/Xilinx software	Specialized technology
		Adriano Programming	Specialized technology
		Experimental stress analysis	Specialized technology
		New trends in Metrology and Quality Engineering	Advance technology
		Computer Integrated Manufacturing	Advance technology
		Product Design for Engineers	Advance technology
		Introduction to IDM Programming	Specialized technology
		Non- Conventional Energy Sources	Basic technology
		Advances in Operations Research	Advance technology
6	H&S	General English Proficiency Test	Pre – requisite
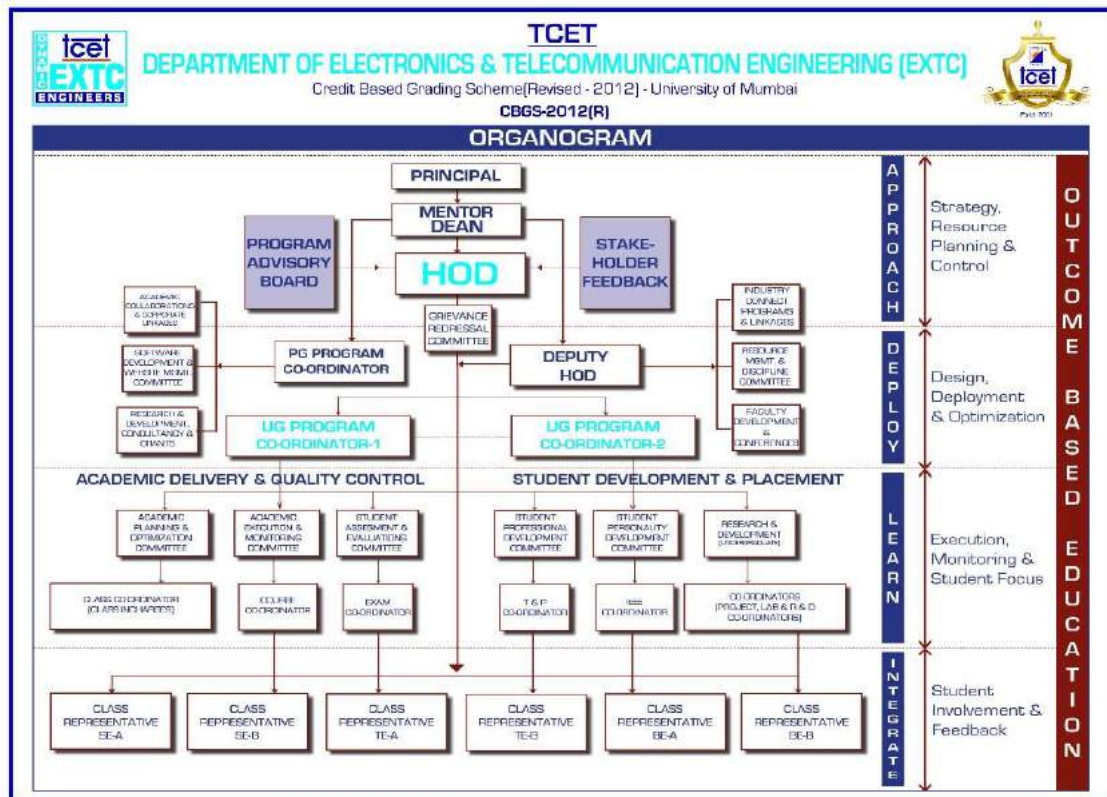
Fig. 1.1: Organogram of Electronics & Telecommunication Engineering

The objective for Foundation Program is:

1. To build strong foundation for the course and the domain with emphasis on Self learning & Project based Learning.
2. To build positive impact for the course (creating interest) by ensuring learning outcomes with regard to prerequisites and fundamentals.
3. To ensure better understanding by the low profile students by devising a mechanism to extract learning outcomes.
4. To ensure better class attendance by showing them other modes of learning (Technology based learning).

The following is the broad outline of the topics/contents that will be covered during SOP:

Lecture 1. Theory lecture plan with subject orientation, prerequisites, subject content gaps, research opportunities and any other relevant content (Through PPT and Website based LMS portal)

Lecture 2. Practical conduct plan with experiment list, industry skill gaps, bridge courses, mini, minor and major projects, opportunities for higher studies and any other relevant content (Through PPT and Website based LMS portal)

Lecture 3. Outcome Based Education (OBE)

Primary Outcomes: Evaluation and Assessment of theory and practical, expected course outcomes and its linking with program outcomes.

SecondaryOutcomes: Linking of outcomes of bridge courses, mini, minor and major projects to program outcomes.

Final Outcomes: Linking of primary and secondary outcomes to Graduate Attributes (GA) by explaining the benefits of participation in All-Round development activities to become a highly skilled professional engineer.

Lecture 4: The Class In-Charge will orient and collect choices from their respective class students about the category of project (Research, Core, Interdisciplinary, Application) by forming groups of 3-4 students, allotting a project as per students choice, identifying skill gaps, offer training if necessary, get the project implemented in 3-4 weeks, time, ensure that the groups write an article, SLP or FLP based on their project undertaken and motivate them to publish in MULTICON-W 2017.

Lecture 5: The session on Portfolio Building will be taken by Teacher Guardian that will help every student build their individual portfolio.

The above process is system driven, the first part is according to the guidelines of the University of Mumbai whereas, and the overall personality development of the student is taken care by conducting various co-curricular and extra-curricular activities.

1.1.5   How does the institution network and interact with beneficiaries such as industry, research bodies and the university in effective operationalization of the curriculum?

The Institute has an institute level advisory committee comprising of stakeholders from industry research bodies & university which meets twice in a year to advise the institute to network &interact with the beneficiaries. Apart from this every programme offered by the institute has a programme advisory board which includes Alumni, Parents & students apart from industry experts. The institute level and programme level advisory committees recommends to conduct courses, training programmes for effective operationalization of the curriculum in line with the industry requirements and research opportunities. The training & placement cell has a system of receiving regular corporate feedback from our recruiters and alumni. Based on these inputs the student training programmes are conducted. The sample copy of inputs received from industry and research experts, action taken is as follows:

Table 1.5: Suggestions by the Advisory Committee & Compliance of the Departments

Sr. No	Department	Suggestions by Advisory Committee	Compliance
1	EXTC & ETRX	Emphasis on Core Engineering subjects along with IT skills	Bridge course on "Essentials of electronics projects design and implementation" conducted in March 2015. No. of participants: 57 Bridge Course on Computer Networks conducted in June 2015. No. of participants: 16
		Industrial Visits to support curriculum	1.Usha Martin Cables' 2.Sudhir Genrator No of participants: 80 On 27th and 28th march 2015
		Promotion of Entrepreneurship culture amongst students	Entrepreneur development cell has been started in the institute AY 2014-15
		Idea Competitions should be promoted.	In house technical paper presentation was kept under ICWET-17.
		Provide domain orientation to SE students.	During the Semester orientation programme, SE students were made aware of the domains in the department and projects related to those domains.
		Suggestion to combine R&D cell with innovation cell.	Hobby club at department level started in AY 2014-15
		Teachers training through programs conducted by industry experts	Local industrial visit to Reliance was organized under communication domain in September 2015 STTP on 'Recent Trends in WSN and its implementation using NS2' was organized in December 2015
		Student training for effective technical communication skills.	Seminar on 'How to write a paper ' for third and final year students was conducted by department in Jan

Sr. No	Department	Suggestions by Advisory Committee	Compliance
			2016.
2	CMPN & IT	Online courses should be promoted as snippets on whatsapp. Theory session to be taken in lab wherever possible for better understanding. Students should work on real life / lives projects together with Industry representatives / alumni for knowledge transformation.	Faculty explains theory before start of the practical We are planning real life / lives projects (Outhouse) for knowledge transformation for BE students
		Seminars should be held on different topics so that students can identify interest areas and hence form groups belonging to the same interest area. Complete SDLC cycle should be strictly followed for Projects and Case studies at the institute level itself. He also suggested that students can use "LATEX" for documentation purpose which provides ready-made commands for formatting and layout requirements such as chapter headings, footnotes, cross-references and bibliographies.	Technical seminar conducted on Web Development(SE) Oracle, PL/SQL(TE) Industry aspects of cloud computing(BE) Followed SDLC cycle for projects A Session is organized on LATEX for PG students during Engineering Colloquium and we are planning to conduct the same for UG students during zero hour.
		"Google Summer of Code" as an option to provide platform to students for internship. As placement in IIT is based on internship so, students should be motivated to do internship during vacation.	Motivated TE students to do internship through teacher guardian

The following are the details:
1) The institute personnel such as Training & Placement Officer (TPO) interact with the industry human resource managers (HR) for discussion in case of industry requirement so that workshop, projects of advance areas can be developed which shall later help students for placement purpose.
2) The institute communicates with the industry for academic requirements, ICT requirements to conduct the laboratory sessions as per curriculum.
3) Research bodies are communicated for grant of funds through AICTE and other regulatory bodies for conduct of workshops, lab development and to work on advance industry based requirements which shall help to enrich the curriculum.
4) The minor research grant received from university to faculties, where the faculties work on the project as per their area of expertise that allows them to strengthen the operationalization of curriculum.
5) The communication with university is done for effective operationalization of the curriculum with the conduct of oral/practical exams, paper setting, paper assessments as per deadlines mentioned by university from time-to-time during each semester and academic year subsequently etc.
6) The structure of curriculum is defined by the board of studies of University and revised every 4-5 years. The structure has 2 parts:
   i) Curriculum component with the no. of hours assigned for delivery and no. of credits.

ii) Examination scheme and number of credits.

1.1.6 What are the contributions of the institution and/or its staff members to the development of the curriculum by the university (number of staff members /departments represented on board of studies student feedback, teacher's feedback, stake holder feedback provided, specific suggestions etc.)

The curriculum offered by the institute is designed by the University of Mumbai under the respective programme BoS constituted by the university. The BoS conducts regular syllabus revision meetings by inviting our institute faculty members to participate in the syllabus revision process. Further the syllabus is approved by the academic council and board of management for implementation. After this the BoS conducts subject orientation meetings where our faculty members teaching respective course attend. The following is the contribution made by our faculty members for effective curriculum delivery.

The sample Feedback provided by faculty after attending the syllabus revision meeting:

- Mrs. Rashmi Thakur suggested that DBMS should be included in IV sem, so that students learn Advanced Databases in Sem V and DWM in Sem VI
- Mrs. Rashmi Thakur also suggested that CSS Lab should be included in sem VI
- Mrs. Veena Kulkarni suggested that SOOAD should be included in Sem V as more practice is required for Final Year Projects and there is no Software engineering related subject in Sem V
- Mrs. Veena Kulkarni also suggested that Web Design Lab should be of 4 hours
- Mrs. Veena Kulkarni also suggested that Software Architecture can be included as an elective in Sem VII/VIII
- Mrs. Shiwani Gupta suggested that AI should be taught before ML, BDA or NLP hence to be put as elective in Sem V
- Mr. AnandKhandare suggested that in OOPM subject there should be some concepts of C++ programming introduced along with JAVA programming
- It was found by faculty members that HCI lab is missing in Sem VIII

1) **Institute contribution to the development of curriculum by the university:**
   a) **Submission of reports, interactions and presentation:**
      i)   The institute gets opportunities to apprise the university on the academic aspects through various submissions and reports which inevitably includes the status of the current curriculum implementation as well as the additional input from stakeholders. These reports also includes the current market trends to keep pace with the current demand of the courses, curricula etc.
      ii) Meetings are called by the university at various levels particularly the Principals meeting by the Vice-Chancellor, Pro vice-Chancellor and Dean Faculty of Technology to discuss the various issues of effective implementation of university curriculum including the evaluation and assessment. The meetings are attended by the Principal or on his behalf by Professor or senior faculty member. It gives an opportunity to share the experiences related to the curriculum implementation, evaluation and assessment and acting as one of the vital input for the subsequent revision of the courses and curriculum.
      iii) In the Principal meeting, best, innovative practices and scope for beyond syllabus are discussed and due considerations are given for the syllabus revision
      iv) LIC committee visits the institute for the extension and continuation of affiliation wherein they have extensive interactions with the Principal, HOD & Faculty and during the interaction institute presentation are given by the Principal and other Senior Leaders. The presentation is focused towards the programme objectives and their achievements. Therefore this may be one of the inputs for the curriculum development at the time of revision.
2) **Faculty member contribution to the development of curriculum by the university**
   a) **Quality improvement programme:**
      i)   The institute conducts a number of programmes including conferences, workshops, seminars, symposium and training programmes attended by the elite from the engineering academic profession where important recommendations emerge for improvement in the teaching learning process.

ii) The publication arising out of the recommendation of such committees are printed and circulated to all the affiliated colleges and university. Thereby disseminating the information for overall quality improvement

iii) The institute invites eminent experts for conduct of Student Development Programmes thereby getting an opportunity to inculcate modern trends in technical education.

b) **University process of syllabus revision:**

i) The syllabus revision in the university is a continuous process with a cycle period of 4 years for UG and PG. Therefore, every year one of the year syllabuses of the programme is revised. Therefore, university invites the faculty members for the suggestions as per the subject of their interest and the subject orientation is also conducted once the syllabus is framed. In the syllabus orientation the length and breadth of the syllabus along with the learning resources and practical's to be conducted subject wise are discussed as an outcome the blue print for effective implementation of curriculum is prepared. In the process the subject teacher and Heads of Department gets an opportunity to contribute in curriculum development for effective implementation.

c) **Faculty as committee members:**

i) Faculty members are members of board of studies, board of examinations, syllabus revision committees. While giving suggestions for changes, additions / deletion etc. in the curriculum the teachers keep in view the feedback from the stakeholder mainly students

Table 1.6: Faculty Contribution in the Curriculum Design of University of Mumbai UG and PG program

Sr.No.	Department	Name of the faculty member	Course	In capacity of
1	EXTC	Dr. Lochan Jolly	Optical Communication Network (ME EXTC Sem I)	Chair Person
			Optical Fiber Communication (BE Sem VII)	Chair Person
		Dr. VinikumarDongre	Radar Engineering(BE Sem VI)	Chair Person
			Advanced Antenna Design(Me EXTC Sem I)	Committee Member
		Mr. Sanjeev Ghosh	Modern Digital Communication(ME EXTC Sem I)	Committee Member
		Dr. MadhuriMavinkurve	Electronics Instrumentation and Control (SE EXTC Sem III)	Committee Convener
		Ms. Sujata Kulkarni	Computer Communication Telecomm. Network(TE EXTC)	Chair Person
			Internet and Voice Communication (BE EXTC Sem VII)	Chair Person
			Wireless Network (BE EXTC Sem VII)	Committee Member
			Next Generation Network (ME EXTC Sem I)	Committee Member
1	EXTC	Ms. Sujata Kulkarni	Networks & Cyber Security (ME EXTC Sem II)	Committee Member

Sr.No.	Department	Name of the faculty member	Course	In capacity of
		Dr. Vivek Mishra	Mathematics – III	Chair Person
2	ETRX	Dr.B.K.Mishra	Electronics Engineering (UG) (R2012) (R2017)	Member, BOS (R2012)
		Ms.PoorvaWaingankar		Invited Member (R2012& 2017)
		Dr.Sandhya Save		Invited Member (R2012 & 2017)
		Ms.SonalBarvey		Subject Teacher (R2012)
		Ms.ArchanaBelge		Subject Teacher (R2012)
3	CMPN	Dr.SheetalRathi	High Performance Computing (ME) Data Science (ME) Data Warehousing and Mining (BE – Sem VII) Big Data Analytics (BE – Sem VIII)	Committee Member
		Mr. Kiran Bhandari	Computer Vision and Soft Computing(BE Sem VIII)	Committee Member
		Mrs. Rashmi Thakur	Data Structures and Files(SE Sem III)	Committee Member
4	IT	Dr.Deven Shah	Syllabus setting for U.G. BE (IT) for all four year -AY 2016	Chairman BoS IT for Mumbai University
			Syllabus formation for Ph.D(PET)-AY 2015-16	Incharge of Syllabus setting for ME (IT)- AY 2012
		Dr.RajeshBansode,	System And Web Security – VIthsem IT)	Paper setting for UG programs- Committe Member
			Information Theory & Coding (IVthsem -IT	Paper setting for UG programs- Committe Member
		Dr. Bijit M.	1.Enterprise Resource Planning(VIIIthsem-IT)	Chairperson
			2.Knowledge Management (ME-IT)	Chairperson
			E-Business Technonolgy (ME-IT)	Chairperson
			Multimedia SystemVIIthsem-IT)	Paper setting for UG programs- Committee Member
			Image Processing VIIthsem-IT)	Paper setting for UG programs- Committee Member

Sr.No.	Department	Name of the faculty member	Course	In capacity of
		Mr. Aditya Deasi	Distributed System (V^th sem – IT)	Paper setting for UG programs - Committee Member
5	MECH	Dr Sanjay Kumar	Production Process I(SE Sem III), Production Process II(SE Sem IV), Production Process III(TE Sem V),Mechanical Measurement & control(TE Sem V), Metrology and Quality Engineering (TE Sem VI) Production planning & control (BE Sem VII), Operation Research (BE Sem VII), Industrial Engineering and Management (BE Sem VIII), World Class Manufacturing (BE Sem VIII),	Committee Member
6	CIVIL	Dr. SeemaJagtap	Advance Fluid Mechanics (ME- CIVIL –WRE Sem I)	Chair Person
			System Engineering and Its applications (ME- CIVIL –WRE Sem II)	Chair Person
			Design of Hydraulic Structures(ME- CIVIL –WRE Sem II)	Committee Member
			Fluid Mechanics I (SE CIVIL Sem III)	Committee Member
			Fluid Mechanics II (SE CIVIL Sem IV)	Committee Member
			Applied Hydraulics I (TE CIVIL Sem V)	Committee Member
			Applied Hydraulics II (TE CIVIL Sem VI)	Committee Member
			Irrigation Engineering (BE CIVIL Sem VII)	Committee Member

1.1.7 Does the institution develop curriculum for any of the courses offered (other than those under the purview of the affiliating university) by it? If 'yes', give details on the process ('Needs assessment', design, development and planning) and the courses for which the curriculum has been developed.

No, as the institute is affiliated to University of Mumbai the curriculum is completely designed by the university as explained in 1.1.6. However, to strengthen the curriculum and to cater to the needs of the industry/society the institute offers need based bridge courses as explained in 1.1.4.

The following is the process followed for the design of need based curriculum:

1) **Co-curriculum need assessment**
   a) Need assessment is done on the basis of market requirement collected from potential employers and outcome of the various placement processes in order to make the students employable.
   b) Stakeholders aspiration and student needs

    c)   Programme specific criteria given by Professional and Accreditating Bodies
    d)   Education and Training model available with industries.
    e)   Institute Brand building
    f)   Opportunity for life-long learning

2)   Co-curriculum Design

    a)   **Alignment and coherence:**

           Students are admitted at entry level which the transition phase between high school and professional education and there is lot of variation as an individual personality. However there is professional requirement as distinct from general education which needs application of student's learning to the industry requirements. This is addressed through design of various programmes through co-curricular activities.

    b)   **Scope:**

        i)   Learning over and above the university curriculum
       ii)   To enhance the employability
      iii)   Overall personality development to match the industry need
      iv)   Life-long learning

    c)   **Sequence:** There are four stages

        i)   Improve the communication skill preferably at 1st & 2nd year level.
       ii)   Programming skills and computer competency at 2nd & 3rd year level
      iii)   Employability and employment at 3rd & 4th year (VII semester)
      iv)   For smooth transition from campus to corporate at VIII semester or immediately at the end of the programme.

    d)   **Continuity:**

        i)   University curriculum is mainly focused on Principle and fundamentals of subjects. But there are some gaps in practice component required by the industry.
       ii)   The institute has realized the importance of Co-curricular activities as a skill and competency development essentially needed for better employment.
      iii)   The programme is designed for vertical improvement in the knowledge and practice with linkage at each stage to ensure continuous improvement in the knowledge and technical skill as mapped at each stage. Therefore the institute initiatives supports the students to maintain continuity in learning effectively.

    e)   **Integration:**

        i)   This helps the students to develop the knowledge, skills and competency along with the theoretical knowledge imparted through university curriculum. It gives the competitive edge to students with better acceptability in the industry.
       ii)   The co-curricular activities are organized in such a way that it does not impact the implementation of university curriculum. Therefore these programmes are organized during the semester break or beyond the college hours or weekends.
      iii)   Overall personality development as an engineering graduate.

3)   Co-Curriculum development

        Validity: The contents of the co-curriculum are selected based on the objectives and relevance.

    a)   **Significance:**

        i)   The contents of the co-curriculum are designed in a manner that the students understanding are improved so as to gain mastery in the subjects / domain.
       ii)   It also provides the opportunity for multi-disciplinary learning particularly the non-IT students.

        Utility: The learning of the students from co-curricular activities helps them to develop the skill sets as required by the industry which improves their employability. This gives them an opportunity for professional growth in the industry and life-long learning.

        Learnability & interest: The contents and level of the co-curricular programmes is designed in a manner keeping in view the learning ability of the students and also to ensure their continued interest to undergo the programme. Learn ability is checked through various evaluation and assessment process and interest is checked through attendance, feedback and surveys.

4)   Co-curriculum planning:

a) **Goals and objectives:** Institute has adopted the graduate attributes as defined by NBA as a reference for the students learning, knowledge building and skills and competency development in compliance with the graduate attribute the institute has defined PEOs and Pos. these programme educational objectives are not achieved fully from the university curriculum. Therefore, the co-curriculum is planned keeping in view the goals and objectives of improving the same over and above the university curriculum. It helps the learner at TCET to become industry ready and professionally competent as per demand of the stakeholder.

b) **Pre-requisite:** The fundamental learnt through school and university curriculum is required to be kept in mind while designing the programme on co-curricular activities.

c) **Syllabus:** For planning the Syllabus inputs are invited from stakeholder and university curriculum has taken for reference. The syllabus on the various courses to be covered under co-curricular are mainly planned for 20-40 hours and in most of the cases assessment is done at the end of the course. The syllabus is dynamic in nature and totally depends on the feedback and survey.

5) **Learning resources:**
   a) Hardware, Software, Text books, reference books, online resources
   b) Tools and technology
   c) ICT infrastructure and services
6) **Resource persons:** Institute Faculty, visiting faculty, professionals and experts from industry.
7) **Certification:** On successful completion of programmes, certificates are given to the students. Therefore certification guidelines are to be planned for each programmes.

Table 1.7: Additional Curriculum Details

Additional curriculum	Objective	Description
Accenture Head Start Foundation Programme (HSFP), Infosys Campus Connect Programme	Professional skill development	At least one dedicated training programme is conducted during the academic year preferably at the beginning of the semester. The content emphasis on technical skills, communication skills, time management, presentation skills, aptitude and reasoning abilities, group discussion and presentation skills. Resource persons identified are internal or external faculty members/ professionals/industry experts
Bridge courses	Covering the gaps in university curriculum and programme educational objectives	The university curriculum does not cover all the PEOs of the programme, hence the gaps are identified and corresponding bridge courses are designed such as : ethics in engineering and value education, android programming, cloud computing, business intelligence, CCNA (proposed)
Student Development Programme	To meet the technical, soft skills and HR requirements of placement companies	The content delivered in SDP helps to fill the gaps between content being taught during semester, so as to improves the technical skills of the students
Pre-placement training	To make students understand the basic fundamentals in various domains	To make students understand the technical fundamentals of their respective subjects/domains, its use and applications in various systems.
General English Proficiency Training	To improvise on the spoken skills, writing effective resumes etc.	Students from vernacular medium who don't have effective written and communication skills. GEPT helps in overall improvement in students written and communication skills.

Additional curriculum	Objective	Description
Course on Moral values	To inculcate moral values and be a good citizen	Moral values help students in taking right or wrong decisions in doing various activities during their 4 years of course.

1.1.8   How does the institution analyze/ensure that the stated objectives of curriculum are achieved in the course of implementation?

PO, CO mapping and attainment

The effective implementation of curriculum is done as follows:

a)   All the programmes offered by the institute have developed their PEOs, POs, COs& LOs as per the NBA requirements.

b)   During induction through academic orientation programme all the students are sensitized about the same.

c)   The curriculum received by the university is divided into 6 modules and the CO,LO attainment is checked through continuous and end semester examination.

d)   The continuous evaluation of laboratory work is assessed by evaluating experimental work for COs and LOs for a group of experiments.

The effective implantation is carried out by the following processes:

The institute has implemented the **faculty diary** where all the information related to curriculum is maintained by the faculty members including the attendance and the performance of the students under the continuous evaluation process. The records in faculty diary is in compliance with PDCA /ADLI. Therefore on the basis of the analysis of the data the gaps are identified and corrective and preventive measures are taken which ensures that the objectives of the curriculum are achieved.

Monitoring of the objective achievements is done at faculty, department and institute by HOD and Dean (Academic) and to ensure the effectiveness the records are checked by Principal on sample basis.

The records maintained in the faculty diary helps the individual faculty member and the department for the smooth conduct of the semester as per the curriculum requirement and in case any gaps are identified it enables for timely action and meeting the compliance of term work. It is only after completion of the cycle that ensures achievement of curriculum objectives resulting in grant of term to all the registered students.

Monthly reporting for the effectiveness of curriculum implementation is a well-defined process which is documented in ISO 9001:2008 Procedure Manual. As per the process guidelines every department are required to submit the monthly records as given below:

- **Attendance:**

    As per the university guidelines students must have 75% attendance for grant of the term. High attendance of the students indicates proper engagement by the faculty members for attainment of curriculum outcome.

    This also ensures effective learning of the students of various courses on regular basis so that they can excel in the process of continuous evaluation and semester end examination. It also inculcates the professional etiquette required for the engineering graduates.

    From the records it has been found that more than 75% students are complying with the attendance requirement. The gaps are addressed through the remedial actions which are treated as compensation of attendance and the academic loss. Moreover, it has been found that the students with good attendance are showing good results in the university examination.

    In order to impress upon the students the importance of regular attendance, the attendance analysis co related with various learning activities are presented to the students during the semester orientation programmes which is one week programme conducted during the 1st week of semester conduct.

- **Syllabus coverage:**

    Before the effective implementation of curriculum, in order to ensure the achievement of curriculum objective proper planning is done at the faculty level under the guidance of HOD and Dean (Academic) and as per the plan the curriculum is required to be conducted for theory/practical/tutorial and properly recorded in the faculty diary with the various objectives and expected outcome.

As per the plan the curriculum is conducted and the syllabus coverage is monitored by the Principal on monthly basis through HOD and Dean (Academic)

Syllabus coverage records are submitted on 5th of every month. Wherever gaps are identified the faculty members are instructed to compensate extra lectures by load arrangement on non-instructional working Saturday, conducting the lectures beyond college hours

The process ensures 100% syllabus covered by end of the semester and as a bench mark 50% syllabus is to be covered before Term Test I (Mid semester) and remaining before Term Test II (semester end).

The syllabus coverage is also checked with the students through feedback.

The student feedback form has been structured in order to ensure the achievement of curriculum objectives for e.g. Depth of subject knowledge, Lecture Pace, Ability to invoke participation and cultivation of learning habits etc. these are the indicative of how strongly the faculty achieves the objectives of curriculum.

Moreover, the achievement is also checked through PRDP which is done on six monthly bases and provides the institute an opportunity to identify the strength and scope for improvement for faculty members.

Institute is conducting exit survey, programme survey and course survey on regular basis. The objective of the survey is to get the input for improving the knowledge, skills and competency with the attitude for life- long learning with the sensitivity towards the society and environment. Accordingly, the curriculum for the bridge courses and industry electives are improved and also to explore the possibilities for including the new courses and teaching the students beyond the curriculum. Survey also helps the institute to understand the attainment of graduate attributes over the 4 years of the programmes.

Course survey is done on semester basis, exit interview is done at the end of VIII semester and programme survey is carried out from alumni.

Institute has the rigorous academic result analysis which is mainly done to analyse the success rate, eligibility for placement and the development of domain knowledge in the area of interest.

The result analysis and continuous monitoring leads to the identification of gaps as per the academic learning is concerned. Identified gaps provide the opportunity to the institute to conduct the remedial work to improve the knowledge acquisition, success rate and professional placement on graduation.

In order to maintain the competitive edge the institute has the system of result analysis which includes the result analysis at institute level, subject level, department level and student level. Moreover, the institute also collects the data of other colleges (wherever possible).

Internal Audit is conducted quarterly to review the Institute's processes, operations, and goals. With a solid understanding of the TCET's objectives, internal auditors examine operations to determine whether they are efficient and effective. During Internal audit, the auditors review operations closely and assess whether existing processes are well designed to help the organization to achieve its goals. Internal auditors also assess the organization's compliance with statutory, regulatory and stakeholders requirements to ensure that management is addressing these requirements adequately. After auditing a particular area, internal auditors report their findings and recommend appropriate courses of action. They bring deficiencies to light and make recommendations for improvements in the processes. The results of internal audit, weaknesses and strengths of established QMS are presented in management review meeting.

Semester review: At the end of semester the department prepares the semester review with the focus on curriculum effectiveness, mapping and attainment with roles and objectives and mission statements. Semester review also highlights best and innovative practices adopted to deliver the curriculum and the opportunity for further improvement in the attainment.

Semester review also provides the opportunity to the department to modify the objectives for the achievement of higher goals.

Semester review is conducted on the last day of the semester and a full day programme where review is presented to all the faculty members by HOD and their team.

At the micro level the semester review is carried out by every individual faculty member where a separate section is created in the faculty diary. Based on the experience and learning at the implementation stage the information are furnished which is utilized for the improvement in the curriculum in the subsequent semesters.

1.2   Academic Flexibility

1.2.1 Specifying the goals and objectives give details of the certificate/diploma/skill development courses etc., offered by the institution.

The instituteconducts number of programmes as a part of bridge courses, industry elective, industry oriented training programme, co-curricular activities which lead to career opportunities to students.

Objectives: On the completion of the programmes the institute is required to place the students in the industry. To make students employable the institute initiates proactive steps to have association with industries to collaborate and runindustry oriented training programmes. In the process, institute has developed following certificate / skill development courses in association with industry and IITs. The students have privilege to gain knowledge as per industry norms and standards in addition to university curriculum which is based on fundamentals.

1) Thakur-Accenture Innovation Centre
   Establishment: Academic Year 2013-2014
   Training Objective:
   a) To deploy advanceddatabasemanagement system and configuration
   b) To deploy Accenture ERP Software
   c) To conductmini/major project related to ERP/ ADBMS.
   Benefits for students:
   a) Hands on experience of Accenture ERP
   b) In-house training of placed students
   c) Availability of high endresourceslike IBM, BladeServer and ORACLE DBMS SW
   d) Centreofprofessionaltraining,andAccenture's
   e) Head Start Foundation Programme, etc.
   Placement opportunity: Accenture,ORACLE, Infosys, Zensar Technology, I-Gate.

2) Thakur-TATA Technologies Centre of Excellence
   Establishment: Academic Year 2015-16
   Training Objective:
   a) Establish advanced facilities to propagate emerging technologies and train manpower in the field of computer aided design and computer aided manufacturing
   b) Crucial link to foster the development of high value-added services and to streamline product innovation processes to the industries
   c) Provide learning facility, implement the enterprise software solutions, provide precise training to the nominated faculty
   d) Provide recurring trainings to the students
   e) Internship offering and placements with different companies
   f) Adding values for learning compulsory subject "Computer-Aided-Design/computer aided manufacturing and engineering (CAD/CAM/CAE)" of Final Year Mechanical Engineering Students.
   Benefits for students:
   a) Hands on training on PLM software
   b) 80-hours course
   c) Certificate Course from Tata Technology Ltd.
   d) Institute-Industry interaction through collaborative research program, extension courses
   e) Consultancy services in CAD / CAM / CAE
   Placement opportunity: Volkswagen India Private Ltd., K.B.Auto Tech India Pvt. Ltd, MAHALE Behr India Ltd

3) TCET-CISCO Wireless Network Laboratory
   Establishment: Academic Year 2013-2014
   Training Objective:
   a) To provide latest technological knowledge to faculty of TCET.
   b) To uplift the student's knowledge for competent industrial project.
   c) To provide facilities for PG projects and research work.
   d) To provide platform for international certification in networking.
   Benefits for students:
   a) Hands on training on Industry Lab setup
   b) Bridge courses in networking for preparation for CCNA, CCNP.
   c) Internships and relevant Placement Assistantship
   d) Workshops

Placement opportunity: Accenture, ORACLE, Infosys, ZensarTechnology, I-Gate.

4)   TCET-TEXAS Instruments Laboratory
Establishment: Academic Year 2015-16
Training Objective:
a)   To promote design of embedded products based on TIs tools.
b)   To promote design of educational solutions for teaching subjects on embedded systems.
c)   To provide trainings to the students.
d)   To organise Train the Trainer program
e)   To organise Faculty development programs
f)   To bridge gap between the industry and academic world.
Benefits for students:
a)   Hands-on learning experience for students
b)   Domain enrichment
c)   Institute-Industry interaction through collaborative research
d)   Internships and relevant Placement Assistantship
e)   Workshops

Placement opportunity: Intel, IBM, Philips, Motorola, LG Electronics, Texas Instruments, VOLVO, Freescale , General Motors, Samsung, Siemens, Cisco Systems India Pvt Ltd, L&T InfoTech, Wipro Technologies, HCL Technologies, ISRO(Indian Space Research Organisation), DRDO(Defense Research and Development Organisation), BEL(Bharat Electronics Limited), BHEL(Bharat Heavy Electricals Limited), ONGC(Oil and Natural Gas Corporation), HAL(Hindustan Aeronautics Limited)

5)   TCET-ARM University
Establishment: Academic Year 2015-2016
Training Objective:
a)   To provide latest technologies knowledge for faculty of TCET.
b)   To uplift Student's knowledge for competent industrial project.
c)   To provide access of good industrial technological materials of companies having tie up with the company Eduvance for students of TCET.
d)   To provide platform for international certification from ARM university.
Benefits for students
a)   Hand on training on Industry Lab setup
b)   Certificate courses from ARM UK
c)   Internships and relevant Placement Assistantship
d)   Workshops

Placement opportunity: Larsen and Toubro, BARC, Automata Systems (Mumbai), Reanu Microelectronics, (Mumbai and Pune) Maximus Technologies (Mumbai), EpiSkope (Mumbai), Uurmi Systems (Hyderabad)

6)   TCET-INTEL Centre of Excellence
Establishment: Academic Year 2015-2016
Training Objective:
a)   To provide latest technologies knowledge in the field of Internet of Things for faculty and students of TCET.
b)   To uplift student's skill for competent industrial projects.
c)   To provide platform for international certification from Intel-USA.
d)   Research opportunity for PG students in latest technology IOT
Lab benefits for students:
a)   Hands on training on Industry Lab setup
b)   Certificate courses from INTEL USA
c)   Workshops for students and faculty members
d)   Internships and relevant Placement Assistantship
Placement opportunity: Core companies using Intel Processor

7)   Training for higher studies and professional certification
•   Higher education and online certification Cell has been created in the A.Y.2015-16 to make students aware and prepare to write competitive exams such as GATE, CAT, XAT, GRE, TOEFL, IELTS etc. For preparation of such competitive exams the institute has tie up with IMS. The IMS awards scholarship to 3 students.The higher education counselling

for students is done in collaboration with "Mission Career". The training for GATE exam is given by internal faculty.

- The institute also offers training to students in order to improve their inter-personal skills by providing hands on experience in the area of Networking, CCNA training, Business Intelligence etc.

8) **Personality development:**
- Student Development:
  The placement section plans student development programme where experts from industries are called to deliver lectures on soft skills, basic programming, resume building etc., to improve students overall placement.
- Industry Oriented workshops:
  Industry oriented workshop (IOW) is conducted during yearly international conference in the institute to provide students with hands on training regarding latest issues as per industry requirements.

9) **Pre-placement Training:**
   Training Objective:
- To prepare students to become employable by providing them soft-skills, aptitude and technical training
- To provide information regarding career opportunities
- To organize seminars, workshops and technical talks by eminent personalities from academic institutions and industry to enhance the knowledge and skills of students
- To bridge the gap between Industry and Academia

1.2.2   Does the institution offer programmes that facilitate twinning/dual degree if yes give detail?

No, the institute strictly follows the guidelines of UOM and AICTE to run the various programmes at the institute and therefore with the current status the twinning/dual degree programmes are not applicable for us.

1.2.3   Give details on the various institutional provisions with reference to academic flexibility and how it has been helpful to students in terms of skill development, academic mobility, progression to higher studies and improved potential for employability. Issues may cover the following and beyond:

The listing of various institutional provisions that is referred as academic flexibility which are helpful to students for their skill development, academic mobility, progression to higher studies and improved potential for employability is mentioned in para 1.1.7.

- **Range of Core / Elective options offered by the University and those opted by the college:**
  University curriculum offers two electives which are offered duringSem VII and Sem VIII. The choice of electives are taken from students which are based on the requirements of industry and higher education.

- **Choice Based Credit System (CBCS) and range of subject options:**
  Choice Based Credit System has been implemented from academic year 2015 – 16.
  Choice based credit system is supported by electives. The range of subject options at the institute level are decided on the basis of domains. Each department has 5-6 domains with 40-45 courses. These courses are grouped in such a way that the knowledge learnt over 4 years can lead to the domain knowledge. Each domain comprises of around 6-8 courses. The domain knowledge of the student supports them to select the concerned project at their final year and career option including higher studies.

- **Courses offered in modular form:**
  The courses in the syllabus are made modular based on the guidelines framed by the university. To make learning more effective the curriculum component is categorized into various domains. The domainsbenefit students to develop their domain knowledge. To bring more effectiveness in the learning of each course the syllabus is further divided into six modules of which first three modules are covered by mid-semester and next three by the end of semester.The courses are modular at institute level to ensure uniform syllabus coverage during semester.

- **Credit transfer and accumulation facility:** NA
- **Lateral and vertical mobility within and across programmes and courses:**
  First year students have the common curriculum and therefore if they want to change the programmes at second year they can change as per the guidelines of DTE.
  At second year level there is provision for 20% of the total intake to be admitted with the student with engineering diploma degree or BSc. However it was found that only the diploma students are opting for engineering.
- **Enrichment courses:**
  Enrichment courses are run on the basis of gap identification between AICTE, model syllabus and university syllabus. The gap that exists between the university curriculum, industry requirement and professional practices are fulfilled by enrichment courses that are non-credit courses and are implemented as bridge course, industry electives and professional accelerator courses. Refer Table 1.1.

1.2.4   Does the institution offer self-financed programmes? If 'yes', list them and indicate how they differ from other programmes, with reference to admission, curriculum, fee structure, teacher qualification, salary etc.
No

1.2.5   Does the college provide additional skill oriented programmes, relevant to regional and global employment markets? If 'yes' provide details of such programmes and the beneficiaries.
Yes.The institute provides various skill oriented development programmes relevant to regional and global employment market through the industry collaboration laboratories.

Table 1.8: Skill Development Programmes Conducted under Centre of Excellence

Centre of Excellence	Training programme offered	Duration	Placement opportunities (Companies linked)	Number of students benefitted
Thakur-Accenture Innovation Centre	Accenture Code Maze	1 day	Accenture, ORACLE, Infosys, Zensar Technology, I-Gate.	33
	Accenture ERP Training	1 week		45
	Accenture Head Start Foundation Programme	22 days		48
	Industry-Oriented Workshop (2013-14)	1 day		40
	Accenture Head Start Foundation Programme	1 week		48
	Industry-Oriented Workshop (2014-15)	2 days		40
	SDP Training (2014-15)	1 week		40
	Industry-Oriented Workshop (2015-16)	2 days		
	SDP Training (2015-16)	1 week		40
Thakur-TATA Technologies Centre of Excellence	Basic CATIA V6, Advance CATIAV6, DELMIA, ENOVIA.	40 Hrs each	Volkswagen India Private Ltd., K.B.Auto Tech India Pvt.	125

Centre of Excellence	Training programme offered	Duration	Placement opportunities (Companies linked)	Number of students benefitted
			Ltd, MAHALE Behr India Ltd	
TCET-CISCO Wireless Network Laboratory	Computer Networks	1 Week (2016-17)	Accenture, ORACLE, Infosys, Zensar Technology, I-Gate.	31
	Computer Networks	1 Week (2015-16)		18
	Computer Networks	1 Week (2014-15)		16
TCET-TEXAS Instruments Laboratory	TEXAS open book test	17/2/2017	Texas Instruments, Freescale , General Motors, Samsung, Siemens, Cisco Systems India Pvt Ltd, L&T InfoTech, Wipro Technologies,	38
TCET-ARM University	Workshop on embedded system based on ARM mbed	26-2-16 27/2/16	Larsen and Toubro, BARC, Automata Systems (Mumbai), Reanu Microelectronics, (Mumbai and Pune) Maximus Technologies (Mumbai), EpiSkope (Mumbai), Uurmi Systems (Hyderabad)	21
	Workshop on PCB Design	26-2-16 27/2/16		11
	SDP on "IOT and future technologies	04-2-16 to 05/2/16		33
	SDP on "Embedded ARM mbed and cypress Psoc	10-3-16 to 11/3/16		40
	Summer Industrial Training on "Embedded systems and IoT"	13-6-16 to 05/7/16		40
	Online Bridge courses (2) Arduino, PCB design	2016-17		36
TCET-INTEL Centre of Excellence	Design and development of smart city	2 Weeks	Core companies using Intel Processor	40

Skill Oriented Programmes under Professional Bodies:

Mumbai is the economic capital of India and therefore there is huge requirement of skill work force in the area of finance, management, IT and ITEs and service sector. Looking into the demands of these industries the institute has started the professional bodies and are engaged in various professional activities.

Currently in institute there are six professional bodies which cater professional skill development such as soft skill, technical skill, managerial skill, leadership skill etc. Skill Oriented programmes are normally conducted on Saturdays which is a non-instructional day and during the vacation period.

In addition to this to get the practical exposure the students are also organizing various programmes such as Tech Fest, Certification Training Programmes, Project Contest, Entrepreneurship Week, Seminars and Workshop on emerging technology and professional practices.

Programmes on Quality Assurance and Quality Control:

Academic Partnership:

Institute has academic partnership with IET, CII-EEF, NEN, these organization supports the SDP & certification programmes.

Institute Level Programmes:

Institute has developed the R & D Cell recognized by UoM and Six Centres of Excellence in association with the industry. The objective of these centres is to provide the learning opportunity for new technology with practices and the opportunity for Research.

In addition to these centres T & P cell conducts the SDP and Pre-placement Training which takes care of theemployability and employment. The cell also places the student for internship and final year project in industry though it is not mandatory. Internship varies from student to student where the minimum period is 15 days. The internship is arranged during the vacation period and it gives the opportunity to the students to learn the industry environment. On an average around 150 students every academic year take the advantage of internship.

Moreover, the social oriented programmes in order to understand corporate social responsibilities the skill is imparted through NSS activities. The institute has NSS chapter since A.Y. 2005-06 which started with capacity of 60 which has increased to150. Looking into the interest ofthestudent, the college is planning to have one more unit of 100 students so that the total capacity will be 250.Institute takes the pride that amongst the affiliated college TCET is the first college to start NSS wing.

The sincere effort of the institute for skill development and the active participation of students in the Skill Development Programme under various schemes prepare the student for regional and global market.

1.2.6   Does the university provide for the flexibility of combining the conventional face-to-face and Distance Mode of Education for students to choose the courses/combination of their choice" If 'yes', how does the institution take advantage of such provision for the benefit of students?

As such the institute doesn't have flexibility.

However the institute is exploring for collaborative learning with the other institution at national and international level through student and faculty exchange programmes. Where the institute is in discussion with Texas University and University of East London.

Institute is identified as remote centre of UOM and therefore SDP and FDP are conducted through remote centre by various IITs. Therefore, the faculty and the students get the platform for additional learning and broadening the scope of curriculum.

TCET is the member of spoken tutorial of IIT Bombay where the students can learn the subject and the technology related to open sources.

Some of our recruiters also provide the online resources for learning with the expectation that the student will learn their curriculum and will complete the programme successfully which may be tested through online exams and project based skills.

NEN conducts the online programmes by using MOOC the students interested in entrepreneurship knowledge and skills they can undergo the online certification. Therefore the initiative of conventional fact to face amalgamated with online education at TCET has broadened the scope of the curriculum with better professional career to the students. The additional learning does not carry any credits which will not be reflected in mark sheet of UOM. However, there may be credits by certifying agency on completion of the programme.

AICTE is in the process of recommending to the university where 20% of the total credit can be imparted through premier institutes such as IIT and UOM and will be implemented whenever the decision is taken by UOM and AICTE. Moreover the industry associates for centre of excellence, IBM, Texas are having online programmes which can be implemented at institute level for benefit of students.

1.3 Curriculum Enrichment

1.3.1 Describe the efforts made by the institution to supplement the university's curriculum to ensure that the academic programmes and institution's goals and objectives are integrated?

To supplement the university curriculum the institute has made sustained efforts and has started offering pre-requisite bridge courses and advanced bridge courses for creating strong theoretical foundation and research abilities. Apart from this to strengthen the skill and professional personality development new modes of learning such as self-learning, technology based learning, project based learning and activity based learning are being practised by all the department faculty members. For theoretical foundation programmes the online courses offered by universities of National and International repute are taken up by the students under the mentor faculty and to enhance the skill the students are offered mini and minor projects, case studies and research assignments with an objective to create research culture at the under graduate level.

Table 1.9: Student Project Distribution

Class	Project Category	Research based		Core		Multidisciplinary		Application Based		Total Projects
		Projects	Publications	Projects	Publications	Projects	Publications	Projects	Publications	
SE	Number of Student Groups	8	8	7	7	0	0	7	7	**22**
	Number of Faculty Members	5	5	4	4	0	0	6	6	**22**
	Distribution of projects in %	**68%**	**68%**	**18%**	**18%**	**0%**	**0%**	**14%**	**14%**	**100%**
TE	Number of Student Groups	6	6	3	3	1	1	11	11	21
	Number of Faculty Members	6	6	3	3	1	1	8	8	8
	Distribution of projects in %	**29%**	**29%**	**14%**	**14%**	**5%**	**5%**	**52%**	**52%**	**100%**
BE	Number of Student Groups	11	11	3	3	2	2	11	11	**27**
	Number of Faculty Members	11	11	3	3	2	2	11	11	**27**
	Distribution of projects in %	**41%**	**41%**	**11%**	**11%**	**7%**	**7%**	**41%**	**41%**	**100%**

Table 1.10: Programming in Python Bridge Course Plan

TCET/FRM/IP-02/09						Revision: A
Semester Plan **(Beyond Curriculum Bridge Course)**						
Semester: **VI** Course: **T.E CMPN**						
Subject: **Programming in Python**				Class: **T.E CMPN (A & B)**		
Sr. No	**Module No.**	**Lesson No.**	**Topics Planned (Technology to be used)**	**Mode of Learning**	**Resource Book References**	**Planned /Completion Date**
1	1	1.1	**Introduction to Python**	Classroom / Lab		Planned 13/2/17
2	1	1.2	**Installation and Environment Setup**	Classroom / Lab		Planned 13/2/17
3	1	1.3	**Basics of Programming in Python** • Lexical Matters	Online / Self-Study	1.1	Planned 13/2/17

			• Built in Datatypes and their functions			
4	2	2.1	Loops and Decision statements in Python	Online / Self-Study	1.1	Planned 14/2/17
5	2	2.2	String and the various String functions in Python.	Online / Self-Study	1.1	Planned 15/2/17
6	2	2.3	**Functions in Python** • Overview • Basic Statements	Online / Self-Study	1.1	Planned 19/2/17
7	2	2.4	**Working with Functions** • Lambda • Iterators and Generators	Online / Self-Study	1.1	Planned 20/2/17
8	1 – 2	-	**Online Evaluation – I**	Online	-	Planned 21/2/17
9	3	3.1	**Packages in Python** • Lambda • Iterators and Generators	Online / Self-Study	1.1	Planned 21/2/17
10	3	3.2	**Modules in Python** • Doc String • Decorators for functions	Online / Self-Study	1.1	Planned 23/2/17
11	3	3.3	Concepts of Object Oriented Programming in Python	Online / Self-Study	1.1	Planned 27/2/17
12	3	3.4	Classes in Python	Online / Self-Study	1.1	Planned 28/2/17
13	3	-	**Online Evaluation – I**	Online	-	Planned 01/3/17
14	4	4.1	Constructor in Python	Online / Self-Study	1.1	Planned 01/3/17
15	4	4.2	Methods in Python	Online / Self-Study	1.1	Planned 06/3/17
16	4	4.3	**Inheritance implementing subclass**	Online / Self-Study	2.1	Planned 07/3/17
17	4	4.4	Recursive calls to methods	Online / Self-Study	2.1	Planned 08/3/17
18	5	5.1	Graphic Methods in Python	Online / Self-Study	2.1	Planned 13/3/17
19	5	5.2	Debugging Tools in Python	Online / Self-Study	1.1	Planned 14/3/17
20	5	5.3	File operations in Python	Online / Self-Study	1.1	Planned 15/3/17
21	5	5.4	**Python Database API**	Online / Self-Study	2.1	Planned 20/3/17
22	5	5.5	GUI application in Python	Online / Self-Study	2.1	Planned 21/3/17
23	6	6.1	GUI packages	Online / Self-Study	1.1	Planned 22/3/17
24	6	6.2	**Using packages in Python - Django**	Online / Self-Study	1.1	Planned 27/3/17
25	6	6.3	**Developing web**	Online /	2.1	Planned

			applications	Self-Study		28/3/17
26	6	6.4	Further Topics to consider	Online / Self-Study	2.1	Planned 3/4/17
27	1 – 6	-	Final Evaluation	Classroom / Lab	-	15/4/17
Remark:: Course:		Syllabus Coverage: Planned 24 + 3 (Evaluation Tests)			Practice Session: Planned :	

Text Books:

1.1. Dive into Python 3, Mark Pilgrim, http://www.diveintopython3.net/

1.2. Think Python, 2nd Edition, Allen B. Downey, http://greenteapress.com/wp/think-python-2e/

1.3. Algorithm Design, Jon Kleinberg and Eva Tardos, Pearson (2013)

Reference Book:

1.4. Hands on Python Tutorial, by Dr. Andrew N. Harrington, Loyola University Chicago

Digital Reference:

3.1. https://www.learnpython.org/
3.2. https://developers.google.com/edu/python/

Table 1.11: Mobile Communication & Technology Practical Conduct Plan

TCET/FRM/IP-02/10		Revision: B

Semester Plan
(Practical / Tutorials / Assignment)

Semester: **VI** Course: **B.E CMPN**   Batches: **T.E (A1/A2)(A3/A4)**

Subject: **Mobile Communication and Technology** Class: **T.E CMPN- A**
Batch size: **40** Students

Laboratory faculty in charge: **Mr. ShaileshSangle** Lab. Attendant: **Mr. Pankaj Singh(208)**
Ms. Nitin Harne
Note: **Experiment planned as per University Curriculum**

Sr. No.	TITLES Experiments / Tutorials / Assignment (Planning with use of Technology)	Planned Date
1.	Study of Setup & Configuration of Wireless Access Point (AP).	23-01-17
2.	Study of WLAN : Ad Hoc & Infrastructure Mode and Handson on Wireless toolkit	30-01-17
3.	Design and Program Income Tax and Loan EMI Calculator for Mobile Phones	06-02-17
4.	Implementation of Bluetooth Protocol and Applications	13-02-17
5.	Study of GSM modem (Android based mobile) and SMS client server application.	27-02-17
6.	Implementation of Mobile Network using Network Simulator (NS2)	06-03-17
7.	Simple WMLScript	20-03-17
8.	J2ME Program for Mobile Node Discovery	27-03-17
9	**Case Study :-** 1) Wireless Network Security : kismet and Nets tumbler 2) Mobile protocol study using GNS3	03-04-17
10	**Project :-** **1)** SMS Based Mobile Banking System with Security	17-04-17

	2) Wireless Health Care System			
11	**IEEE Transaction :-** Reconstruction of Correlated Sources with Energy Harvesting Constraints in Delay-constrained and Delay-tolerant Communication Scenarios			**06-04-17**
S.No.	**Bridge courses/Technology**			**Duration (Week/hrs)**
1.	**Prerequisite course:** JavaBeans, Enterprise, network programming, J2EEE			2 Weeks / 3 Hrs
2	**Advanced course:** Mobile Computing			12 Weeks / 2 Hrs
S.No	**Project Title**		**Class**	**GroupSize/ Project Hours**
1.	Identification using smart card		T.E CMPN	4 / 120 Hrs
2.	Intelligent Mannequin		T.E CMPN	4 / 120 Hrs
No. of Prac	Planned	Completed	No. of Assignments	Planned	Completed
	Basic Exp: 04 **Design Base Exp**: 04 **Bridge Course:** 02 **Minor Project:** 02			03	

The following is the process of identifying the curriculum gaps and deploying the same for enrichment of the curriculum:

Institute being the NBA accredited for 4 programmes the emphasis is given for imparting the education beyond the curriculum. Moreover, the courses under the curriculum are further enriched by integrating the design and development type of content.

- The contents that are covered as per the syllabus such as additional content covered by the faculty member in their courses are recorded in faculty diary.
- The additional contents are taken by introducing new experiments, case studies, technological advancement in the course etc.
- In addition to the additional curriculum taken by the faculty every department conducts at least one local industrial visit and two special topic seminars during the semester and the event is reflected in academic calendar.
- Normally in the BE programmes the students in the curriculum are required to do the projects for partial fulfilment of academic requirement and therefore to bring the effectiveness the department conducts training session before starting of projects where the students are told about literature survey, problem definition,research methodology, preparation of synopsis and final project.

Mini project and technical paper presentation contest are arranged for SE and TE students. The activities are mainly arranged to develop the project management skills and technical presentation and it also acts as the foundation for the BE projects. Students are also encouraged to make the posters based on their projects.

The practice sessions for effective learning is designed and developed by the concerned faculty member and is documented in form of resource book and course file.This arrangement for curriculum enrichment leads to the achievement of institutional goals and objectives and meeting the requirement of vision statement.

1.3.2   What are the efforts made by the institution to enrich and organize the curriculum to enhance the experiences of the students so as to cope with the needs of the dynamic employment market?

The institute has consistently putting efforts to enrich the curriculum through collaborative means by holding meetings and interactive sessions with industry and alumni. To cater to dynamic employment market the departments have identified the industry tie-ups for technology courses and the institute has strong tie-up with CII an industry body for understanding the employment needs.

The department of Information Technology and Computer Engineering have collaborated with Accenture technologies for an Oracle ERP training by setting up their training centre. The centre offers hands on experience of working environment of large ERP set up run by big corporate houses

at a nominal cost. Such is the experience received by the students at the institute during their learning phase which usually is experienced by our students after joining the corporate environment.

Thakur College of Engineering & Technology has establishedcenter of Excellence (COE) in association with Tata Technologies Limited by providing advanced facilities to propagate emerging technologies and train manpower in the field of computer aided design and computer aided manufacturing (CAD/CAM).This centre acts as a crucial link to foster the development of high value-added services and to streamline product innovation processes to the industries.

The center of Excellence will provide learning facility and precise training of Dassault System Software such as CATIA PLM, CATIA V6, ENOVIA V6, SIMULIA V6, and DELMIA V6 to the faculty, and even provide recurring trainings to the students from expert trainers from Tata Technologies.

The department of EXTC have collaborated with CISCO Wireless Network Laboratory to provide latest technological knowledge to faculty and to uplift the student's knowledge for competent industrial project. This lab facilitates for projects and research work also provides platform for international certification in networking.It provides hands on training on industry lab setup, bridge courses in networking for preparation for CCNA, CCNP are offered. It benefits students for their internships and relevant placement assistantship.

1.3.3 Enumerate the efforts made by the institution to integrate the cross cutting issues such as gender, climate change, environmental education, human rights, ICT etc., into the curriculum.

The woman development cell is established with the idea that if there is any gender problem in the campus it is requiredto inform the institute authorities so that action to be taken accordingly.

The course on environmental studies is incorporated in syllabus so as to create more awareness on environmental education to tackle issues such as pollution control, green gases etc. Number of activities related to environment and climate change are organized through NSS such as tree plantation, clean and green initiatives of BMC.

Students are made aware that ragging is banned in campus and if found legal action taken on them. The ragging related posters are displayed at various places in campus to bring awareness about human rights on students. Institute has constituted the Anti-Ragging Committee which meets twice in academic year. Agenda for discussion includes:

In addition the undertaking from the parents and students are taken during the admission process which is related to the anti-ragging act and making the campus ragging free.As a result till date no case for ragging is reported.

The practical aspects of using ICT are explained to students as a part of it is covered in the curriculum. On top of which students are also shown the institute ICT campus infrastructure where the students get to correlate the practical aspect of ICT devices such as switch, router, gateway, printers, scanners etc., practically.

Students are explained about selection of appropriate topology of campus network architecture, its design, analysis, set-up, testing and verify the network operations. Application of ICT are also told to the students during the orientation and throughout the course widely used for presentation, learning new tools and technology, referring the online resources etc.

In addition to the above provisions the institute further sensitize the issues of gender, caste, environment, climate change, by organizing videos, display of important coats, posters,and discussion in classroom, competition and collaborative ventures with NGO.Dean Student and Staff Welfare along with the students' council and NSS faculty members organize such programmes.

1.3.4 What are the various value-added courses/enrichment programmes offered to ensure holistic development of students?

a) **Moral and ethical values** - Yes, conduct of lecture series and bridge courses, business communication skill with corporate etiquettes as a part of university curriculumon moral and ethics during semester.

b) Yoga is done on world yoga day at the institute on 21st June.

c) **Employable and life skills** - learning certification courses such as basis of CCNA trainingStudents Development Programme, Pre-placement training, Industry Oriented Campus Connect Programme etc.

d) **Better career options** - MNC Placements, placement in public and government sector through GATE score, placement in Indian Defence organization.

e) **Community orientation** - NSS activities in association with NGO and social clubs such as Rotary, Lions Club.

The value added courses are added keeping in mind the 4H model.

1.3.5 Citing a few examples enumerate on the extent of use of the feedback from stakeholdersin enriching the curriculum?

a) On considering parents as stakeholders were interested in allowing students to take part in training provided to students from industry experts for CCNA (related to computer networking), Tata experts for mechanical students etc., so that students have an edge during placement activities.

b) Students as stake holders feel that the programmes such as basic programming on C/C++/Java skills would improve their chances ofplacement in companies related to IT sector. Therefore three level training is done. The first level is training in first year and its application in higher semester in the curriculum of UOM. The second level at institute level the training is conducted to enable the students as a better coder and the applications of coding in various projects during the academic process.The third level the industry oriented training under campus connects programme and employable skill development programme of Zensar technology.

c) Industry as stakeholders are interested to recruit students with better programming, soft skills, academically and technically strong students. The feedback is collected from industry personnel during placement process and various industry connect programmes and road shows of industry.

d) Entrepreneurs perspective is that curriculum containing subjects related to business intelligence, financial accounting & management to help them bridge to enrich their curriculum. The feedback and the inputs are taken from the industry organization such as CII, IMC,NEN etc.

e) From vendors perspective the subjects of application use and that match the subjects as per industry requirements enrich the curriculum.

1.3.6 How does the institution monitor and evaluate the quality of its enrichmentprogrammes?

The institute has special focus towards developing the students to become responsible citizens with social sensitivity. Therefore to fulfil this vision the institute offers 3types of enrichment programmes which are as follows:

1) Industry oriented Technology enrichment programme offered by T&P cell.
2) Research Development and Entrepreneurship programmeoffered by R&D cell
3) Professional Ethics & societal consciousness enrichmentprogramme offered by professional bodies.

The monitoring and its enrichment is done through a systematic approach by the respective cell by collecting the feedback from time to time, analysis, designing of courses as per gaps , deployment followed by student feedback to improve the quality.

The monitoring and evaluation of the research development and entrepreneurship programme enrichment programme is carried out by providing a platform to the students to present their projects by conducting various competitions and exhibitions. The projects are evaluated and feedbacks are collected from the experts who are called from the industry and academia. The project quality is ensured by evaluating the feedbacks given by the experts who inspect the competitions and exhibitions. TCET-NEN provides the students with a platform to enrich their entrepreneurship skills. The Quality of the student ideas is ensured by conducting regular online tests, quizzes and faculty student interaction. The students are motivated to participate in the various exhibitions and start up programmes conducted by NEN both inside and outside the institute and their performance is measured.

The monitoring and evaluation of the quality of the Professional Ethics & societal consciousness enrichment programme offered by professional bodies is done by taking the feedback of the NSS Volunteers in various domains such as; 1) Health, 2) Cleanliness & Environment, 3) Education and 4) Society. The NSS TCET unit mainly focused their activities in adapted villages and adapted areas.

The feedback in the adaptive villages and adaptive area is received from the sarpanch (representative of villages) and corporator respectively in the form of appreciation letter. Services done by the NSS volunteers is verified by the area co-ordinator and the program co-ordinator of University of Mumbai. The NSS TCET unit makes sure to implement all theinnovative ideas presented by the HRD ministry and University of Mumbai. The quality of the service provided by the NSS Volunteers can be measured by the developments in the rural areas such as, construction of toilets and nutritional gardens.

The process adopted by the T&P cell for industry oriented enrichment programmes for its pre placement training is as follows:

1)   Orientation of the programme
2)   Orientation of training Institute
3)   Selection of the training institute
4)   Actual Conduct of the programme
5)   Attendance entry and list of defaulters
6)   Phone calling to Parents of defaulter Students
7)   Conduction of Mock Test
8)   Students Feedback about the training
9)   Feedback by Training Institute about the student

Other two enrichment programs also follow similar approach for student's holistic development.

1.4   Feedback System

1.4.1   What are the contributions of the institution in the design and development of the curriculum prepared by the university?

The contributions of the institution in the design and development of the curriculum prepared by the university is explained in 1.1.6.

However, the institute faculty members take proactive role in the design of curriculum at the university level in order to ensure quality policy defined by various accrediting bodies, professional bodies, national vision etc. Our faculty members play a key role in communicating the curricular gaps as received by our feedback system to the BoS as curriculum of the university needs to be mapped to industry needs. Based on the gaps identified, the university BoS bring immediate changes as a reference for the next curriculum revision.

The feedback is communicated to the UOM by various means:

1)   Meeting at various levels
2)   Faculty inputs at the time of revision of curriculum /syllabus.
3)   Faculty orientation at the time of syllabus revision
4)   Industry institute symposium organized by institute
5)   Conference and workshop
6)   Feedback and survey of stakeholders
7)   Experience sharing in the implementation of curriculum.

1.4.2   Is there a formal mechanism to obtain feedback from students and stakeholders on curriculum? If 'yes', how is it communicated to the university and made use internally for curriculum enrichment and introducing changes/new programmes?

As such we have very limited scope for design of curriculum and being an affiliated self-financed institute there is no provision of communicating the feedback received formally to the university. However, the institute has a mechanism to obtain the feedback from the existing students and the outgoing students in the form of Course survey & exit survey respectively.

The findings of the course survey and exit survey are internally analyzed by the Programme assessment Committee (PAC) comprising of Dean, HOD and senior faculty members of the department. Based on the findings the PAC recommends the bridge courses, case studies, projects, assignments, online self-learning courses etc.

A sample of PAC recommendation sheet is as follows:

Programme Assessment Committee (PAC)

Institute being the private institution and affiliated college has to compete with large number of institutions not only in the private but also in government sectors. One of the factor through which the programmes can be made effective is through proper assessment and checking the attainments by

defining proper programme educational objectives. To ensure the same the institute has constituted the programme committee and details are as follows:

Objective:
- To provide quality education by effective planning and implementation of the programme.
- To identify various platforms to provide multi-disciplinary learning.
- To mold the students as an all rounded personality.

Expected Outcomes: Competent engineering graduate with strong professional and managerial skills with leadership quality

Core Function:
- To adopt the recommendation of various committees (including Programme Advisory Committee) and stake holders
- To plan and execute the program effectively
- To bring parity in the course delivery mechanism across all the courses
- To review the attainment of POs Identification of gaps, recommendations for Corrective Action / Preventive Action

Agenda of Programme assessment committeemeeting:
Beginning of semester
- To review different committee reports
- To plan for process improvement to enhance educational productivity
- To plan for academic activities for ensuing semester
- To plan for evaluation and assessment
- Identifying the scope for bridge courses/industry electives/IOCCP (if any)
- To plan for co-curricular and extra-curricular activities
- Identification of the need of resources
- Any other agenda with the permission of the chair

End of semester
- Sharing of best and innovative practices
- Attainment of academic results of previous semester
- Students performance in continuous evaluation
- Organization and outcome of co-curricular and extra-curricular activities
- Faculty performance review
- Review of program sustainability and growth
- Review of bridge courses/industry electives/IOCCP (if any)
- Any other agenda with the permission of chair

1.4.3   How many programmes /courses were introduced by the institution during the last four years? What was the rationale for introducing new courses/programmes?"Any other relevant information regarding curricular aspects which the college would like to include."

Based on the growing demand of skilled work force for the national and international need the TEG management felt the need to introduce the new programmes at UG and PG level with focus on research leading to Ph.D. programme. The following programmes were introduced in the last four years:

Table 1.12: Programmes Introduced by the Institution in the last four years

Sr.No.	Programme	Academic Year	Remarks
1	Mechanical Engineering (UG)	2012-13	
2	Civil Engineering (UG)	2014-15	To meet Demand and supply of industry, academics and R&D
3	Information Technology (PG)	2011-12	
4	Computer Engineering (PG)	2011-12	
5	EXTC- Ph.D. Technology	2014-15	

Moreover, the institute has introduced 60 bridge courses. Each department offers 6 to 8 courses based on the feedback by various stakeholders and recommendation by PAC. The rationale behind the offering is the gap identified between industry & academia and to make students socially responsible.**(Refer to table in para 1.1.4).**

Criterion - II: Teaching - Learning and Evaluation

2.1   Student Enrollment and Profile
2.1.1   How does the college ensure publicity and transparency in the admission process?
Minority and institute level admission:

Admission process: It is defined in ISO manual as TCET/IP/01. The process includes the preparation of publicity material, release of advertisement, publication of important dates, counselling of students at the time of provisional admission. The admission confirmations are done after receiving the approval from the competent authority and the enrolment/registration of the students with the university. For the complete process the activities are done as the schedule listed in table2.2.

Table 2.1: Admission publicity Schedule

Sr. No.	Activity	Schedule
1	Initiation of Brochure Printing	10th - 15th March of Every Year
2	Printing of Brochure	At Least 7 days before JEE-main results declaration
3	Release of Advertisement for Admission	Next day of JEE-main results declaration in two newspaper
4	Sale of Forms	15-30 days from the date of release of advertisement

The above schedule is tentative and depends on the declaration of the results of Maharashtra HSC boards and other boards and entrance examination results. All the above dates are almost aligned with the DTE dates. All notification related to admission guidelines and schedule are notified on the website and the leading newspaper in Marathi, Hindi and English admissions.
As per the schedule given in table 2.2 advertisements is released for the wide publicity of the admission for the academic year and the admission Brochure is distributed to the aspiring students. Moreover banners are put in the campus to highlight the admissions details, institute achievement, TCET advantage, academic results and placements. Accordingly the website is also updated and help desk is also kept to solve the students query.
The transparency is maintained in the admission procedures by following:
*   By adhering the rules and regulations laid by regulatory and statutory bodies from time to time.
*   Merit list is prepared as per the guidelines of DTE for eligible candidate only.
*   Admissions are strictly as per merit.
*   All admissions are within the sanctioned intake.
*   All the admissions the minimum threshold cut-off marks obtained by students are maintained for admission into engineering.
*   Admission reporting is updated on DTE website immediately
*   On cancellation of admission refund is given as per the DTE guideline and next admission against cancellation is given on merit.
*   Any grievances against the admission can be put up to grievance cell in writing and is dealt with natural justice.
Eligibility Guidelines: - Eligibility and merit preparation guidelines awareness (mainly prepared by DTE based on students' performance in MH CET) information is also made available on college website and admissions procedure

2.1.2   Explain in detail the criteria adopted and process of admission:
Seat Distribution: Total number of UG seats available for UG programmes are 660 which are distributed in to three categories as shown in the table 2.2
Table 2.2: Seat Distribution for Various Admissions

FE Admission Seat Distribution						
Sr. No.	Programmes	Intake Sanctioned	Minority Seat (51%)	Open (29%)	Institute Level intake	TFWS	Total

					(20%)		
1	CMPN	120	61	35	24	6	126
2	EXTC	120	61	35	24	6	126
3	IT	120	61	35	24	6	126
4	ETRX	60	31	17	12	3	63
5	Mechanical	120	61	35	24	6	126
6	Civil	120	61	35	24	6	126

TWFS is only applicable for UG admissions at first year admission and is on and above sanctioned intake

Similarly, there will be the distribution of seat for PG as well as the direct second year admission. mainly for engineering diploma students these seat distributions are put up in the admissions Boucher as well as website of the college, more over the list is also available on DTE government of Maharashtra Website admissions for minority category seats, open seats are done through centralized admission process of GOM whereas institute level seats mainly called management quota admissions is carried out institute level.

Criteria and Process for admissions:-

Eligibility and merit preparation guidelines awareness (mainly prepared by DTE based on students' performance in MH CET) information is also made available on college website and admissions procedure.

Table 2.3: Criteria and Process for admission

Sr. No.	Type of Seats and criteria	Eligibility	Documents
1	Minority Eligibility Valid score card of MH CET undertaking Performa of GOM Domicile certificate of GOM	Indian national HSC or equipment pass with maths and physics as compulsory subjects Third subject could be chemistry Biology or vocational subject Score should be minimum 50 % Overall marks in HSC should be 50 % MH-CET Score card of current year	SSC Mark sheet HSC Mark sheet and passing certificate School leaving certificate Migration certificate(if applicable) Hindi Minority Domicile certificate Income certificate for OBC category Birth Certificate Facilitation centre registration proof Affidavit as per regulatory body
2	CAP (open) Same	Same as above with 5 % relaxation incurred of backward class categories and person with disability belonging to Maharashtra state only	Same as1-3 of Sr. no. 1 caste certificate caste Validity certificate Non – creamy layer certificate Disable category certificate (as applicable) other document
3	Institution Same	Same as in Sr. no. 1	Same accept point 5 given in Sr. no. 1
4	TFWS Same	Same income proof less than 1 lakh	Same income proof certificate by Tashildar after verifying family income

The process of admission and the criteria for admissions are well documented in the Boucher published by DTE as well as the institute for given academic year (A.Y). Method adopted by DTE for generating admissions merit list, changes every year. In the admissions process from 2011 to 2014, merit list were prepared by DTE based on the basis of the score obtained in CET and subject to other rules of eligibility as specified by DTE. In the admission process of 2015-16, students were allocated

colleges based on the composite score obtained by the candidate. The composite score is generated by combination of marks in the qualifying exam and JEE (Mains). However in the AY 2016-17 admissions were similar to the admission process in the AY 2013 -14. PG level admissions are given based on the merit of GATE mandatory score. Admission criteria and Summary of admissions intake can be seen in table 2.2 and 2.3.

Table 2.4: Admission Statistics

A.Y	CET	AIEEE/JEE	Institute Level (20%)
2012-13	547	19	132
2013-14	552	14	132
2014-15	666	24	132
2015-16	659	29	132
2016-17	657	39	132

Admission Process: The process for the institute levels adopted is as follows:
- Release of advertisement
- Distribution of brochure and admission as per schedule
- Details of documents to be submitted
- Submission of duly filled forms at the institute counter
- Filling up of feedback form
- Merit list preparation as per guidelines of DTE
- Preparation and display of merit list as per schedule
- Provisional admission and Receipt of fees
- Display of vacancies
- Admission rounds as per DTE guideline
- Complying with the important dates as notified by DTE.
- Getting approvals for provisionally admitted students and complete the enrolment process at the affiliating university.

Table 2.5: Admission Process Schedule:

Sr. No.	Activity	Schedule
1	Admission Process and Display of Merit List	As per Guidelines given time to time by DTE.
2	Uploading of Merit List on DTE website.	At least 2 days before cut-off date or as per DTE notification.
3	Hard copy of uploaded merit list need to be sent to DTE with covering letter	On the day of completing the uploading on DTE website or the next day.
4	Approval Process as per DTE, Joint Director, PNS	As per date given by Regional office/DTE/PNs
5	Enrolment form Submission	On or before 30th September(at least for the admitted students)
6	Any other related dates	As per notification by Principal from Time to Time.

2.1.3   Give the minimum and maximum percentage of marks for admission at entry level for each of the programmes offered by the college and provide a comparison with other colleges of the affiliating university within the city/district

Table 2.6: Admission marks at entry level

Programme	Academic Year 2012-13		Academic Year 2013-14		Academic Year 2014-15		Academic Year 2015-16		Academic Year 2016-17	
	Minimum Percentage	Maximum Percentage*	Minimum Percentage	Maximum Percentage*	Minimum Percentage	Maximum Percentage	Minimum Percentage	Maximum Percentage	Minimum Percentage	Maximum Percentage
U.G (DTE quota)										
1.CMPN	70	191	54	172	51.10	96.59	73.70	95.71	68	158
2.EXTC	66	151	53	144	62.45	92.59	58.56	91.12	78	133
3.ETRX	61	127	53	111	41.53	92.32	60.51	84.83	67	129
4.IT	60	135	44	135	53.71	93.54	45.49	92.30	91	143

	Academic Year 2012-13		Academic Year 2013-14		Academic Year 2014-15		Academic Year 2015-16		Academic Year 2016-17	
5.MECH	60	158	59	168	35.53	96.14	47.17	96.63	95	153
6.CIVIL	0	0	0	0	46.99	89.43	69.79	93.69	80	146
U.G (Minority Quota)										
1.CMPN	45	147	37	125	17.63	94.87	21.83	95.04	102	146
2.EXTC	55	153	46	130	26.35	95.03	13.59	87.48	66	111
3.ETRX	41	122	53	130	31.98	86.52	32.05	87.80	52	105
4.IT	44	115	53	119	33.13	88.71	15.39	91.50	87	128
5.MECH	48	166	51	131	27.64	97.16	29.91	94.44	81	138
6.CIVIL	0	0	0	0	20.01	88.91	17.31	90.20	52	100
U.G (Institute Quota)/ (Management Quota)										
1.CMPN	45	146	46	118	26.66	85.99	13.72	88.78	65	135
2.EXTC	54	108	44	118	16.57	81.36	20.09	91.80	69	110
3.ETRX	48	88	57	94	27.49	78.04	15.71	83.35	61	102
4.IT	47	114	53	97	27.92	95.73	21.58	91.95	64	123
5.MECH	60	140	42	129	36.98	86.68	13.27	88.60	59	116
6.CIVIL	0	0	0	0	36.09	86.23	8.78	81.82	57	94
P.G (DTE quota)										
1.CMPN	0	0	27	49	10.52	10.52	2.28	3.27	0	0
2.EXTC	0	0	31	35	3.19	4.03	4.65	4.65	0	0
3.IT	0	0	42	42	19.03	19.03	0	0	0	0
P.G (Minority Quota)										
1.CMPN	0	0	0	0	3.50	71.07	62.47	62.47	12.66	15.07
2.EXTC	0	0	0	0	3.00	77.80	61.68	71.74	13.47	16.17
3.IT	0	0	0	0	1.84	75.87	62.80	62.80	0	0
P.G (Institute Quota)/ (Management Quota)										
1.CMPN	30	92	39	72	4.81	21.25	64	74.53	11.01	12.44
2.EXTC	25	72	32	51	2.85	74.69	9.48	64.13	4.75	4.75
3.IT	54	93	34	76.57	0.53	74.87	66.13	74.00	14.09	14.09

Note: *Score as per merit list

The table shows that admission marks not consistent as admission policy is changing every year. As a result student cannot get focus for preparation of examination

2.1.4   Is there a mechanism in the institution to review the admission process and student profiles annually? If 'yes', what is the outcome of such an effort and how has it contributed to the improvement of the process?
Yes
  Review of admission:
  a)   Admission process changes and its comparative study with respect to previous years
  b)   Number of forms sold in current and previous years and the projection of next year
  c)   Merit of students admitted with minimum, maximum marks and average score
  d)   Review of admission cancellation
  e)   Study of student academic background and segregation through student validation
  f)   Suggestions received from Feedback form and otherwise
  g)   Any anomalies noticed in the previous year's admission for correction
  h)   Guidance from DTE (if any)
  i)   Improvement required for online admissions in DTE quota
  j)   Comparison of admission with competitors
  k)   Ways and means to improve the level of students
  l)   Word of mouth (articulation)
  m)   Bar chart for improvement in the admission on yearly basis.
  n)   Graphs /data about students profile. For e.g. gender bifurcation.
Outcome and the process improvement:
The review process based on the above parameters has held the institute to respond to the dynamic changes in the process arises because of the policy change, court judgement, market trends and the future growth and development of the institute for the sustainable model. Some of the key outcomes with the process improvement are listed below:

1) Gap identification and process improvement.
2) Consistent response for the admission and almost negligible impact of the market trend.
3) Timely completion of all the work including the approval and enrolment as created the satisfaction amongst the students.
4) Compliances to all regulatory requirements as a result 100 % confirmation of the admission by the competent authority.
5) Advocacy of the programmes for admission by the stakeholders.

Therefore, the institute has well matured and established documented system to handle the future challenges.

2.1.5   Reflecting on the strategies adopted to increase/improve access for following categories of students, enumerate on how the admission policy of the institution and its student profiles demonstrate/reflect the National commitment to diversity and inclusion

a) All admissions are bound by the guidelines of GOM which inter- alia includes the condition of domicile which is open to Indian students who are resident of the state. 51% seats are reserved for candidates whose mother tongue is Hindi (Hindi Linguistic minority) with domicile of Maharashtra.

b) The reservation policy for admissions of various categories of students is prescribed by the Government of Maharashtra. This policy is implemented in the central admission process (CAP) of the Directorate of Technical Education (DTE) Government of Maharashtra which is followed by the institute. This is reflected in the student profile presented as follows:

Table 2.7: Student admission from reserved category

Category	2016-17	2015-16	2014-15	2013-14	2012-13	Remark
SC	1	1	2	6	5	29% of sanctioned intake
ST	0	0	0	1	0	
VJ	0	0	0	0	0	
NT1/NT2/NT3	1	1	0	2	0	
OBC	10	4	9	2	6	
SBC	0	2	0	1	0	
Differently abled	1	1	0	3	0	
Economically weaker Section	32	31	31	27	27	
Minority Community	319	316	336	275	275	51% of sanctioned intake
Women	136	130	117	118	119	-

Being the minority institute, reservation is not applicable for 51% seats of minority. However reservation for 20% opens seats is as per the norms of GOM which includes women candidates. Since the admission AY 2016-17 for minority seats are given by GOM through CAP, some of the students from minority group are also covered under EBC category benefits

2.1.6   Provide the following details for various programmes offered by the institution during last four years and comment on the trends i.e. reasons for increase/decrease and actions initiated for improvement.

Demand of engineering education can be judged by the number of seats available and number of aspiring candidates. The table 2.6 shows the number of colleges and intake capacity at national/ State/University level.

Table 2.8: Engineering admission capacity

	India	Maharashtra	Mumbai University
No of colleges	4276	367	63
Intake	16.93 lakhs	1.56 lakhs	27000

As per last year report available there were over fifty thousand seat vacant in Maharashtra state and can be seen in Table 2.7.

Table 2.9: Vacancy status in Maharashtra in A.Y.2015-16

Sr. No.	Name of University	No. of seats	Remark
1	Amravati	3,972	The trend is seen in the recent years mainly because of the decreasing trend for the popularity of the engineering programmes
2	DBATU	0	
3	Gondwana	768	
4	Kolhapur	5,934	
5	Marathwada	4,202	
6	Mumbai	3,241	
7	Nagpur	8,862	
8	North Maharashtra	3,285	
9	Pune	15,201	
10	Rama Tirth	1,571	
11	SNDT	0	
12	Solapur	3,567	
Total		50,603	

Other state the situation is even worst. Downwards trends in the demand for engineering seats may be because of rising unemployment among the engineering graduates which may because of the problem employability skill in compliance to industry requirements and the market trends. As a contrast, the demand for admissions to our institute has however remained steady for the last 5 years approximately 3:1 ratio) and is depicted in Table 2.8. This is mainly because of quality and standard of technical education maintained by our institute to the satisfaction of students, better pass out result, improved employment opportunities and addition of entrepreneurship training programmes.

Table 2.10: Admission Status in the institute

Programmes	Academic Year	Number of applications	Number of students admitted	Demand Ratio
UG				
1.Computer Engineering	2012-13	1820	574	3.17:1
2. Electronics & Telecommunication Engg.				
3.Electronics Engineering				
4.Information Technology				
*5.Mechanical Engineering				
1.Computer Engineering	2013-14	1731	571	3.03:1
2. Electronics & Telecommunication Engg.				
3.Electronics Engineering				
4.Information Technology				
5.Mechanical Engineering				
1.Computer Engineering	2014-15	2287	696	3.28:1
2. Electronics & Telecommunication Engg.				
3.Electronics Engineering				
4.Information Technology				
5.Mechanical Engineering				
**6.Civil Engineering				
1.Computer Engineering	2015-16	2154	695	3.09:1
2. Electronics & Telecommunication Engg.				
3.Electronics Engineering				
4.Information Technology				
5.Mechanical Engineering				
6.Civil Engineering				
1.Computer Engineering	2016-17	#401 (Application received for Institute	695	3.03:1
2. Electronics & Telecommunication Engg.				
3.Electronics Engineering				
4.Information Technology				

Programmes	Academic Year	Number of applications	Number of students admitted	Demand Ratio
5.Mechanical Engineering		Level 132 seats.)		
6.Civil Engineering				
PG				
1.Computer Engineering				
2. Electronics & Telecommunication Engg.	2012-13	108	54	2:1
3.Information Technology				
1.Computer Engineering				
2. Electronics & Telecommunication Engg.	2013-14	94	54	1.74:1
3.Information Technology				
1.Computer Engineering				
2. Electronics & Telecommunication Engg.	2014-15	105	54	1.94:1
3.Information Technology				
1.Computer Engineering				
2. Electronics & Telecommunication Engg.	2015-16	61	54	1.12:1
3.Information Technology				
1.Computer Engineering				
2. Electronics & Telecommunication Engg.	2016-17	#12	12	1:1
3.Information Technology				
Ph.D.				
Ph.D. (Technology) Electronics & Telecommunication Engineering.	2014-2016	10	09	1:1

Note:- 1) *Mechanical Engineering Course started in the A.Y.2012-13.2) **Civil Engineering Course started in the A.Y.2014-15.3) #51%Minority seats & 29% CAP seats filled by DTE through CAP, application received for 20% Institute Level Quota only.

2.2   Catering to Student Diversity

2.2.1   How does the institution cater to the needs of differently-abled students and ensure adherence to government policies in this regard?

Resource Centre for Students with Special Needs

TCET is dedicated to provide full accessibility to all of its programs and services for individuals with physical disabilities (orthopaedic, visual/ hearing impairment, dyslexia, depression etc.) The Office of DRC is dedicated to provide appropriate and reasonable concessions for students with disabilities, based upon individual needs. This ensures that students receive an equal opportunity to learn, participate in campus life, and grow emotionally and socially, and to successfully complete the program of study that will enable them to be self-supporting while remaining as independent as possible.

Contact: Administrative Office, responsible for functioning of DRC

Awareness: Through notices, website & admission brochure.

Support: The students with disabilities get:

- Facility to record lectures.
- Extended loan period for Library books.
- Reading material in advance of lectures.
- Book bank services.
- Wheel chair, if needed.
- Extended time for writing examinations, conducting practical/workshop practice.
- Extended time line for submissions.
- Mentor.
- Additional support (writer) during examination.
- Clear information about course requirements and deadlines well in advance.
- Reserved seating in class.
- Human support in certain outdoor activities.
- Breaks during practical, if needed.

- Meetings with office in-charge to discuss problems, if needed.

Student Responsibilities: Student responsibilities include:

- To self-identify as a student with a disability to the DRC office at the college.
- To provide up-to-date documentation of the disability to the DRC office.
- To self-identify to faculty/mentor as a student with a disability and provide them with a copy of the Individual Student Profile.
- To remind faculty in a timely manner of academic concessions required for tests and assignments.
- To accept responsibility for his or her successful education.

This includes maintaining satisfactory academic levels, attending classes, completing assignments, behaving appropriately and communicating regularly with the appropriate office and/or individual regarding specific needs.

Office Responsibilities: The office responsibilities includes:

- To assess students' requests for concessions using the current disability documentation provided by the students.
- To provide information regarding policies, procedures, rights and responsibilities to students with disabilities in accessible formats upon request.
- To recommend and provide reasonable and appropriate learning and testing concessions, academic adjustments, and/or auxiliary aids for students with disabilities who meet the college or university criteria for eligibility.
- To ensure confidentially of all information pertaining to students' disabilities.
- To assist students in communication with faculty about their disabilities and required concession, if needed.

Faculty Responsibilities: The faculty responsibilities include:

- To allow students to disclose their disabilities in an appropriate and confidential place.
- To provide reasonable instructional and/or testing concessions.
- To acknowledge the rights of students with dignity and respect.
- To maintain integrity of academic standards.
- To maintain student confidentiality at all times.

2.2.2   Does the institution assess the students' needs in terms of knowledge and skills before the commencement of the programme? If 'yes', give details on the process.

Yes,

The institute carry out **student validation** on the basis of their SSC, HSC and JEE marks during the commencement of first semester. On the basis of this, students are categorized into excellent, good and average. Institute successively trace their performance in different examinations onwards.

Student validation: A tool for assessment of student performance.

Objective:

The first year of college is a critical period of transition for incoming college students. TCET have identified an approach to link first-year students' performance needs in mind.

Scope:

It serves as a prediction model with an assessment of students' achievement at the onset of First Year engineering providing a space for the academic strategy for improvement of student performance.

Participants:

All first-year students who enrolled under UOM admitted in TCET for their first and second semesters.

Method adopted:

The pre-historic variables of students that are collected on the first day of class are based on their SSC, HSC, PCM and CET score. Based on the average taken the students are categorized into Excellent, Good and Average cohorts.

1) SSC marks scaled as 5 (80% >), 4(65%-80%) and 3 (below 65%)
2) HSC marks scaled as 5 (80% >), 4(65%-80%) and 3 (below 65%)
3) PCM scaled as 5 (> 80 marks), 4(>65-79 marks) and 3 (below 65 marks)
4) CET scaled as 5 (> 120 marks), 4(>80-120 marks) and 3 (below 80 marks)
5) PCM+CET added and scaled as Excellent (9, 10), Good (8, 7) and average (6)

It has been observed that students with better PCM+CET perform better and the mapping between the same and end semester exam matches well. Academic Counselling has helped 20% students to get better status. This furnishes a clear data for high performer, medium and slow learners. The Class In charge along with mentors and subject teachers are then communicated to cater the students academically for performance improvement in various sectors.

Result of Students Validation:

Table 2.11: Validation as per the branch at entry level

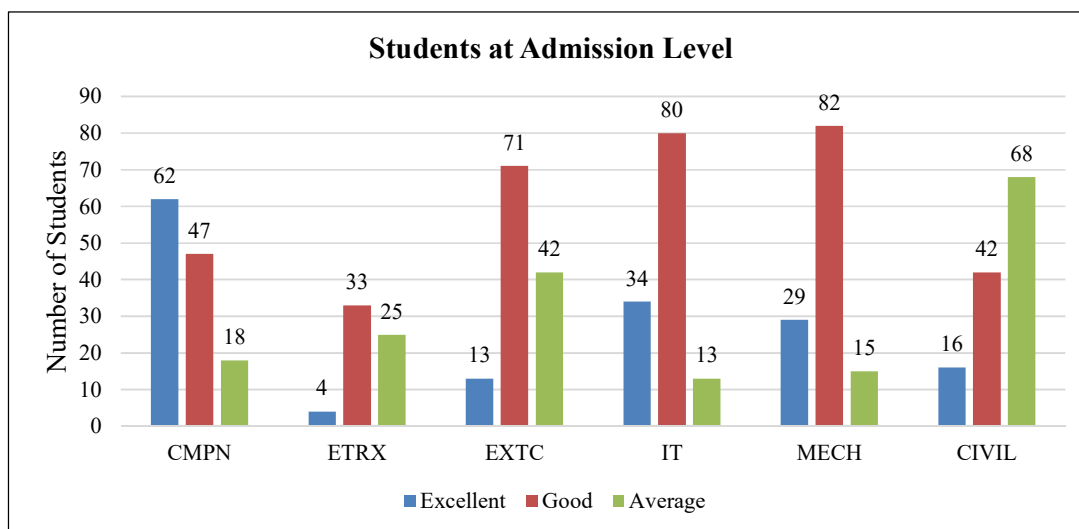| Branch	Excellent	Good	Average
CMPN	62	47	18
ETRX	4	33	25
EXTC	13	71	42
IT	34	80	13
MECH	29	82	15
CIVIL	16	42	68
Total	158	355	181

Fig. 2.1: Graphical presentation of Students validation as per the branch at entry level
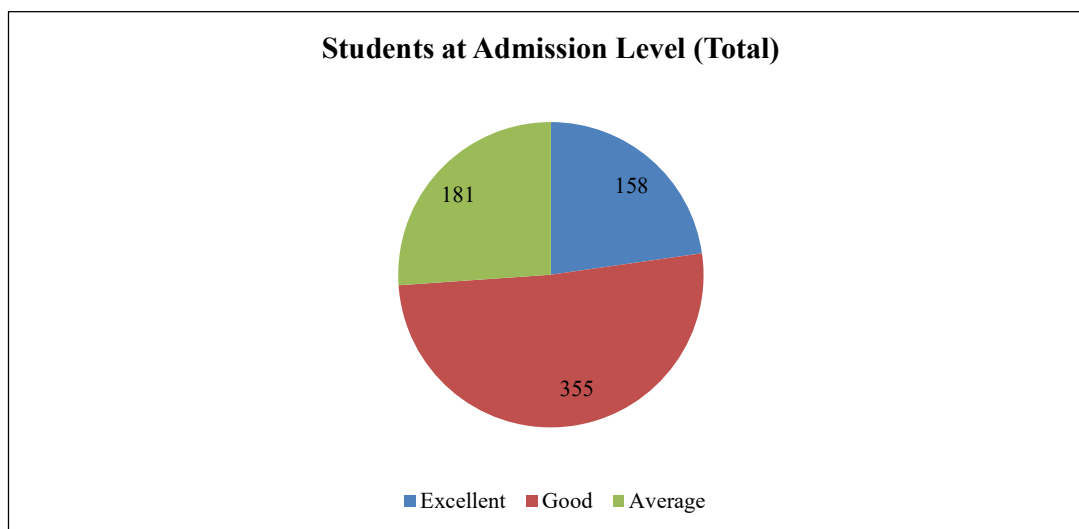

Fig. 2.2: Overall validation status of students at entry level

The similar exercise is done for the students for various semesters. The process has helped the institute to identify the weak area of students in academics. Accordingly the faculty can design and develop the lesson so that learning should not become monotonous. The process also helps in the creation of learning resources for the students. We should address the students learning from low level to high level and the equation of life skill.

2.2.3   What are the strategies adopted by the institution to bridge the knowledge gap of the enrolled students (Bridge / Remedial / Add-on / Enrichment Courses, etc.) to enable them to cope with the programme of their choice?

The institute runs various orientation programmes, bridge courses and quality enrichment programmes to fill the gaps of enrolled students. These programmes have created the learning diversity for students.

Orientation programmes: It includes:

1. Semester orientation programmes is conducted to orient the students in the department about the new developments in the department, new initiatives, events to be conducted during the semester, compliance to the quality objectives, sharing of results and student validation. In addition there is also the orientation for process that will be conducted during the semester. Course orientation includes the detailing of syllabus content, the requirement of pre-requisite and co-requisite and the foundation for learning the subject during the semester. In addition the list of the experiments, the use of tools and technology during the experiments and the orientation for laboratory experiments. Moreover, the activities to be conducted for outcome based education through activities and projects are also oriented. The initiative makes the learning structured and guided with result orientation.

2. Road shows are mainly done for training and placement activities during the fifth semester zero hours where the students are oriented about the employability skills, training to be conducted and the potential employer for campus recruitment. It is also arranged for Student Development Programmes (SDP) which is required to be conducted as a part of co-curricular activity. The orientation is applicable to all the students from F.E. to B.E.

3. Orientation for higher studies through Higher Studies and Online Certification Courses (HOC) cell is conducted. The orientation includes: the higher studies abroad, higher studies in the country, various competitive examinations the engineering graduates can write, the career opportunities through competitive examination, online certification courses etc. The orientation helps the students to understand the alternative means of professional placement.

4. Professional body and student chapter orientation are done by the faculty incharge about the functioning, roles and responsibility of the members, programme to be conducted, report writing and the learning to be developed from the activity. They are also encouraged to do the mapping and attainment check for various outcomes as per the requirement of engineering graduate attributes as defined by NBA.

Bridge Courses and add on courses: The bridge courses are mainly designed and developed mainly to address the gap that exist between the university curriculum and industry need. Some of the important bridge courses that have been done the programme specific bridge courses conducted by the departments, the courses for personality development, technology specific courses etc. One of the key programme which is done for the students of first year is GEPT (General English Proficiency Test). The programme includes the training on the learning of English as a language, spoken English, public speaking etc. During the conduct instructions are given activities are arranged and in some cases the activities are video recorded so that student can see the area they need to improve.

Enrichment coursesand activities includes plan and conduct of doubt solving and practice session, project based learning, industrial visit, HACKATHON, workshop/technical seminar/technical paper presentation, ethics and value education, problem specific coding skills. These programmes not only the competitive skills but also empower the students with affective and psychomotor skills which enables the student for life skills.

2.2.4   How does the college sensitize its staff and students on issues such as gender, inclusion, environment etc.?

TCET sensitize its staff and students on the issues of gender inclusion through its WDC cell which built with following objectives:

- To ensure a safe & secure working conditions for woman.

- To provide platform for empowering & developing them.
- To conduct various activities in different spheres of Women development.

The following activities are conducted in the last two years and the current Academic Year.

- Women's Day Celebration
- Talks by Nutritionist & Dietician
- Self Defense Workshop for Staff & students
- Poster Competition on Women Empowerment
- Meditation & Yoga Sessions
- Street play conducted by NSS/extension

TCET-WDC has taken the effort to build Gender Equality among the Staff members. There is Quarterly Feedback System which ensures smooth and a conducive work environment for female employees as well as no gender discrimination amongst the staff members. Apart from this, for gender sensitization among student community, TCET takes initiative by appointing Girls Class Representatives (CR's) for every class, so as to understand any issue or problem and provide timely help to them.

At institute level, in different committees, girl students are incorporated to ensure equal opportunities are provided to them for participation in extra-curricular and co-curricular activities. As a part of the Student Development Program (SDP) at TCET, there are sessions held on Gender Sensitization by organizing role plays and provide insights about the issues related to it.

2.2.5   How does the institution identify and respond to special educational/ learning needs of advanced learners?

Identification of advance learner is done through student validations, an assessment tool to identify the students as High (H), Low (L), and Medium (M) performing students. Category H students are treated as advance learner. Validation is done on the basis of their attendance, Performance in Continuous evaluation and previous semester result.

After identifying the High performing students, the institute offers training facility to the students through bridge courses, industry elective , on-line/off-line certification courses etc. to improve their competence as per industry needs as well as for higher studies. Such programme may also lead to certification adding to their achievement. These students are also encourage to undertake activity like writing and publishing research paper, taking up project in their specific domains in addition , entrepreneurship programme are conducted through guided and self-learning modes which may enables them to be successful entrepreneur and employment creator.

2.2.6   How does the institute collect, analyze and use the data and information on the academic performance (through the programme duration) of the students at risk of drop out (students from the disadvantaged sections of society, physically challenged, slow learners, economically weaker sections etc. who may discontinue their studies if some sort of support is not provided)?

Institute has the ISO System under which there is a system of continuous evaluation and performance in semester end examination (SEE) which is conducted by the university. Being the affiliated college the first year result of university is around 30- 40 % against which the students get the result 50- 65 % . More or less similar results are coming for second year. However the results improve thereafter and finally around 95% of the students graduate every year with the success rate of 80% (success rate is defined as the number of students completing the course in the course duration). This is possible because of rigorous analysis of examination data, which is done by exam section. Data analysis is done at the Institute, Department, Subject, and Individual (Faculty as well as students) levels. The data analysis includes the SWOT analysis, scope for improvement and the recommendation for necessary action to improve the result of academically disadvantage section of the students. In addition there is a mentoring and counselling is done by the teacher guardian and the proper records of the proceeding are maintain in teacher guardian book.

2.3   Teaching-Learning Process

2.3.1   How does the college plan and organize the teaching, learning and evaluation schedules? (Academic calendar, teaching plan, evaluation blueprint, etc.)

The college plans the teaching learning as per the university calendar received from University of Mumbai. The institute academic calendar is prepared 15 days before commencement of every semester. The syllabus blueprint is followed by all faculties to conduct their respective subjects.

During the conduct of semester period the teaching plan is prepared. Each faculty is supported with university syllabus schema where the number of hours for lectures/practical's are stated which is followed accordingly. Each faculty prepares the lesson plan (semester planning) as per university schema and is required to follow the planning throughout the semester to conduct the lectures/practical.

The academic calendar is prepared so that during teaching learning of the semester the college conducts two term test to check for student's preparedness for final semester exams. According to academic calendar prepared at the institute level where the first 6 weeks the conduct of lectures/practical is done followed by first term test in seventh week. The teaching learning is again continued from 8th week till 13th week followed by second term test in 14th week. Finally the requirements for fulfilling term grant is carried out in 15th week which is considered as term end. During the semester, students learning are evaluated through term work and the Internal Assessment Test (IAT).All assessment and evaluations are required to be completed as per the academic calendar, being an affiliated institute, evaluation blue print and paper format are provided by the university. To bring uniformity and consistency in the evaluation process institute has developed Rubrics as an indirect assessment tools. Examination and evaluation scheme of UOM along with the rubric sample is presented as a sample in Fig.2.12.

Evaluation Guidelines for Theory and Practical

Table 2.12: Rubrics for Continuous Evaluation

Sr. No.	Particulars	Specification	Very good (10)	Good (7)	Satisfactory (4)	Unsatisfactory
1	Identify problem statement (Aim) and conclusion (Result)	Proper problem statement, definition and expected output	Meeting 90% expectation	Meeting 70-90% expectation	Meeting 50-90% expectation	Less than 50% expectation
2	Answer formats and presentation	Content coverage Proper illustration and diagram	Meeting 90% expectation	Meeting 70-90% expectation	Meeting 50-90% expectation	Less than 50% expectation
3	Answer Quality	Language Hand writing Content: length, breadth and depth Presentations	Meeting 90% expectation	Meeting 70-90% expectation	Meeting 50-90% expectation	Less than 50% expectation
4	Uniqueness in answer	Value added information Innovative content Exemplary answer New findings from answer	5% and above	3-5%	1-3%	Less than 1%

Table 2.13: Program Structure for B.E. Computer Engineering Second Year (Computer)(Semester III)(REV 2012)

Course Code	Course Name	Teaching Scheme (Contact Hours)			Credits Assigned			
		Theory	Practical	Tut	Theory	TW/ Practical	Tutorial	Total
CSC301	Applied Mathematics III*	4	-	1#	4	-	1	5
CSC302	Object Oriented Programming Methodology*	4	2	-	4	1	-	5
CSC303	Data Structures	4	2	-	4	1	-	5
CSC304	Digital Logic Design and Analysis	3	2	-	3	1	-	4
CSC305	Discrete Structures	4	-	-	4	-	-	4

Course Code	Course Name	Teaching Scheme (Contact Hours)			Credits Assigned			
		Theory	Practical	Tut	Theory	TW/ Practical	Tutorial	Total
CSC306	Electronic Circuits and Communication Fundamentals	4	2	-	4	1	-	5
	Total	23	8	1	23	4	1	28

Table 2.14: Program Structure for B.E. Computer Engineering Second Year (Computer)-Examination scheme

Course Code	Course Name	Internal Assessment			End sem. Exam	Exam Duration (in Hrs)	TW	Pract. / oral	Total
		Test 1	Test 2	Avg					
CSC301	Applied Mathematics III*	20	20	20	80	03	25	-	125
CSC302	Object Oriented Programming Methodology*	20	20	20	80	03	25	25	150
CSC303	Data Structures	20	20	20	80	03	25	25	150
CSC304	Digital Logic Design and Analysis	20	20	20	80	03	25	-	125
CSC305	Discrete Structures	20	20	20	80	03	-	-	100
CSC306	Electronic Circuits and Communication Fundamentals	20	20	20	80	03	25	25	150
	Total	-	-	120	480	-	125	75	800

* Common Subjects with IT # Tutorial to be taken class wise! Tutorials will be evaluated as Term work

2.3.2 How does IQAC contribute to improve the teaching–learning process?

The internal quality audit committee **(IQAC)** holds three internal audits and one external (surveillance) audit in each year. The frequency of each audit is once in quarter. The audit is conducted by a three member committee comprising of staff from other department/section.

The process for effective teaching learning process is defined and the measurement of conduct of lectures /practical's is done as per the defined process in ISO. The lectures and practical's to be taken are done as per lesson planning.

The complete syllabus is divided into **6** modules, where the first three modules are covered with **50%** syllabus for first term test and remaining **50%** syllabus comprising of other three modules for second term test. The syllabus coverage is taken every **5th** of each month during semester to check for the number of chapters completed with the number of hours that justify content/modules covered. At the end of semester all 6 modules are taught by individual faculty members. The audit is conducted (semester end) where the teaching learning process execution is checked and reviewed. The short fall in the lectures conducted/modules if not completed as per the schedule, such faculty members are asked to complete them by taking extra lecture. Moreover the failure students IQAC team should ensure extra lectures, doubt solving sessions etc. should be conducted to make them successful in subsequent semester

In addition IQAC also ensure on day to day basis the maintenance of the records in the department, ISO process is followed and all academic work is executed as per the academic calendar and the time-table. It is found that those who are new in the system they generally avoid following quality practices. Therefore effective induction training to be completed and time to time brainstorming session should be conducted. They should be also given the on job training which will increase their productivity.

Role and responsibility of IQAC are as follows:

1) To establish, implement and maintain QMS in the Institution and to promote awareness among students, staff and faculty
2) To report to Management on the performance of QMS and any need for improvement
3) To ensure that the Quality Policy is understood by all
4) To define measurable Quality Objectives
5) To help faculty in delivery of quality education to the students

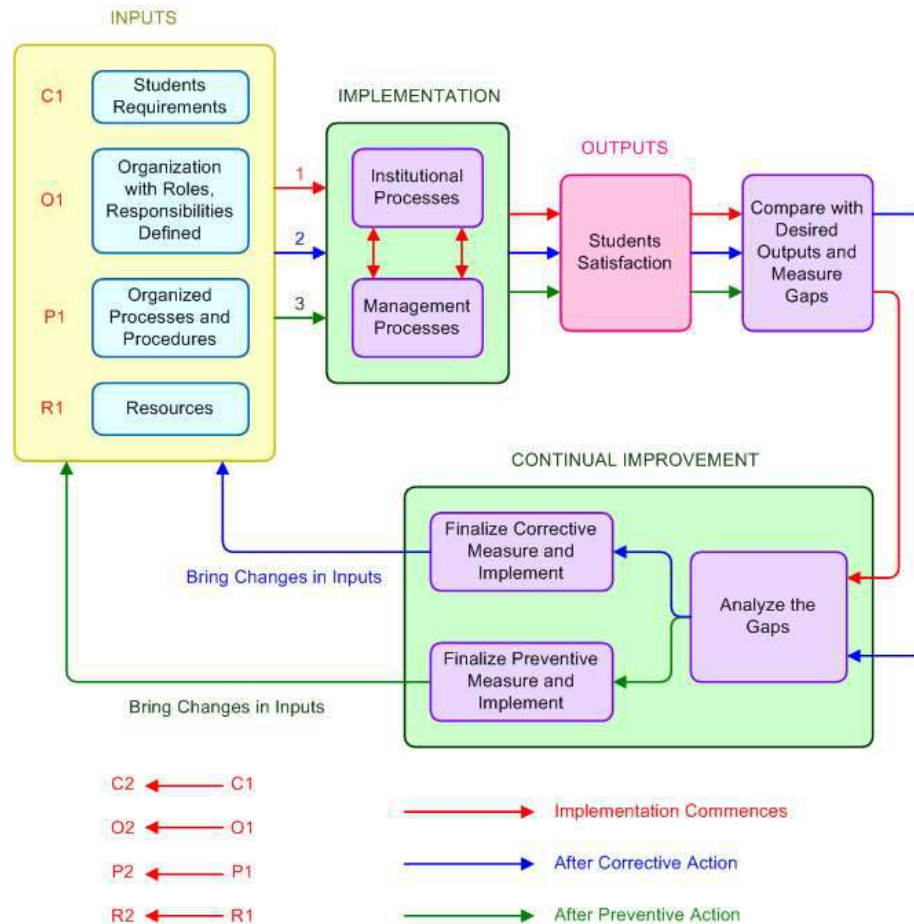IQAC contribution to improve the teaching learning process is a system based which is shown in fig.2.3

Fig. 2.3: Process based approach for improving the teaching learning quality

2.3.3 How learning is made more student-centric? Give details on the support structures and systems available for teachers to develop skills like interactive learning, collaborative learning and independent learning among the students?

Learning is made more student-centric due to the reason that students are provided with the resource books that are prepared for each subject by faculty members. The resource book which acts as support structure contains the unsolved old university questions in the form of problems, short answer questions, design based questions &analytic based questions. The content of each topic is described in such a way that the students can refer and prepare to write the similar answers in end semester exams.

Faculty members prepare the resource books with the support of NPTEL database, MIT open source, course era etc. It is updated after each year. Faculty members attend IIT remote centre STTPs based on their area of interest and subjects being taught, where the faculty involvement in observed. The assignments provided by IIT professors are solved and uploaded on the Moodle which is a part of interactive learning. The difficult questions are put in to discussion mode under collaborative teaching and few similar type of unsolved problems are considered under independent learning to the students. This results in overall preparation of students for all the subjects.

2.3.4 How does the institution nurture critical thinking, creativity and scientific temper among the students to transform them into life-long learners and innovators?

Students are encouraged to be the member of professional body from first year onwards & participate in different activities such as paper presentation contest, workshops, technical festival (Zephyr), project content, entrepreneurship week where students learn different types of critical and practical thinking on applying their ideas.

Mini/Minor projects are also conducted at department level where the critical thinking is brought in to the students. These project loads may be beyond the university syllabus and therefore it is learning beyond curriculum. Final year project completion are held at last month of academic year

Students are also encouraged to write papers as publications of their final year project work which helps them into life-long learning. Students also participate in Avishkar where the students show case their innovation ideas. It is a state level programme conducted at 3 level: Zone level, University Level and finally State Level

Moreover critical thinking, creativity and scientific temper are also the part of engineering education and at TCET is addressed through OBE model of NBA and can be seen in detail in Art.6.1.4.

2.3.5 What are the technologies and facilities available and used by the faculty for effective teaching? e.g. Virtual laboratories, e-learning-resources from National Programme on Technology Enhanced Learning (NPTEL) and National Mission on Education through Information and Communication Technology (NME-ICT), open educational resources, mobile education, etc.

The technology such as A-View is provided by IITs to conduct remote centre STTPs based on various subjects. The faculty members enrol and attend the STTPs conducted by IITs which help them to know about TPS (think-pair-share) type of activities. The assignments are given to faculties to solve and upload the same on Moodle from their respective account. The assessment of the assignments during and after the programme is done. Finally, faculty members clearing the assignments are given the certificates of the course. Thus, the assignments solved by faculty members during the IIT STTPs help them for their effective teaching.

2.3.6 How are the students and faculty exposed to advanced level of knowledge and skills (blended learning, expert lectures, seminars, workshops etc.)?

Students are exposed to advance level of knowledge by participating in industrial visit (local & out station), technical seminars are conducted during each semester to boost the technical thinking of the students for the topics that are in their current semester and of difficult type. Students are also given an opportunity to participate and publish papers in the institute yearly international conference & workshop (named MULTICON-W). Students attend industry oriented workshop (IOW) during conference where from experts students receive inputs latest issues and challenges of industry requirements. Students also attend the student development programme (SDP) before placement begins where the soft skills, technical skills etc. are explained so as to improve the overall placement.

Faculty members are exposed to programmes (STTPs) of IITs where the concepts and skill development kind of assignments are discussed. These assignments are partly solved and the rest faculties solve them and upload on to their Moodle accounts. The inputs received during remote centre IIT-STTPs help faculty members achieve higher knowledge and skills which help in deliver effective lectures.

2.3.7 Detail (process and the number of students / benefitted) on the academic, personal and psycho-social support and guidance services (professional counselling / mentoring / Academic advice) provided to students?

Teacher guardian scheme is available in the institute where around 18-20 students are allotted to each faculty member. The mentoring is done by faculties twice in each semester. The counselling record is updated and issues faced in academics are discussed with the students. All issues related to psycho-social support and guidance for academic improvement are discussed.

Professional counsellor is available in the institute once in a week, where psycho-social issues of students are resolved.

Teacher guardian scheme is available in the institute where around 20-22 students are allotted to each faculty member. The mentor (faculty member) interacts with each mentee (student) at-least two times in a semester or as per need. The mentee's academic record, co-curricular and extra co-curricular

activities and counseling record is maintained in Teacher Guardian book. Mentee's performance is monitored and based on his/her strength and weakness, guidance is provided to understand the challenges and opportunities present in college and develop a smooth transition to campus life at first year level and to enhance the mentee's growth, improve self-confidence, manage conflict and help to achieve their goals from second to final year level. In addition to this professional counselor is available in the institute on every Thursday, where psycho social issues of students are heard and resolved. (Students taken to professional counselor is identified by mentor, class incharge, subject teacher or parents)

Table 2.15: Student counselling

Sr. No.	2014-15	2015-16	2016-17
1	Through Teacher guardian scheme all students at FE, SE, TE, BE	1) Through Teacher guardian scheme all students at FE, SE, TE, BE 2) Through professional counselor 3 students	1) Through Teacher guardian scheme all students at FE, SE, TE, BE 2) Through professional counselor 10 students

Table 2.16: Mentoring statistics

Sr. No.	Process mentoring type	Number of students benefitted					Remarks
		2011-12	2012-13	2013-14	2014-15	2015-16	
1	Academic	196	210	225	200	198	
2	Personal	45	48	50	42	40	
3	Psycho-social	12	10	14	15	11	
	Total number of students	253	268	289	257	249	

2.3.8   Provide details of innovative teaching approaches / methods adopted by the faculty during the last four years? What are the efforts made by the institution to encourage the faulty to adopt new and innovative approaches and the impact of such innovative practices on student learning?

Innovative teaching approach and Methods adopted to simplify the learning at the same to broaden the scope of learning. The basic chalk and duster teaching is blended with the innovative teaching approaches/methods adopted by faculty members are as follows:

a)   Group activity
b)   Use of internet
c)   MS-Power point presentation
d)   Use of smart boards
e)   ICT enabled learning
f)   Use of computers, projectors etc.
g)   Demonstrations of models
h)   Tutorials
i)   Lectures with visual annotations
j)   Resources and online learning

To bring the innovative approach and teaching methods following initiatives are taken:

1)   Classroom are updated with internet lines and multimedia projectors so that the monotony of chalk and board teaching can be supplemented with the use of technology in the classrooms. The facility has encouraged the faculty member to use motivational video of short duration may be aligned with the teaching learning process. Moreover, the industrial or the field experience can be simulated in the classroom and be presented which will increase the learning effectiveness in the classroom. It also reduce the teaching time and therefore more learning activities can be conducted as the teaching partly can be facilitated through power point presentation or the online portals for learning resources can be accessed in the classrooms.

2)   In first year and second year the concept of resource book was introduced mainly to make the learning more effective, structured and guided. It also makes the uniform delivery of lectures

in the classroom. Moreover, in case if any student misses the lectures because of one or the other reason they can learn the topic through self-learning as the resource book is made highly modular and aligned with the flow of lectures. The contents are organised so that student can learn the topic from low level to high level as the practice exercise is developed keeping in mind the cognitive development of students w.r.t. Bloom Taxanomy Model (BTM).

3) Some of the hardware laboratories are fitted with the projectors. The purpose is to develop the self-learning by playing the videos of the laboratory conduct by the faculty members. The video address the necessary instructions, assemble the various component as a part of experiment, connect the signal source and majoring instruments and then how to make the measurement and what are the expected outcomes and what are expected from the experimentation. Moreover value has been added to these experiments by adding some of the applications relevant to the experiment. It helps the experiential based learning. At the same time it saves lot of instructional time of the faculty and can be utilised for evaluation and assessment and attainment of the outcomes.

Similarly there are many other innovative practices that has been adopted which has improved the process which has improved the system and it also supports to transform the mediocre to the bright student with goal orientation. Noteworthy such practices are as follows:

1) Project based learning to provide the field experience in the classroom/laboratory environment.
2) Encouraging co-curricular and extracurricular activities by introducing the concept of the zero hour and activity hour on Friday, 2nd half to make the student and faculty stress free when leave on the campus on Friday. The activity hours brings the engagement and reduce the gap of faculty and students as all the programmes are the joint programmes.
3) Institute promotes the professional certification and also prepares the students for competitive examination by integrating the syllabus of the competitive examination and professional certification requirement with the university curriculum wherever applicable. Otherwise it is conducted as bridge course or industry electives which are non-credit value addition courses. Effort results into the competitive edge for the students with more learning in limited time.
4) Case study based teaching to develop the understanding about the real life problems and how it can be handled. The initiative develops the critical thinking and problem solving skills and many more.

2.3.9   How are library resources used to augment the teaching- learning process?

Library resources augment teaching-learning process because material in the form of text books, reference books, research papers (online from e-databases) are supported from library. Faculty members issue the books and return by term end. The library also contains the copy of old question papers which support faculties to make students prepare for the end semester exams. In case of new books prescribed in the new syllabus, books are purchased and are made available to the faculties / students on immediate basis.

Digital Libraries URL is also provided as a link on institute website

2.3.10   Does the institution face any challenges in completing the curriculum within the planned time frame and calendar? If 'yes', elaborate on the challenges encountered and the institutional approaches to overcome these.

No, there does not exist any problem in completion of curriculum within the planned time frame of the academic calendar comprising of 15 weeks of semester. Since, the planning of curriculum and its execution/implementation is done in advance considering all other activities to be held during the semester. In case, the lectures planned are not completed in the stipulated period due to unavoidable reasons or public holidays, then faculty members plan for lectures on working Saturdays and complete their curriculum. The number of hours to be planned for each module is mentioned in the syllabus which helps faculty attain the planned hours accordingly for syllabus completion.

2.3.11   How does the institute monitor and evaluate the quality of teaching-learning?

Institute is ISO certified since 2005 therefore all process are well set and the regular monitoring and evaluation are done as per schedule.

The teaching learning is monitored of each department/section where the concerned HODs are required to submit the syllabus coverage report 5th of every month. The HODs monitor the progress of syllabus covered each month and the cumulative syllabus coverage. In case the lectures were not being conducted due to public holidays on a concerned day of the week then the extra lectures are planned on working Saturdays and completion of syllabus is done.

Also in case the result of say some subject in a department is less than expected as per the quality objective set as mentioned in table below, where the students are called on working Saturdays. The time table is prepared in advance and is informed to students accordingly. The evaluation of teaching learning is monitored by results achieved in respective Subjects /department. The institute ISO manual has pre-defined qualitative and quantitative analysis for results at F.E, S.E, T.E and B.E (final year).

Table 2.17: Quality Benchmarking

Class	Quantitatively	Qualitatively	Remarks
F.E	Passing percentage should be 70%	Out of which 50% should have first class /distinction	Initially the result was between 40 -50 % and currently the result are between 50- 65%
S.E	Passing percentage should be 75%	Out of which 50% should have first class /distinction	Most of the old courses are compiled with quality objective
T.E	Passing percentage should be 85%	Out of which 50% should have first class /distinction	Compiled
B.E	Passing percentage should be90%	Out of which 50% should have first class /distinction	Complied

Institute conduct the feedback twice in the semester also uses the OBE indirect tools such as survey exit interview formal/ informal interaction to understand the quality of teaching learning process.

The finding of the feedback, survey and the interaction are utilized to improve the process by identifying the gap and addressing gap through root cause analysis followed by corrective and preventive action. In addition feedback is also taken from stakeholder i.e. parents and industry. Parents' feedback is collected during parent meet or meeting with teacher guardian on working Saturday. Feedback from industry is taken during training and placement activity.

Institute also has advisory committee at department as well as institute level. One of the key objective of advisory committee meeting is to guide the institute and department to improve the academic standard so that the institute can become internationally renowned by acquiring the Autonomy and Deemed university status. During the meeting the academic performance record of the student continuous evaluation and SEE result are shared with analysis and necessary input from faculty member and student necessary guidance.

2.4   Teacher Quality
2.4.1   Provide the following details and elaborate on the strategies adopted by the college in planning and management (recruitment and retention) of its human resource (qualified and competent teachers) to meet the changing requirements of the curriculum

Human resources required for the meeting changing requirement of curriculum includes the appointment of faculty member or technical staff with knowledge and core competency. Moreover to empower the existing faculty and technical staff with the new skill set and the knowledge through proper training. Training could be in house or out house, class room teaching or on job training, the activity or project based etc. These training modes not only empower the faculty for effective teaching but also prepared them to face the challenges of 21st century campuses. The number of faculty member required in the department is determined on the basis of university academic load, AICTE Norms of student - teacher ratio along with the cadre ratio, and the NBA guidelines. Keeping these requirements in the mind the recruitment of the faculty member are done as per set guidelines of UOM applicable for minority institution.

To retain the faculty member in the department brain storming and orientation session are conducted on regular basis, faculty member are address by the principal at beginning and end of the semester with the objective that the faculty must be oriented with target and goal so that their action becomes result oriented. Whereas semester end address is focus on students and faculty performance during semester, the gap identification, and the root cause analysis that has been on the facts and figures. Moreover they are also oriented about the opportunity that they can avail for improvement and further

strengthening of the system. This ensure the effective communication with faculty and brings the fruitful engagement with the sense of belongingness. The faculty member also involved in the various institution and departmental event required to carry out for academic excellence. This help the faculty member to develop managerial and leadership skills and provide the vertical growth.

Strategies adopted by the institute for retention of faculty members are as follows:

1) To provide academic to attain set learning outcome.
2) To provide conducive atmosphere for the professional growth.
3) To assign well defined roles and responsibilities and providing challenging role.
4) To provide necessary infrastructure and facilities conductive for teaching learning process and R&D activity
5) To provide an opportunity for sabbatical training and qualification improvement from reputed institution / university to complete Ph.D. or Post-Doctoral qualification.
6) Establishing research promotional policies for attending conferences and publishing research papers in India and abroad.
7) Implementing various welfare schemes for faculty viz. PF, group gratuity,
8) Medi-claim, Group insurance, credit cooperative society etc.

Table 2.18: Current status of faculty

Highest Qualification	Professor		Associate Professor		Assistant Professor		Total
	Male	Female	Male	Female	Male	Female	
Permanent teachers							
D.Sc./D.Litt.	-	-	-	-	-	-	-
Ph.D.	05	03	04	04	03	09	28
M.Phil.	-	-	-	-	01	-	01
PG	-	-	04	01	48	50	103
Temporary teachers							
Ph.D.	-	-	-	-	-	01	01
M.Phil.	-	-	-	-	-	01	01
PG	-	-	-	-	15	10	25

Table 2.19: Faculty experience for retention factor

Department	Maximum experience	Minimum Experience	Mean Experience	Median Experience
CMPN	24 years	2 months	10 years	10 years
EXTC	28 years	2 years	11 years	13 years
IT	21 years	8 months	10 years	11 years
ETRX	26 years	1 year	11 years	9 years
Mech	47 years	9 month	9 years	4 years
Civil	17 years	1 year	5 years	3 years
H & S	25 years	6 months	11 years	12 years

2.4.2   How does the institution cope with the growing demand / scarcity of qualified senior faculty to teach new programmes/ modern areas (emerging areas) of study being introduced (Biotechnology, IT, Bioinformatics etc.)? Provide details on the efforts made by the institution in this direction and the outcome during the last three years.

- Institute conduct 2-4 week short term training programme during the vacation periods some of the short term training programme are dedicated to department where faculty can enhanced their core engineering knowledge, research skills and knowledge of emerging technology.
- Every department has 5-6 domains where the students and faculty in the department are uniformly distributed so that the domain can be strengthen. domain activity such as workshop, seminar, conferences, technology talks etc. are arranged in the institute it provide the opportunity to learn new subject
- Institute encourage the faculty to conduct the project based teaching learning process by guiding the students at UG, PG, and PhD Level.
- Institute has partner with some of the industry to conduct their campus connect programme one of the way to conduct the campus connect programme is to train the faculty by industry expert under the scheme of train the trainer programme once they are trained they conduct the training

programme for students under Infosys campus connect programme around 30 faculty member are trained in Business communication , people skills , IT courses and computer courses they are trained for conducted the programme which are case study and project based training.

- Every year in the month of February the institute organises the MULTICON - W where faculty get an opportunity to interact with resource person from industry as well as academic institution. Therefore the faculty get network with resource person for sharing of their knowledge and domain expertise. The platform may support faculty for sabbatical Project and also to improve their qualification by acquiring PhD and post Doc.

2.4.3   Providing details on staff development programmes during the last four years elaborate on the strategies adopted by the institution in enhancing the teacher quality.
   a)   **Nomination to staff development programmes:**
         The institute encourages (deputes) faculty/staff to take part in development programs conducted at the institute or in other institutes/organizations. Special budgetary provision is made under "faculty/staff development" head to make sure that faculty/staff upgrade themselves by attending various training programs.

Table 2.20: Nomination to staff development programmes (Applicable to Engineering institute)

Academic Staff Development Programmes	Number of faculty nominated			
	AY 2015-16	AY 2014-15	AY 2013-14	AY 2012-13
HRD programmes	78	174	114	200
Orientation programmes	36	36	36	6
Summer/winter schools, workshops, etc.	200	320	40	32

   b)   **Faculty Training programmes organized by the institution to empower and enable the use of various tools and technology for improved teaching-learning:**
   - **Teaching learning methods/approaches:**Faculty development programmes conducted during the semester as well as during the semester break at institute level. Focus area includes: used of technology in education, development of learning resources, interaction in class and laboratory, engagement of students in learning etc. Training is conducted by senior faculty from the institute or from the university.
   - **Handling new curriculum:** University conducts the orientation programmes whenever there is the change in the syllabus. Moreover faculty members are encourage attending the open source programme, STTP vacation period,and self preparation of bridges courses help them prepare new subjects.
   - **Content/knowledge management:** Quality training conducted by the trainer from the quality agency and also through the self learning and research.
   - **Selection, development and use of enrichment materials:** It is done through necessary guidance and the set format of the content development. Resource book developed by the faculty member is an example which is well accepted by the students. Faculty also developed their course file.
   - **Assessment:** University is having the well defined guidelines for assessment. They also conduct the workshop as and when required. Faculty members are encouraged to attend the same. They are also having the discussions during the syllabus revision meetings.
   - **Cross cutting issues:** Participation and organization of Seminars, conferences workshops, discussion and deliberation on various plate forms helps the faculty to acquire knowledge about cross cutting issue.
   - **Audio-Visual Aids/multimedia-**Faculties are developed: Video cameras are provided to thedepartments and some of the technical assistants are trained for video recording. Many of the faculty member's videos are available on YOU TUBE.
   - **OER's**
   - **Teaching learning material development, selection and use:** Resource book development, bride course content development, and interactions at various level including peer group and also the use of INTERNET technology and the interaction on social plate forms helps the faculty to develop the content for learning resources.

Training programme profiles are given in the table2.21.

Table 2.21: Faculty Development

Sr.No.	Training Programme
1	ISTE Approved Short Term Training Programme No of programme conducted 46 Objectives :- • To improve the core knowledge • To use effectively teaching learning pedagogy • To learn the new subject Outcome: - Skill and competency improvementfor effective conduct of teaching learning and R&D activity preparedness for handling new subject. Duration :- One week to Four week
2	Faculty Development Programme No of programme conducted more than 200 Objectives :- • Knowledge and expertise sharing • Uses of technology in class room • Conduct of various activity • Subject and curriculum orientation Outcome :- Learn new strategies for teaching learning Duration :- half day or full day
3	Semester Review No of programme conducted 4 (Started from AY 14-15) Objectives :- • To share good practices in the department • To learning new methods and innovation used by other department • To update students with the performance of students and faculty contribution Outcome:- Faculty member are equipped department updates inter department interaction bringing the feeling of one family. Opportunity for organizing various events. Duration :- Two days

c) **Percentage of faculty**
   • invited as resource persons in Workshops / Seminars / Conferences organized by external professional agencies
   • participated in external Workshops / Seminars / Conferences recognized by national/ international professional bodies
   • presented papers in Workshops /Seminars / Conferences conducted or recognized by professional agencies

Table 2.22: External Participation

Details of faculty participation in workshops/ Seminars/ Conferences	Percentage of Faculty				
	2015-16	2014-15	2013-14	2012-13	2011-12
Invited as resource persons in workshops /Seminars /Conferences organized by External professional agencies.	15%	13%	9%	7%	4%
Participated in external Workshops / Seminars /Conferences recognized by national/ international professional bodies	20%	17%	12%	10%	8%
Presented papers in Workshops /Seminars / Conferences conducted or recognized by professional agencies	35%	23%	25%	28%	20%

2.4.4 What policies/ systems are in place to recharge teachers? (e.g.: providing research grants, study leave, support for research and academic publications teaching experience in other national institutions and specialized programmes industrial engagement etc.)

- Get-togethers for faculty and staff on many occasions are arranged during semester review, MULTICON-W
- Faculty sports day once every academic year is arranged.
- Gymnasium facility on fifth floor.
- Yoga and mediation session conducted on working Saturday and YOGA DAY on 21st June every year.
- Support for making application to funding agencies for R&D projects.
- Leadership training and Internal/Lead auditors training
- Start-ups plate forms to faculty.
- Faculty Industrial visit through CII
- Students participation in co-/extra-curricular at state and national level, industrial visit and NSS camps faculty members are accompanying the tour. For every 20 students with one faculty member is sent.
- Faculty interested in pursuing research for Ph.D. is supported by adjustingtheir teaching work load and providing research facilities in the department.
- The institute encourages faculty members to pursue their Ph.D. research atpremium institute like IITs, IISc by sanctioning study leave.
- To facilitate this, institute allots a budget of Rs.50,000/- per year per department.
- The faculty is encouraged to organize Short Term Training Programs/Faculty Development Programs.
- Friday Second is mainly utilized for extra circular activity were all the students and faculty member together organises their own co-curricular and extra circular event the activity helps the relives the week stress and go with free mind for effective utilization of Saturday and Sunday

2.4.5   Give the number of faculty who received awards/recognition at the state, national and International level for excellence in teaching during the last four years. Enunciate how the institutional culture and environment contributed to such performance/achievement of the faculty.

Table 2.23: Awards and recognition statistics of faculty members

Sr. No.	Award /Recognition	Faculty	Years	Institute
1	ISO internal auditor	100	2005-16	Indian Register Quality Systems, Powai, Mumbai
2	ISO Lead auditor	10	2015-16	Indian Register Quality Systems, Powai, Mumbai
3	IMC RBQNA Examiner	24	2015-16	Indian Merchants Chamber, churchgate, Mumbai
4	IMC RBQNA Best Examiner Award	01	2016-17	Indian Merchants Chamber, churchgate, Mumbai
5	Best paper award editor choice	06	2010-17	International Journal of Computer Application, USA
6	Institute Award	10	2009-11	TCET, Mumbai
7	PhD award for faculty (Remaining in JOB)	15	2010-17	Various universities and IITs
8	Infosys Recognised trainer	10	2006-17	Infosys, DC-Pune
9	Infosys Trained Faculty	30	2006-17	Infosys, DC-Pune
10	Others	05	2010-17	Various organisation

2.4.6   Has the institution introduced evaluation of teachers by the students and external Peers? If yes, how is the evaluation used for improving the quality of the teaching-learning process?

The institution has established a feedback and survey system for evaluating the teacher by
Students which is well document in ISO manual. Students give feedback about their teachers twice in every semester through software system develop by the institute. Feedback is compiled and reviewed for the finding the report is prepared and put up through the principal through dean academics. Noteworthy finding from the feedback are as follows:

- New faculty have comparatively low feedback in comparison with old faculty.
- Faculty coming from Remote place have the communication problem.
- Use of technology in classroom are found to extremely low for subject like mathematics and Science.
- Excessive use of power point for Third and Final year students.
- Non acceptability of learning resources in hard copy form
- Students found to be interested in overall growth

Table 2.24: Findings of feedback/survey

Sr.No.	Findings of Feedback/ Survey	Compliances	Dates of Compliances
1	New faculty have comparatively low feedback in comparison with old faculty.	Induction training is done and time to time counseling and orientation is done	Ongoing
2	Faculty coming from Remote place have the communication problem	Counseling, guidance and orientation is done at HOD and Dean level	Ongoing
3	Use of technology in classroom are found to extremely low for subject like mathematics and science.	Ask to use motivational lecture PPT for some topics	From AY 2015-16 onwards
4	Excessive use of power point for Third and Final year students.	Problem solving , activity based, and case study learning	From AY 2013-14 onwards
5	Limited acceptability of learning resources in hard copy form	Resources book is created and initiative has been taken for effective implementation Tag line for resource book is structure and guided learning	For FE 2008-09 onwards For SE 2016-17 onwards
6	Students found to be interested in overall growth	Ratio for curricular: co- : extra-curricular is defined as 60:20:20 Two hours provision on Friday and one hour as zero hour has been allocated in the time table in addition vacation period and Saturday is utilized for such activity	From AY 2015-16 onwards However zero hours created from 2014-15 Friday period is created from AY 2016-17

2.5   Evaluation Process and Reforms

2.5.1   How does the institution ensure that the stakeholders of the institution especially students and faculty are aware of the evaluation processes?

Yes, the faculty and students are aware of the evaluation process of the fact that syllabus schema represents the scheme of final end semester marks along with the term test marks, term work and practical exam marks wherever applicable. The evaluation of term work comprises of journal marks, attendance and performance in lab.

The attendance of all students is displayed each month and at the end of semester where final defaulters are declared. The term test marks are also displayed where the students can make out of their performance level and understand the evaluation process accordingly.

2.5.2   What are the major evaluation reforms of the university that the institution has adopted and what are the reforms initiated by the institution on its own?

Major Evaluation Reforms (University)

1) Answer book evaluation has been switched over to online answer book evaluation where the entire answer book of first year is scanned and put up on university portal along with the question paper solution. As a result the faculty can assess the paper from their own institute through their login ID and password. This has saved the assessment time and reduce the backend processing time. With the initiative if all papers are assessed results can be declared within a week. The process started in the A.Y.2012-13 and TCET was one of the institute

considered for pilot project. University of Mumbai is the first university in the country to implement such facilities on such large scale.

2) Evaluation system has been changed from marking system to credit based grading system in the A.Y.2012-13. The same has been changed to Choice Based Credit system in the current academic (A.Y.2016-17)

Major Evaluation Reforms (Institute)

Our institute is identified as one of the Cluster Cap Centre for facilitating the evaluation of answer books at first year and final year.

1) Dedicated laboratory with 35 PCs
2) 10 MBPS dedicate internet facility for online paper assessment
3) Centre is fitted with CCTV camera

Institute Level reforms:

Assessment is done at institute level for second year and third year as per university of Mumbai norms.

1) Answer book is masked so that it will not reveal any identity for examining
2) Dedicated staff and room for monitoring the entire assessment process
3) Assessment record is generated on daily basis to comply with the number of days required to publish the results in compliance with university guidelines.
4) Evaluated papers are moderated by the external faculty as per the norms of university of Mumbai mainly to ensure the fairness in evaluation system and also to reduce the revaluation cases.
5) Rubrics are developed for the assessment of answer books

2.5.3   How does the institution ensure effective implementation of the evaluation reforms of the university and those initiated by the institution on its own?

Institute is committed to abide by the rules and regulations set by the Regulatory and /Affiliating Body with zero tolerance and therefore if any directives comes from university on priority basis necessary approval is taken from the management so that it can be implemented within the time frame with no error. In case if any amendments are required in ISO under the examination chapter the amendments are done through I/CExamination. The same is done for institute process as the evaluation for second year and third is also done as per the guidelines of University of Mumbai.

2.5.4   Provide details on the formative and summative assessment approaches adopted to measure student achievement. Cite a few examples which have positively impacted the system.

The details of formative and summative assessment at institute level is done through 5W1H model which can be seen in Table 2.23

Table 2.25: Formative and summative Assessment

Description	WHAT	WHY	HOW	WHO	WHERE	WHEN
Formative Assessment						
The collection of information about student learning during the progression of a course or program in order to improve students learning.	Continuous Evaluation and to improve students' learning and skills Student validation	Students can improve their CGPA by getting better Term Work and score more in internal Examinations	By conducting Term Tests, Assignments, Practical's and Oral's	Teacher Guardian	It can be useful for students to get better term work, improved academic record per semester. Excel in Semester end examination.	Throughout the Semester as per the Academic Calendar
Summative Assessment						

| The gathering of information at the conclusion of a course, program, or undergraduate career to improve learning or to meet accountability demands. | To meet accountability demands, Success Rate, Maximum placements and Higher studies | Placement eligibility, Higher studies, Program review, Course review | Bridge courses, SDP's, Pre Placement Training's, Professional Certifications, Self-learning | HOD and Faculty | Get placed in dream companies, good letter of recommendation for higher studies. | After the paper evaluation of Final year students |

2.5.5   Detail on the significant improvements made in ensuring rigor and transparency in the internal assessment during the last four years and weightages assigned for the overall development of students (weightage for behavioral aspects, independent learning, communication skills etc.

Internal Exam:

Internal assessment is done as a part of continuous evaluation to be carried out during the semester as independent passing head called Internal Assessment Test. As per the University guidelines two internal tests are to be conducted for 20 marks each and average of two tests will be contributing to theory marks of semester end examination equivalent to 20%.

The rigor and transparency are maintained by orienting the students during SOP conducted in the first week of the semester along with the statistics of the previous results. It has been found from the records that around 10% of the results at First year and second year are impacted because of the low score of the student in internal assessment. The information is shared mainly to ensure that the student should excel in the internal examination. This will also ensure that if they will excel in internal examination their performance in SEE will also get enhanced.

It has been found that the university question of SEE is missing the alignment with the well-established learning model such as BT and 4H. In the internal examination the effort is taken to align the question paper with these models which helps the institute to understand the attainment of programme outcome.

Term work:

Term work is another type of continuous evaluation to be conducted during the semester. It comprises of two assignments, minimum 8 experiments and 75% attendance in the course during the semester. The evaluation of the term work is done for 25 marks and it needs to be granted by the subject teacher and the granted list is to be approved by the authority.

The term work is assessed on regular basis and the records are maintained with the concerned laboratories as a result the learning discipline has been seen amongst the students at the same time the sincerity for assessment is seen in the faculty members as the department needs to submit the assessment report on monthly basis. Moreover on sample basis the records are called by the Principal office to check the compliance and the integrity. Faculty takes the help of rubrics to evaluate the journals which can be seen in table 2.24. Similarly the rubrics are developed for assignment evaluation also.

Table 2.26: Rubrics for practical evaluation

Sr. No	Very Good (23-25)	Good (20-22)	Satisfactory (15-19)	Unsatisfactory (10-14)

1	Student performed the practical correctly and conclusion shown. Understanding of concepts correctly for the given experiment with 1) Additional information 2) Effective Communication skills 3) Formal Dress up	Student performed the practical correctly and conclusion shown. Understanding of concepts correctly for the given experiment with 1) Less Additional information 2) Good Communication skills 3) Formal Dress up	Student performed the practical correctly and conclusion showed partial understanding of concepts for the given experiment with 1) Poor Additional information 2) Low Communication skills 3) Formal Dress up	Student performed the practical partially correctly and conclusion showed lack of understanding of concepts for the given experiment with 1) No Additional information 2) Poor Communication skills 3) Formal Dress up

 Almost negizero defaulters are

2.5.6   What are the graduate attributes specified by the college/affiliating university? How does the college ensure the attainment of these by the students?

The graduate attributes (GAs) specified by the institute are taken from NBA website and are strictly followed which includes Engineering knowledge, problem analysis, design/development of solutions, modern tools usage, environment and sustainability, ethics, individual and team work, communication, lifelong learning & project management and finance.

The mapping of subject linkage with the number of graduate attributes are highlighted by each faculty member from the GAs mentioned above which justifies the attainment of the graduate attributes.

2.5.7   What are the mechanisms for redressal of grievances with reference to evaluation both at the college and University level?

The mechanism for redressal of grievances with reference to evaluation both at the college and university level includes the setup of unfair means committee.

The unfair means cases held during the conduct of end semester exams are collected and after the exams a meeting is called by the college for the unfair means students and the college unfair means committee. The case of each student is discussed at length and the outcome is finalized accordingly.

2.6   Student performance and Learning Outcomes

2.6.1   Does the college have clearly stated learning outcomes? If 'yes' give details on how the students and staff are made aware of these?

Yes, the college has clearly stated the learning outcomes LOs and has displayed the LOs in each department.

The staff members are made aware with the aspect of incorporating learning outcomes (LO) in faculty diary. The subject/syllabus taught by all faculty members are divided into 6 modules, where for each module one learning outcome is stated. The LOs helps faculty members to make students understand the objective and outcome of teaching each module.

Students are briefed about the LO of each subject by respective faculty members in each class during semester orientation programme (SOP), the subject LOs are also displayed in class rooms. The LOs are explained during SOP which gives students an idea about the subject depth & breadth, difficult topics, practical aspects, applications etc. in the current semester.

2.6.2   Enumerate on how the institution monitors and communicates the progress and performance of students through the duration of the course/programme? Provide an analysis of the student's results /achievements (Programme / course wise for last four years) and explain the differences if any and patterns of achievement across the programmes/courses offered.

Institute monitors the progress and performance of students through each course at the end of each semester. Faculty calculates the student validation and course outcome for all the students of each class. The students are classified on their performance in three main categories as High – H (70% and above), Medium-M (55% to 69%) and Low-L (< 55%).

The student validation is carried out on the previous semester results, attendance, term test marks, and respective university subject result. This gives an idea about how the student's progress is going on from lower semester to final year last semester.

Course outcome (CO) mapping is done for each subject the performance of the students are classified in 3 major categories as stated above.

There is no difference in calculation of student validation (SV) and Course Outcomes (CO) across all programmes and courses offered in four years of engineering course for all departments.

The results are communicated to university on regular basis for publishing the results; they are also displayed on admission information brochure.

Thestudent's results /achievementsare discussed in para 5.2.2 of criterion V.

2.6.3   How are the teaching, learning and assessment strategies of the institution structured to facilitate the achievement of the intended learning outcomes?

The teaching-learning mechanism at the institute level is structured as mentioned:

a) The subject allocated to each faculty is given syllabus

b) The lecture content to be taken are planned at the commencement of semester and are noted in planned date

c) The content delivered are noted in completed date, check is kept whether the planned dates and completion dates match

d) The software, hardware, kits and tools required to conduct practical are notified at the semester commencement

e) Assessment strategy at the institute level comprises of two term test during each semester where the first term test is conducted during mid-semester and the second term test is conducted at the end of semester.

f) The final result comprises of 20% weightage of term test, 80% weightage of final theory exam.

g) The result is measured as course outcome from where the CO-LO mapping helps in the amount of intended LOs of the students.

2.6.4   What are the measures / initiatives taken up by the institution to enhance the social and economic relevance (student placements, entrepreneurship, innovation and research aptitude developed among students etc.) of the courses offered?

The measures / initiatives taken up by the institution to enhance the social and economic relevance includes:

- **Students' placement:** The placement is given to students for almost 95% of eligible students. To ensure the consistent performance in the placement rigorous pre-placement training, corporate trainings are conducted. Students are validated for the preparedness for campus placement. In case of the gaps re-training is done.

- **Entrepreneurship:** The IEDC cell offers our alumni and other students to begin their start-ups in our campus. There are around 8 start-ups that are currently working in the incubation centre.

- **Innovation & Research aptitude:** The R&D cell has the initiative of NEN and e-week where students are given opportunity to show case their technical skills and display the innovation and research aptitude among students. The technical festival (Zephyr) held each year during September where all students have their own ideas and put forth them into various events.

2.6.5   How does the institution collect andanalyseddata on student performance and learning outcomes and use it for planning and overcoming barriers of learning?

The LO-CO mapping is collected by HOD from faculty members. To analyse a specific student's performance on sampling basis is done by comparing the performance in all subjects. The LOs are checked in coherence with student's performance. In case a student has failed or couldn't score more marks then the reasoning is found due which the result has decreased.

Since CO mapping gives the student's performance scoring question wise so that it can be analysed.

The specific questions from a module/subject being difficult and its CO mapping is analysed again so that during the planning for next semester the barriers should overcome. The learning is made clearer to the students so that they can benefit from corresponding LOs of specific COs.

2.6.6   How does the institution monitor and ensure the achievement of learning outcomes?

The institute monitors and ensure the achievement of learning outcomes by following:
   a)   By explaining students LOs in Semester Orientation Programme (SOP)
   b)   During lectures at the commencement of each module
   c)   Mapping of each LO with CO
   d)   Mapping of LO with semester end results and its achievement

2.6.7   Does the institution and individual teachers use assessment / evaluation outcomes as an indicator for evaluating student performance, achievement of learning objectives and planning? If 'yes' provide details on the process and cite a few examples. Any other relevant information regarding Teaching-Learning and Evaluation which the college would like to include.

Yes, the institution and individual teachers use assessment / evaluation outcomes as an indicator for evaluating student performance, achievement of learning objectives and planning using student validation as one of the direct tools for assessment which is similar to the student validation done at the entry level which is given in para 2.2.2. Moreover the achievement of course objective is also measured through the learning outcomes.

The teaching-learning and evaluation is also done using indirect assessment where course survey is evaluated for all the students whereas program exit survey from the final year students.

Criterion - III: Research, Consultancy and Extension

3.1   Promotion of Research

3.1.1   Does the institution have recognized research center / so the affiliating University or any other Agency / organization?

The institute is recognized as research centre by university of Mumbai for Ph.D. (Technology) in Electronics & Telecommunication Engineering.

Research plays a vital role in the success of any institution. Fundamental research in the field of engineering is a national challenge. Quality research in technology is the need of the hour for sustainable growth. TCET since its establishment, has a culture of nurturing research abilities at undergraduate and postgraduate level. Pursuing research leading to Ph. D. degree is both challenging and rewarding experience. Against this background, TCET has started Ph.D. (Technology) Research Centre of University of Mumbai (UOM) from the current academic year (A.Y.2014-15). It offers research program leading to the Ph.D. (Technology) Degree in Electronics & Telecommunication Engineering of UOM. Presently 10 seats are offered and it involves course work and other requirements as per university rules/guidelines.

In order to provide a strong platform to the researchers, academicians and scholars, TCET regularly organizes various national and international conferences, seminars, workshops and colloquium. These initiatives enable the stakeholders to build their capacity for critical examination and sound judgment, thereby facilitating them to contribute to the existing body of knowledge. The approval for Ph.D. (Technology) for Information Technology and Computer Engineering is expected shortly. The institute has a remote centre of IIT Bombay for online research, android mobile application development and e-yantra laboratory. Under industry-institute-interaction the institute has Thakur-Accenture Innovation Centre for advance computing and communication. The institute also has centre of excellence with the set objectives and advantages for carrying out research which impacts the overall research culture in the institute.

3.1.2   Does the Institution have a research committee monitor and address the issues of research? If so, what is its composition? Mention a few recommendations made by the committee for implementation and their impact.

The institute has two research committees, one for Ph. D. program and the other for the UG and PG level monitoring. The Ph. D. level research recognition committee comprises of the following research guides as members of the committer who are recognized guides of the University with one research expert from University invited from the panel.

   a. Dr. B.K Mishra, Principal
   b. Dr. R R Sedamkar, Professor & Dean (Academic), Research Centre In-charge
   c. Dr. Lochan Jolly, Professor & Dean (SSW)
   d. Dr. Devan Shah, Professor (IT)
   e. Dr. Vinitkumar Dongre, Associate Professor & HoD (EXTC)
   f. Dr. Rajesh S. Bansode, Associate Professor and HoD (IT)
   g. Dr. Sandhya Save, Associate Professor and HoD (ETRX)

Institute has research committee at UG and PG level under the chairmanship of the Principal as given below:

Constitution
   1. Chairman, Dr. B. K. Mishra – Principal
   2. Member secretary, Dr. Kamal Shah - Dean R&D
   3. Members, Dr. Sangeeta Mishra (EXTC), Ms. Purvi Sankhe (IT), Ms. Megharani Patil (CMPN), Dr. S. C. Patil (ETRX), Mr. Jayant Patil (MECH), Ms. Ashwini Shanbaug (CIVIL), Mr. Krishnakant Mishra (H&S)

Functions:
   a. To carryout student research and development
   b. To consider research and consultancy project
   c. Student project management

d. To increase the research culture amongst student through publications and conferences to strengthen domain activities

The inputs given in advisory meeting are considered by Dean (R&D).The implementation of ideas is done at department level under various R&D domains. The domains are strengthened through various domain activities carried out throughout the year in terms of UG/PG projects and publications in reputed journals.UG/PG projects which are supported by industry are categorised as 'Outhouse Project'. These industry projects progress is monitored through TPC (Training & Placement cell) and HOD along with departmental committee.

3.1.3 What are the measures taken by the institution to facilitate smooth progress and Implementation of research schemes/projects?

- **Autonomy to the principal investigator:**
  Faculty members are encouraged to identify current problems and submit the solution for the same through minor research grant proposals. The approved projects by UOM are provided with necessary facilities at institute level. Principal investigator is given full autonomy and solely responsible for completion of the project and settlement of accounts.
- **Timely availability or release of resources:**
  There is a dedicated R&D cell which is kept open for students and faculty members from 8am to 8pm and an extension facility which is well equipped with hardware and software resources in the vicinity of institute is available from 9am to 9pm.
- **Adequate infrastructure and human resources**
  R&D cell provides components and necessary facilities required for completing the project as per the availability. One administrative, one laboratory Assistant and two class IV employees are appointed for the R & D centre. R & D work is monitored by the R & D committee at various levels. Normally two faculty members from each department are incorporated in the R & D committee, which consists of 16 members in total. Details can be seen in Table 3.1.
- **Time-off, reduced teaching load, special leave etc. to teachers**
  For time-off and reduction in teaching load consultancy guidelines of UoM are followed. The necessary leave is sanctioned to faculty for attending conference. In the teaching load 2 hours of load is allocated to carry out research & guidance for UG and PG projects each.
- **Support in terms of technology and information needs**
  In case faculty wish to apply for referred conference and reputed journal, necessary guidance is provided with financial support for deserving cases. IPR registration at institute level based on original research work is also encouraged. Institute has provided the necessary software & hardware, workstation and special equipment required for research. 24x7 internet facility with 52Mbps dedicated connection is available. Faculty members are also encourage to use the open source tools and databases.
  All required licensed software /tools and open –source tools are available in the R&D centre and department research laboratories.
- **Facilitate timely auditing and submission of utilization certificate the funding authorities**
  Utilization certificates are regularly submitted for the following
  - AICTE grants.
  - Minor research grants by University of Mumbai.
  - IEDC – Department of Science and technology

3.1.4 What are the efforts made by the institution in developing scientific temper and research Culture and aptitude among students?

Faculty members are encouraged to complete their Ph.D. and also improve upon their quality publication so that their individual score in finalisation of proposal by various funding agencies can be improved. As a result in the last academic year one faculty member have completed their Ph.D. In the current academic year two faculty members have completed Ph.D. and 29 are in the process of submission. Completing Ph.D. and the university approval also makes the faculty eligible for research guide at University.

Research issues addressed through -
1) Establishment of UOM approved research centre and research guide
2) Motivation to participate in research activities through FDP has led to increase in the number of faculty members applying for research grant
3) To satisfy the Need of resources required by students, a separate fund was created in A.Y.2014-15 where the students are issued the component and other resource on request ~~and~~ with the undertaking. Undertaking is to ensure the return of the component so that benefits can be availed by other students. Till date the procedure is followed.
4) Hobby club has been re-created from A.Y.2012-13 when the students are also provided with the financial assistance for development of academic project to enhance their technical skill may be relevant to their programmes. They are encouraged to participate in the project competitions organized at University/State and National level.
5) The scope has increased more after the establishment of IEDC centre. To identify the research potential and the innovation, TCET is organizing the project competition at institute level named as 'Mind's Eye" since academic year 2013-14. The objective of the competition is to identify the best project and channelizing the same to develop product which may lead to entrepreneurship.
6) Institute is in the process of establishing research laboratories with the perspective of programme which is the recommendation of NBA committee and separate department wise fund allocation will be done rather than institute level R & D fund allocation

Impact of implementation of recommendation on Research culture
1) Participation of student and staff has increased with engagement.
2) Funding has been increasing mainly because of the increase in terms of the applications for research proposals.
3) Research publications by student and faculty members has increased
4) Awareness regarding IPR has improved as a result today the institute has 3 copyrights and 3 patents registered and two trademarks.

Scientific and Research temper
Guiding force for R & D culture: For R & D cell the institute has defined the MVS and the R & D objectives which are widely displayed in the research area and also the page has been created on the website and guiding force as MVS and objectives are listed below:

Vision: *TCET-R&D cell shall inculcate the R&D culture at par with internationally reputed institutes and in coherence with the scope of the programme.*
Mission: *TCET-R&D cell is dedicated to help advance existing knowledge and nurture new ideas by providing resources and facilities to create cutting edge products from which future research will emerge.*
Objectives
1) To motivate faculty members and students for research and development activities in the area of specialized domains defined by the institute.
2) To encourage and assist faculty and students to apply for minimum one grant yearly in major domains from various government and non-government funding agencies.
3) To interact with industry, government, professionals, experts from research laboratory etc. for research opportunities.
4) To incubate, projects in the institute and then promote and commercialize them to external stakeholders like industry and other institutions through yearly project exhibition and competition.
5) To conduct minimum one workshop in major domains and one industrial visit for staff and students on emerging technologies.
6) To have memorandum of understanding (MOU) with industries for research service and product development and to provide solutions to industrial problems through consultancy.
7) To register the work done by R&D cell under Intellectual Property Rights like copyrights, patents etc.

Students are oriented about the R & D opportunities during semester orientation programme conducted in the 1st week of the semester. Domain Specific student investigation group at institute has divided departments into 31 various technological domains:

For these domains, consent is taken from students and also the training needs are identified. As per the consent, the students are categorised and the faculty members as mentor are allocated to them. Wherever check and balance is required to make the student registration uniform in each domain, Dean R & D takes the necessary action in consultation with HODs. Objectives and outcomes for each domain as listed in the Table 3.2 are defined by the department.

Table 3.1: Number of Students and Faculty Registered in each Domain

Sr. No.	Domain Name	Department	No. of student registration	No. of faculty registration
1	Algorithms and Data Structures	CMPN	33	9
2	Networking and Web Technologies		36	4
3	Human Computer Interaction		54	8
4	Database Technologies	IT / CMPN	170	17
5	Software Management and Development	CMPN	40	7
6	System Design and Development		33	3
7	Wireless Technology and Security	EXTC	13	5
8	Communication Engineering		138	7
9	Electronic Devices & Modeling		31	5
10	Signal Processing		23	5
11	Embedded Systems		128	3
12	Antenna & Microwave Engineering		34	3
13	Ubiquitous Computing	IT	110	12
14	Digital Signal Image Processing, Soft Computing & AI		56	10
15	Information and Communication Technology	IT	62	6
16	Web Technology and E-commerce		61	8
17	Electronic Devices and Circuits Modelling and Simulation	ETRX	19	2
18	Digital system Design and VLSI		17	2
19	Signal Processing and Communication		48	8
20	Embedded System Design		23	2
21	Industrial Automation and Control	MECH	46	2
22	Manufacturing Engineering		165	12
23	Thermal Engineering		92	6
24	Design Engineering		117	9
25	Automation and Control		36	4
26	Material Engineering		6	4
27	Construction Management	CIVIL	46	3
28	Structural Engineering		46	1
29	Transportation Engineering		13	2
30	Water Resource Engineering		7	3
31	Geo Technical Engineering		3	1

Same is published on website on R & D page. As an example the objective and outcome of one of the domain IT /CMPN has been cited in Table 3.3.

Table 3.2: Objective and Outcome of a Domain in CMPN / IT

Domain	Objectives	Outcomes
Database Technologies	1) Learn and practice data modelling using the entity-relationship and developing database designs. 2) Understand the use of Structured Query Language (SQL) and learn SQL syntax. 3) Apply normalization techniques to normalize the database 4) Understand the needs of database processing and learn techniques for controlling the consequences of concurrent data access.	1) To describe data models and schemas in DBMS 2) To understand the features of database management systems and Relational database. 3) To use SQL- the standard language of relational databases. 4) To understand the functional dependencies and design of the database. 5) 6. To understand the concept of Transaction and Query processing

Workshop and seminar organisation:
Students attend various workshops to develop research culture. The students are working in E-yantra lab in association with IIT Bombay.
To develop various robotics projects, they are provided with fire bird robots and various kinds of sensors for different applications useful to society. This activity is accrued out after college hours and during vacation.

Establishment of Research facilities and Advance Learning.
Institute has developed Akash lab in association with IIT-Bombay where students can develop various android applications on Akash tablets in association with IIT-Bombay. Institute has association with FOSS where students get a chance to learn latest technology from IIT-Bombay through e-learning. Whenever student participates in state/national level competitions our institute sponsors the students. Each year under the banner of Hobby club institute encourages students to develop small working model from various domains and supports them for project development. In addition to this there are six centres of excellence and five centres for advance learning.

3.1.5   Give details of the faculty involvement in active research (Guiding student research, leading research projects, engaged in individual/ collaborative research activity, etc.)

Institute has taken initiative for the active involvement of faculty, student and staff through various platforms. The research work is carried out at three different levels as UG, PG and Ph.D. As per discussions in 3.1.2, a committee is constituted to take care of project activities. Each department has four to five domains to enhance research projects at the department level. The institute has established Ph.D. research centre in the field of technology for the collaborative research as shown in Table 3.3.

Table 3.3: Collaborative Research of Faculty and Ph.D. Students

Sr. No	Name of the Student	Name of the Guide	Research Area
1	Mr. Chaudhary Ujval	Dr. B. K. Mishra	Antenna
2	Ms. Dubal Sujata	Dr. R. R. Sedamkar	Image Processing
3	Ms. Koti Jayasudha	Dr. B. K. Mishra	Wireless communication
4	Ms. Mujawar Nazneen	Dr. R. R. Sedamkar	Image Processing
5	Ms. Kalawati Patil	Dr. B. K. Mishra	Nano Electronics
6	Mr. Ratore Kiran	Dr. B. K. Mishra	Antenna
7	Mr. Thekedath Dhanajay	Dr. R. R. Sedamkar	Image Processing
8	Ms. Disha Singh	Dr. B. K. Mishra	Antenna
9	Ms. Sukruti Vijay Kaulgad	Dr. B. K. Mishra	Nano technology
10	Ms. Megha Gupta	Dr. Lochan Jolly	Wireless communication

Being an affiliated institute, the students at UG and PG are required to complete their final research / technical project as a mandatory requirement from the university. As per the institute and university norms, some of the project work is carried out in collaboration with industries. Where the external guide from the industry along with the internal guide help the students for the completion of their research

work. To enhance the quality of research, various platforms such as, conferences, project exhibitions and competitions are conducted at the institute level. Further, the institute has developed hobby club under R&D cell which takes care of promoting the potential research work at the industry and ensures the development of products from these research works.

Faculty members are also motivated and encouraged to enhance their qualification for the quality research and publications. In this process, majority of the faculty members upgraded their qualification from UG to PG and PG to Ph.D.

The institute has established centre of excellence and in the process of establishing advanced research labs in collaboration with industries. These platforms further enhances the quality of research at all the levels and creates an environment for collaborative research. This can be extended to meet the society and the industry requirements by developing projects, which will bring the industry consultancy.

3.1.6   Give details of workshops/ training programmes / sensitization programmes conducted/ organized by the institution with focus on capacity building in terms of research and imbibing research culture among the staff and students.

Table 3.4: Faculty Development Programmes

Sr. No.	Year	Name of program	No of Participants to whom certificate issued	No. of Days	Venue
1	2012-13	Two-Week Introduction to Research Methodologies	47	10	IIT-Rem
2	2012-13	Two-Week ISTE workshop on "Database Management Systems"	17	10	IIT-Rem
3	2012-13	Two-Week ISTE workshop on 'Analog Electronics' conducted by IIT-Kharagpur	16	10	IIT-Rem
4	2012-13	STTP cloud computing Ethical Hacking N/W security	5	10	IT
5	2012-13	IMC RBNQA training	2	10	IT
6	2013-14	Two week ISTE workshop on Engineering Mechanics	13	10	IIT-Rem
7	2013-14	Two week ISTE workshop on Signal and Systems conducted by IIT-Kharagpur	27	10	IIT-Rem
8	2013-14	Two week ISTE workshop on Fluid Mechanics	18	10	IIT-Rem
9	2013-14	Two week ISTE workshop on Computer Programming	33	10	IIT-Rem
10	2013-14	Two week ISTE workshop on Computer Networking	23	10	IIT-Rem
11	2013-14	NBA Training-SAR Writing	20	10	IT
12	2013-14	Workshop on CCNA By IIT Bombay	6	6	EXTC
13	2014-15	Two week ISTE workshop on Cyber Security	30	10	IIT-Rem
14	2014-15	Two week ISTE workshop on Control Systems	19	10	IIT-Rem
15	2014-15	Two week ISTE workshop on Pedagogy for Effective use of ICT in Engineering Education	26	10	IIT-Rem
16	2014-15	Two week ISTE workshop on Introduction to Design of Algorithms	29	10	IIT-Rem

Sr. No.	Year	Name of program	No of Participants to whom certificate issued	No. of Days	Venue
17	2014-15	Two week ISTE workshop on Environmental Studies	29	10	IIT-Rem
18	2014-15	STTP on "Integration of R&D, Consultancy with academic activities"	14	10	ETRX
19	2014-15	ISTE approved STTP on Introduction to design of Algorithms	14	10	IT
20	2014-15	Data Mining And Analytics: Advanced Techniques and Research Opportunities	32	10	CMPN

3.1.7   Provide details of prioritized research areas and the expertise available with the institution.

1ˢᵗ priority: to develop the research facility with the perspective of program
After the establishment of the institute for as excellence in academic and placement. The institute has taken the decision for attaining the recognition for R&D activities. As a result, the institute has decided to develop the research culture with the perspective of the UG and PG programs and is the top priority. Looking into the requirement of the perspective, every department has been asked to form the four to five domains and align the project based learning with the domain specialization. As a result, the institute has thirty one domains with each department is having five to six domain as depicted in Table 3.1. Based on the domain specialization, the institute has developed centres of excellence, R&D centre and program specific research laboratories with the focus on the project based learning. Which is already described in criteria 1 and 2.

2ⁿᵈ priority: research with the perspective of the incubation centre
It is to develop the incubation centre, so that the faculty and students can jointly have the services where the projects can be developed and marketed. In this direction the initiative has been taken in the current academic year, where five thousand square feet dedicated area has been developed and six incubates are working. In which four are the Alumni and remaining are students. The centre is handled by dean R&D and senior professor Dr. Deven Shah. In future, looking into the demand, facilities can be developed for another five thousand square feet area.

3ʳᵈ priority: Industrial research
Third priority of the institute is to promote the industrial R&D activities having the collaboration with the industries. As the institute is well connected with the industries for the training and placement activities, moreover, the institute is connected with the professional bodies and also is the member of CII and the strong connect with Indian Merchant Camber (IMC). Further, may be in couple of years, around 30 – 40% of the faculty members will be Ph. D. and therefore, there will opportunities for the such faculty members to explore their research with industry in the field of their research and industry needs. In this direction, the institute is exploring the possibilities by meeting the industry personnel, officials of government agencies and the researchers in the premier R&D organisations. This connect is possible through the various programs organized throughout the year, such as Multicon-W, which is the platform for multiple conferences and workshops, where the institute is able to attract the resources persons from industries. Institute also have the advisory committee at institute level and department level, where lot of industry people are the members of theses advisory committees.

4ᵗʰ priority: Technology transfer
Fourth one is the development of technology and technology transfer to the industry. Once the autonomy is obtained, the institute will explore for the possibilities of deemed university, which is already given in the perspective plan of the institute. Thereafter, the institute has a plans for tie-up with the foreign universities and the research laboratories, where the institute can develop the capabilities, new technologies than can be transfer to industry or society.

3.1.8   Enumerate the efforts of the institution in attracting researchers of eminence to visit the campus and interact with teachers and students.

As stated in article 3.1.7, institute has the early event Multicon-W, which is conducted since 2010. Therefore, the conference is one of the referred conferences in the city. During the conference we received large number of research papers and the workshops are arranged in multiple tracks. It enables the institute to attract the eminent resource person from industry as well as premier academic institutions and leading research organizations.

The institute has the Ph.D. program in the Electronics and Telecommunication and likely to start Information Technology and Computer Engineering from the next academic year. In the process, the institute has established the research review committee (RRC) in the subject. Members of the RRC include eminent professors and scientist from IITs and research organizations. These eminent personalities are participating in the research progress review of the research scholars and suggest the need for improvement.

As per the university guidelines, there is dissertation for the PG students for which the examiners are appointed by the university which are mainly from premier institutes like IIT. During such visits, if possible the interaction with the faculty and students are arranged. There is provision of UG project, where the experts can be called from IIT, research organizations like SAMEER and innovation centres associated with the industry.

Some of the eminent personalities visited the institute on regular basis are listed below:

Table 3.5: Eminent Personalities Visited the Institute

Sr. No.	Name	Designation	Affiliation
1	Dr. P. Chakrabarti	Professor and Ex Director of MNIT Allahbad	IIT-BHU, Varansi, UP
2	Dr. B. Satyanarayan	Scientist – F	TIFR Mumbai
3	Dr. Manoj Guwar	Ex Director	Bhilai Institute of Technology, Bhilai
4	Dr. D. Datta	Senior Scientist	BARC-Mumbai
5	Dr D. M. Dewaikar	Professor	IIT Bombay
6	Dr. Alok Verma	Senior Scientist	SAMEER, Mumbai
7	Dr. S. M. Merchant	Professor	IIT Bombay
8	Dr. Deepak Phatak	Professor	IIT Bombay
9	Mr. Rajul Master	Senior Manager	Accenture, Mumbai
10	Dr. Jyotis Kumar	Professor	Malaysia University
11	Mr. Anto C. A.	Director	Terminal Technology Pvt. Ltd. Mumbai
12	Dr. Rakesh Raut		NITIE, Mumbai
13	Dr. V. M. Thakare	Professor and ex dean faculty of technology and	SGB Amravati University, Amravati
14	Dr. Mohammed Atique	Professor	SGB Amravati University, Amravati
15	Dr. Rahul Khokale	Dean R&D	Priyadarshini College of Engineering, Nagpur

3.1.9   What percentage of the faculty has utilized Sabbatical Leave for research activities? How has the provision contributed to improve the quality of research and imbibe research culture on the campus?

Faculty members are encouraged to associate themselves with industries and other research organization to develop various projects.

It is at nascent stage at institute and in process of implementing during semester break. From next academic year up to 15% of faculty may be sanctioned sabbatical leave which will improve collaborative research with institute and industry.

3.1.10 Provide details of the initiatives taken up by the institution in creating Awareness / advocating/ transfer of relative findings of research of the institution and elsewhere to students and community (Lab. to land)

Project 1: Bus Tracking System
This project is developed in R&D cell where safety of students are ensured by tracking them while they are travelling in bus or any other transport system. Project is implemented in Thakur Vidya Mandir School, Thakur Public School for primary and secondary section.
Project 2: Arduino based circuits in school labs
School teachers are oriented with students for the application of electronics circuit to real time.
Projects are given to 10 schools under "TECHWORLD - STEP INTO THE WORLD OF TECHNOLOGY" for the students of
School studying in standards 8th to 10th.along with ELECTRONICS LABORATORY FOR THE SCHOOLS which will consist of one set of experiments on Bread board and kit of the same set along with training for faculty in-charges conducting the lab for 20 students.
Project 3: Establishing of Reliance Nutrition garden
TCET in association with Reliance JIO organization established a nutrition garden in the village Saivan near Wada. Here each farmer can produce vegetables, fruits and medicinal plant in his backyard in organic way.

Projects in pipeline:
1) **Cost effective education system:**
   In this project a low cost teaching learning device is developed which will enhance the learning of students in rural area. This project is capable of replacing laptops or computers like costly devices with cost effective Raspberry pi model.
2) **Home Automation System:**
   In this project a Home automation system is developed where owner can control home appliances with audio control or control with App.

3.2   Resource Mobilization for Research
3.2.1   What percentage of the total budget is earmarked for research? Give details of major heads of expenditure, financial allocation and actual utilization.

Table 3.7 shows the details of expenditure of R&D cell (2013-14 to 2015-16).

Table 3.6: Expenditure Details of R&D cell (A.Y. 2013 - 14 to A.Y. 2015 - 16)

Academic year	Sanctioned amount	Expenditure
A.Y 2013-14	1,23,300/-	62,839/-
A.Y 2014-15	4,64,054/-	4,38,317/-
A.Y 2015-16	20,66,577/-	3,26,608/-

Following are the details of the expenditure year wise

Table 3.7: Year-wise Details of Expenditure

Academic year	Details of expenditure	Sanctioned amount	Expenditure
2013-14	Sanctioned budget	1,23,300/-	
	R&D Cell inauguration		6,800/-
	Hobby club		16,559/-
	Mind's Eye -14		36,980/-
	Seminar for idea generation		2,500/-
	Grand total (A)	**1,23,300/-**	**62,839/-**
2014-15	Computers	81,900/-	81,900/-
	D Link wireless with ADSL option	17062/-	17062/-

Academic year	Details of expenditure	Sanctioned amount	Expenditure
	2 projectors	73092/-	73092/-
	NEN membership	1,80,000/-	1,80,000/-
	Mind's Eye -15	42,000/-	39075/-
	Student participation in events	40,000/-	40,000/-
	Hobby club	30,000/-	7,188/-
	Grand total (B)	**4,64,054/-**	**4,38,317/-**
2015-16	Incubation centre	7,55,555/-	2,78,643/-
	R&D cell 4th floor	2,46,546/-	In process
	Hobby club	30,000/-	In process
	Computers	9,80,016/-	-
	Printers	-	-
	Raspberry PI	11,760/-	11,760/-
	Abad	42,700/-	36,205/-
	Grand total (C)	**20,66,577/-**	**3,26,608/-**
	Grand Total (A+B+C)	**26,53,931/-**	**8,27,764/-**

3.2.2   Is there a provision in the institution to provide seed money to the faculty for research? If so, specify the amount disbursed and the percentage of the faculty that has availed the facility in the last four years?

The seed money is provided as per the request raised by the faculty members as and when it required. Besides, seed money is incorporated for hobby club and incubation centre in the institution.
IEDC/Minor Research grant 50% amount is given to respective faculty member as seed money by the authority.

3.2.3   What are the financial provisions made available to support student research projects by students?

Each department allocates Rs. 50,000/- of their budget towards research projects of students. To support student research projects, critical components, software, etc. are procured as and when required.
The financial provisions made available to support student research projects by students through hobby club, incubation centre, international conference held each year at the institute where students publications of the projects, industry oriented workshop, workshop and paper presentation for first year students through conference corpus.

3.2.4   How does the various departments/units/staff of the institute interact in undertaking inter-disciplinary research? Cite examples of successful endeavors and challenges faced in organizing interdisciplinary research.

a) Inter-departmental STTPs conducted each year, in order to exchange multi-dimensional ideas which strengthen various domains.
b) Industry-Institute symposium
c) P.G teachers of I.T, Electronics department teach few subjects of P.G-M.E (EXTC) and conduct their projects resulting in publications which support inter-disciplinary research activities. The research work is published in renowned international journals.
d) Under Eyantra Robotics competition, students from various departments make mix group. In AY 2015-16 students won first prize at national level.
e) Ms. Neha Patwari of IT department is guiding EXTC student on IOT based project titled Transmitted Advanced Safety Assistance Automobile System, and received grant of Rs. 27,500/- by UoM.
f) Faculty and students from EXTC and IT department gave various IOT based suggestions to convert Gowardhan Eco village in Wada into a digital village.

3.2.5   How does the institution ensure optimal use of various equipment and research facilities of the institution by its staff and students?

The institution ensures optimal use of various equipment and research facilities of the institution by its staff and students by keeping account of the issue of kits and components required for work in various research domains. Once the work is completed students are required to return the equipment and issued kits. The usage of the equipment is measured with respect to the time taken to complete their respective research activities.

- The research committee, at institute level, monitors the research activities and keeps track of the usage of various resources and facilities available for research
- Specialized equipment required for R & D are made available as and when required by faculty and students
- Equipment that are used in interdisciplinary research are made available to inter-departmental faculty members
- Laboratories are also utilized for technical add-on courses for students
- Optimum utilization of equipment is done by UG, PG and Ph. D. students both in first and second shift

R&D cell – open from 8am to 10pm, so that facilities are used by all students.

3.2.6   Has the institution received any special grants or finances from the industry or other beneficiary agency for developing research facility? If 'yes' give details.

Institute has well established relationship with various industries. From last five years it has been strengthened by various Faculty Development Programmes in association with industry as well as thru student out house projects. After this strong relationship, industries have started establishing their Centre of Excellence in associate with institute. Under this initiative, various skill enhancement workshops are organized for students. EduVance has established embedded systems lab where hardware kits worth Rupees. 1,50,000 were provided along with software worth of Rupees. 3 cores.

	UoM	AICTE	IIT-B	Industry
2012-13	52000	775000	414598	2078648
2013-14	25000	0	522153	0
2014-15	145000	0	548805	3437000
2015-16	295000	0	187648	150000
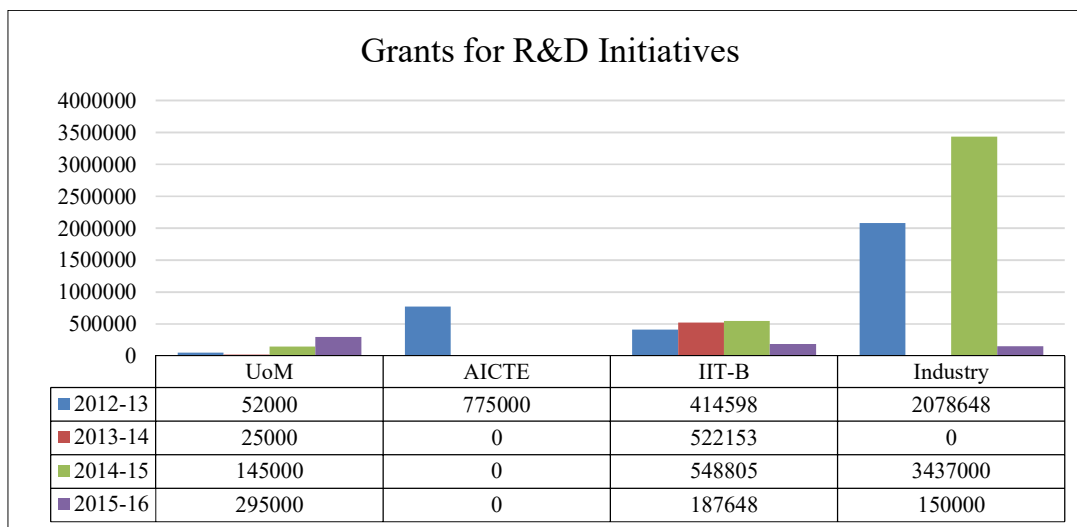
Fig. 3.1: Grants Received for R & D Initiatives

3.2.7   Enumerate the support provided to the faculty in securing research funds from various funding agencies, industry and other organizations. Provide details of ongoing and completed projects and grants received during the last four years.

Table 3.8: Grants Received for Projects during the last four years.

Nature of the Project	Duration Year From - To	Title of the project	Name of the funding agency	Total Grant		Total grant received till date
				Sanctioned	Received	
Minor projects	2012-13	Real Time Face reorganization for surveillance	UoM	12000.00	12487.50	12487.50
	2012-13	FPGA PAPR using 2x2, 4x4 antennas for channel capacity improvement	UoM	15000.00	15000.00	15000.00
	2012-13	Gain and bandwidth enhancement of Helical loaded antenna	UoM	25000.00	25000.00	25000.00
	2013-14	RFID Based Attendance Management System	UoM	25000.00	25000.00	25000.00
	2014-15	Next generation Farming	UoM	15000.00	15000.00	15000.00
	2014-15	Home Automation using Speech and Clap recognition System	UoM	15000.00	15000.00	15000.00
Minor projects	2014-15	Solar Harvesting and its Efficient Utilization	UoM	25000.00	25000.00	25000.00
	2014-15	Synthesis, Characterization and gas sensing properties of conducting polymer nano-composites	UoM	50000.00	50000.00	50000.00
	2014-15	Acid-free Nitration of Quinoline Analogues using Metal Nitrate	UoM	40000.00	40000.00	40000.00
	2015-16	Image Processing based book reader, facial recognition along with GPS tracker for visually impaired	UoM	35000.00	35000.00	35000.00
	2015-16	7am Arivu – The Seventh Sense	UoM	25000.00	25000.00	25000.00
	2015-16	Hidden Markov Model based Online Handwritten Signature Verification using Hybrid Wavelet Transform	UoM	25000.00	25000.00	25000.00
	2015-16	QuadCopter controlled by Android mobile	UoM	30000.00	30000.00	30000.00
	2015-16	Electronic Oxygen Tree	UoM	40000.00	40000.00	40000.00
	2015-16	TCETDUINO-AVR Development Board	UoM	10000.00	10000.00	10000.00
	2015-16	Portable Wireless Patient Monitoring	UoM	32000.00	32000.00	32000.00

Nature of the Project	Duration Year From - To	Title of the project	Name of the funding agency	Total Grant		Total grant received till date
				Sanctioned	Received	
		System Using GSM				
Minor projects	2015-16	Magnetic Wheel based on magnetic propulsion and levitation	UoM	35000.00	35000.00	35000.00
	2015-16	Ethical Behaviour among TCET Engineering Undergraduate	UoM	25000.00	25000.00	25000.00
	2015-16	Heat transfer an alysis of magnet o hydrodynamic non-Newtonian fluids	UoM	25000.00	25000.00	25000.00
Major projects	2012-13	Cloud computing and virtualization lab	AICTE	725000.00	725000.00	725000.00
	2013-14	Seminar on Quality improvement in education	AICTE	50000.00	50000.00	50000.00
Industry sponsored	2012-13	Accenture Innovation centre		2200000.00	2200000.00	2200000.00
	2015-16	Embedded system lab in collaboration with ARM and Cypress semiconductor		102000.00	102000.00	102000.00
Students' Research projects	2015-16	Secure Signaling System	Western Railway Mumbai Region	--	--	--
Minor Project	2016-17	Techworld	IEEE	20000.00	20000.00	20000.00
Major Project	2016-17	Keil Pro-100 license	Software license	3 Cr.	3 Cr.	3 Cr.
	2015-2016	IEDC Centre Establishment	IEDC	530000.00	530000.00	530000.00
	2016-17	Bus Tracking System	IEDC	100000.00	100000.00	100000.00
	2016-17	Next generation farming	IEDC	100000.00	100000.00	100000.00
	2016-17	FACCIL _Home automation system	IEDC	100000.00	100000.00	100000.00
	2016-17	Design and development of electrolytic cell for production of H2 from urine	IEDC	100000.00	100000.00	100000.00
	2016-17	Low cost educational system	IEDC	100000.00	100000.00	100000.00

*Details of minor research grant is enclosed in annexure

3.3   Research Facilities

3.3.1   What are the research facilities available to the students and research scholars within the campus?

The research facilities available to the students and research scholars within the campus are library database, extended hours of R&D cell, incubation centre, research labs, software tools such as MatLab, Adobe tools etc. equipment, CISCO based networking lab, 100 Mbps internet facility provided 24x7.

3.3.2   What are the institutional strategies for planning, upgrading and creating infrastructural facilities to meet the needs of researchers especially in the new and emerging areas of research?

The institute plans for continual research through holding International conference (Multicon-W) every year where, students and faculty members contribute their research through publications. The research to be carried out by faculty members apply for minor research grant of university of Mumbai from where the funds are received by the faculties, which are utilized for conduct of research. The continual research each year results in purchase of equipment, kits, tools etc. help in upgrading & creating more of infrastructural facilities to meet the demands of emerging areas of research.

To organise various R&D activities with revenue models where surplus can be utilize for infra facilities.
To make associates and partners to develop the advance infrastructural facilities for research.
To study research facility to be develop as per market the trend and technology demand.
Implementation of advisory committee to improve infrastructure at institute.

3.3.3   Has the institution received any special grants or finances from the industry or other beneficiary agency for developing research facilities? If 'yes', what are the instruments / facilities created during the last four years.

Yes, institute has received the grant from different beneficiary agency for the development of research facility. The institute has started developing specialized labs in all the departments using special grants from the industry and other government and non-government organisation.

In A.Y. 2012 – 13 the department of IT received grant from AICTE for development of Virtualization and Cloud Computing Lab. Currently, UG, PG, research projects are developed in this lab where 2 servers and 5 computers are dedicated for research work.

Table 3.9:   List of the Major Extension and Outreach Programmes

Sr. No	Agency	Grant	Facility Developed	Equipment / Software	Project / Consultancies
1	AICTE	7, 25, 000	Virtualization and Cloud Computing Lab	2 – Servers 5 - Computers	• UG, PG projects • SaaS model utilized for consultancy
2	UoM	8, 75, 000	Various Labs	• Solar Pannels • Fire Bird Robots • Raspberry Pi' • Fingerprint Scanner • Face Recognition Device • Arduino Board • Gallileo board • Various Sensors	• UG, PG projects • Low-cost education system is designed.
3	IIT - B	16, 73, 204	IIT – B Remote Center Aakash Lab	• A-view facility • Wifi enabled Seminar Hall	• UG, PG projects • Digitization of Maths text book for

Sr. No	Agency	Grant	Facility Developed	Equipment / Software	Project / Consultancies
				• 246 Aakash tabs	4th and 5th Standard
4	EduVance	3,01,50,000	Embedded System Lab	• Hand on training on Industry Lab setup • Certificate courses from ARM UK	• UG, PG projects • Workshops
5	Accenture	20, 78, 648	THAKUR-ACCENTURE INNOVATION CENTRE	• Hands on experience of Accenture ERP • In-house training of placed students • Availability of high end resources like IBM, Blade Server and ORACLE DBMS SW 4. Centre of professional training, and Accenture's Head Start Foundation Programme, etc.	• Industry Ready Students
6	Tata Technologies	34, 37, 000	Thakur-TATA technologies centre of excellence	• Hands on training on PLM software • 80-hours course • Certificate Course from Tata Technology Ltd • Institute-Industry interaction through collaborative research program, extension courses	• Consultancy services in CAD / CAM / CAE

Sr. No	Agency	Grant	Facility Developed	Equipment / Software	Project / Consultancies
7	Additional Industries	-	Tcet-CISCO wireless network laboratory	Hands on training on Industry Lab setup	• Bridge courses in networking for preparation for CCNA, CCNP
8		-	Tcet-TEXAS instruments laboratory	Launch Pad	• Institute-Industry interaction through collaborative research
9		-	Tcet-INTEL centre of excellence	Galileo Board	• IoT Projects developed
10		-	Tcet-e-yantra laboratory	Firebird Robots Sensors	• Projects developed for national level competitions

3.3.4   What are the research facilities made available to the students and research scholars outside the campus/other research laboratories?

- Access to IIT Bombay Library
- SAMEER
- Faculty Industrial visit
- ME Projects
- Out House Projects

3.3.5   Provide details on the library/ information resource center or any other facilities available specifically for the researchers?

Learning Resource Centre (Central library) is located on 4th floor of the College building with 840 Sq. m. built area. LRC is highly modular. Additional library facility is created on fifth floor of Thakur Mall as Library Extension and the 78 students can use the premises upto 9.00 p.m. and as per request of students, timings can be extended upto 10.00 p.m. during examinations.

Highlights:
- Text Books - more than 24,000
- References book - more than 1945
- Magazines - more than 10
- Printed Journals - more than 81
- Added 4452 books for the A.Y. 2014-15

8 E-Journals Data Bases:
- IEEE-All Society periodicals Package - 145 Journals
- Springer Electrical, Electronics & CMPN – 149 journals
- ASME-Mechanical Engineering 26 Journals
- ASCE-Civil Engineering ~~Engg~~ - 35 Journal new
- McGraw Hill-Access Engineering Library - e-books
- J-Gate - Engineering & Technology-4700 indexed & 1700 new
- Elsevier-Science Direct - 275 Journals
- ASTM Digital Library - 1700 Indexed & 13000 Journal articles
- Department Library with average 500 books and 500 project reports

- Organised 2 training programmes of e-resources for faculty members. Book Exhibition for students and faculty

Key Facilities:
- Book stack section : Capacity of 70,000 books
- Reference Section : Handbook stacking capacity of around 4000 books ,Seating arrangement (48), Stack for magazines/Journals
- General reading room : Seating capacity (128)+(100)
- Faculty reading room : Seating capacity (30)
- Book processing & : Accession /Issue / return of books
- Circulation of books CDs / Tutorials
- Audio Visual Room : Seating capacity (20)
- Digital Library : 24 PCs and 12 Mbps Internet
- Library Management : LibSuite Software

3.3.6   What are the collaborative research facilities developed / created by the research institutes in the college? For ex. Laboratories, library, instruments, computers, new technology etc.
- Ph. D. Resource centre
- List of software (Annexure)
- From every department 2 to 3 labs are devoted for Research work

3.4   Research Publications and Awards

3.4.1   Highlight the major research achievements of the staff and students in terms of Patents obtained and filed (process and product)

Table 3.10: Major research achievements of Faculty and Students

Company Name	Company Sector	Incorporation Status	Faculty First Name	Faculty Last Name	Faculty Id	Discipline	Level	Date Of Patent Adoption	Patent Number	Granted/ Filed	Patent Owner	Year
Thakur college of engineering &technology	Education	Private	VINITKUMAR	DONGRE	1-415347775	Electronics Engineering and Allied	Degree	3/12/2015	4566/MUM/2015	Filed	Institute	2015-2016
Thakur college of engineering &technology	Education	Private	BRAJ KISHORE	MISHRA	1-415347951	Electronics Engineering and Allied	Degree	3/12/2015	4566/MUM/2015	Filed	Institute	2015-2016
Thakur college of engineering &technology	Education	Private	VINITKUMAR	DONGRE	1-415347775	Electronics Engineering and Allied	Degree	3/2/2016	201621003790	Filed	Institute	2015-2016
Thakur college of engineering &technology	Education	Private	BRAJ KISHORE	MISHRA	1-415347951	Electronics Engineering and Allied	Degree	3/2/2016	201621003790	Filed	Institute	2015-2016
Thakur college of engineering &technology	Education	Private	VINITKUMAR	DONGRE	1-415347775	Electronics Engineering and Allied	Degree	3/2/2016	201621003789	Filed	Institute	2015-2016
Thakur college of engineering &technology	Education	Private	BRAJ KISHORE	MISHRA	1-415347951	Electronics Engineering and Allied	Degree	3/2/2016	201621003789	Filed	Institute	2015-2016

- Original research contributing to product improvement
- Research studies or surveys benefiting the community or improving the services
- Research inputs contributing to new initiatives and social development

3.4.2   Does the Institute publish or partner in publication of research journal(s)? If 'yes', indicate the composition of the editorial board, publication policies and whether such publication is listed in any international database?

Yes, following are the details of the international databases where the publication is listed.
1)   ICWET 2010 – ACM USA :
     ACM Proceedings Link -

http://dl.acm.org/citation.cfm?id=1741906&coll=DL&dl=GUIDE&CFID=498046622&CFT
OKEN=51889474

2) ICWET 2011 – ACM USA, IJCA (www.ijcaonline.org)
ACM Proceedings Link -
http://dl.acm.org/citation.cfm?id=1980022&coll=DL&dl=GUIDE&CFID=498046622&CFT
OKEN=51889474
IJCA proceedings Link : http://www.ijcaonline.org/proceedings/icwet

3) ICWET 2012 - IJCA, IJACSA (www.thesai.org/IJACSA)
IJCA proceedings Link : http://www.ijcaonline.org/proceedings/icwet2012
IJACSA Special Issue Link :
http://thesai.org/Publications/ViewIssue?volume=3&issue=1&code=SpecialIssue
http://thesai.org/PdfFileHandler.ashx?filen=SpecialIssue_Volume3No1

4) ICWET 2013, ICWAC 2013 - IJCA, IJACSA, IJAIS
IJCA proceedings Link : http://www.ijcaonline.org/proceedings/icwet2013
IJAIS proceedings Link : http://www.ijais.org/proceedings/icwac

5) ICWET 2014, ICWAC 2014- IJCA, IJAIS (USA) (International Journals) –
IJCA proceedings Link : http://www.ijcaonline.org/proceedings/icwet2014
IJAIS proceedings Link : http://www.ijais.org/proceedings/icwac2014

6) ICWET 2015, ICWAC 2015 – IJCA, IJAIS (USA) (International Journals)
In Progress.

7) Multicon 2016 – Elsevier, IET, IJCA, IJAIS (USA) (International Journals)
IJAIS proceedings Link: http://www.ijais.org/proceedings/icccv2016
IET proceedings Link : http://digital-library.theiet.org/content/conferences/cp700
IJCA proceedings Link : http://www.ijcaonline.org/proceedings/icccv2016
Elsevier proceedings Link : http://www.sciencedirect.com/science/journal/18770509/79

Editorial Board:
From TCET: Dr. B. K. Mishra
From Publisher: Representatives of Editorial Board from respective Publishing House.

Publication Policies:
Each paper is reviewed by Expert from the Technical Committee and The Advisory Committee,
Three Reviews are performed for each paper:
First Review – Conducted by the Internal Review Committee to perform Initial Screening.
Second review – The review members are from the Technical Committee, this checks the technical
content of the paper.
Third review – this is final review, checks the plagiarism, quality of results, discussion and conclusions,
validations etc. The selection is done by reviewers on the criteria set by the editorial board of the
affiliated digital library.
The Review & Technical Committee along with program & Publication Chair is displayed on website.
Around 25 -30 reviewers from India and abroad will review the papers.

International database listing:
Each of the IJCA articles are archived and indexed with prestigious academic indexes including DOAJ,
Google Scholar, Informatics, ProQuest CSA Technology Research Database, NASA ADS (Harvard
Univ.), Scientific Commons (Univ. of St Gallens), University of Karlsruhe, Germany, Georgetown
University Library and Washington University.

The research articles with *International Journal of Applied Information Systems (IJAIS)* are indexed
with ADS Harvard Database, Google Scholar, Proquest Technology Research Database, Informatics

IJACSA has been accepted for indexing in the Thomson Reuters, IET-Inspec, Directory of Open Access Journals(DOAJ), Ex Libris, Serials Solutions, Index Copernicus (IC), Google Scholar, Microsoft Academic Search, GetCITED, CiteSeerx, ArXiv, EBSCOhost, WorldCat, BASE, Ulrichsweb™, Cabell's,

3.4.3 Give details of publications by the faculty and students: *(Can be taken from DER)*

The summary of the publications of the faculty is shown in the table 3.11. For the detailed report fo the publications by the faculty, refer the Department Evaluation Report (DER).

Table 3.11: Consolidated Summary of publications by faculty (Department-wise)

Department	Total No. of Faculty	Papers Published	Books Published	Total publications
CIVIL	16	42	0	42
CMPN	28	198	4	202
ETRX	14	55	2	57
EXTC	28	239	3	242
IT	28	261	16	277
MECH	9	10	0	10
H&S	34	101	8	109

3.4.4 Provide details (if any) of
- Research awards received by the faculty - Nil
- Recognition received by the faculty from reputed professional bodies and agencies, nationally and internationally
  - o Dr. Deven Shah was invited as guest speaker for IEE conference on IoT
  - o Dr. Kamal Shah is awarded Examiners certificate of excellence from IMCRBNQA, Mumbai
- Incentives given to faculty for receiving state, national and international recognitions for research contributions.
  - o Dr. Kamal Shah has been sponsored to New Zealand to receive an Award by APQO where institute is recognized as Best in class at Asia Pacific Level

3.5 Consultancy

3.5.1 Give details of the systems and strategies for establishing institute-industry interface?

Objectives of 3I Cell:
- As per the design of curriculum actual technical subjects are taught to students from second year of engineering. For every semester and for every branch institute need to identify one subject where student should learn industry relevant technologies.
  For e.g. Students are in 5th semester and learning the operating system as a subject. Industry relevant course for that subject is Linux certifications. Similarly for Security subject, students will undergo learning of Web Apps (Cyber Security) subject. This would equip students with advance technologies and practical industry oriented knowledge.
- Some good research oriented projects will be allotted to students in consultation with R&D cell which will have involvement of industry mentors. At the end of the year project evaluation will be done by industry experts. Projects which have potential for further product development will be handed over to Entrepreneurship cell for start-up formalities and business plan development.
- 3I Cell will help students and faculty to associate themselves with reputed industries for research and product development. Some of the tie ups with industries can be developed in form of establishing centre of excellence.

- On each Engineers day there could be an exhibition of the projects developed by students and staff as well as some seminars can be arranged on cutting edge technology.
- Main purpose of 3I Cell is to adopt new technology and make it aware to the students. 3I Cell will organize Technology day in collaboration with industry to showcase new technology to students. For e.g. 3I Cell organize "Internet of Things day" in collaboration with IBM.
- Faculty training programme in collaborations with industry can be organised per department in vacations for two weeks either in college or in industry.

Expected Outcome:
a) Engineers with strong technical knowledge will be created by institute which is a need of an hour.
b) For accreditation point of view also this will help as NBA etc has 'industry institute interaction' as one of the deciding parameter.
c) It will help institute to improve its brand value in various reputed industries.
d) Many more dream companies can also visit campus for recruitment as students will be having multiple industry acceptable certifications along with degree of relevant branch.
e) Faculty members can also learn new technologies and can apply knowledge in developing various projects so the consultancy work of faculty members also be boosted which is a prestigious parameter for any institute.

Some of the actions taken towards the same:
a) Establishment of EDC (Entrepreneurship Development Cell)
b) Training and placement cell
c) Alumni and institute strong relation so that some of our alumni are our recruiters
d) Different workshops and faculty development programme as well as students' development programme.
e) CII survey is done every year and our institute is getting high rating as Great place to work survey in which our institute got 725 Score which is considered as high score.

3.5.2 What is the stated policy of the institution to promote consultancy? How is the available expertise advocated and publicized?

Institute follows the guidelines of university of Mumbai according to circular no. APD/449/1/of 2012 dated 18th February 2012 *(Refer annexure)*

3.5.3 How does the institution encourage the staff to utilize their expertise and available facilities for consultancy services?
a) Institute encourage the faculty to utilize their expertise for consultancy activities
b) Faculties can take at a time up to 5 assignments.
c) Faculties are given 50% concession in total time apart from the actual teaching hours.
d) Institute allows utilizing the infrastructure for the consultancy activity.
e) 6-7 faculty members are registered for MOOC.
f) Institute provides platform for industry interaction and collaborative research
g) Institute promote faculty for professional body membership.

3.5.4 List the broad areas and major consultancy services provided by the institution and the revenue generated during the last four years.
Institutes have expert faculties in various domains which helps the institute in getting various projects in diverse fields.

Table 3.12: List of the Major Extension and Outreach Programmes

S.No	Faculty	Client	Name of Project	Domain	Amount
1.	Mrs. Rashmi Thakur	Thakur School of Architecture and Planning	Automated Result Generation	Database	60, 000

S.No	Faculty	Client	Name of Project	Domain	Amount
2.	Dr. Kamal Shah, Dr. Vinayak Bharadi, Mr. Vikas Kaul, Mr. Aditya Desai, Mr. Bhushan Nemade, Ms. Pranjli Kasture, Ms. Vandna Mumnde	Bhakti Vedanta Hospital	Customizing Google docs	Ubiqtous Computing	1,73,000
3.	Dr. Kamal Shah	TIMSR	Online Quiz Softwre	Database	10, 000
4.	Dr. Devan Shah	Samay Lab	Automation of Carriage for Load Transfer	IoT	5,000

Projects are developed with intention to convert product and services and can be marketed. Therefore these projects are potential projects for future consultancy.

3.5.5 What is the policy of the institution in sharing the income generated through Consultancy (staff involved: Institution) and its use for institutional development?

The policy of sharing of revenue by institute and the faculty is 30:70 wherein 30% after deduction of the expenditure as envisaged here in above shall be paid to the institute while 70% shall be retained by the concerned faculty

3.6 Extension Activities and Institutional Social Responsibility (ISR)

3.6.1 How does the institution promote institution-neighborhood-community network and student engagement, contributing to good citizenship, service orientation and Holistic development of students?

Institute has established university approved NSS wing in A.Y.2005-06 followed by extension work from the current academic year.

The Motto of NSS "Not Me but You", reflects the essence of democratic living and upholds the need for self-less service. NSS helps the students develop appreciation to other person's point of view and also show consideration to 'other living beings'. The philosophy of the NSS is well reflected in this motto, which underlines on belief that welfare of an individual is ultimately dependent on welfare of the society on the whole. Therefore, the NSS volunteers shall strive for the well-being of the society which mainly promotes the improvement in the community service along with leadership qualities with good moral and ethical values which helps the student for holistic development.

The College has 3 units, with strength of 150 volunteers along with the programme officers of NSS units. Every student member of NSS serves for a period of at least two years with 120 hours of engagement in community service, per year, excluding annual camps. At the end of two years of satisfactory service, each student member receives NSS Certificate, which is considered as equivalent to a diploma in Social Service.

Our College is interested to inculcate the social awareness among our students, thereby institute has selected 150 students from various departments.

These students serve for various villages in and around Mumbai. Every year around about 500 students donated their blood according to the need of the patient at Government Hospital, Mumbai for different situations.

Activities are conducted from domain:
- Domain Health, cleanliness among citizen to find out the courses availability of first aid and approach hospitals
- Awareness programmes are conducted in the adopted area to discuss viz malaria, dengue, leprosy
- conducted in adopted village Saivan (Palghar) and adopted area (Damu Nagar) Singh Estate Hanuman Nagar and college vicinity
- Awareness about organ donation
- Minimum one medical check-ups camp organised every year in association with local corporator.
- Eye check up in adopted village
- Minimum two blood donation camps arranged in the college every academic year where more than 400 blood bottles are collected in August/February –March month. Blood samples are mainly collected by JJ hospital, Tata hospital and Red cross. Student are benefited as they get Thalesemia checking.
- Donor card which may use to get blood in emergency.

In the process students develop the understanding of the various diseases, its causes and remedies. They come to know about their own health for Thalassemia. It also creates learning for students for primary health centres where the check-ups can be done at an affordable rate.

3.6.2   What is the Institutional mechanism to track students' involvement in various social movements/activities which promote citizenship roles?

Institutional mechanism to track students' involvement in various social activities which promote citizenship roles.

Students are peer counselled in classroom and in personal too to participate in various activities which promote citizenship roles.
Notices are issued for students, workshops and orientation programmes are also organised for students to involve them in social movements. Various programmes are organized by the tcet mumbai. The college has various associations like N.S.S., Women Development Cell, professional body Association, etc. which organizes various programmes involving students. This promotes the development of citizenship roles among the students

Continuous monitoring of students by in-charge faculty members followed by Dean S S W and HOI by giving hands on experience in various movements (MUN, NSS)and activities related to the society.

3.6.3   How does the institution solicit stakeholder perception on the overall performance and quality of the institution?

Stakeholder perception on overall performance is solicited through feedback, survey, formal and informal meetings. From students we collect 2 feedbacks per semester about teaching learning and institute, also conduct exit survey and alumni survey. Survey of potential student is also conducted to understand demand and preferences of the programmes for admissions.

Scope: Stakeholders perception indicates various community services that has been done for the society particularly for needy population. The services are provided through student and faculty members, stakeholders include students, faculty and society. Moreover if with noble cause if any industry or NGO are involving their perception is also important for institute. The overall performance and quality of institute can be included by formal and informal feedback, interaction with stakeholder and may be survey that can be conducted to identify the various social activities. For example during NSS residential camp student conduct various activities and feedback is taken informally through interaction with Sarpanch, Villagers, Students and teachers of the school. Local language about impact of activity conducted and their suggestion for improvement is taken into consideration for improvement of next activity.

3.6.4   How does the institution plan and organize its extension and outreach programmes? Providing the budgetary details for last four years, list the major extension and outreach programmes and their impact on the overall development of students.

The extension and outreach program has been started from current A.Y. Extension Programme is based on the theme of population whereas the outreach programme is to create the interest in subjects like Maths & Science so that students should opt for engineering career. Moreover school education will be integrated with teaching education an initiative similar to STEM (Science, Technology, Engineering and Maths) of USA.

Extension facility is provided beyond college hours to carry out the training, research and development activities.

Institute has NSS committee at UG level department under the chairmanship of the Principal as given below:

> Constitution:
> Chairman, Dr. B. K. Mishra – Principal
> Member secretary , Dr.Ela Agarkar(H&S),Mr.Ashwin Pathak (H&S)
> Members, Vaibhav Karnik(H&S),Paridhi Somani(H&S) ,Kaustubh Patil(H&S),Kunal Rana(H&S)

The institute has taken initiative under extension program of UoM for developing technical temper in students of schools listed in table 3.13.

Table 3.13: List of the Major Extension and Outreach Programmes

Sr. No.	Name of School	Date
1	Oxford Public schools	29th Aug, 2016
2	English medium school teachers	17th Dec, 2016
3	Marathi medium school teachers	23rd Dec, 2016
4	Chogle High School, Shri Krishna Nagar, Borivali (East)	2nd Jan, 2017
5	Thakur Public School, Kandivali (E)	13th Jan, 2017
6	Pioneer School, Akurli Road, Kandivali(E)	18th Jan, 2017
7	Vidhyabhushan, Rawalpada, Dahisar(E)	4th Jan, 2017
8	Zila Parishad Shala, Saivan- Virar, Dist- Palghar	24th Jan, 2017
9	BMC school Alibag (Raigad)	17th-18th Mar, 2017

Table 3.14: List of NSS Activities & Impact

Sr. No.	Activity	2014-2015	2013-2014	2012-2013
1	Blood Donation Camp	563 bottles collected in 2 camps	413 bottles collected in 2 camps	191 bottles collected in 2 camps
2	Cleanliness Drive /Swachata abhiyan	3 drives: College compound & Manori Beach & Dadar Stations	2 drives: SGNP area	4 drives: SGNP, Manori Beach
3	BMC School Teaching / Bajaj BMC School / Education	2 activities: BMC school (300 children benefited) & Constitution Café	250 children benefited	200 children benefited
4	Ganesh Visarjan / Traffic Control	4 days: Helped in traffic control - 231 volunteers involved	4 days: Helped in traffic control - 40 volunteers involved	4 days: Helped in traffic control - 45 volunteers involved
5	Tree Plantation	150 saplings planted at Fareed Estate in Thakur Village& 72 volunteers	48 volunteers planted 60 plants in Dadoji	Aids Seminar – educating with illustrations

Sr. No.	Activity	2014-2015	2013-2014	2012-2013
			Konadev Ground in Thakur Village	conducted by 70 volunteers

3.6.5   How does the institution promote the participation of students and faculty in extension activities including participation in NSS, NCC, YRC and other National / international agencies?

NCC YRC and other national/international agencies are not applicable to us as institute does not have chapter and students are motivated to participate all the activities included in NSS. Every year the institute organises residential camp of 75 + 12 students adopted village for 7 days. Camp is organised under the leadership of faculty in-charge. Institute has the policy to 1 faculty: 20 students Therefore for the camp 4 faculty members per day are required to be put on duty. Therefore there is an opportunity for 28 faculty members to be a part of residential camp. The duty is assigned through Office Order to faculty members and they have to attend as per office order. The platform provide opportunity to faculty for night stay so that they can have interaction with the students. Faculty members are engaged in social activity through industry social activity which is from CSR society that has been given to faculty by industry. for e.g. FIC visited innovative hub of reliance to get their association to have kitchen garden from villages in adopted village. Our institution undertakes community based activity through various associations like N.S.S., Alumni Association, etc. The activities are as follows:- Pulse-polio immunization drive, Tree plantation, AIDS awareness rally's, Blood donation and Thalassemia testing camp, Eye check-up camp, Medical camp, Awareness about health and hygiene, Construction of bandhara for water management. Street plays are organized by N.S.S. volunteers to spread awareness about social issues, Disaster management training programme. Visit to BMC School children. These programmes help the students in personality development and in learning organization skills. Institute depute NSS program officers on yearly basis so that every faculty member will have the experience extension activities with the help of Red Cross and so on. The list of activity along with budget provision and actual expenses can be seen in the table given below.

Table 3.15: Budget Provision & Expenses of Extension Activities

Sr. No.	Activity	Date	A.Y 2016-17		A.Y 2015-16		A.Y 2014-15		A.Y 2013-14		Remark
			Budget	Actual Expenses	Budget	Actual Expenses	Budget	Actual Expenses	Budget	Actual Expenses	
1	NSS	Throughout the Academic Year	65250	65250* (To be audited)	65250	65250	65250	65250	65250	65250	Balance sheet is verified by the CA and submitted to the university
2	Extension Work		22000	17948	-	-	-	-	-	-	To be audited
3	Outreach Program		35000	25000							To be audited

3.6.6   Give details on social surveys, research or extension work (if any) undertaken by the college to ensure social justice and empower students from under-privileged and vulnerable sections of society?

There are research and extension works to ensure social justice and empower under-privileged sections in particularly for children. The students of Faculty of engineering are divided in small groups and under the guidance of teachers are asked to pick up social problems. Gender issues have been taken up in research and extension work with particular emphasis on deprived sections. The faculty members are involved in a project with the NSS unit for Social Justice and Empowerment. The Women development cell raises such issues in seminars and workshops organized by it and also through invited talks.

3.6.7   Reflecting on objectives and expected outcomes of the extension activities organized by the institution, comment on how they complement students' academic learning experience and specify the values and skills inculcated.

NSS inculcates in the youth a sense of nationalism and secular outlook that contributes towards the building of the nation. It also provides a platform for individual upliftment through the process of channelizing the energy of the youth in constructive pursuits. Besides giving thrill and excitement, NSS promotes camaraderie and resilience and hones cultural skills to preserve the cultural traditions and values of the society. It helps the youth to realize the intimate relationship between man and the community, between community and nature and their inter-dependability. NSS training programmes helps the cadets in the improvement of mental alacrity, cultivating sense of discipline and responsibility, development of social personality and aptitude for leadership and inculcation of the principles and practices of military service.

Recruitment to NSS is made at the commencement of each academic year, from among the second year degree class students only. Every enrolled volunteer undertakes to continue in the NSS UNIT for a minimum period of two years. Attendance is compulsory at weekly activities held during the academic year and at the annual residential camp held during the winter vacation. Normally activities will be held on Saturdays, and will not interfere with the much of academic work.

3.6.8   How does the institution ensure the involvement of the community in its reach out activities and contribute to the community development? Detail on the initiatives of the institution that encourage community participation in its activities?

The local community has been benefited by the Institution through various outreach activities as follows:
- Students visited and rendered recreation services through story-telling and cultural programmes in Old Age Home,
- Literary, creative and cultural activities as well as distribution of daily life requirements to the poor and destitute children of Mumbai Orphanage in Borivali,
- Taking classes on health and hygiene, cleanliness, taking tutorials in Singh estate slum area, and neighbouring Primary School,
- Community service activities i.e. clean, green and beautiful campus under Swachata Abhiyan.
- Yearly Educational exhibitions are held in the college, the beneficiaries of which are our students, parents, and teachers, students of local schools and children of local community.

3.6.9   Give details on the constructive relationships forged (if any) with other institutions of the locality for working on various outreach and extension activities.

BMC has provided the platform to carry out programmes for integrity the school education with professional engineering education. Moreover IEEE have supported the programme morally and financially.

NSS activities are supported by Lions Club of Mumbai Rotary club for BDC and various awareness programs and in organising in various medical camp.

NSS residential camp has been supported by Sarpanch of Saivan Village for lodging and boarding and local conveyance if any emergency arises

3.6.10 Give details of awards received by the institution for extension activities and / contributions to the social / community development during the last four years.

Certification of appreciation was received from LIONS Club Mumbai for NSS BDC. Extension students got 1st prize in poster competition in University Udaan festival and consolation prize in street play in Udaan festival. Letters of appreciation from Rotary club for cleanliness drive and medical camp is received. Appreciation from Harmony NGO for Kandivali station cleanliness was received.

3.7   Collaboration

3.7.1   How does the institution collaborate and interact with research laboratories, institutes and industry for research activities. Cite examples and benefits accrued of the initiatives-collaborative research, staff exchange, sharing facilities and equipment, research scholarships etc.

Institute has established the centre of excellence with the collaboration with industry such as:
   a)   Thakur college of Engineering and Technology-Accenture innovation Centre
   b)   Thakur college of Engineering and Technology-Texas Instruments Centre of Excellence
   c)   Thakur college of Engineering and Technology-Tata technology Centre of Excellence
   d)   Thakur college of Engineering and Technology-ARM University Programme

3.7.2   Provide details on the MoUs / collaborative arrangements (if any) with Institutions of national importance/other universities / industries / Corporate (Corporate entities) etc. and how they have contributed to the development of the institution.

Table 3.16: Budget Provision & Expenses of Extension Activities

Sr. No.	Organization	Period		No. of years	Remarks
		From	**To**		
1	IMS Learning Resources Private Ltd.	20-02-2016	19-02-2018	2	Help students for preparation of Higher studies.
2	Texas Instruments (EdGate Technologies Private Limited)	w.e.f May, 2015			Institute-Industry interaction through collaborative research
3	Bizotics	07-01-2016	06-01-2018	2	Alumni Startup
4	NEN (National Entrepreneurship Network)	01-04-2016	31-03-2019	3	Entrepreneurship development activities
5	Tata Technologies	07-01-2015	06-01-2017	2	Institute-Industry interaction through collaborative research
6	Oracle	31-05-2016	30-05-2019	3	Institute-Industry interaction through collaborative research
7	Phionike	01-12-2015	30-11-2017	2	Alumni Startup
8	IET – The Institution of Engineering & Technology	01-10-2015	30-09-2016	1	Academic knowledge partner
9	ARM University Program	08-09-2015	07-09-2016	1	Institute-Industry interaction through collaborative research
10	Infosys Campus Connect	27-12-2004	26-12-2016	13	Pre-Placement Training for students
11	Accenture	w.e.f. 15 Feb 2013 each year			In-house training of placed students
14	Zensar Technologies	w.e.f Jan, 2015			Pre-Placement Training for students
15	Computer Society of India - CSI	01-07-2015	30-06-2016	1	Professional Body activities for development of students

3.7.3   Give details (if any) on the industry-institution-community interactions that have contributed to the establishment/ creation/up-gradation of academic facilities, student and staff support, infrastructure facilities of the institution viz. laboratories / library / new technology / placement services etc.

a)   Advisory committee details: Advisory committee meeting is conducted twice in year where members are from industry academia and other stake holders. Present committee can be seen in table:

1. Mr. Karan V Singh-CEO-TCET, TIMSR, TIMSCDR & TSAP
2. Dr. Rajpal Hande, Principal- SVKM's Mithibai College of Arts, Chauhan Institue of Science   & Amrutben Jivanlal College of Commerce And Economics, Former, Director-BCUD, University of Mumbai
3. Dr. S.M.Khot- Principal, Fr.C.Rodrigues Institute of Technology, Vashi, Former, Chairman, Board of Studies in Mechanical Engineering
4. Dr. S.K.Ukarande- Principal, K. J. Somaiya Institute Of Engineering & Information Technology, Coordinator, Faculty of Technology, Member- Academic Council, University of Mumbai.
5. Dr. Alok Verma-Scientist, SAMEER
6. Dr. S.N.Merchant, Department of Electrical Engineering, IIT Bombay, Powai
7. Dr. Vivek Bharatiya- Global Technology Leader-TCS
8. Mr. Ramani Iyer- Telecom Consultant, Ex-Director MTNL
9. Ms. Suman Pai- Consultant
10. Mr. Makarand Maduskar, Regional Business Development Head, VFS Global Services Pvt.Ltd.
11. Ms. Sudha Iyer-Information System Consultant
12. Dr. R.R.Sedamkar-Dean (Academic)
13. Dr. Kamal Shah-Dean (R & D)
14. Dr. Lochan Jolly- Dean (SSW)
15. Dr. Sheetal Rathi- HOD(CMPN)
16. Dr. Rajesh Bansode- HOD(IT)
17. Dr. Vinitkumar Dongre- HOD(EXTC)
18. Dr. Sandhya Save-HOD(ETRX)
19. Dr. Siddesh Doddametikurke-HOD-(MECH)
20. Dr. Seema Jagtap-I/c.HOD (Civil)
21. Dr. Vivek Mishra-F.E. in-charge

The agenda discussed include:

1. To review the academic, Co-Curricular/Extra-curricular activities and further strengthening of these activities.
2. To review the training & placement activities and industry institute interaction with the scope for further strengthening of these activities.
3. To review the R & D activities.
4. Suggestion for the improvement.
5. Any other points with the permission of the chair.

From the minutes of meeting, action plans are generated and as per action taken, reports are made. In Advisory Meeting mainly discussion is about academic, placement and R & D culture that can be developed among student. Some of the noteworthy suggestions of advisory committee are as follows:

Students should be sent for internship therefore initiative has been taken by institute to comply with requirements.

To bridge the gap between industry & university curriculum, online courses through mocks were suggested which include NPTEL, NIT, Course Era etc. The platform for virtual learning has been created. Institute has got good response where more than 1000 students have registered for NPTEL courses.

One of the members from SAMEER have invited institute faculty for collaborative research and also agreed to provide testing facility available in SAMEER laboratory.

b) T&P Cell: Before placement the cell conduct rigorous training programme with the support of industry. Moreover the expert coming from industry during training and placement share, valuable feedback about student and institute which has improved the training facility and also employability skills of the students resulting into improvement in placement.

c) IIT- Remote Centre: FDP are conducted under the MHRD scheme. Institute get financial support and the funds for improving the facility of remote centre

d) Centre of Excellence: New technology labs are developed (hardware as well as software). This has provided opportunity to student to learn new technology and improve their employability and industry acceptance.

e) Infosys Campus Connect Programme: It is a program designed by Infosys and training is provided to faculty who train 500-600. As a result institute has be recognised as advanced partner institute of IOCC.

f) Industrial visits: Institute conducts local and outstation industrial visit which give a platform to students to know about the professional practice and make them better professionals.

g) Industry institute symposium and MULTICON W. It provides a platform where the industry experts and prominent academicians can come and share their feedback and also a platform for faculty & TPOs to discuss with them the problems they are facing and find the possible solutions acceptable to industry and institute.

3.7.4 Highlighting the names of eminent scientists/participants who contributed to the events, provide details of national and international conferences organized by the college during the last four years.

Table 3.17: Details of Conferences and the Delegates

Sr. No.	Year	Name of the conference	Name of the key note speakers	Topic delivered	In the capacity of
1	2010	ICWET	Dr. D J Shah	Recent Trends in Technology	Chief Guest/ Keynote Address
2	2011	ICWET	Dr. Dalbir Virdi	Information Management	Chief Guest
3	2012	Multicon-W 2012	1. Dr. P. Chakrabarti 2. Dr. DalbirVirdi	1)VLSI 2)Software Engineering in 21st century	1) Chief Guest 2) Distinguished Guest
4	2013	Multicon-W 2013	1. Shri Durga Maruwada 2. Dr. P Chakrabarti	2. Electronics System Design	2.Keynote Address
5	2014	Multicon-W 2014	1. Dr. N. D. Desai 2. Dr. S. N. Merchant	1)Research Directions for Engineering 2)Biomedical Engineering	1)Keynote Address 2)Keynote Address
6	2015	Multicon-W 2015	1. Dr. S. K. Ukarande 2. Dr. S. S. Yawalkar	1. Foundation of Engineering Research	1. Keynote Address

Sr. No.	Year	Name of the conference	Name of the key note speakers	Topic delivered	In the capacity of
7	2016	Multicon-W 2016	Dr. P. Chakraborti	Trends in Microwave Communication	Keynote Address

3.7.5   How many of the linkages/collaborations have actually resulted informal MoUs and agreements? List out the activities and beneficiaries and cite examples (if any) of the established linkages that enhanced and/or facilitated-

a) Curriculum development/enrichment
b) Internship/ On-the-job training
c) Summer placement
d) Faculty exchange and professional development
e) Research
f) Consultancy
g) Extension
h) Publication
i) Student Placement
j) Twinning programmes
k) Introduction of new courses
l) Student exchange
m) Any other

Table 3.18: List of Organizations Collaborated with & its Beneficiaries

Sr. No.	Organization	Period	No. of years	Beneficiary
1	IMS Learning Resources Private Ltd.	20th Feb.2016 to 19th Feb.2018	2	Passing out students who aspire for Higher studies in the field of Management.
2	Texas Instruments (EdGate Technologies Private Limited)	w.e.f 20th May 2015	-	Hands on training using Texas instruments (TI) develop the technical skills of faculty members
3	Bizotics	7th Jan.2016 to 6th Jan 2018	2	It is an innovation entrepreneurship development center as accelerator on the campus for its students and alumni. The goal of the center is to assist the students for solving practical problems in the specific domain and incubate them.
4	NEN (National Entrepreneurship Network)	1st April 2016 to 31st March 2019	3	The goal is to develop impactful programs, people capacity, institutional and organizational structures and policies within the institute partner for entrepreneurship development.
5	Tata Technologies	7th January 2015 to 6th January 2017	2	To create infrastructure and learning environment for training manpower, to cater the increasing needs of manufacturing industries in India.
6	Oracle	31st may 2016 to 30th May 2019	3	Program refers to oracle software owned and made available to the institute for download, web based application that oracle may host remotely for the institute to access & to use it for the purpose of teaching a non-commercial, accredited class rooms, educational, not for profit class & performance of degree related research.

Sr. No.	Organization	Period	No. of years	Beneficiary
7	Phionike	1st December 2015 to 30th November 2017	2	It aims to facilitate the future entrepreneurs to build their own dream business.
8	IET – The Institution of Engineering & Technology	1st October 2015 to 30th September 2016	1	The conference proceeding publication agreement- ICWET
9	ARM University Program	8th Sept.2015 to 7th Sept.2016	1	To facilitate donation of educational material and equipment for the lab. to the institute from the companies that EDUVANCE has a tie-up. a)ARM University program b)Cypress Semi-conductors University alliance. Knowledge sharing on latest technologies and project with students and faculty of the institute.
10	EDC Cell	1st Nov.2015 to 31st Oct.2016	2	It aims to facilitate the future entrepreneurs to build their own dream business to financial and infrastructural help.
11	Infosys Campus Connect	27th Dec.2004 to Dec.2016	13	It facilitate and share input for imparting technical and soft skill training to the students.
12	Accenture	w.e.f. 15th Feb.2013 each year		To have an agreement to sponsor the event Multicon-w 2013.
13	Zensar Technologies	January, 2015 onwards	-	This program is intended to give students the opportunity to work in industry –like environment under the guidance of experts during their final year of academic tenure.
14	Computer Society of India - CSI	1st July 2015 to 30th June 2016	1	Professional Body activities for development of students

3.7.6 Detail on the systematic efforts of the institution in planning, establishing and implementing the initiatives of the linkages / collaborations.

Thakur College of Engineering and Technology has taken the initiative to encourage staff and students for exchange program, postgraduate studies, summer internship and research in foreign countries.

Table 3.19: External Interactions

Programme	Objective	Number of participants from TCET	Date	Speakers
Interactive Session with Czech Universities Delegation	To explore possibilities for cooperation with Indian Universities, as well as study opportunities for Indian students and knowledge sharing.	3 Faculty	4th November 2014	Delegation of Presidents / Vice-Chancellor from Czech Republic Universities
3rd India Australia skills Conference:	To prepare both Australian and Indian delegates for mutually addressing various skills and	7 Faculty	11th November 2014	Ian Macfarlane, Industry Minister (Australia), Anita

Programme	Objective	Number of participants from TCET	Date	Speakers
SKILLS FOR BETTER BUSINESS	workforce development issues facing both countries			Rajan, COO Tata Strive, Mr Phil Cox,CEO Hunter Tafe, Mr Atul Bhatnagar(COO-NSDC), Mr. Stephen Conway (CEO-TAFE), Mr.Lary Davies(CEO-ACPT)
Interactive session of TCET students with representative of ISEP	To make the students aware about the opportunities available in Portugal for Post graduate courses	135 students	14th January, 2016	Mr Jose Carlos Quadrado, Vice President, ISEP-Instituto Superior de Engenharia do Porto, Portugal.
Visit of Stanford University Experts along with AICTE experts	To provide feedback to institutes on a specific area for improvement in order to help the students perform better.	More than 50 students & all the senior faculty Members	16th February, 2017	Mr. Ashutosh and Mr. Praashant along with Dr. Smit Dutta, Dy. Dir(e-Gov) AICTE

Criterion - 4: Infrastructure and Learning Resources

4.1   Physical Facilities

Institute has five storied building with 20261.78 sq.m built up area. It includes 11535.22 sq.m instructional area, 2692.27 sq.m, administrative area, 3240.99 sq.m amenities, and 2793.3 sq.m circulation areas with three wings. Instructional area includes class room, laboratory, tutorial room, research laboratories, seminar room and the auditorium. All class rooms and laboratories are well furnished and well equipped. Each floor is provided with wide and well lit corridor mainly with class rooms, laboratories and common venues on either side. Either side walls have the soft board mainly utilized for notice board and displays. Each classroom is also having the soft board used mainly to display the course/learning objectives and outcomes. Institute uses ICT to its optimum use. Therefore each classroom are provided with INTERNET access mainly to be used by faculty during lecture, fitted with multimedia projects. Each department is provided with laptops and walk and talk portable type of public address system mainly utilized during lecture so that the faculty voice shall be audible even to the last bench. Seminar rooms in addition to these facilities are provided with recording facilities and also fitted with CCTV. There are 165 CCTV for surveillance fitted in the campus, common area, computer laboratories etc. A laboratory where skill development training is conducted is also fitted with projectors. Two digital displays are installed in the office area mainly utilized for institute information /notification activity as well as dignitary visit displays.

More details of the TCET campus one can also see from the virtual tour on college website www.tcet.mumbai.in.

TCET campus is maintained by dedicated maintenance team. State-of-the art infrastructure and facilities and academic reputation have made the institute one of the premier institutes in the city of Mumbai. Moreover, the infrastructure is not only complying with the regulatory compliance but it also addresses the need of 21st Century campus which can be seen during the site visit.

Table 4.1: Compliance of Area requirement as per AICTE Norms

Sr. No.	Particulars	Area requirement as per AICTE Norms (Sq. mtr.)	Total Area Available (Sq.mt.)	Compliance
1	Instructional Area	8466	11535.22	100%
2	Administrative Area	1435	2692.27	100%
3	Amenities Area	1000	3240.99	100%
	Total Carpet Area	10901	17468.48	100%
	Total Built-up Area (Including 25% Circulation Area)	13626	20261.78	100%

Table 4.2: Details of Area required for the Existing Courses as on 2017-18

Particulars	Area Requirement For Existing Courses For All 4 Years			Total Available Area	
	Area Requirement For Per Room (Sq.M)	No. Of Room Required	Total Area (Sq.M)	No. Of Room Available	Total Area (Sq.M)
Instructional Area					
Class Room	66	36	2376	44	3566.2
Tutorial Room (UG)	33	9	297	18	752.52
Tutorial Room (PG)	33	3	99		
Laboratory (UG)	66	48	3168	68	3982.94
Laboratory (PG)	66	3	198		
Workshop For All Courses	200	1	200	1	225.74
Additional W/S & Machine Shop	200	4	800	2	880.46
Computer Centre	150	1	150	1	165.23

Particulars	Area Requirement For Existing Courses For All 4 Years			Total Available Area	
	Area Requirement For Per Room (Sq.M)	No. Of Room Required	Total Area (Sq.M)	No. Of Room Available	Total Area (Sq.M)
Drawing Hall	132	1	132	1	250.33
Library & Reading Room (Area Of 50sq M /Per 60 Student (UG + PG) Intake Beyond 420.	650	1	650	1	840.3
Seminar Hall	132	3	396	6	886.51
Total		110	8466	123	11550.23
Administrative Area					
Principal Office	20	1	20	1	64.18
Board Room	20	1	20	1	74.18
Office All Inclusive	150	1	150	1	1109.00
Department Office	20	6	120	6	1108.04
Cabinets For HOD	10	6	60		
Faculty Room Total Faculty For Existing Course = 185			925		
Central Store	30	1	30	1	30
Maintenance Office	10	1	10	5	10
House Keeping	10	1	10	1	10
Pantry For Staff	10	1	10	1	12.53
Examination Central Office	30	1	30	1	74.18
Placement Office	50	1	50	1	30.17
Other Area	-	-	-	-	160
Total			21	1435	2682.28
Amenities Area					
Toilet (Ladies /Gents)	150	Adequate	150		774.79
Boys Common Room	75	1	75	1	87.35
Girls Common Room	75	1	75	1	87.35
Cafeteria	150	1	150	1	168.7
Stationary Store & Reprography	10	1	10	1	10
First Aid Cum Stock Room	10	1	10	1	21.24
Principal Quarter	150	Desired	150	-	-
Guest House	30	Desired	30	-	66.49
Sports Club/Gymkhana	100	Desired	100	-	-
Auditorium	250	Desired	250	-	-
Boys Hostel	Adequate	Desired	-	-	-
Girls Hostel	Adequate	Desired	-	-	-
Other Area (Visitors Longe, Car Parking, Security Office, AC Plant)	-	-	-	-	2025.07
Total		-	1000		3240.99

4.1.1   What is the policy of the institution for creation and enhancement of infrastructure that facilitate effective teaching and learning?

Policy of institute for creation and enhancement of infrastructure for conducive learning environment includes:

a) Regulatory compliance which is mainly the compliance of AICTE and UOM which is same as AICTE compliance for engineering institution approved by AICTE. However, Ph.D (Engg) is not under the preview of AICTE. Therefore Ph.D (Engg) compliance is as per UOM guidelines which are mainly the requirements for Ph.D. (Engg) centre.
b) Infrastructure should provide the corporate/industry culture feel so that on graduation their acceptability should increase.
c) Infrastructure and facility must match the international standards particularly the foreign university campus.
d) All related work should be carried out in such a way that it should not disturb the daily functioning of the institute.
e) Development process should be on regular basis so that infrastructure can be upgraded with the changing need
f) Development of infrastructure must support the natural growth of the institute to realize the vision of deemed university /institute of excellence
g) infrastructure creation and enhancement should not exceed the budgetary provision
h) Infrastructure creation an enhancement should have the optimum utilization so that resources should not be wasted.
i) venues should have the structured wiring for electrical LAN, INTERNET, CABLE TV, INTERCOM etc and wiring layout is required to be maintained for future need
j) To comply with safety norms of regulatory and BMC viz.fire, natural calamity, act of terrorism etc
k) Address the need of physically disabled students
l) utility and services provisions and campus parking

Effectiveness of Teaching and learning
This policy facilitates the effective teaching and learning is as follows:
a) Ease of understanding latest topics online/ offline (for e.g.: Use of internet, projectors in class etc.) which helps faculties deliver lecture content more effectively.
b) Students seating arrangement in class rooms and labs. as 1:1
c) Sharing of computers in lab by students as 1:1
d) Enough space seating arrangement to staff and faculties in various department/sections
e) Internet speed required is increased as per its need to students, faculty and staff
f) Learning resource center (LRC) for students, faculty & staff members increased as per requirement on timely basis.
g) Establishment of Innovation center and centre of advance laboratories and R & D for conduct of SDPs and FDPs
h) Seminar halls and auditorium for conduct of seminar, workshop, conference, corporate presentation.
i) Tutorial rooms and Audio-visual rooms for conduct of lectures/seminars/STTPs
j) Wi-Fi facility to have an access to learning resource and technology

Policies and approach towards development of infrastructure has created the conducive and progressive environment and made the campus fully fledged for effective teaching and learning.

4.1.2   Detail the facilities available for:

Each department is self-content with almost no dependency on other department for conducting the academics. Each department has the classroom equal to the number of divisions in the department and 8-10 laboratories with some common facilities viz seminar room and tutorial room. Institute understands the comfort level of the student required as they need to spend minimum 7 hours in classroom/laboratory. Therefore classrooms are provided with single seater desk-bench. Software and hardware laboratories are provided with comfortable chairs with cushions .All classrooms are equipped with air conditioners. Table 4.1 shows the compliance of AICTE and the details of infrastructure in Table 4.2.
a) Curricular and co-curricular activities – classrooms, technology enabled learning spaces, seminar halls, tutorial spaces, laboratories, botanical garden, Animal house, specialized facilities and equipment for teaching, learning and research etc.

Table 4.3: Infrastructure details of Curricular / Co-curricular activities

Wing	Dept.	No. of Rooms required as per AICTE norms	Room number	No. of Rooms	Carpet Area	Furniture & fixtures	Electrical Equipment
A,B & C	CMPN EXTC ETRX IT MECH CIVIL H &S	36	107,108,109,110,111,112,216,302,303,304,305, 306,307,318,323,324,325,326,402,403,404,405, 412,414,415,416,418,419,420,421,502,503,504, 505,506,507,510,514,515,517,518,519,522, 523	44	3566.2	Yes	Yes
A,B & C	Shared Commonly	12	124,125,126,127,308,309,310,311,312,313,314, 315,316,317,407,408,409,410	18	752.52	Yes	Yes
A,B & C	Shared Commonly	3	SEM-I,SEM-II & SEM-III	3	522.86	Yes	Yes
B	Shared Commonly	Desirable	Auditorium	1	660.65	Yes	Yes
A,B & C	CMPN EXTC ETRX IT MECH CIVIL H &S	51	7, 8, 13, 17, 18, 102-A & 102-B, 103-A & 103-B, 104-A & 104-B, 105-A & 105-B, 106-A & 106-B,, 113, 114,115-A & 115-B, 116-A & 116-B, 117-A & 117-B ,118-A & 118-B ,119-A & 119-B ,120,121-A & 121-B, 122, 123,130, 131, 202-A & 202-B, 203-A & 203-B, 204-A & 204-B, 205-A & 205-B, 206-A & 206-B, 207-A & 207-B, 208-A & 208-B, 209-A & 209-B, 214, 215, 217, 218, 219, 221-A & 221-B, 319, 320, 321, 327, 328, 329-A & 329-B, 330, 411, 508, 520.	68	3982.94	Yes	Yes
Flower bed in the campus						Yes	Yes
Incubation center in 5000 sq.ft. area, Ph.D. center, auditorium							
Workshop, advance test and measuring instruments, machine shop, 3D Printers, advance training kits and simulation.							

Therefore institute has the capability to conduct all the lectures and practical in the common slot. However to maintain the proper discipline in the campus, time table has been staggered by one hour.

b) Extra-curricular activities-sports, outdoor and indoor games, gymnasium, auditorium, NSS, NCC, cultural activities, public speaking, communication skills development, yoga, health and hygiene etc.

Extra-curricular activity is the part of the overall personality development and to instill the human values with professional and social connect.

For sports, institute has qualified physical instructor and under his guidance along with the members of sports committee organize various sports event and also upgrade facilities for the same. For indoor games we have the facility for table tennis, carom, chess and many more. The arrangement is done in the Boys and Girls common room. In addition facilities may be extended on terrace in future.

Institute has taken the decision to promote four outdoor games which includes football, cricket, volley ball and basketball. Therefore, facilities has been developed in the playground maintained by the college and also has the facility for hand ball, kabbadi, kho-kho etc.

The institute conducts indoor, outdoor games regularly throughout the year as per the planned schedule. The gymnasium facility is provided for staff and faculty members which is made operational during 3.00 to 6.00pm. As per AICTE requirement Gym Facility is desirable & not a compulsory requirement. Institute has the Gym facilities equipped with latest machinery like treadmill, sit-up bed for stomach crunches, 4 Station Multi Home Gym Exercise with Furniture & A.C. facilities etc.

Auditorium:

The auditorium is used to conduct cultural events and annual function **Sojourn** each year. It is also used to conduct Pre-Placement Training during placement process. Auditorium has the seating capacity of 600+ audience with state-of the art audio visual facility and projection facilities. College has the university approval student wings of NSS and extension program each with 100+ student members. Facility for working for NSS/Extension has been created on fifth floor with the soft board for the displays and code of conduct.

Table 4.4: Infrastructure details of Extra Curricular activities

Sr. No	List of events	Type of event	Facility required	Compliance
1	Zephyr	Tech-fest	Classrooms, Laboratories, Auditorium	During tech-fest no academics is conducted. Entire premises is available
2	Cultural Program		Open space and auditorium	Large open space available
3	Rose Day	Special day	Open space and stage	Space available .Arrangement is done through regular vendor.
4	T-Spark	Intra sport	Playground for outdoor and room for indoor.	Football ground and Cricket ground available. Indoor facility on 5th floor.
5	Inertia	Inter collegiate	Flood Light, Playground	Play ground is available, Flood light arrangement is to be done.
6	Sojourn	Annual day	Room for preparation and auditorium for show	Available. Practice to be done after 5.30 pm
7	Blood donation camp	NSS activity	Multipurpose hall	Available
8	Heath checkup		Multipurpose Hall	Available

Language laboratory:

It is developed in the academic year 2009-10 on 5th floor equipped with 48 multimedia PCs connected with INTERNET and multimedia projectors and the podium to develop the proficiency of English language and public speaking. Currently it is used for the conduct of communication skill and the

English proficiency training for vernacular medium students. It is also used for learning the Business Communication and preparation of TOFEL, IELET etc. Moreover institute has two multipurpose Hall can be used for multi purposes viz. Yoga, Activity based learning, Group discussion etc.

Health and Hygiene:
Institute maintains the premises based on Five S Model

Table 4.5: Recreation Facility

Recreation facility	Facility operational	Sports kit available	Remark
Football ground	Yes	Yes	3.5 acre ground
Basketball ground	Yes	Yes	
Badminton court	Yes	Yes	
Lawn tennis	---	---	Facility available in sister concerned institute.
Cricket ground	Yes	Yes	Separate ground
Gymnasium	Yes	Yes	Only for staff
Language Lab	Yes	yes	English proficiency for public speaking

4.1.3   How does the institution plan and ensure that the available infrastructure is in line with its academic growth and is optimally utilized? Give specific examples of the facilities developed/augmented and the amount spent during the last four years (Enclose the master plan of the institution/campus and indicate the existing physical infrastructure and the future plan expansions if any).

The available infrastructure is in line with academic growth is due to:
a)   All area requirements, infrastructure facility etc. incompliance with AICTE norms and standards and zero deficiency report for infrastructure and facility since inception. Each department has their individual classrooms and laboratories.
b)   The utilization of all the classrooms and labs (hardware & software) is around 70% on an average
c)   Institute has provided for separate common rooms for women staff members and students.

Table 4.6: Details of existing physical infrastructure

Office	Area in sq. mtr.	Flooring	Electrification	Furniture's & Fixtures	Air conditioning
Admin section	Refer Table 4.2	Yes	Yes	Yes	Yes
Exam section		Yes	Yes	Yes	Yes
Placement office		Yes	Yes	Yes	Yes
Library		Yes	Yes	Yes	Yes
EXTC staff room		Yes	Yes	Yes	Yes
IT staff room		Yes	Yes	Yes	Yes
CMPN staff room		Yes	Yes	Yes	Yes
ETRX staff room		Yes	Yes	Yes	Yes
MECH staff room		Yes	Yes	Yes	Yes
H&S staff room		Yes	Yes	Yes	Yes
Security		Yes	Yes	Yes	Yes
Stores		Yes	Yes	Yes	Yes

Faculty offices:
The Institute has a separate office for Principal and Dean's cabin. Additionally, the Institute has a boardroom. All offices, the boardroom and the faculty staff room are air-conditioned. They are equipped

with a white-board, bookshelves, quality furniture, and direct phone facility. Faculty members are provided with desktops and laptops. Following are the details of these facilities:

Table 4.7: Infrastructure details of Principal and Deans Office

Office	Area in sq. mts	Flooring	Electrification	Furniture's & Fixtures	Air conditioning
Board rooms	54.18	Yes	Yes	Yes	Yes
Principal Office	37	Yes	Yes	Yes	Yes
Deans Cabin	74.18	Yes	Yes	Yes	Yes

Table 4.8: Facility developed /augmented in last four years

Sr. No.	Facility developed	Profile of facility	Year	Utility
		EXTC		
1	IIT Bombay Remote Centre	Till date the Remote Centre has conducted 21 workshops. The participants for the workshop are TCET faculties as well as the engineering faculties from all over India. We have also conducted the workshops for engineering students.	2012	Participation in IIT Bombay Remote Centre leads to enhancement in the understanding of teachers in respective course, and improvement in class room teaching. The use of new technologies and tools helps to further enhance the educational experience. After the course the teachers will be able to use open source contents, technologies and tools for laboratory use.
2	TCET-CISCO Wireless Network Laboratory	Cisco Lab. Equipment - Cisco 2611 XM Router (1 No.), Cisco 2610 XM Router (2 Nos.), Cisco 3550 - 24 Switch (1 No.), Cisco 2950	2013	1. Hands on training on Industry Lab setup 2. Bridge courses in networking for preparation for CCNA, CCNP. 3. Internships and relevant Placement Assistantship 4. Workshops
3	TCET-TEXAS Instruments Laboratory	1. To promote design of embedded products based on TIs tools. 2. To promote design of educational solutions for teaching subjects on embedded systems. 3. To provide trainings to the students. 4. To organise Train the Trainer program 5. To organise Faculty development programs 6. To bridge gap between the industry and academic world.	2015	1. Hands-on learning experience for students 2. Domain enrichment 3. Institute-Industry interaction through collaborative research 4. Internships and relevant Placement Assistantship 5. Workshops
4	Hardware lab No. 105 renovated to Hardware cum Software Lab	PCs with subject related software, Furniture, Soft boards, Whiteboard etc. AC	2016	105 – Lab is utilized for regular software simulation practical.
		ETRX		

Sr. No.	Facility developed	Profile of facility	Year	Utility
1	Lab.114 Control system and automation	The Lab. contains the following equipment's: SoC Development Kitsin center of excellence in Embedded system in collaboration with Arm University & Cypress Semiconductors ARM Cortex M0 - Cypress PSoC 4042 Pioneer Development Boards PSoC4 Bluetooth Low Energy Pioneer Development Board ARM Cortex M0+ -Free scale FRDM-KL25Z development boards Thunder board sense board kit	2015-16	Conduct of trainings & STTPs to faculty members for developing their skill set in the area of Microprocessors, Embedded system in turn strengthening the Embedded system domain and Industry Automation domain
2	Lab.116, Embedded system& Advanced Networking Technology	The setup is to support Embedded system and wireless experiments The lab. contains equipment's like kit-18used for Embedded system &Wireless based experiments 4-kit Embedded system &Advanced Networking Technologies based Experiments kit-18 used for communication & linear integrated circuit based experiments	2015-16	a) Research Facilitates for UG students and research scholar of the institute for various experiments in the advance Networking Technologies. b)It is helpful to students perform the experiments on Embedded system and wireless system and
3	Lab.117 Optical& Mobile Communication Lab	used for mobile communication based experiments ,Optical fiber system based experiments , Power electronic & Advance Power electronic based experiments	2016-17	Research Facility for UG students and research scholar of the institute for various OFC&MC
4	Lab 113 Analog System lab (in collaboration with Texas Instrumentation)	SoC Development Kits in center of Excellence collaboration with Texas Instrumentation (T.I.)	2014-15	Research Facilitates for UG students and research scholar of the institute for various experiments in the Analog lab system, Digital Communication ,

Sr. No.	Facility developed	Profile of facility	Year	Utility
5	Hardware	Power supply dual 30v dc PSD 3205, 3MHZ Function generator MSG3M, Oscilloscope (CRO) Model – 3803, , 60 MHz 4 channel 1GS/S colour digtal storage oscilloscope D36060CA, 60 MHz 4 channel 1GS/S colour digtal storage oscilloscope D36060CA4, 3 MHZ function generator, universal IC Tester	2012-13	Useful for all hardware experiments
6	V TCAD	licenses -10 with one sever used for device Level simulation and modeling	2015-16	The licenses were used to deal with practical experiments, projects based on the subjects VLSI and nano technology
	MATLAB 7.1	licenses -15 with one sever used for device Level simulation and modeling	2014-15	The licenses were used to deal with practical experiments, projects based on the subjects of Communication and control system
	Keil MDK Pro Licenses	Embedded System design based experiments –software	2015-16	The licenses were used to deal with practical experiments, projects based on the subjects of Embedded system
CMPN				
1	Lab.214, Computer Center – I (Open source and computer network)	This lab is developed for networking based projects and courses. Configuration of Lab is as follows: Dell Optiplex380, intelcore2 Duo E7500, 2.93Ghz, 2GB RAM, 250Gb HD, 18.5"TFT, Keyboard, Mouse	2013-14	a)To conduct Network related courses b) To conduct projects for UG students b) Conduct of trainings and bridge courses.
2	Lab.215, Computer Center – II(Network Security and Network simulation Lab)	This lab is developed for major, mini and minor projects. Also for the advanced and bridge courses. The lab contains the following equipment's to conduct of various projects and courses using open source and commercial software. Configuration of Lab is as follows:	2014-15	a)To conduct projects for UG students b) To run Programming languages and DBMS Courses. c) Conduct of trainings and bridge courses.

Sr. No.	Facility developed	Profile of facility	Year	Utility
		Dell Optiplex , I-5 Intel core processor, 3.2 GHz, 500 GB HDD 4 GB RAM, Duel Boot OS(Linux and Win7)		
	IT			
1	Lab.207, Intel Intelligent Lab. systems	The lab contains the following equipment's for conduct of various projects using wireless sensors and Intel Galileo kit. The Lab. contains the following equipment's: a)Intel Galileo (5 No.s) b)Advance sensor set (1 No.) c)Enables WiFi and Bluetooth on Galileo(5 No.s) d)Micro SD card (5 Nos) e)GSM-GPRS shield – ATWIN Quad- band GPRS (5 Nos.) f) GPS module (2 Nos) g) FTDI cable (5 Nos) h)2.4 Ghz WiFi Antenna (5 Nos) i)USB Cables (5 Nos) j)Content CD(5 Nos)	2016	a)To conduct projects for UG & PG students with the available IoT equipment's b) Conduct of trainings & STTPs to faculty members for developing their skill set in the area of IoT, in turn strengthening the ICT domain. c) Institute can host ideation and make competitions by inviting other college students to participate in the IoT competition
2	Lab.205, Virtualization & Cloud Computing Lab. Under AICTE-MODROBS	The setup is to support heterogeneous environment (Windows and Linux) , Where application runs on virtual desktop on private cloud. The model is based on all three service models of cloud computing which are IaaS (Infrastructure as Service), Paas (Platform as Service) & SaaS (software as Service). The lab. contains the following equipment's: a) Dell power Edge RS20 Server S/N 7QPB102 , Q*PB102 (2 Nos) b) Desktop Computers (5 Nos) c) Laptop Dell (1 No.)	2016	a)Research Facilitates for UG,PG students and research scholar of the institute b)It is helpful to students simulate public cloud environment and will acquired new cloud based technology

Sr. No.	Facility developed	Profile of facility	Year	Utility
3	Lab.213, Thakur Accenture Innovation center	Dell Optiplex , I-5 Intel core processor, 3.2 GHz, 500 GB HDD 4 GB RAM, Duel Boot OS(Linux and Win7)	2013	1) Accenture Code Maze 2) Accenture ERP Training 3)Accenture Head Start Foundation Programme 4) Industry-Oriented Workshop
4	Adobe License's	The Adobe software is used for Multimedia applications & Project management. The details of Adobe software Licenses include: Adobe Photoshop CC (2Nos) Adobe Illustrator CC (2 Nos) Adobe Dreamweaver CC ((4 Nos) Adobe Audition CC (1 No.) InCopy CC (2 Nos) InDesign CC (3 Nos) After Effects CC (2 Nos) Flash Professional CC (3 Nos) Adobe Muse CC(2 Nos) Adobe Premiere Pro CC (2 Nos)	2015	The licenses were used to deal with practical experiments, projects based on the subjects Computer Graphics & Virtual Reality, Multimedia systems.
		MECH		
1	Lab No. Gr-01(A), Manufacturing Engineering Lab-I The lab is admeasuring 200 Sqmtrs.	This lab is developed for understanding various basic machining operations/ processes and machine protocols. Also for fabricating various Engineering projects. Lab is equipped with following equipments: All geared Lathe -20 Shaping Machine-02 Milling Machine-1 Spot welding -1 Power hack saw-1 Grinder-2 Smiths furnace-01 It is supported by various furniture and fixtures as follows. White Board, Dias, faculty table, flapper chairs-20 , wooden cupboard, storage rack, chip containers, Cabin for faculty(W/s. Superintendent) with PC	2013	a)To conduct Practical's of the subjects Machine shop –I , S.E.(Sem-III) and Machine shop-II, S.E.(Sem-IV) b) To conduct projects for UG students b) Conduct of trainings and bridge courses.

Sr. No.	Facility developed	Profile of facility	Year	Utility
		and Internet port ,split Air conditioning, Intercom port, necessary electrical connection(2 Phase & 3 Phase) ,Notice board, Wash basin, fire extinguishers, illumination and air circulation equipments, first aid box.		
2	Lab No. Gr-01(B), Manufacturing Engineering Lab-III (CNC room) The lab is admeasuring 38 Sqmtrs.	This lab is developed for performing practical's for subject CAD/CAM/CAE (VII Sem) and also to perform major, mini and minor projects. The lab contains the equipment's is as follows: ACE CNC LATHE MODEL JOBBER LM-1 Swing over bed-500 mm, distance between center-425mm FANUC 01 – Mate- TD controller with all accessories Turning tool with suitable inserts-10 Facing tools with suitable inserts-10 ID Threading tools with suitable inserts-10 Parting Tools with suitable inserts-10 Lab is equipped with necessary electrical connections, furniture and fixtures.	2015	a)To perform Practical of B.E. (VII Sem)for the subject CAD/CAM/CAE b)To conduct projects for UG students c) Conduct of trainings and bridge courses.
3	Lab Gr-02 FLUID MECHANICS LAB The lab is admeasuring 228 Sqmtrs.	Bernoulli's verification-1 Impact of Jet-1 Pipe friction apparatus-1 Wind tunnel-1 Pitot tube-1 Metacentric height-1 Dead weight pr gauge-1 Ventury meter and orifice meter-1 Nozzle apparatus-1 Lab is equipped with necessary electrical connections, furniture and fixtures.	2013	To perform Practical's of S.E. (Sem IV) for the subject FLUID MECHANICS
		Pelton wheel Turbine Test rig-1	2014	To perform Practical's of T.E. (Sem VI)

Sr. No.	Facility developed	Profile of facility	Year	Utility
		Francis wheel Turbine Test rig-1 Model of Lancashire boiler, Model of Cochran boiler Model of four stroke engine-1 Model of two stroke engine-1 Lab is equipped with necessary electrical connections, furniture and fixtures.		for the subject THERMAL AND FLUID POWER ENGG.
		Study of Rotary Compressor-1 Different components Centrifugal Pump-1 Trial on Reciprocating Compressor-1 Trial on Single Stage reciprocating pump-1 Trial on Multistage centrifugal pump-1 Lab is equipped with necessary electrical connections, furniture and fixtures.	2015	To perform Practical's of B.E. (Sem VI) for the subject MECHANICAL UTILITY SYSTEMS
4	Lab Gr-03 Design Engineering Lab-III The lab is admeasuring 102 Sqmtrs.	Universal Testing Machine-100 tonne-1 Torsion Testing machine-1 Impact Testing Machine-1 Hardness testing machine-1 Lab is equipped with necessary electrical connections, furniture and fixtures.	2013	To perform Practical's of S.E. (Sem III) for the subject STRENGTH OF MATERIALS
		Fatigue testing machine-1 Trinocular and binocular microscope-2 each, Jominy end quench test-1, Metallurgical samples-1, cutter machine-1 abrasive machine-1,Furnace-1 Lab is equipped with necessary electrical connections, furniture and fixtures.	2013	To perform Practical's of S.E. (Sem IV) for the subject MATERIAL TECHNOLOGY
5	Lab Gr-04	Multi cylinder petrol engine test rig-1	2013	To perform Practical's of T.E. (Sem V)

Sr. No.	Facility developed	Profile of facility	Year	Utility
	Thermal Engineering Lab – I The lab is admeasuring 179 Sqmtrs.	Single cylinder test rig-1, Models of fuel injection system, ignition system, solex carburetor, Gas analyzer for 4 gases. Lab is equipped with necessary electrical connections, furniture and fixtures.		for the subject I.C. ENGINE
		Synchromesh gear box - 1,sliding mesh gear box-1,constant mesh gear box Hydraulic disc braking system-1,Hydraulic drum brake unit-1,Steering Mechanism rack and pinion type-1,worm and roller type-1,Hydraulic power steering system-1,Rear axle assembly with differential gear semi floating type-1,Front suspension type sysem-1,Mac-pherson type suspension system-1,Front suspension system double wishbone-1,battery charging system-1,Old Car for Demonstration(Cut section)-1 Lab is equipped with necessary electrical connections, furniture and fixtures.	2015	To perform Practical's of B.E. (Sem VII) for the subject AUTOMOBILE ENGINEERING
6	Lab C-302 Design Engineering Lab-I The lab is admeasuring 87.35 Sqmtrs.	Solid work 2013-14 1bundle for 60 licenses, Workstation- (HP Z2220 : Intel Xeon E3-1225v23.2 GHz 8GB,DDR3-1600ECc , 1TB HDD, Monitor HP LED 23" ZR 2330W) Plotter-1 Lab is equipped with necessary electrical connections, furniture and fixtures.	2013	To perform Practical's of S.E. (Sem III) for the subject COMPUTER AIDED MACHINE DRAWING
		Finite Element Analysis Software Version -15 Ansys academic Teaching Mechanical and CFD version	2014	To perform Practical's of T.E. (Sem VI) for the subject FINITE ELEMENT ANALYSIS

Sr. No.	Facility developed	Profile of facility	Year	Utility
		Lab is equipped with necessary electrical connections, furniture and fixtures.		
	Thakur-Tata Technologies Centre of Excellence	CATIA PLM - 60 CATIA V6 - 15 DELMIA V6 -15 SIMULIA V6 -15 ENOVIA V6- 15 iGETIT - 30	2015	To conduct Bridge course training on advanced CAD/CAM software by TATA Technologies Trainers.
7	Lab C-307 Thermal Engineering Lab – II The lab is admeasuring 74.25 Sqmtrs.	Thermal conductivity of metal bar-1, determination of contact resistance app-1, radial heat conduction-1, heat pipe apparatus-1, fin efficiency and effictiveness-1 unsteady state heat transfer appa-1, natural and forced convection apparatus-1, Lagged pipe app-1, shell and tube heat exchanger-1, plate type heat exchanger-1, emissivity app-1 Lab is equipped with necessary electrical connections, furniture and fixtures.	2014	To perform Practical's of T.E. (Sem V) for the subject HEAT TRANSFER
8	Lab C-308 Manufacturing Engineering Lab-II The lab is admeasuring 74.25 Sqmtrs.	Bourdon tube pressure gauge-1 Dead weight pressure gauge-1 LVDT apparatus-1 Strain gauge-1 Calibration of tachometer-1 Vibration kit-1 Feedback system-1 Servo Mechanism, Frequency response app-1 Transient response app-1 PID controller-1 Lab is equipped with necessary electrical connections, furniture and fixtures.	2014	To perform Practical's of T.E. (Sem V) for the subject MECHANICAL MEASUREMENT
		Comparator-(Mechanical, Pneumatic, Electrical)-1 Each Surface roughness Tester-1,	2014	To perform Practical's of T.E. (Sem VI) for the subject

Sr. No.	Facility developed	Profile of facility	Year	Utility
		Angle Dekker and Auto collimator-1, Parkinson Gear Tester-1, Optical Profile Projector-1, Floating Carriage Micrometer-1 Lab is equipped with necessary electrical connections, furniture and fixtures.		METROLOGY AND QUALITY ENGINEERING
9	Lab C-309 Design Engineering Lab-I The lab is admeasuring 74.25 Sqmtrs.	Various models of Inversion of four bar chain , oscillating cylinder, kinematic chains, scotch yoke ,etc	2014	To conduct theory lecture of S.E. (Sem IV) for the subject THEORY OF MACHINE-I
		Governer-1, rope brake dynamometer-1, Gyroscope-1, Various Models of clutches, brakes ,etc Lab is equipped with necessary electrical connections, furniture and fixtures.	2014	To perform Practical's of T.E. (Sem V) for the subject THEORY OF MACHINE-II
		Whirling of shaft apparatus-1 Static and dynamic balance apparatus-1 Experimental set up for vibrating table(Force transmissibility)-1 Experimental set up for transmissibility (displacement transmissibility) Lab is equipped with necessary electrical connections, furniture and fixtures.	2014	To perform Practical's of T.E. (Sem VI) for the subject MECHANICAL VIBRATION
10	Lab C-306 Automation Lab-I The lab is admeasuring 74.25 Sqmtrs.	Electronic Pneumatic Kit-1 Electronic Hydraulic Kit-1 Sensor Trainer kit with accessories-1 NI data acquisition Card-1 Servo motor with drive-1 Lab is equipped with necessary electrical connections, furniture and fixtures.	2014	To perform Practical's of T.E. (Sem V&VI) for the subject MECHATRONICS AND CONTROL
11	Lab C-410	Air conditioning test rig-1	2015	To perform Practical's of

Sr. No.	Facility developed	Profile of facility	Year	Utility
	Thermal Engineering Lab – III

The lab is admeasuring 74.25 Sqmtrs. | Refrigeration test rig-1 Domestic refrigerator with working and control display test rig-1

Lab is equipped with necessary electrical connections, furniture and fixtures. | | B.E. (Sem VIII) for the subject Refrigeration and Air condition |
CIVIL				
1	Building Material and Construction Laboratory	200 (T) CTM, Tile Flexural M/C, 30 cm GI Sieve, Tile Abrasion MlC, 20 cm Brass Sieve, Balance 100 kg, Laboratory Oven, Vicat Apparatus	2015-16	To perform Practical's of Second Year Semester III and IV
2	Concrete Technology Laboratory	Compacting Factor Apparatus, Vee bee Consistometer , Flexure Testing Machine, Blaine's Air Permeability Apps, Slump Test Apparatus , James Manual Test Hammer , Cube Moulds 70.7mm-C.I , Cube Moulds 150mm-C.l , Flow Table Machine Motorized, Vibration Machine, Vibration Table, Beam Mould 100xl00x500mm	2015-16	To perform Practical's of Second Year Semester III and IV
3	Engineering Geology Laboratory	Model showing Dip, Strike and Escarpment in Inclined strata. Models Fold, Fault, Models Unconformity, Models Mining, Trays, Streak Plate, Magnetism & Electricity	2015-16	To perform Practical's of Second Year Semester III and IV
4	GEOTECHNICAL ENGINEERING Laboratory	Pycnometer, Field Density Kit, Sand PouringCylinder 115mm diameter, Sand Pouring Cylinder 215mm diameter, Liquid Limit Device, Shrinkage Limit Apparatus,	2015-16	To perform Practical's of third Year Semester V and VI

Sr. No.	Facility developed	Profile of facility	Year	Utility
		Compaction Apparatus (100 mm), Compaction Apparatus (150 mm), Compaction Apparatus Rammer (2.86kg)		
5	Environmental Lab	Digital Turbidity Meter, 0 To 1000 NTU, Digital FlocculatorSix Stirrer, Residual chlorine By Orthotolidine Test Kit, Hardness Kit, Digital Sound Level Meter, Colony Counters, Imhoff Cone, Sharp Tip, Imhoff Cone, Blunt Tip, B.O.D. Incubators 3 Cft	2016-17	To perform Practical's of third Year Semester V and VI

Expansion Plan-
Library is in the process of expansion likely to be completed by the end of this academic year. Program specific research laboratory is to be developed on fifth floor. Additional 2 seminar rooms with state-of-the-art facility with digitally connected facilities. (Annexure-4)

4.1.4   How does the institution ensure that the infrastructure facilities meet the requirements of the Student's with physical disabilities?
The institution ensure that the infrastructure facilities meet the requirements of students with physical disabilities by giving support during writing exams, use of lift or at times wheel chairs are provided at their request, allowing parents stay in the campus during college hours etc.
All the floors are connected with lift. All floors are at zero level. Special toilet block on each floor.

4.1.5   Give details on the residential facility and various provisions available within them:
Hostel facility – Accommodation available: Yes (limited facilities as most of the students are day scholar)
Recreation facilities, gymnasium, yoga centre, etc.: Yes
Computer facility including access to internet in hostel: No
Facilities for medical emergencies: Yes, First aid box at reception, workshop and first aid room. In case of further emergency a doctor associated with the institute is available on call.
Library facility in the hostels: No (As hostel is at walk able distance from college and library working is from 8 am to 8 pm)
Internet and Wi-Fi facility: No. Security reasons not provided. Moreover, students are widely using these facilities on laptops and smart phones.
Recreation facility-common room with audio-visual equipment: Yes
Available residential facility for the staff and occupancy constant supply of safe drinking water: Yes
Security: Yes

4.1.6   What are the provisions made available to students and staff in terms of health care on the campus and off the campus?
Health care provisions:
- Provisions are made available to students and staff in terms of health care
- Medical checkup camp is arranged every year in the month of September for staff and students.
- Medical insurance for students are available as per UOM guidelines for the amount upto 1 lakh

- Management has created the platform for mediclaim for staff were part premium is paid by the institute
- Trust ambulance and college vehicle are available for emergency
- The first-aid box is kept at the reception for students and staff if they need in-case of emergency on the campus. There is an allocation of doctor who can be called if required urgently.
- There is a first aid room on the ground floor for staff and students, if they are not well on a specific day. First Aid Room is self-content with two beds to rest. Being located in the heart of Thakur Village around the institute lot of medical facilities viz, diagnostic centre, private nursing home, super specialty hospitals are available at a walking distance from the campus.
- Moreover more than 95% students are day scholars staying in the Thakur Village or nearing townships. In case any emergency their parents or guardians are only a call away. They are contacted by teacher guardian in case of any emergency. Therefore the student and their parents feel safe in the campus with the available healthcare provisions.

4.1.7 Give details of the common facilities available on the campus-spaces for special units like IQAC, Grievance Redressal unit, Women's cell, counseling and career guidance, placement unit, health centre, canteen, recreational spaces for staff and students, safe drinking water facility, auditorium etc.

Table 4.9: Common facilities developed to provide various services

	Availability	Location	Area	Remark
IQAC	Yes	Ground floor (office)	5 sq. mtr.	Cubical with meeting area and seating arrangement
Grievance redressal area unit	Yes	Examination section	74.18 sq. mtr.	Dean (Academic) Chairman and Examination I/c. MS
Women Development Cell	Yes	Ground floor	10 sq. Mtr.	Dean (SSW) is the chairperson
Counseling Career Guidance	Yes	First floor –HOC Cell, 4th floor –T & P Cell	118	
Placement Unit	Yes	4th floor	84 sq. mt.	
Health centre	No	-	-	Sick room is available with first aid facilities.
Canteen	Yes	Ground floor	250 sq.mt	Canteen is integrated with kitchen, service counter, payment counter, comfortable seating arrangement
Recreation space for staff and students	Yes	Fifth floor	74.18 Sq. Mtr.	Separate room for boys and girls with common facilities
Auditorium	Yes	2nd floor	250 sq.mt	State-of-the art air conditioned auditorium with Dolby sound system , projection facilities and cafeteria

4.2 Library as a Learning Resource

Learning Resource Centre (Central Library) is shifted on 4th floor in November 2006. Currently LRC is having 840 sq. mtr. of built area and it is highly modular. Seven sections are there which include: Stacking Section, Reference Section, Digital Library, A-V Room, Circulation section, student and staff reading rooms. Koha library management software is used for managing library. Books and Students' Library cards are barcoded for book transaction purpose. Presently LRC is having more than 30,000

books, 81 printed journals and 8 e-journal databases. LRC provides Book Bank facility to SC/ST and economically weaker section students. LRC is open for 12 hours (8.00 am to 8.00 pm.)

Future plan of LRC:
1) To create institutional repository with the help of DSPACE software.
2) Increase the collection of e-books and save the space of the LRC.
3) Planning to implement RFID technology in LRC for fast functioning of library and immediate identification of resources.

4.2.1 Does the library have an advisory committee? Specify the composition of such a committee. What significant initiatives have been implemented by the committee to render the library, student/user friendly?

Yes, Library has an advisory committee. Its composition is as follows:

Dean Academic as a Chairmen & librarian as member secretary, All HODs and one faculty members from each department and student council secretary are members of the library committee.

Function
1) The Library Committee (LC) will function as an advisory body without administrative duties or powers, and also act as a liaison between the library and other members of the teaching staff.
2) It will assist in establishing broad general policies of the library.
3) It will help in the preparation of the library budget to be forward to the college management.
4) It will formulate a development plan for the library and initiatives to improve the usages of library by students as well as faculty.
5) For routine, day-to-day work the librarian will be directly responsible to the principal.
6) It will help in the preparation of the annual report of the library.
7) It will assist in the formulation of proposal in connection with grants and their allocation.
8) Withdraw and weeding out of unwanted and outdated material should be recommended by LC to the competent authority for final decision in the matter. The LC should meet at least once in three months.

Initiative
1) Recommend the books to the library which are useful for student and users at the beginning of every semester.
2) Book Bank Scheme facility is implemented for economically weaker section students.
3) Provide Hyperlinks of subscribed e-journal databases on library web page for easy access to students and users.
4) For fast transaction of books on library issue/ return counter new library software purchase is under process.
5) Provision of Rs. 50,000/- amount is done for purchase of required journal articles for PG students.

4.2.2 Provide details of the following:

- Total area of the library (in sq. mts) - 840 **Sq. mtrs**.
- Total seating capacity – **250.** Likely to be increase up to 400 from the academic year 2017-18
- Working hours (on working days, on holidays, before examination days, during examination days, during vacation) – **12 hrs. Mon-Fri and 8 hrs. on Saturdays and during vacations**
- Layout of the library (individual reading carrels, lounge area for browsing and relaxed reading, IT zone for accessing e-resources)
  o General Reading capacity: 128
  o Reference Section capacity: 48
  o Teachers Reading Room: 30
  o Digital Library capacity: 24
  o Audio-Visual Room: 20
  o Stacking Area Capacity: 30,000 books
- Wi-Fi facilities are going to be enhanced within the month, where institute has undergone the MOU with Vodafone through firefly

4.2.3   How does the library ensure purchase and use of current titles, print and e-journals and other reading materials? Specify the amount spent on procuring new books, journals and e-resources during the last four years.

Every year in the month of Dec-Mar budget is prepared for the next academic year, (Academic Year starts from July 1st every year). Procurements are done in four phases as per the budget provisions. For routine procurement which sets the incidental requirement of academic resources, a monthly provision of rupees 1.5 lakh has been made. Procurement should address the requirements of academic programme, projects, R & D work and other supplementary reading.

For the procurement, library receives suggestions from faculty and students for current titles which are required in the library. Moreover librarian also prepares list of books in consultation with the committee members. List is prepared based on the information available in book catalogues and UOM syllabus. On an average around 3000 books are added yearly for six programmes. All procurements of books, journals and e-journals are done keeping in mind the norms and standards set by AICTE and UoM (affiliating university) and also the professional and industrial requirements.

Library conducts the orientation programs on regular basis. Moreover, new arrival books are displayed in the library and the list is also displayed on the library notice board. Monthly usages, statistical information are also displayed in the library notice board. New arrival books are also updated on college website. Statistics of visit of faculty, staff and students can be seen in the table 4.7 given below:

Table 4.10: Library Usage of books, e-journals

Academic Year	Staff Visit	Student Visit	Digital Library	Books Issued	Books Returned	A-V Room	Remark
2012-13	766	27348	469	18323	16693	71	Data is collected from the records maintain with library
2013-14	932	32204	213	17715	17531	74	
2014-15	867	35451	609	20433	20252	112	
2015-16	635	37007	2936	15624	13805	60	

Table in general shows the increasing trends for the student visit and the usages of digital library
As per the budget provisions the expenses are done. Expenses over years can be seen in table 4.2 Significant increase in the procurement can be seen. It is mainly because of the increasing usages and change in the policy of regulating and affiliating body.

Table 4.11: Table 4.8 Library Expenditure over four years

Library holdings	2011-2012		2012-2013		2013-2014		2014-2015		2015-16	
	Num.	Total cost	Num.	Total cost	Num.	Total cost	Num.	Total cost	Num.	Total cost
Text books	1119	674016	1866	775324	2605	1055788	3562	1828270	2676	1498450
Reference books	16	48000	22	66000	25	100000	27	108000	35	140000
Journals/ Periodicals	57	715474	69	223505	69	451330	81	275025	81	262630
e-Resources	6	1209545	7	1127925	5	1225636	7	1537391	8*	1933190
Any other (specify) Gen. Mag.	12	8866	11	10334	11	5125	11	6966	11	23242
Total	1210	2655901	1975	2203088	2715	2837879	3688	3755652	2811	3731513

Names of subscribed 8 e-resources: 1. IEEE-ASPP, 2. Springer Electrical, Electronics & CMPN, 3. ASME, 4. ASCE, 5. McGraw Hill –Access Engg Library, 6. J-GATE (JET), 7. Elsevier- Science Direct, 8. ASTM Digital Library.

4.2.4   Provide details on the ICT and other tools deployed to provide maximum access to library collection?

- OPAC: 2 dedicated terminals

- Electronic Resource Management package for e-journals. IP based access to digital resources
- Federated searching tools to search articles in multiple databases – Open source books are used by the user. J-GATE federated source facility is available
- Library website - Library web page is available in college website **https://tcetmumbai.in/aboutLRC.html** . Library virtual tour can be seen on Home page
- Library pages on college website through which student can have access directly to e-resources.
- In-house/remote access to e-publications - Students can access e-publications in the Digital Library
- Library automation – All books and member cards are barcoded and LibSuite Library software is in use for library management.
- Total number of computers for public access - 30
- Total number of printers for public access – 1 (3 – in – 1)
- Internet bandwidth / speed : a)2 Mbps b) 52Mbps c) 1Gbps
- Institutional repository – Library content server maintained in the central IT server room
- Content management system for e-learning – Done through service provider of e-content.
- Participation in resource sharing networks/consortia (like inflibnet): Google search and research scholar

4.2.5   Provide details on the following items:
- Average number of walk-ins – **294.86 (per day)**
- Average number of books issued/returned – **Issued 1661 Avg 75.5, Returned 1564 Avg 71.09**
- Ratio of library books to students enrolled – **9:1 (against the AICTE ratio of 4:1)**
- Average number of books added during last three years – **2947.7 per year**
- Average number of login to OPAC – 12 per day
- Average number of login to e-resources – **19.3**
- Average number of e-resources downloaded/printed – 10 per day
- Number of information literacy trainings organized – **Yearly one orientation program for students at the beginning of semester & yearly one training for use of e-resources and as & when new staff joins induction of library process is conducted by Librarian**
- Details of "weeding out" of books and other material – Yearly after stock verification, unusable books are weeded out from library. Till date 77 books are weeded out.

4.2.6   Give details of the specialized services provided by the library

- Manuscripts - Nil
- Reference - Reference books, Syllabus, Question papers, Daily newspapers, Printed journals, magazines,
- Reprography – 3 in 1 machine (scanner, Printer and photo copier) of Image Runner 2520 (Canon).
- ILL (Inter Library Loan Service) – to Sister-concern libraries like TIMSR, TCSC, TIMSDR, TSAP
- Information deployment and notification – Monthly- Book New Arrival List, Student Overdue Reminders, Usage Statistics, etc.
- Download – Journal articles and full text which have been subscribed.
- Printing – on demand users are given the printouts of required online information, syllabus and university question paper
- Reading list/Bibliography compilation – OPAC facility provided.
- In-house/remote access to e-resources - In-house(LAN Based)
- User orientation and awareness – Yearly at the beginning of odd semester.
- Assistance in searching databases – Manually assisting user to guide search terms and Boolean search
- INFLIBNET/IUC facilities – NA

4.2.7   Enumerate on the support provided by the library staff to the students and teachers of the college.

- Providing reading, book issuing and book return facility 12 hrs. per day.
- Providing "open access" to stacking area for book selection to students.
- Providing access of e-resources to students & teachers 12 hrs. per day.
- Providing information about newly arrived books
- Providing set of books for the semester to economically weaker section students.
- Providing University Question papers & Syllabus for student & teachers
- Providing assistance during OPAC (Online Public Access Catalogue) search
- Providing required resources from sister-concerned libraries

4.2.8   What are the special facilities offered by the library to the visually / physically challenged persons? Give details.

- Assisted by library staff for all library services
- Notice for usages of library facility is issued by Librarian
- Physically Challenged persons can keep issued books from the library up **20** days with him & they can renew the issued books on telephonic conversion. Other student can keep issued books with them for seven days only.
- Special arrangement for online access facility is done in the library,
- Reading space is also reserved in the library
- Ground level flooring within the library with separate door. If required they can move in library freely on wheel chair. Wheel chair facility is also provided in the library.

4.2.9   Does the library get the feedback from its users? If yes, how is it analyzed and used for improving the library services. (What strategies are deployed by the library to collect the feedback from users? How is the feedback analyzed and used for further improvements of the library services?)

Yes, Library get the formal feedback from its users twice during the semester. Following points are used to get feedback from its users:

1) Availability of books
2) Indexing and stacking
3) Condition of books
4) Availability of new versions
5) Reading room environment
6) Availability of journals/magazines
7) Behaviour of staff

In addition the institute also takes the formal and informal feedback during the orientation and interactive session.

Moreover, from the current academic year survey has been started for the student where learning resource availability is one of the key area. Alumni feedback is also taken. Moreover it is discussed during the advisory committee for necessary action and compliances.

4.3   IT Infrastructure

TCET has well-structured IT infrastructure where almost all the computers approx. 1000 are connected on LAN. Structure can be seen in fig 4.1. Every floor there is a rack with CISCO switches and same is provided in each laboratory also. Each laboratory is provided with 2 printers. Laboratory uses the licenced as well the open source software. All the computers are purchased from DELL and HP. Machines comprise of server, desktops, workstations, laptops etc. INTERNET lines are available in all the academic venues and seminar rooms. Moreover all the seminar rooms can also be digitally connected in the broadcasting mode. Dedicated team of 6 members maintain the entire TCT infrastructure.

Institute has the policy to replace old PCs with the new one on regular basis so that student and staff can work with latest machine. Software for perpetual license are updated on regular basis by company

and paper license software are updated as and when vendor approaches with the new edition and the requirement is felt by the department.

TCET in 2006 was one of the few institutes with Wi-Fi connectivity in the campus. However because of security reasons the service has been discontinued. Now once again want to introduce the facility through Telecom operator viz. Reliance Jio etc. Facility will be available soon to staff and the students, service will be provided in healthy secured environment.

Since the IT field is continuously evolving through the committed IT team is continuously upgrading the facilities through market research so that the best of the facility should be provided to the students to make the learning effective and relevant.

4.3.1 Give details on the computing facility available (hardware and software) at the institution

Number of computers with configuration (provide actual number with exact configuration of each available system)

Table 4.12: Details of Computing Facility - Hardware

Sr. No	Processor	RAM	HDD Capacity	Quantity
1	Pentium D	1GB	160GB	30
2	Core2Duo/Dual Core	1GB	160GB	288
		2GB	160GB	140
			250GB	159
3	Core i5	4GB	500GB	325
4	Core i7	4GB	500GB	17
5	Intel Xeon	4GB	1TB	15
		8GB	1TB	15
			Total	989

- Computer-student ratio: - 2:1 (for IT & Computer) and other programmes 4:1
- Standalone facility-Yes
- LAN facility: Yes .Each computer is connected to firewall through CISCO Switches.
- Wi-Fi facility: Seminar Hall-3 (2 access points) and R&D cell (1-access point), Library access
- Licensed software: Oracle Academic, Microsoft Campus agreement, Rational Rose, Adobe creative cloud, antivirus Symantec, MatLab, AutoCad, CATIA, SIMULIA, SOLID WORKS, LAB VIEW, KEIL (Embedded System design), OPTISIM, CANADIAN AUTOCAD, CORELDRAW, INDESIGN

Table 4.13: Details of Computing Facility - Software

Sr. No.	Software Name	Quantity
1	Microsoft Campus Agreement	100
2	Adobe Creative Cloud (campus agreement)	50
3	IBM Rational Rose	30
4	Matlab	61
5	VTCAD	10
6	Oracle Academy	1
7	Symantec Antivirus Campus Agreement	Unlimited

- Number of nodes/computers with internet facility: Each Computer is connected to the firewall for access internet
- Any other: Firewall – Dell Sonic wall

4.3.2 Detail on the computer and internet facility made available to the faculty and students on the campus and off-campus.

The college provides high speed internet connectivity of 52mbps lease line of TATA to faculty members and students. Individual login id is provided to each faculty member. Digital library is provided for accessing the use of online journals and IEEE papers. All the computers in the campus are connected

to the centralized firewall, so that each can access to the internet from anywhere in the campus. One separate 2mbps lease line is available for the IIT programs. In addition in the current academic year, institute is providing 4G Wi-Fi connectivity of AIRTEL. Email ID is provided to student and staff with - @thakureducation.org domain through Microsoft Office 365.

4.3.3   What are the institutional plans and strategies for deploying and upgrading the IT infrastructure and associated facilities?

The college intends to upgrade the computers with latest configuration, Internet lease line with high bandwidth and highly configured network equipment. There are plans to extend computer facilities and high speed LAN for all departments. Institute is in the process of providing Wi-Fi 4G from AIRTEL. Students will have the facility of 45 min download with data download upto 100 Mbps per day. Moreover, 120 computers are likely to be added soon where 40 machines are high end machine with the performance of workstation and 8 workstation are to be added in CAD/CAM laboratory of Mechanical Engineering. With this addition in CAD/CAM laboratory there will be 38 dedicated work stations. Moreover two more seminar halls which are going to be IT enabled are going to be developed.

4.3.4   Provide details on the provision made in the annual budget for procurement, upgradation, deployment and maintenance of the computers and their accessories in the institution (Year wise for last four years)

Table 4.14: Annual budget provision for procurement, upgradation, deployment and maintenance of the computers

Items	2011-12 (in lakhs)		2012-13 (in lakhs)		2013-14 (in lakhs)		2014-15 (in lakhs)		2015-16	
	Budget	Utilization	Budget	Utilization	Budget	Utilization	Budget	Utilization	Budget	Utilization
Internet, projector, desktop, software, CCTV AMC, Consumables, Networking, Websites	100	96.43	123.00	91.07	166.5	209.66	207.50	146.00	169.50	128.94

The provisions helps the institute to upgrade the machine on regular basis in a cycle mode with period of 3-5 years

4.3.5   How does the institution facilitate extensive use of ICT resources including development and use of computer-aided teaching/learning materials by its staff and students?

Computers\Laptops are provided to each department. The faculties are liberally take help of the ICT resources such as internet, projectors storage media etc. to enrich their prescribed curriculum. The college has provided internet, projectors facilities in each classrooms and laboratories to provide e-learning. Faculty members are provided computers with internet browsing facility for preparation of teaching/learning materials in their respective departments. The college also has seminar halls equipped with projectors and other audio-visual aids with the access to INTERNET facilities, online courses are widely used for TLP in the college conduct of campus connect programme, SDP workshops and other training programmes for faculty as well as students. It is also used for online examination for mock activity. UOM has started on-line answer book evaluation since academic year 2013-14 and the question paper delivery. Moreover delivery of Xerox copy and result delivery is online. All forms viz. examination, enrolment, event registration are done through portal. Regulatory information for approval are also portal based. Therefore Band-Width requirement is proportionately increased every year.

4.3.6   Elaborate giving suitable examples on how the learning activities and technologies deployed (access to on-line teaching-learning resources, independent learning, ICT enabled classrooms/learning spaces etc.) by the institution place the student at the centre of teaching-learning process and render the role of a facilitator for the teacher.

- Infosys campus connect programme portal where student can have access to training contents and projects and PPT for learning purpose.
- ICT enabled services are taken up by teachers for effective delivery of teaching learning process. One of the services based on ICT is A-View Virtual Classroom environment.
- During A-View programmes that are delivered by experts from IITs (Bombay and Kharagpur) contain lectures based on various engineering subjects/ domains. Few programmes such as signals and systems, research methodology, C programming, Use of ICT, Engineering physics etc. were conducted with support of A-View to strengthen the domains/ subjects. In turn these programmes helped teachers to deliver effective content during lectures/ practical. The institution is in the process of implementing Moodle.
- Spoken tutorial workshops- Free and open source software (FOSS) are provided by the Spoken Tutorial.org site maintained by IIT Bombay, where the student can learn the use of open source software platform.
- Online learning platforms viz. NEPTEL COURSE ERA etc. have been created from the current academic year and institute is getting the response from students as well as faculty. Last year 400+ students registered in NPTEL courses out of which 49 students and two faculty members got certificates. In the current academic year 1107 students and 37 faculty have registered, certification process is yet to be completed.

4.3.7   Does the institution avail the National Knowledge Network connectivity directly through the affiliating university? If so, what are the services availed of? NDN

Yes, Spoken Tutorials is an initiative of National Mission on Education through ICT, Government of India, to promote IT literacy through Open Source Software undertaken by IIT Bombay. Our institution regularly conducts workshops on spoken tutorials. On FOSS platform, in the current academic year, institute has institutional registration of NDL on 25/12/2016 and as a result today we have upto 200 members

4.4   Finance

4.4.1   How does the institution ensure optimal allocation and utilization of the available financial resources for maintenance and upkeep of the following facilities (substantiate your statements by providing details of budget allocated during last four years)?

- It is the need based activity for the institute,yearly budget provisions are done.For monthly expenses provisions are made for the material purchase upto Rs 30,000/-(Cleanning material and standby expenses.
- Optimal utlisation of the available financial resources for maintenance and upkeeping of the facilities is a perogative of maintenance department . Institue has team of 3-5 employees working to ensure the optimal expenditure for MAU. As per the process is concerend the details are documented in ISO manual. Overall monitoring of the fund utilisation is done by the Principal. As per the expenses if any material requirement need the fund more than Rs 25,000/- three quotations are to called.Vendors with best price and best service will be given the purchase order. Moreover the price is also checked online before releasing the order. To reduce the maintenance cost, maintenance has been made a culture with zero tolerance to any non-compliance.Therefore employees and students both are conscious to any damage. In case of any damage immediate action is taken at the initial phase itself.Some of the maintenance are outsourced which is daily monitored by the maintenance dept.

Table 4.15: Optimal allocation and utilization of the available financial resources
All amounts in Lacs.

Sr. No.	Items	2011-12		2012-13		2013-14		2014-15	
		Budget allocation	Utilization	Budget allocation	Utilization	Budget allocation	Utilization	Budget allocation	Utilization
1	Building	-	-	-	-	-	-	-	-

Sr. No.	Items	2011-12		2012-13		2013-14		2014-15	
		Budget allocation	Utilization	Budget allocation	Utilization	Budget allocation	Utilization	Budget allocation	Utilization
2	Furniture & Fixtures	35.00	32.56	40.00	30.73	75.00	24.82	75.00	40.29
3	Electrical Equipment	5.00	1.54	-	-	20.00	7.24	55.00	-
4	Campus security camera	10.00	8.30	-	-	-	0.34	-	19.70
4	Computers	93.00	89.79	112.50	83.26	157.50	201.88	198.50	136.49
5	Vehicles	10.50	10.12	17.50	7.99	12.00	6.24	12.00	6.65
6	Any other*	1441.70	1386.85	1807.75	1631.07	2093.00	1789.93	2337.50	2156.49

*Amount inclusive salary, library, administration, operation expenses etc.

4.4.2   What are the institutional mechanisms for maintenance and upkeep of the infrastructure, facilities and equipment of the college?

Maintenance of resources

a)   **Equipment and machine maintenance**
Some of the critical maintenance work are outsourced as per the outsourcing process defined in ISO manual. However regular monitoring and control is the responsibility of maintenance section. During the maintenance if anything is required to be purchased shall be raised through requisition slip.
  i.   Records of equipment's are maintained in stock registers as specified in Purchase Process TCET/IP/05
  ii.   Equipment's / appliances are serviced periodically or as and when required
  iii.   Equipment's like measuring devices are checked / calibrated during servicing
  iv.   Servicing is done either by in-house personnel or by external party or through annual maintenance contract (AMC)
  v.   Record of servicing is maintained.
  vi.   Records of AMC are maintained in AMC Register.
  vii.   Budget of AMC need to be submitted by December 31st of the ongoing academic year by Department / Section.
  viii.   Equipment's that are not in working condition and are not repairable are removed from the stock.
  ix.   Machines in Machine Shops are maintained and calibrated by the vendor supplying the machine.

b)   **General maintenance:**

  i.   Maintenance of A.C. plant is outsourced on AMC and Auditorium, cleaning and maintenance is done by internal staff member and one person from outside.
  ii.   Cleanliness & daily maintenance of the interior facility (classrooms, laboratories, hallway, and staircase) is done by Class IV employees of the Institute under the supervision of the Admin Office and surprise check is done by Executive Compliance Officer.
  iii.   Cleanliness of toilet blocks and wash room have been outsourced since AY 2013-14.
  iv.   Fire extinguisher is outsourced since refilling of the cylinder is done once in a year.
  v.   Maintenance of CCTV is outsourced and is maintained in coordination through technical person of computer center
  vi.   ICT infrastructure is maintained by computer centre personnel.
  vii.   Cleaning work is done by floor peon. Other maintenance related issues are attended by carpenter and electrician of the institute subject to the complaint put in complaint register.
  viii.   Water tank cleaning is done quarterly and the AMC is outsourced

ix. Carpentry, plumbing and clerical maintenance is done by the in-house carpenter, plumber and electrician respectively.

4.4.3 How and with what frequency does the institute take up calibration and other precision measures for the equipment/instruments?

Table 4.16: Calibration and other precision measures for the equipment/instruments

Department/ section	Equipment's	Calibration frequency	Remarks
Chemistry	Weighing machine and other electronics	once in a year	---
Workshop	Vernier callipers	once in a year	---
Electronics	CRO, voltage power supply, function generators, multi-metres	once in a year	As per requirement of the equipment's, vendors are called for repairing within warranty or after warranty as per the norms
Mechanical	Vernier Callipers Screw Thread Micrometre Gear Tooth Vernier Calliper Digital Vernier Calliper Vernier Height Gauge Vernier Depth Gauge Dial Indicator Outside Micrometre Inside Micrometre	once in a year	In warranty period of three years (2014-17), so calibration is not yet done. But required to be done after warranty maybe from the company supplied the equipment and Machine

4.4.4 What are the major steps taken for location, upkeep and maintenance of sensitive equipment (voltage fluctuations, constant supply of water etc.)?

Meter room and electrical installation sensitise area only authorised person are allowed to enter. Otherwise it is kept locked. Authorised person includes college electrician, the person from TATA POWER and BMC officials designated for visit or inspection.
Voltage fluctuation: 24hrs power back up by TATA power
Measures are taken to save electricity are as follows:
   a) During vacation time venue which are not used are kept closed
   b) Awareness programmes with slogans are conducted for students, staff and faculty
   c) Floor peon are instructed to keep watch on venues
Power Backup:
In case of emergency or special occasion or breakdown, Tata power provides portable DG set on request. If not available it is hired which is on call basis.
Additional power backup is UPS in server room with half an hour backup to ensure consistency in data backup. UPS in also available for EPABX with PRI line with 150 intercom connections are present there are 56 lines of intercom on all floors and spread over five floor and ground floor. In case of failure of electricity communication will remain intact.
Supply of water: Water supply by MCGM
Institute has two underground storage tanks, one for Municipal Corporation of Grater Mumbai (MCGM) water (drinking water) with a capacity of 1.5lakh litres and second one is for boring water or tanker water. Institute has Two overhead tanks for boring water with storage capacity of 40,000 litres each (boring) and 30,000 litres (MCGM). It is fitted with 4 motors and water from underground tank to overhead tank. Each floor is provided with two water coolers with purifiers. Water cooler cleaning is done on call basis by local vendor from purifier or blue star.
Water tank cleaning is done quarterly by new technical high power pressure jet machines and the AMC is outsourced to Anjali Aqua services. The following procedure for cleaning of water tank is done:
   a) High-pressure fresh water spraying jets are used to remove all unwanted elements from all the areas of tanks

b) Addition of detergent and chemicals in the tank proportionately according to the capacity of tanks
c) Scrubbing of internal portions of the tanks through fibre foam brush
d) Washing through new technical of pressurised jet pumps
e) Removing of all duster water from the tanks
f) Spraying of drinking water through
g) Cleaning through the soft touch sponge

Therefore, proper care is taken for the supply of uninterrupted drinking water by the college. All tanks are kept locked so that unwanted situation can be avoided. Moreover camera are put up for vigilance

Any other relevant information regarding infrastructure and learning resources which the college would like to include-
1) Institute has 50 cameras installed in the campus for safety and security of stakeholders particularly students and employees
2) Institute is extending the seating capacity and stacking capacity of library
3) Institute has 2 multi-purpose /studio rooms
4) Bachelor accommodation for faculty members are available particularly those who are new to the society

Criterion - V: Student Support and Progression

5.1 Student Mentoring and Support

5.1.1 Does the institution publish its updated prospectus/handbook annually? If 'yes', what is the information provided to students through these documents and how does the institution ensure its commitment and accountability?

Yes, institution publishes its admission brochure (prospectus) every year. It contains the following:

- Message from Chairman, CEO, Principal, Deans ,HODs
- Institute's Vision, Mission,
- Profile of the institution,
- Best Practices (student-centric) – Mini Projects, Student Development Programme (SDP),Local Industrial visit details, Technical seminars, ENSPIRE (E-week)
- Details of Courses offered
- Institutional growth (no. of students), academic performance (in terms of results)
- Institute Infrastructure – Auditorium, class rooms/seminar halls, Library etc.
- Department profile with faculty profile
- International conference (Multicon-w) details
- Testimonial-Ph.D. (Technology) students
- Various institutional activities
- Student's achievements
- Library (Learning Resource Center)
- Sections including – Training & Placement, R&D Cell, Examination
- Student council activities,
- Student forum --- IEEE,CSI,NSS,IETE,ACMASME,TCET-MUN & ISTE
- Fee structure & Admission rule
- Anti-ragging policy
- Grievance Redressal committee
- Women development/women grievance committee
- Scholarship benefit under various schemes ---Social welfare, merit-cum-means based scholarship of Govt., JRD Tata Trust scholarship program etc.
- Code of conduct related to discipline
- List of another institutes managed by Thakur Education Group
- Institute website information

The institution ensures its commitment & accountability:

a) Orientation programme held for student's to familiarize about the institutional activities, work culture, academic requirements, academic planning & execution, extra-curricular & Co-curricular activities throughout the year.

b) Students are briefed about the CBCGS pattern syllabus scheme. The scheme has been changed to Choice Based Credit Grading System (CBCGS) from the current academic year (i.e.Ay.2016-17).

c) Training & placement activities held in the institute for placement to meet set quality objective and to develop the professional skills as a compliance to graduate attributes achievement.

d) Results to be achieved at FE, SE, TE and BE as per set quality objectives requirement with an competitive edge.

e) Institute displays all notifications received by the university and of institute on notice boards and website from time to time to ensure effective communication. For F.E. to B.E. address is arranged where students are updated with results and guided for grievance redressal as per UOM ordinances. Address is also for unsuccessful student so that student can keep up learning tempo.

f) Teacher guardian scheme to mentor students and support them as and when required.

g) Code of conduct for students & staff.

h) Portfolio building which has been started from the current year which is the self-evaluation for learning and personality development

5.1.2   Specify the type, number and amount of institutional scholarships / free ships given to the students during the last four years and whether the financial aid was available and disbursed on time?

Table 5.1: Scholarship & Freeship

Sr. No.	All Scholarship & Freeship
1	**Economically Backward Class Scholarship (EBC - Scholarship) - DTE**
	Getting from DTE to CAP admitted students and those who having annual income of family upto 1,00,000/-. Getting 50% of Tuition Fees
2	**Economically Backward Class Scholarship (EBC - Scholarship) - UOM**
	Getting from UOM to any 5 students whose parents annual income is upto Rs. 1,00,000/-. Getting Rs.2550/- per student
3	**Merit-cum-Means based Scholarship (Minority) – GOVT. OF INDIA**
	Getting from Govt. of India (Central) to Minority Communities-Muslim/ Christian/ Sikh/ Parsi/ Buddhist and whose parents annual income is upto Rs.2.50,000/-. Getting Rs. 25000/- per student
4	**State Govt. Scholarship (SGS) Merit-cum-Means (MCM) (Minority)**
	Getting from State Govt. to Minority Communities-Muslim/ Christian/Sikh/ Parsi/ Buddhist/Jains Only for Maharashtra Candidates and whose parents annual income is upto Rs.2.50,000/-. Getting Rs. 25000/- per student
5	**The J.R.D. Tata Trust Scholarship**
	Getting from J.R.D. Tata Trust to S.E. to B.E. only to 15 students those who are having 80% and above marks. Getting Tuition fee
	Sir Dorabji Tata Trust – Means Grant - College
	Getting from Sir Dorabji Tata Trust to S.E. to B.E. students and whose parents' annual income is low. Getting Tuition fee
6	**Other Scholarships**
	Getting to those students who were applying individually (Priyadarshni Academy Scholarship, PM Scholarship, MTNL, BMC, Railway, Any Trusts Getting amount as per the rule of various scholarships.
7	**Pragati - Scholarship for Girls Students - AICTE**
	Getting from AICTE to Girls Student, Family Income should be less than Rs. 6 Lakhs per annum, Admitted to AICTE approved Institutions in programmes / courses of Diploma and Undergraduate Degree Level, Only for students admitted in first year of the academic year.Getting Rs. 30000/- or the tuition fees paid, whichever is less and Rs. 2000/- per month for ten months as contingency allowance.
	Scholarship of Rs.5,18,114/- (Rs.1,32,881/- to two students each and Rs.1,26,176/- each) to our four needy students from Abhilasha Foundation through India Bull in 2016-17
	Educational financial assistance for EWS students in our institute to three students of Rs.50,000/- each from MCHI Trust Secretariat
	Saksham - Scholarship to Differently Abled students - AICTE
	Getting from AICTE to Differently Abled students, Family Income should be less than Rs. 6 Lakhs per annum, Admitted to AICTE approved Institutions in programmes / courses of Diploma and Undergraduate Degree Level, Only for students admitted in first year of the academic year.Getting Rs. 30000/- or the tuition fees paid, whichever is less and Rs. 2000/- per month for ten months as contingency allowance.
8	**Post Graduate Scholarship GATE - AICTE**
	Getting from AICTE to GATE/GPAT eligible students of full-time course.Getting 8000/- per month
9	**Prime Minister Special Scholarship for Jammu & Kashmir - AICTE**
	Getting from AICTE to J&K StudentsGetting 100% Tuition fees and Hostel fees

Sr. No.	All Scholarship & Freeship
10	**Government of India Post Matric Scholarship to SC / SBC / VJNT / OBC** Getting from Social Welfareto SC / SBC / VJNT / OBC only CAP admitted StudentsGetting 100% Tuition fees and Exam fees to SC / SBC / VJNT and Getting 50% of Tuition fees and Exam Fees to OBC)
11	**Government of India Post Matric Scholarship to ST** Getting from GOI to Scheduled Tribe only CAP admitted StudentsGetting 100% Tuition fees & Exam Fees to ST Students

5.1.3   What percentage of students receive financial assistance from state government, central government and other national agencies?

Following are the details of students from institute who have received financial assistance from state government, central government and other national agencies:

Table 5.2: Details of students who have received financial assistance

	2015-16			2014-15			2013-14			2012-13		
	No. of Students	Total Students	%	No. of Students	Total Students	%	No. of Students	Total Students	%	No. of Students	Total Students	%
Government Agencies	190	2974	6.4	167	2720	6.1	155	2436	6.4	138	2262	6.1
Other Agencies	42	2974	1.4	38	2720	1.4	34	2436	1.4	42	2262	1.9
University of Mumbai	4	2974	0.1	5	2720	0.2	0	2436	0.0	3	2262	0.1
Total	236	2974	7.9	210	2720	7.7	189	2436	7.8	183	2262	8.1

5.1.4   What are the specific support services/facilities available for

- **Students from SC/ST, OBC and economically weaker sections:** No, any specific facility at college level where as college has grievance cell where the students can approach any time.
- **Books from book bank:** Book bank facilities are provided to economically weaker sections
- **Office facilities:** Administrative staff members provides services to all students.
- **Students with physical disabilities:** College does not provide any specific facility to physically disable person
- **Overseas students:** Institute does not enroll overseas students.
- **Students to participate in various competitions/National and International:** College has started the HOC (Higher Education and online certification) cell for helping the students who wants to go for higher education. Supports financially and morally for participation upto national level events wherever possible, faculty mentor accompany the students during their participation. It not only provides the moral support to student but also gives the feeling to parent that their wards are in safe hands as due care is taken by the institute for safety and security of students on tour.
- **Medical assistance to students: health centre, health insurance etc.:** Institute has doctor availability as well as ambulance, first-aid service during working hours. Doctors are on call basis. The arrangement is done as the institute is located in the center of the township of Thakur Village where lots of clinic/polyclinic and hospitals are there in and around the institute.
- **Organizing coaching classes for competitive exams:** HOC cell helps the students to prepare for different competitive exams like GATE, GRE, and CAT etc. institute has the tie-up with IMS learning resource centre where students are getting the subsidy on fee. Moreover, the HOC cell has 12-14 faculty members with one clerical staff who plan not only for competitive examination but also to give competitive edge by conducting online certification course. All

the work is conducted as per the plan. We are happy to share this is only the institute in the city to have such facility.

Objective:
1) The Higher education, online courses & Certification cell (HOC cell) is to encourage students for higher qualification such as pursuing master level program, graded online courses and certification courses.
2) Students opting for higher education/online course/certification course will get quality training for various exams (GATE, GRE, GMAT, TOFFEL, CCNA, CAT etc.) with the help of experienced and reputed trainer to achieve good score in the competitive exam.
3) Student should get road map to "Where to apply, how to apply and who can apply" for higher education/online course/certification course.

Team Members:
1) Mr.AnilVasoya, HOC incharge,
2) Mr.ShailendraShastri, EXTC Coordinator
3) Ms.ArchanaBelge, ETRX Coordinator
4) Mr. Vinay Bhatkar , Mechanical Coordinator
5) Mr.ShirdharKamble, IT Coordinator
6) Ms.Veena Kulkarni, CMPN Coordinator
7) Dr. Ritu Sharma ,H&S Coordinator
8) Mrs. RitujaShinde, Civil Coordinator

Procedure:
1) HOC cell will take consent from interested students.
2) Technical knowledge enhancement training programme will be conducted by TCET faculty, free of cost for the students of TCET. An undertaking will be taken from students attending this course.
3) Logical reasoning and Aptitude enhancement training programme will be conducted for TCET by reputed trainer/Counselor from outside under professional body.
4) Training will be conducted in our own campus after college academic hours or on holidays or vacation period.
5) HOC cell will maintain photocopy of score card, certificates and LOR of individual student.
6) For this initiative we will be using college infrastructure and there will be no financial burden on the institute.
7) HOC cell will have an in-charge who will be supported by one coordinator from each department.

Results:

Table 5.3: Competitive Exams Results Summary

	2015 -16		2016-17*	
	Appeared	**Qualified / Completed**	**Appeared**	**Qualified / Completed**
GATE	187	33	148	Result Awaited
GRE	101	101	51	51
TOEFL	73	73	42	42
IELTS	13	13	8	8
GMAT	1	1	--	--
CAT/CET	4	4	6	6

- Akash Shah of 2016 batch (CMPN) got admission in IISC Bangalore based on GATE – 2016 (scored 68.56 out of 100 marks with AIR 121.
- Alisha Raul of 2016 batch (CMPN) got admission in IIM Indore based on CAT - 95.70 percentile score.
- Two students of 2016 batch (MECH) joined Vishwakarma Maritime Institute as trainee engineer as they are interested in maritime career.
- Total 51 students of 2016 batch are pursuing for various higher studies programs in different premier Indian & abroad universities.

Table 5.4: No. of students pursuing Higher Studies

Country	No. of students pursuing Higher Studies
India	7
USA	39
Canada	4
Australia	1

- **Skill development (spoken English, computer literacy, etc.,):** College conducts general English proficiency training for first year students who are from vernacular medium, certification, bridge courses and industry electives.
- **Support for "slow learners":** Student validation is done by the department after declaration of results. The students are categorized in three categories high, medium, low.
- **College conducts practice session for the students for slow learners.**
- **Exposures of students to other institution of higher learning/ corporate/business house etc.:** College conducts the Industrial visits where it takes to the students to different industries pertaining to their branch and to different Institute where they can interact. Foreign University Delegation team, industry visit, industry programme for placed students, campus to corporate training
- **Publication of student magazines:**
  - College has yearly magazines for the students named "Quasar" along with these students can publish the articles and presents in Multicon-W.
  - Technical Magazine

5.1.5   Describe the efforts made by the institution to facilitate entrepreneurial skills, among the students and the impact of the efforts.

Innovation and Entrepreneurship Development Cell, IEDC: Thakur College of Engineering and Technology initiated Entrepreneurship Development Cell on September 5, 2014 in association with NEN. TCET-EDC aims at developing the spirit of entrepreneurship among the students of TCET. It craves not only to ignite the minds but also to nurture the ideas of the students. EDC is committed to build a strong platform for the budding entrepreneurs. The vision is to guide the students to take entrepreneurship as a career and as a path to success.

The Innovation and Entrepreneurship Development Centre (IEDC) is being promoted in educational institutions to develop institutional mechanism to create entrepreneurial culture in S&T academic institutions and to foster techno-entrepreneurship for generation of wealth and employment by Engineers.

Objectives of the IEDCs:
1) To act as an institutional mechanism for providing various services including information on all aspects of enterprise building to budding entrepreneurs.
2) To create Entrepreneurial culture in theInstitution and other institutions in the neighbourhood
3) To inculcate a culture of innovation driven entrepreneurship through student projects.
4) To respond effectively to the emerging challenges and opportunities both at national and international level relating to SMEs and micro enterprises.

Functions of IEDCs:
1) To organize Entrepreneurship Awareness Camps, Entrepreneurship Development Programmes, Faculty Development Programmes and Skill Development Programmes in the college/institution for the benefit of S&T persons.
2) To initiate five innovative student projects each year for new innovative product development.
3) To organize Business Plan Competitions every year.
4) To guide and assist prospective entrepreneurs on various aspects such as preparing project reports, obtaining project approvals, loans and facilities from agencies of support system, information on technologies, etc.
5) To arrange interaction with entrepreneurs and create a mentorship scheme for student entrepreneurs.
6) To facilitate creation of entrepreneur's club in each college to foster culture of entrepreneurship amongst students

7) To act as a Regional Information Centre on business opportunities, processes, technologies, market etc. by creating and maintaining relevant data bases.

8) IEDCs would also sensitise the management of the institutions regarding the importance of entrepreneurship and integrate their activities with the Host Institutions.

Table 5.5: EDC Committee Members

Sr. No.	Name of faculty	Department
01	Mrs.Sangeeta Mishra	EXTC
02	Mr. Anil Vasoya	IT
03	Ms.MegharaniPatil	CMPN
04	Ms.NehaChavan	MECH
05	Mr. HemantKasturiwala	ETRX
06	Mr. Rohitsingh	H&S

E- Week: (February 14-20, 2015): The most important objective of E-Week was to inspire entrepreneurship ideas in students' minds. In the E-week, a series of exciting and competitive entrepreneurship skill testing events were organized, where the students could compete and judge themselves.

Table 5.6: R&D-Cell Calendar 2014-15

Sr. No.	Date	Event / Activity
01	05/09/14	EDC Cell Inauguration
02	10/09/14	Seminar on Idea Generation.
03	27/09/14	Workshop on Entrepreneurship Start-up
04	04/10/14	Seminar on Entrepreneurship
05	13/2/15 to 21/2/15	E-Week
06	23/1/15	Workshop on Business Plan IIT Bombay Workshop
07	7/3/15	I.V. related to E-Cell to Pune
08	20/4/15 to 25/4/15	Project Group & Idea Selection for A.Y. 2015-16 OR Project Idea Competition

Table 5.7: Student Entrepreneur

Sr. No.	Name of Student	Batch of passing	Branch	Company Name	Website Name
01	Pratik Parasrampuria	2013	IT	Owner of Pratik Web Solutions	www.pws.in.net
02	Pratik Khanedlwal	2013	IT	Founder & CEO of Pragati Enterprise	www.indiamart.com/pragati-enterprise-mumbai/
03	YogeshBarade	2014	CMPN	Director: Sailee international school	www.ismtindia.com
04	KhushbooGadhia	2013	IT	Founder member: Purple Squirrel EduventuresPvt.Ltd. khushboo@purplesq.com	www.purplesq.com
05	Avinash Singh	2012	IT	Director at SLangCode avinash@*slangcode*.com	www.slangcode.com
06	Sunil Maurya	2008	IT	MAURYA CONSULTANCY SERVICES	www.mcslinc.com
07	Krishnakant Mishra	2015	CMPN	CEO and Promoter at The Website Walas	www.websitewalas.com
08	PareshSojitra	2007		Founder of FELIX IT systems	www.felix-its.com

Sr. No.	Name of Student	Batch of passing	Branch	Company Name	Website Name
09	Manan Shah	2010	IT	ech Junkie - Serial Entrepreneur &Technopreneur - Cyber Expert - Author - Web Designer	http://www.xovak.com/
10	Rahul Kanojia	2014	IT	Funder- Diplomad	www.diplomads.com
11	TanviKapdi	2013	IT	Bizotic	www.bizotic.com
12	Rupam Mishra	Start up	CMPN	PHIONIKE	www.phionike.com
13	Ramkrishna Parsana	Student	MEC H	Founder – Haven Industries	
14	Pranav Upadhyay	2007	IT	Co founder – Pulse EDU Concepts	
15	Irfan Ahmad	2012	IT	Fonder – TRILL IT	www.trill-it.com
16	PankitChheda	2011	IT	Founder - MassBlurb	www.crunchbase.com/organization/massblurb
17	Simran Arora	Student	IT	Founder – Pulse Lectronics	www.pulseelectronic.audio
18	Ankit Solanki	2011	IT	Imscinct innovation Red book	www.redbook.co.in
19	Nikhil Malvankar	Student	IT	Founder of Game Eon Pvt. ltd	www.gameeon.in
20	Dhruv Shah	Student	IT	Founder-Zappazap	www.zapaazap.com
21	Apporva Joshi	2013	IT	Funder – Aporva Creation & J K enterprise	www.aporva_joshi.com www.dryfruitboxes.com
22	Krishna Mishra	2008	IT	Process9 Technologies	www.process9.com
23	Abhishek Shah	2013	EXTC	Director: Fashionly (Unit of strategile)	www.strategile.com
24	Jain Amit	2012	IT	Director – Ellvee mills pvt ltd	
25	VaishnavMohnish	2011	IT	Founder – Shopicorn , comedy flavors	
26	Pooja welling	2007	CMPN	Founder – Mission Carrier	www.missioncarrier.com

Fig. 5.1: Incubation Centre

(Annual reports of IEDC 2011-12, 2012-13, 2013-14 & 2014-15 on institute website www.tcetmumbai.in)

5.1.6   Enumerate the policies and strategies of the institution which promote participation of students in extracurricular and co- curricular activities such as sports, games, Quiz competitions, debate and discussions, cultural activities etc.

- Committees are formed at the end of the academic year which will be functional in the next academic year.
- Institute has 6 professional body student chapter and student council and university approved NSS and extension wing. Each of these group has the faculty incharge and students committee
- Co-curricular activities are to be conducted by professional bodies and the academic department and student services sections viz placement HOC etc. Extra- curricular activities are to be organized by institute student council.
- All activities are to be conducted under the guidance of activity head: Head Co-curricular and Head Extra-Curricular activities under the leadership of Dean (SSW). This is the new arrangement that has been done from the current semester.
- Student chapters FIC prepares the activity calendar on semester basis and carry out the activity as per the calendar.
- Additional academic support, flexibility in internal examinations
- Special dietary requirements, sports uniform and materials
- Financial and moral support by accompanying faculty for outside Mumbai participation.
- At the end of activity, FIC under the guidance of activity head and Dean prepare the report with the student participation, schedule planned and followed, event profile, SWOT, scope for improvement and major conclusion which is discussed and deliberated during semester review.
- Weightage Academic:Co-curricular:Extra-curricular=60:20:20 in terms of hour. To reach to the compliance a special permission is done in the class time table as zero hour and activity mainly followed for overall personality development.

5.1.7   Enumeratingon the support and guidance provided to the students in preparing for the competitive exams, give details on the number of students appeared and qualified in various competitive exams such asUGC-CSIR- NET, UGC-NET, SLET, ATE / CAT / GRE / TOFEL / GMAT /Central /State services, Defense, Civil Services, etc.

- HOC cell is formed in the academic year 2014-15
- Started GATE training in courses such as MECH, CMPN, IT, EXTC & ETRX with the support of internal faculties for free of charge for achieving better percentiles.
- In total 154 students from final year opting for higher education, which is about 25% 0f total students.
- 187 students form final year appearing for GATE exam which is about 30% of total students.

5.1.8   Whattypeofcounsellingservicesaremadeavailabletothe students(academic,personal,career,psycho-socialetc.?)

a)   Institute has a teacher guardian scheme where for every **18-22** students has **1** teacher is allotted as guardian. The teacher maintains the record of students which contains the contact details, e-mail id of student and their parents. The academic record, attendance, term test record, extra-curricular achievements of the students are enlisted which is a continuous evaluation process till the student leaves the institute after completion of final year. In case of critical cases the institute has the professional counsellor on visiting basis normally coming on Friday. Counselling is done in multiple seating's.

b)   In case of career guidance the training & placement cell, which conducts road show, awareness programmes, student development programme for enhancing their different skills such as soft skills, programming skills, and technical skills etc. which are required for their placement in various industries.

c)   Teacher-guardians conduct 2 counselling meets in each semester for all students, in case of physio-social activity.

5.1.9   Does the institution have a structured mechanism for career guidance and placement of its students? If 'yes', detail on the services provided to help students identify job opportunities and prepare themselves for interview and the percentage of students selected during campus interviews by different employers (list the employers and the programmes).

Yes, The Training & Placement process through continual improvement has resulted in significant number of students being placed despite the current recession in the market. From training interventions beginning only in the third year of engineering (6th semester) and only in a few areas, the training is now done as a full-fledged Student Development Program (SDP) with training interventions each year from professional grooming to industry recommended bridge courses. Through these structured and well organized training interventions involving faculty and industry professionals, the Institute develops competencies required for ready-to hire professionals. Our focus on the future is to introduce industry electives such as business intelligence, cloud computing, etc. This systematic SDP program has earned the Institute recognition from the industry partners. Table below illustrates the various training interventions in the four-year graduate engineering program.

Table 5.8: TCET – 4 year SDP Schedule

Sr.No.	Year	Bandwidth of activities
1	First year	Brainstorming session
		Communication skills
		General English Proficiency Training for the students form vernacular medium
2	Second year	Programming languages
		Fundamentals of IT and computer engineering
3	Third year	Domain specialization
		Industry Orientation Programs
		Aptitude and Personality Development Programs
4	Final year	Pre-placement training
		Campus connect program
		Campus to corporate training programs

SDP Training Hours and Student Benefit

	2012-13	2013-14	2014-15	2015-16
No. of training hours targeted	450	750	750	843
No. of activity hours	456	756	760	843
No. of student benifited	301	300	289	1182
Internship training	18	24	102	128
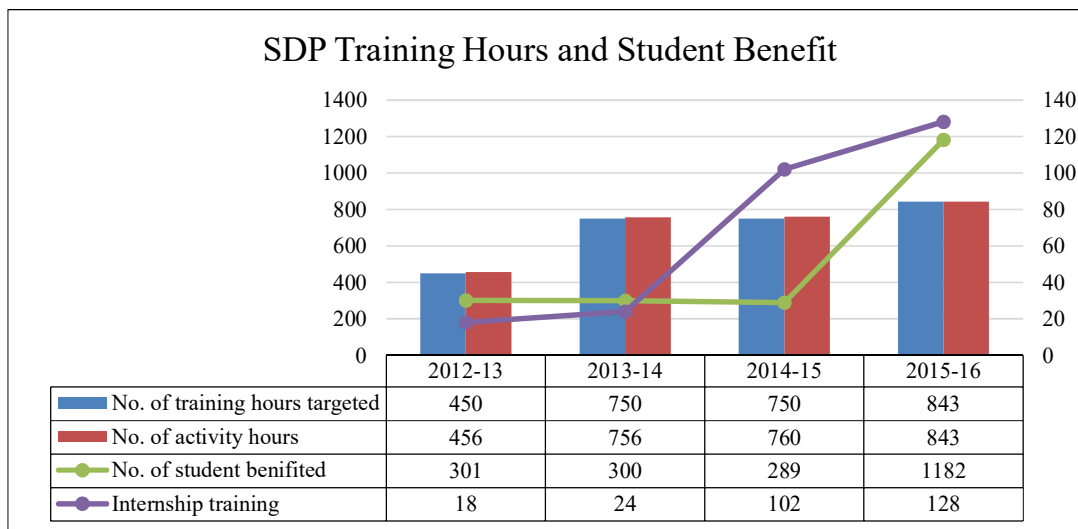
Fig. 5.2: SDP training hours and student benefit

The change in the SDP process has resulted in increase in the training activity hours as can be seen from above Fig. What is significant is the increase in the internship training program, with 102 student's undergoing internship in 2014-15. Internship programs are beneficial to the students as it enhances their employability because of professional experience. The T&P officer is constantly scouting the market for increasing the number of industries partnering with TCET to absorb the institute's graduate engineers. Fig. above provides information about the number of students trained and placed along with the packages offered. The number of students trained in 2014-15 is higher than that of the previous years, but the placement numbers are lower because of the recession in the industry. Yet, TCET has managed to place a significant number more than 60% of the entire student population.
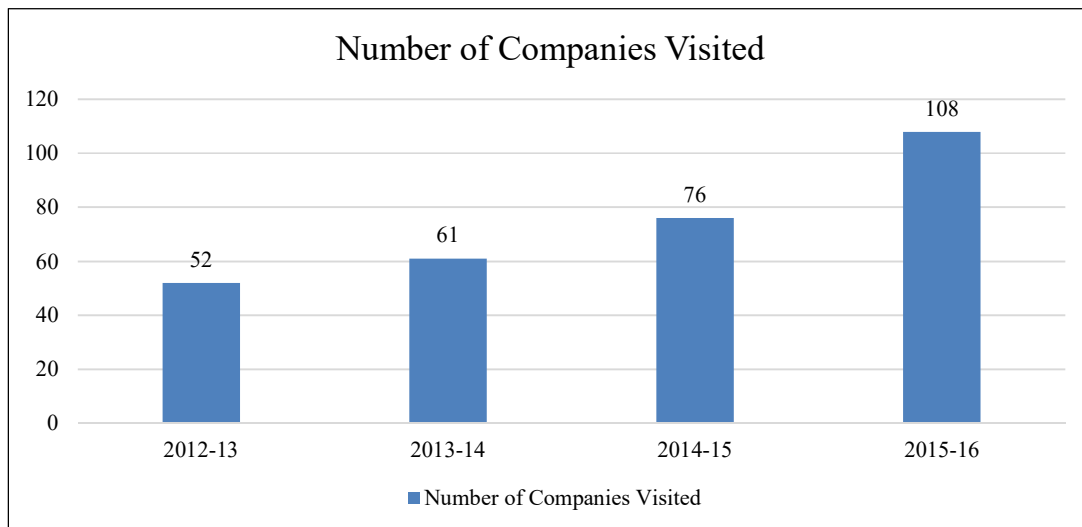
Fig. 5.3: Number of companies visited
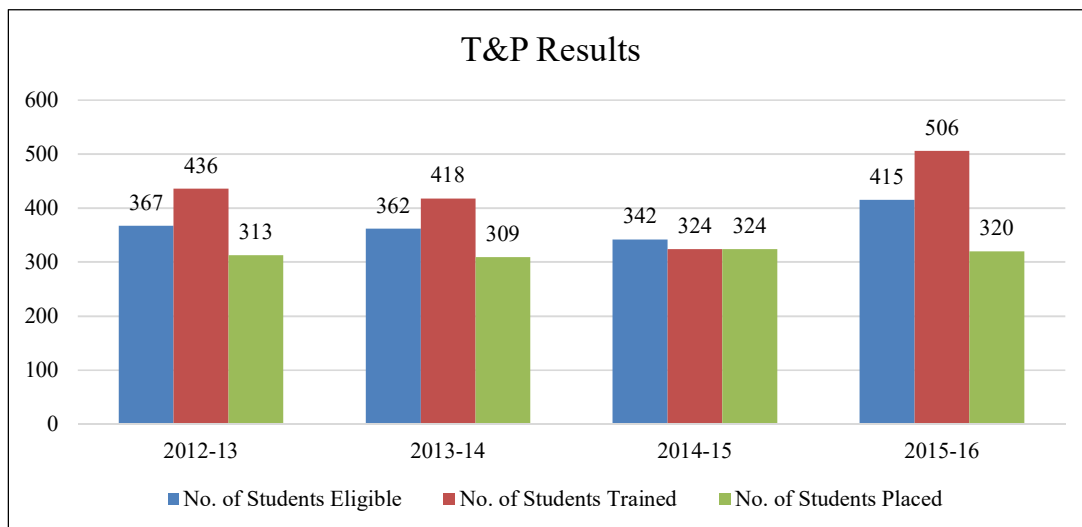
Fig. 5.4: T& P Results

5.1.10 Does the institution have a student grievance redressal cell? If yes, list (if any) the grievances reported and redressed during the last four years.

Yes, as per the university of Mumbai no.AFF/ICC/2012-13/26 dated 15-3-2013 guidelines the following grievanceredressal committee is constituted in the institute for the purpose ofredressal of the student,parents and other stakeholders which comprises of committee members:

Dr.R.R.Sedamkar (Dean-Academic),

Ms.PoorvaWaingankar –Associate professor,

Mr.HemantKasturiwale- Associate professor,

Dr.RajniBahuguna – Assistant professor (H&S),

Ms.Nita Jain- Assistant professor.

No grievances has been placed officially to the cell.

5.1.11 What are the institutional provisions for resolving issues pertaining to sexual harassment?

As per the circular received from university of Mumbai no. CONCOL/24/of 2014-2015 stating that the sexual harassment of women at workplace (Prevention,Prohibition and Redressal) Act,2013 for its implementation at the organization levels. The formation of women's grievance redressal committee (Internal complaint committee in accordance with the provisions of the Act 2013) was constituted in the institute to provide protection against sexual harassment of women at workplace and for the

prevention and redressal of complaints of sexual harassment and for matters connected herewith or incidental thereto. Till date no complaint has been received by the internal complaint committee members regarding the same. The members of the women development/ women grievance committee for the A.Y: 2014-15 are as mentioned below:

Table 5.9: Women Development / Women Grievance Committee

Dr.Lochan Jolly	Dean- SSW
Ms.PoorvaWaingankar	Chairman
Ms.Rohini Kulkarni	Members NGO-Swadhar, Goregaon (west)
Dr.VinayakBharadi Ms.Sandhya Save Mrs.ShwethaJha	Faculty members
Mr.Rajeev Singh Mrs.BhartiRathod Ms.PallaviPatil	Non-Teaching
Ms.Shikha Singh – B.E ETRX Ms.SahanaNayak – B.E CMPN (A) Mr.SarveshGiri – B.E. EXTC(B)	Students Member
Ms.TeenaSequera	Advocate

Women Grievance committee constituted on 26-6-2014 for the academic year 2014-15. Institute takes quarterly feedback from all women staffs' regarding the conducive work environment format of the feedback is as under:

Table 5.10: Women Development/ Women Grievance Committee feedback form

- Name of the female staff/employees:
- Age:
- Designation:
- Date of joining:
- Department:

Sr.No.	Particulars	Yes	No
1	Organisation has a safe work environment		
2	I have not experienced or witnessed any sexual harassment at my workplace		
3	I have not experienced or witnessed any gender based discrimination of any kind at my workplace		
4	My workplace knows how to deal with workplace safety, health and sanitation issues		
5	Overall satisfaction as women staff members		

Signature:

Witness: (1)   (2)

Dean (SSW), Dr.Lochan Jolly conducts the feedback along with the members of the WDC committee. Results are compiled and maintained. Till date there is no negative findings and therefore ATR are not applicable.

5.1.12 Is there an anti-ragging committee? How many instances (if any) have been reported during the last four years and what action has been taken on these?

Yes, as per the AICTE notification the anti-ragging committee and squad is constituted in the institute (Sr. No. Principal/50 (A) of 2012 on 16-7-12). The following is the list of anti-ragging committee members for AY 2012-13:

Table 5.11: List of Anti-Ragging Committee Members for AY 2012-13

Name	Designation
Dr.B.K.Mishra	Principal
Dr.R.R.Sedamkar	Professor & Dean
Dr.(Mrs.) Kamal Shah	Professor & Dean
Mr.Vivek Mishra	Assistant Professor
Mr.Pankaj Singh	Office superintendent
Mr.Machindrachavan	Sr.Police Inspector, Crime Branch
Mr.Wasim Shaikh	Journalism, Sr. Manager (Mktg),DNA
Mrs.Snehali Vaidya	NGO-Swadhar, Goregaon(W)
Shah Aashna K.	Student of FE-IT 56 A
Jain Mudit G.	Student of BE-IT 16 A
Nainajani	Mother of VikramJani, Student of BE-IT 55 A
Pratap Ashok Kumar Singh	Father of Manvendrasingh

The list of anti-ragging squad is as follows:

Table 5.12: The List of Anti-Ragging Squad

Member	Designation
Dr.Rekha Sharma	Associate Professor – CMPN
Ms.SonalBarvey	Assistant Professor-ETRX
Mr.DeepakShete	Assistant Professor- EXTC
Mr.BijithMarakarakandy	Assistant Professor – IT
Mr.Rohit Kumar Singh	Assistant Professor – H&S
Mr.Pankaj Singh	Office Superintendent
Mr.SomnathChinchkar	Assistant Librarian
Mr.Rajesh Singh	Hostel Warden

Anti-ragging committee meets twice in academic year and make awareness programme for the students against ragging. There are no ragging instances reported in last four years. Even in the past also such instances are not reported.

5.1.13 Enumeratethewelfareschemesmadeavailabletostudentsby theinstitution.

- Scholarships – economical backward schemes,
- Overall develop - SDP
- Awareness programmes - NSS,
- Book bank scheme - Yes (Available in central library)
- Helped the student to get scholarship (Nepal earthquake victim, supported by India bulls)
- Guest lectures – Yes. (more than 500 hours of lecture per academic year conducted in 7 departments and T&P Cell)
- Career counselling by professionals – Yes, (Ms.PoojaWeling, regularly visiting the institute for counselling. She also arranging delegation teams from various foreign universities to the institute)
- To interact with foreign delegates for career opportunities in foreign university - Yes

5.1.14 Does the institution have a registered Alumni Association? If 'yes', what are its activities and major contributions for institutional, academic and infrastructure development?

No, the formal Alumni Association of the institute was formed in academic year 2011-12, 6 yearsafter the first engineering students graduated in May 2005. Since then the alumni meet is organised every year in the month of December last week preferably on Saturday. The Annual Alumni Meet providesnetworking opportunities for the Alumni and the college benefits from past student experiencelearning as well as their recommendations for improving teaching learning processes, camp[us placement, student services etc. Recommendation from the Alumni was implementedto improve the functioning for the institute and the student satisfaction.

The Entrepreneurship Cell was one of the recommendations that was implemented bythe Institute in the last academic year. The Institute actively promotes multiple interactions with the Alumni and in AY 2014-15 three Alumni members addressed the students on the importance of entrepreneurships during inauguration of the Entrepreneurship Cell.

An Alumni member who was placed at an MNC in Singapore recruited 2 students from this college his Alma Mater when the organization he served were expanding operations in India. He hasalso expressed interest to associate himself with the Research activity of this institute and product promotions. While this appears as an isolated incident, this is a big booster for the college sincethe R&D cell and the Entrepreneur Cell are very recent developments (A.Y 2013-14). Student's participation in alumni meet can be seen in fig.
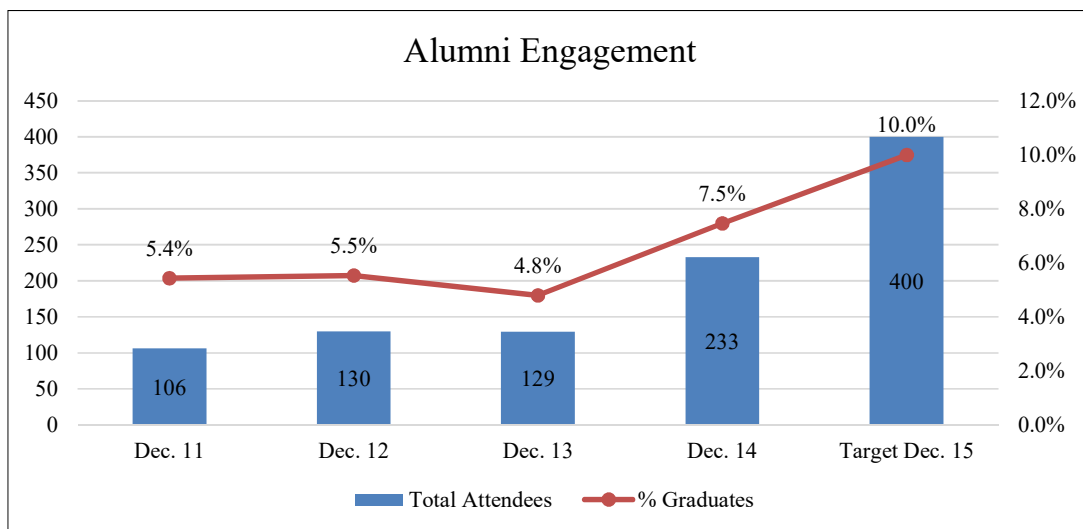
Fig. 5.5: Alumni engagement

Institute is in the process of registering the Alumni Association and likely to be completed by next academic year.

5.2   StudentProgression
5.2.1   Providing the percentage of students progressing to higher education or employment (for the last four batches) high light the trends observed.

Table 5.13: Student Progression

Student Progression	2015-16	2014-15	2013-14	2012-13
UG to PG	7.18%	15.59%	13.63%	23.34%
PG to M.Phil.	0	0	0	0
PG to Ph.D.	0	0	0	5.56%
Ph.D. to Post-Doctoral	0	0	0	0
Employed - Campus selection	62.22%	66.92%	67.82%	66.42%
Employed - Other than campus recruitment	3.50%	5.80%	5%	21.22%
Entrepreneurship / Self-employment	1.93%	3.31%	2%	2%

Placement and Higher Studies

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Eligible	137	154	238	254	216	295	320	424	367	362	342	409
Placed	65	70	220	197	174	237	276	339	313	309	324	307
Higher Studies	0	0	0	14	65	90	18	19	29	76	114	152
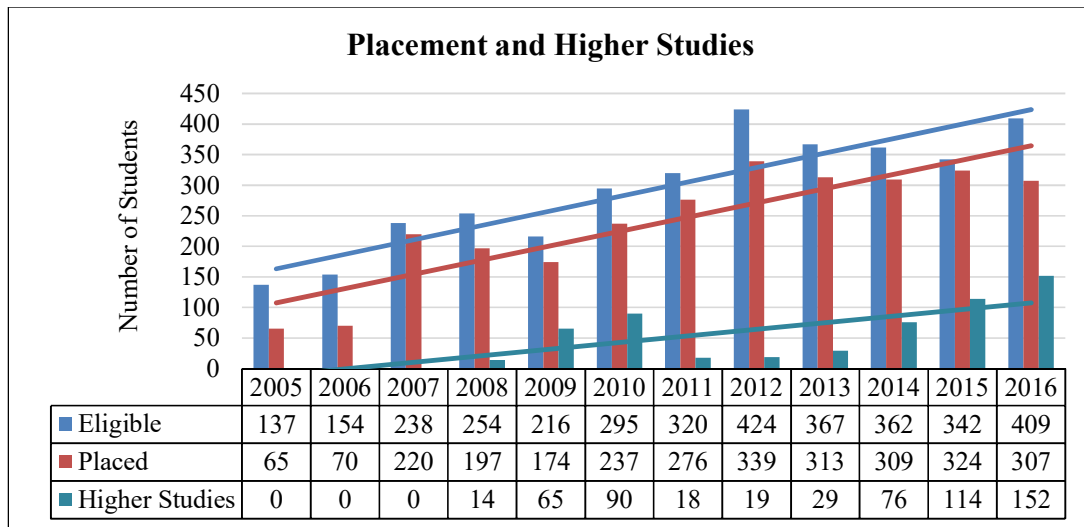
Fig. 5.6: Placement and Higher Studies

5.2.2   Provide details of the programme wise pass percentage and completion rate for the last four years (cohort wise/batch wise as stipulated by the university)? Furnish programme-wise details in comparison with that of the previous performance of the same institution and that of the Colleges of the affiliating university with in the city/district.

Institute results along with University of Mumbai results:

Table 5.14: Institute results along with University of Mumbai results

	Academic Year	2011-12	2012-13	2013-14	2014-15	2015-16
UG-CMPN	Institute Passing %	89.81	95.58	95.89	94.44	95.57
	UoM Passing %	92.69	94.47	93.43	96.69	*
UG-EXTC	Institute Passing %	88.89	72.88	90.73	86.21	97.93
	UoM Passing %	80.29	86.49	86.43	87.78	*
UG-IT	Institute Passing %	97.37	99.37	95.14	96.53	96.71
	UoM Passing %	96.50	96.97	96.25	96.12	*
UG-ETRX	Institute Passing %	86.57	75.00	85.00	85.19	75.68
	UoM Passing %	79.15	79.90	83.08	80.08	*
UG-MECH	Institute Passing %	NA	NA	NA	NA	91.84
	UoM Passing %	NA	NA	NA	NA	*
PG-CMPN	Institute Passing %	94.74	80.00	84.21	100.00	89.47
	UoM Passing %	56.08	86.38	79.90	81.74	90.91
PG-EXTC	Institute Passing %	66.67	59.09	80.00	88.89	56.00
	UoM Passing %	64.89	58.41	66.46	73.48	70.70
PG-IT	Institute Passing %	80.00	84.21	100.00	88.89	75.00
	UoM Passing %	73.49	80.77	92.31	85.71	90.91

* UoM Result not available
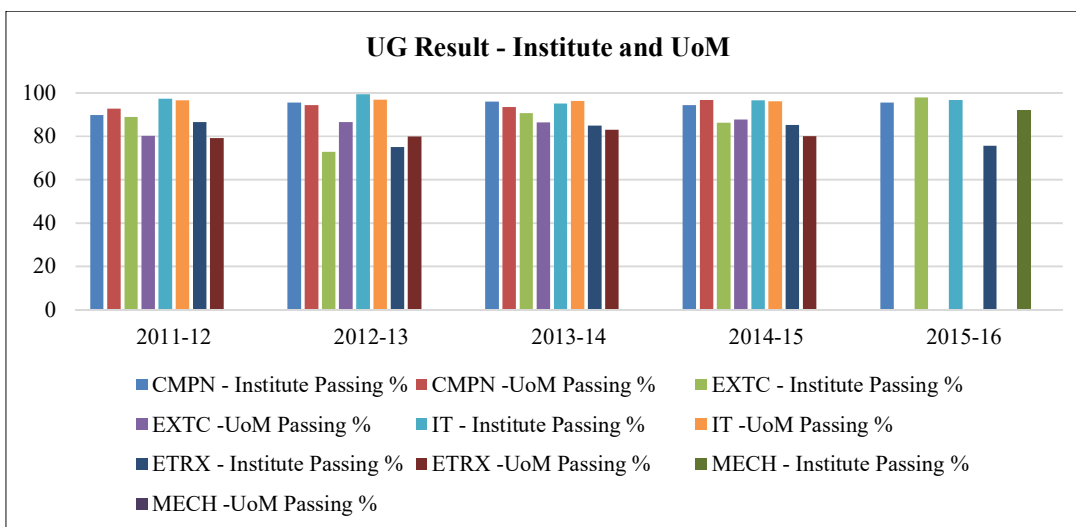
Fig. 5.7: UG Result - Institute and UoM
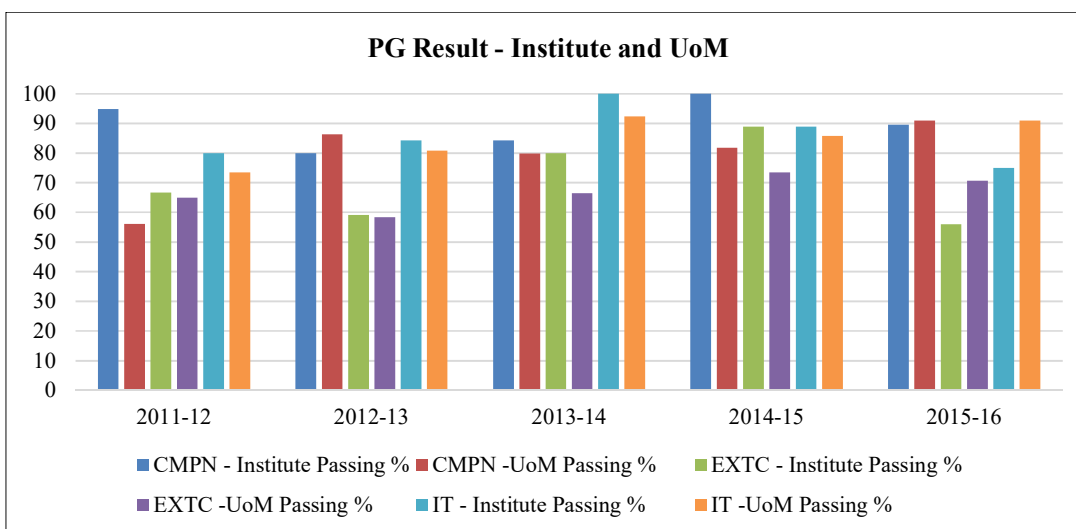
Fig. 5.8: PG Result - Institute and UoM
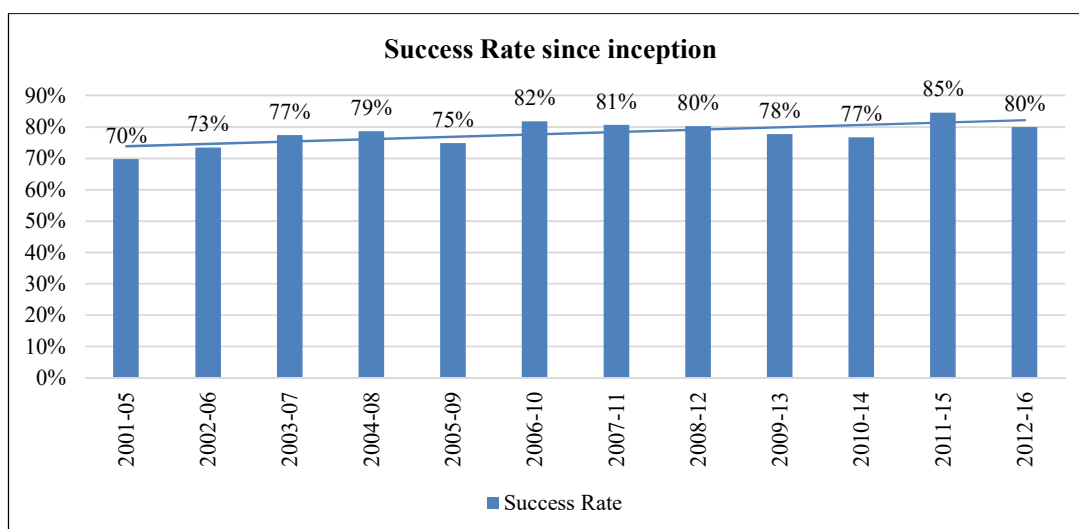
Fig. 5.9: Completion Rate (Success Rate) since inception

5.2.3   How does the institution facilitate student progression to higher level of education and/ or towards employment?

a) Institute facilitates student progression to higher level of education with the support of activities held in HOC cell (Higher online certification cell) by conducting lectures by experts and faculties of institute for competitive exams such as GATE, CAT, GRE, TOEFL etc.

b) Institute facilitates students for employment through SDP (student development program), Infosys campus connect program, pre-placement training (PPT) etc., where experts train students as per the requirements of the industries related to soft skills, technical training etc.

5.2.4   Enumerate the special support provided to students who are at risk of failure and dropout?

- The supports provided to students who are at risk of failure are those who generally have less attendance.
- These students undergo academic loss thereby to compensate the same remedial assignment based on university questions are given and get them solved from students.
- Discuss the same set of questions and the way questions are to be answered so that students improve their academic results.
- Teacher guardian maintains records related to students viz. attendance, academic, participation in co/extra-curricular activities. All records are updated on regular basis in an appropriate time slot. Therefore, from the records, shortcoming they are identifying and do the necessary counselling also. Provide supports so that they can come up in their life. Moreover special arrangement in Training and Placement are done for placing the non-eligible candidate   through campus.

5.3   StudentParticipationandActivities
5.3.1   List the range of sports, games, cultural and other extra curricular activities available to students. Provide details of participation and program calendar.
Sport Event:

Table 5.15: Sport Event

Sr. No.	Extra-curricular	Scope	Schedule
1	T-Spark'15	Intra Sports Event of Student Council-TCET	January
2	Enertia	Intercollegiate Sports Festival of Student Council-TCET	March

Table 5.16: Sports Activities A.Y. 2013-14 (Outside participation)

Sr. No.	Sports Activities	Level	Scope	Schedule
1	Box Cricket: BOSM-13, BITS-PILANI, Rajasthan	National	Won 1-Gold Medal & Cash Prize of Rs. 4000	17/09/13 to 24/09/13
2	Taekwondo:BOSM-13, BITS-PILANI, Rajasthan	National	Won 1-Gold Medal & 1-Silver Medal	17/09/13 to 24/09/13
3	Swimming:BOSM-13, BITS-PILANI, Rajasthan	National	Won 1-Bronze Medal	17/09/13 to 24/09/13
4	Cricket: Enertia'14, TCET, Mumbai, M.S.	Inter	Winner	04/03/14 to 09/03/14 & 12/03/14

Table 5.17: Sports Activities A.Y. 2014-15

Sr. No.	Sports Activities	Level	Scope	Schedule
1	Taekwondo:BOSM-14, BITS-PILANI, Rajasthan	National	Won 1-Gold Medal	19/09/14 to 24/09/14
2	Cricket: BOSM-14, BITS-PILANI, Rajasthan	National	3rd position	19/09/14 to 24/09/14
3	Cricket: Enertia'15, TCET, Mumbai, M.S.	Inter	Winner	09/03/14 to 15/03/14
4	Valley Ball: Enertia'15, TCET,Mumbai, M.S.	Inter	Runner up	09/03/14 to 15/03/14

Sr. No.	Sports Activities	Level	Scope	Schedule
5	Basket Ball: Excelsior'15, KEM, Mumbai, M.S.	Inter	Runner up	Feb'15

Table 5.18: Sports Activities A.Y. 2015-16

Sr. No.	Sports Activities	Level	Scope	Schedule
1	All India Open FIDE Rating Chess Tournament, Nashik, M.S.	National	Rank-20th Place	25/07/15 to 29/07/15
2	All Maharashtra Open FIDE Blitz Rating Chess Tournament,Mumbai, M.S.	State	Rank-16th Place	15/08/15 to 16/08/15
3	Athelitcs (100 mtrs, 200 mtrs, 400 mtrs):BOSM-15, BITS-PILANI, Rajasthan	National	Won 1-Gold Medal & 8-Bronze Medals	18/09/15 to 22/09/15
4	Volley ball: Intercollegiate tournament, FRCRCE, Bandra (W.), Mumbai	Inter	Winner	09/10/15 to 10/10/15
5	Cricket: Intercollegiate tournaments:1. SIES 2. NMIMS3. DJSCOE, Mumbai	Inter	Winner	09/02/16 to 10/03/16

Table 5.19: College level (Intra Sports'13)–Attainments A.Y 2012-13

Sr. No.	Sports / Game	Date	Number of Teams	Number of Students	Winners
1	Cricket	28th Jan – 07th Feb 2013	18	300	BE IT
2	Basket ball	28th Jan – 07th Feb 2013	13	160	SE ETRX
3	Volley ball	28th Jan – 07th Feb 2013	12	150	TE CMPN
4	Throw ball	28th Jan – 07th Feb 2013	10	70	BE ETRX
5	Football	28th Jan – 07th Feb 2013	14	163	BE IT
6	Chess	28th Jan – 07th Feb 2013	11	18	TE ETRX
7	Carom	28th Jan – 07th Feb 2013	11	20	BE EXTC
	Total Number of Students			881	

Table 5.20: College level (Intra Sports'14)–Attainments A.Y. 2013-14

Sr. No.	Sports / Game	Date	Number of Teams	Number of Students	Winners
1	Cricket	27th Jan – 07th Feb 2014	21	350	SE ETRX
2	Basket ball	27th Jan – 07th Feb 2014	18	210	BE CMPN
3	Volley ball	27th Jan – 07th Feb 2014	18	210	TE ETRX
4	Throw ball	27th Jan – 07th Feb 2014	12	84	BE IT
5	Football	27th Jan – 07th Feb 2014	18	210	BE CMPN
6	Box cricket	27th Jan – 07th Feb 2014	22	160	SE MECH
7	Chess	27th Jan – 07th Feb 2014	12	20	BE ETRX
8	Carom	27th Jan – 07th Feb 2014	14	26	BE IT
	Total Number of Students			1270	

Table 5.21: T-Spark - 15 (Intra Sports'15) – Attainments A.Y. 2014-15

Sr. No.	Sports / Game	Date	Number of Teams	Number of Students	Winners
1	Cricket	27th Jan – 03rd Feb 2015	25	400	TE ETRX
2	Basket ball	27th Jan – 03rd Feb 2015	20	220	BE ETRX
3	Volley ball	27th Jan – 03rd Feb 2015	20	220	BE ETRX
4	Throw ball	27th Jan – 03rd Feb 2015	16	112	BE CMPN
5	Football	27th Jan – 03rd Feb 2015	20	240	BE IT
6	Box cricket	31st Jan – 01st Feb 2015	20	140	BE IT

Sr. No.	Sports / Game	Date	Number of Teams	Number of Students	Winners
7	Tug of War	27th Jan – 03rd Feb 2015	10	100	TE EXTC
8	Chess	27th Jan – 03rd Feb 2015	15	25	FE ETRX, BE EXTC B
9	Carom	27th Jan – 03rd Feb 2015	25	45	BE IT A, BE CMPN B
	Total Number of Students			1502	

Table 5.22: Sports Activities-Enertia'13 (Inter Collegiate Event) A.Y 2012-13

Sr. No.	Sports / Game	Date	Number of Teams	Number of Students from TCET	Winners
1	Cricket	4/3/13 to 10/3/13	TCET + 5 other Colleges	24	Atharva COE
2	Basket ball	4/3/13 to 10/3/13	TCET + 3 other Colleges	14	TCET (Boys)
				08	SFIT (Girls)
3	Volleyball	4/3/13 to 10/3/13	TCET + 4 other Colleges	08	TCET
4	Throw ball	4/3/13 to 10/3/13	TCET + 3 other Colleges	08	RGIT
5	Football	4/3/13 to 10/3/13	TCET + 4 other Colleges	24	Jondhale COE
6	Chess	4/3/13 to 10/3/13	TCET+TCSC	04	TCSC
7	Carom	4/3/14 to 9/3/14 & 12/3/14	TCET	04	TCET
	Total Number of Students			94	

Table 5.23: Sports Activities-Enertia'14 (Inter Collegiate Event) A.Y 2013-14

Sr. No.	Sports / Game	Date	Number of Teams	Number of Students from TCET	Winners
1	Cricket	4/3/14 to 9/3/14 & 12/3/14	TCET + 8 other Colleges	32	TCET
2	Basket ball	4/3/14 to 9/3/14 & 12/3/14	TCET + 4 other Colleges	16	Don Bosco (Boys)
				08	KJ Somaiya (Girls)
3	Volleyball	4/3/14 to 9/3/14 & 12/3/14	TCET + 5 other Colleges	08	TCET
4	Throw ball	4/3/14 to 9/3/14 & 12/3/14	TCET + 2 other Colleges	08	Jondhale COE
5	Football	4/3/14 to 9/3/14 & 12/3/14	TCET + 6 other Colleges	24	Atharva COE
6	Box cricket	4/3/14 to 9/3/14 & 12/3/14	4 TCET Teams + 5 other Colleges	28	TCET
7	Chess	4/3/14 to 9/3/14 & 12/3/14	TCET	04	TCET
8	Carom	4/3/14 to 9/3/14 & 12/3/14	TCET+TCSC	06	TCET
	Total Number of Students			134	

Table 5.24: Sports Activities-Enertia'15 (Inter Collegiate Event) A.Y 2014-15

Sr. No.	Sports / Game	Date	Number of Teams	Number of Students from TCET	Winners
1	Cricket	9th - 13th March	TCET + 7 other Colleges	32	TCET+RIZVI
2	Basket ball	9th - 15th March	TCET + 5 other Colleges	22	SFIT (Boys)
				11	SNDT (Girls)

Sr. No.	Sports / Game	Date	Number of Teams	Number of Students from TCET	Winners
3	Volleyball	9th - 15th March	TCET + 7 other Colleges	11	KJ SOMAIYA
4	Throw ball	12th and 13th March	TCET + 2 other Colleges	14	VIT
5	Football	9th - 12th March	TCET + 7 other Colleges	24	-
6	Box cricket	15th March 2015	5 TCET Teams + 7 other Colleges	35	FCC
7	Chess	14th and 15th March 2015	TCET+TCSC	04	YASHVARDHAN RATHI
8	Carom	14th and 15th March 2015	TCET+TCSC	10	TCSC
9	Table Tennis	14th and 15th March 2015	TCET + VCET	03	VCET
	Total Number of Students			166	

5.3.2   Furnish the details of major student achievements in co-curricular, extra curricular and cultural activities at different levels: University/State/Zonal/National/International, etc. for the previous four years.
Refer tables 5.19 to 5.24

1) TCET Cricket team was winner in the event Box type Cricket at BOSM13 Open Sports meets organized by BITS, Pilani, Rajasthan in September 13.
2) TCET Cricket team was third runner ups at BOSM13 Open Sports meet organized by BITS, Pilani, Rajasthan in September 13.
3) TCET Cricket team was winner in Inter-collegiate sports tournament at RGIT, Mumbai in March 14.
4) TCET Cricket team was runner ups in Inter-collegiate sports tournament at SFIT, Mumbai.
5) TCET Cricket team was runner ups in Inter-collegiate sports tournament ENERTIA 14 organized by TCET in March 14.
6) TCET students won Gold medal & Silver medal in Taekwondo at BOSM13 Open Sports meets organized by BITS, Pilani, Rajasthan in September 13.
7) TCET students won Bronze medal in Swimming at BOSM13 Open Sports meets organized by BITS, Pilani, Rajasthan in September 13.
8) TCET football team was the third runner up in SUMMIT'13 a national level tournament organized by MIT, Pune.
9) TCET students have also participated in various Inter-collegiate tournaments.
10) The annual Intra and Inter collegiate sports festival ENERTIA 14 was organized under halogen lights.

Table 5.25: Sports Achievements in 2014-15

Sr. No.	Name of captain	Name of event	Duration of event	Achievement(winner, runner -up,2nd runner-up)
Sport: Football				
1.	Karan Kathayat	MIT, Kothrud, Pune, M.S.	October'14	Quarter Finalists
2.	Karan Kathayat	VJTI, Mumbai, M.S.	December'14	Quarter Finalists
3.	Karan Kathayat	KEM, Mumbai, M.S.	February'15	Quarter Finalists
4.	Karan Kathayat	KJ Somaiya, Mumbai, M.S.	February'15	Semi Finalists
5.	Karan Kathayat	SPIT, Mumbai, M.S.	February'15	Quarter Finalists
Sport: Cricket				
1.	Mayank Singh	*BOSM-14, BITS-PILANI, Rajasthan*	October'14	3rd-position
2.	Vikas Singh	Enertia'15, TCET,	March'15	Runner up

Sr. No.	Name of captain	Name of event	Duration of event	Achievement(winner, runner -up,2nd runner-up)
		Mumbai, M.S.		
Sport: Box Cricket				
1.	Raghvendra Singh	*BOSM-14, BITS-PILANI, Rajasthan*	October'14	3rd-position
2.	Raghvendra Singh	RGIT, Mumbai, M.S.	February'15	3rd-position
3.	Raghvendra Singh	Enertia'15, TCET, Mumbai, M.S.	March'15	Winner
Sport: Throw ball				
1.	NiharikaPujari	VIT,Mumbai, M.S.	Feb'15	Quarter-finalist (Lost)
2.	NiharikaPujari	TCET, Mumbai, M.S.	March'15	2nd runner-up
Sport: Volleyball				
1.	Dipen Mistry	FACET, Bandra, Mumbai	SEP'14	Quarter-finalist (Lost in semi-finals)
2.	Dipen Mistry	VJTI, Mumbai	OCT'14	- (Lost in Quarter-finals)
3.	SagarMasiwal	KEM, Mumbai	FEB'15	Quarter-finalist (Lost in semi-finals)
4.	Dipen Mistry	SPIT, Mumbai	FEB'15	Quarter-finalist (Lost in semi-finals)
5.	Dipen Mistry	Enertia'15, TCET, Mumbai	MAR'15	Runner up (Lost in finals)
Sports: Basketball				
1.	Mr. Prashant Singh	BOSM,14, BITS, Pilani, Rajasthan	9 DAYS	Gold Medal
Sports: Taekwondo				
Sr. No.	Name of captain	Name of event	Duration of event	Achievement(winner, runner -up,2nd runner-up)
1.	Rahul Sharma	Enthusia'14, VJTI, Mumbai, M.S.	2 days	2nd runner up
2.	Rahul Sharma	Excelsior, KEM, Mumbai, M.S.	3 days	Runner up
3.	Rahul Sharma	SPIT-Spirit, Mumbai, M.S.	2 days	2nd runner up
4.	Rahul Sharma	Enertia'15, TCET, Mumbai, M.S.	7 days	Runner up

Table 5.26: Sports Achievements in 2015-16

Sr. No.	Name of captain	Name of event	Duration of event	Achievement(winner, runner -up,2nd runner-up)
Sport: Chess				
1.	YashvardhanRathi	All India Open FIDE Rating Chess Tournament, Nashik, M.S.	25/7/15 to 29/7/15	20th Place
2.	YashvardhanRathi	All Maharashtra Open FIDE Blitz Rating Chess Tournament, Mumbai, M.S.	15/8/15 to 16/8/15	16th Place
Sport Tournament: BOSM'15, BITS, Pilani, Rajasthan				
1	Rohan Kakati	Athletics (200 mtrs)	18/9/15 to 22/9/15	Winner
2	Rohan Kakati	Athletics (100 mtrs)	18/9/15 to 22/9/15	3rd Position

Sr. No.	Name of captain	Name of event	Duration of event	Achievement(winner, runner -up,2nd runner-up)
3	Rohan Kakati	Athletics (4*400 mtrs)	18/9/15 to 22/9/15	3rd Position
4	VikasTripathi	Athletics (4*400 mtrs)	18/9/15 to 22/9/15	3rd Position
5	Abhishek Pandey	Athletics (4*100 mtrs)	18/9/15 to 22/9/15	3rd Position
6	Atul Singh	Athletics (4*100 mtrs)	18/9/15 to 22/9/15	3rd Position
7	Harsh Singh	Athletics (4*100 mtrs)	18/9/15 to 22/9/15	3rd Position
8	Abhishek Pandey	Athletics (4*400 mtrs)	18/9/15 to 22/9/15	3rd Position
9	Atul Singh	Athletics (4*400 mtrs)	18/9/15 to 22/9/15	3rd Position
10	Rohan Kakati	Athletics (4*100 mtrs)	18/9/15 to 22/9/15	3rd Position
Sport: Volley ball				
1	Abhishek Pandey	Intercollegiate tournament, FRCRCE	9/10/15 to 10/10/15	Winner
Sport: Boxing				
1	Jaivind Yadav	Intercollegiate tournament, Mumbai University	1/11/15 onwards	- (Lost in Quarter finals)
Sport: Cricket				
1	HrishikeshSayar	Intercollegiate tournament, NMIMS, Mumbai	23/02/2016	Winners
2	HrishikeshSayar	Intercollegiate tournament, SPIT, Andheri [W.],Mumbai	25/02/2016	Winners

Cultural Programme: Sojourn, Annual fest is organised every year

5.3.3   How does the college seek and use data and feedback from its graduates and employers, to improve the performance and quality of the institutional provisions?
The institution gathers **feedback from professionals** who are invited as guest speakers
   a) It gathers informal feedback from alumni and employers
   b) The feedback is shared with the faculty for self-improvement purposes andfor designing the curriculum

5.3.4   How does the college involve and encourage students to publish materials like catalogues, wall magazines, college magazine, and other material? List the publications/materials brought out by the students during the previous four academic sessions.
Thakur College of Engineering & Technology brought out the first issue of its annual magazine QUASAR in 2010. Since then, every issue of the magazine has been meticulously handled by the Editorial Committee which comprises of both faculty and student members. The faculty members belonging to Humanities & Sciences Department, Dr. PoonamOjha, Mr. AmolDapkekar and Mr. ShivajiLondhe, guide and collaborate with the student members to create a magazine that fosters creativity, social awareness and responsibility.
The team is formed by passionate writers and editors who are handpicked based on a sample article that they send in. The team also consists of students who design and illustrate the articles giving the magazine a vibrant look.
Once the team is formed, further work for the particular edition starts in the even semester of the year.
Quasar is a powerful medium through which we can inspire and enlighten. With this thought, the committee chooses a different theme for each issue of the magazine.
The following themes were published since the inception of the magazine:

- Quasar 2010-11   Quasar- The Beginning
- Quasar 2011-12   Mumbai MeriJaan
- Quasar 2012-13   The Apocalypse
- Quasar 2013-14   Elections
- Quasar 2014-15   Women Empowerment

The magazine attempts to encompass the diverse moods of the college, capture intricate emotions and thoughts and fabricate them into a single compilation. The magazine also aims to highlight various activities and achievements of the students and faculty alike. It brings into light the talent of the students and has a vibrant display of the TCET culture, making it something that can be valued for a lifetime.

The Quasar magazine has been structured to include every possible aspect stated above.

Structure of Quasar
- Messages from Chairman, CEO, Principal and Deans
- About TCET
- Annual reports of TCET and the different Departments
- Section reports: Exam cell, TnP, RnD, EDC, HOC
- Student body reports
- College festivals and events
- Cover stories
- Articles
- Art gallery
- BE Year book

Details of department magazines:

I.T Department:
a) A newsletter "**BITS**" is published every year at institute level that consist of technical and non-technical articles contributed by students of all departments.
b) A newsletter "**E-Zine**" is published every year at department level that consists of technical and non-technical articles contributed by students of all departments. Started in October 2013, editors: Manaskarnik, Akashsemlani, Mayurpoojari,kaveripillai,Praveendubey and prithvibajpe.Faculty In-charge : Rahul Neve.

ETRX Department: Teletronix magazine: Teletronix is a departmental magazine for Electronics and Electronics & Telecommunication which aims to provide a channel for faculty and students to share their valuable experiences, resources and information. Magazine will be published semester wise. First edition of magazine was published in November 2012. Faculty In-charge: Leena Chakraborty

EXTC Department: Technical Magazine namedAbhivarg started in Year:2015-16, Chief Editor: Mohd.Bilal Khan, Vivek Singh, Aanchal Agarwal, ShivaniSeksaria, Ashish Rawat&TarushShenoy. Faculty In-charge: Ms.Megha Gupta

CMPN Department: Technical Magazine named Nimbusstarted in Feb.2015, Chief Editor:Balchandranaik, Silviyafernandes, Ritukhetan& Aditya munot. Faculty in-charge: Shiwani Gupta &AnandKhandare

H&S, Civil, Mechanical to start from the current academic year.

5.3.5   Does the college have a Student Council or any similar body? Give details on its selection, constitution, activities and funding.

Yes, the details of selection, constitution, activities & funding are as mentioned below through the code of conduct rules:

Rules:
1) The Students' Council-TCET will consist of only the Toppers of the previous Academic Year.
2) First Year are enrolled in the Student's Council on basis of their CET and JEE Scores.
3) The Entries by recommendation will be from NSS, Cultural and Sports fields.
4) The Lady Representatives will only be selected via Interviews by the Faculty In-Charge of the Student's Council.
5) **NO** External Student (Non-Council Members) will be allowed to interfere in any capacity.
6) On any complaints regarding Council Members, their term in the Students' Council will be cancelled by discretion of the concerned Authorities.

7) The Election process will be held fairly and under close supervision.
8) During the Council Elections **NO** Non-Council Members will be present or involved in any way whatsoever.
9) The Election process in to be fair in every way. The Campaigning process is to be conducted fairly.
10) **NO** Council Members are under any force to vote for a particular candidate.
11) All complaints regarding any Election Process or any Council Member or Candidate are to be addressed to the Chairman of the Grievance Cell.
12) Student Participation will be overlooked by the Faculty In-Charges.
13) **ANY and ALL** participants need to maintain an **attendance record above 70%** consistently and an **Aggregate of 60%** over the Academic Year.
14) **The Core Committees** and the **Working Committees** of any Student Chapter of TCET will be formed by interview process of the candidates meeting the criteria regarding the attendance and the Academics.

Students' Council for the Academic Year 2011-12: As per the circular dated 14th August 2008 received from I/c. Director of Students welfare of University of Mumbai, regarding the formation of students council under the section 40(2) (a), 40(2)(b), 40(3), 40(4), for the year 2011-12, the students council under section 40(2)(b) of the Maharashtra Universities act,1994 at college level has been formed.

The Students' Council at the college level shall consist of the following members:
1) **Principal**- Chairman of the Council
2) **Mr. N.T. Kulkarni**, Faculty member nominated by the principal.
3) **Ms.AradhanaManekar** - In-charge, Cultural Activities.
4) **Mr. YogeshBhalekar** - In-charge, Sports Activities.
5) **Mr.Vivek Mishra/Mr.ShivajiLondhe** - National Service Scheme Programme Officer.

The core council of the student's council- TCET formed at the college level for the academic year 2011-12 is as given below:

Table 5.27: The Student's Council- TCET for the academic year 2011-12

Sr.No.	Name of the student	Class	Post
1	MayurJawdekar	BE CMPN	General Secretary
2	SiddhantKejriwal	BE IT	Advisor
3	SiddharthSaxena	TE EXTC	Joint General Secretary
4	Hitesh Jain	TE CMPN	Treasurer
5	PranotiWaingankar	BE ETRX	Cultural Secretary
6	BarsaMohapatra	BE EXTC	Joint Cultural Secretary 1
7	JinkleDharod	TE EXTC	Joint Cultural Secretary 2
8	AdwaitKirtikar	BE CMPN	Sports Secretary
9	Yusuf Kanorewala	BE IT	Joint sports secretary 1
10	Suraj Singh	TE CMPN	Joint sports secretary 2
11	Tanu Singh	TE EXTC	Lady Representative
12	SejalGanpule	TE ETRX	Lady Representative

List of student members of the student council is given as under:-

Table 5.28: Members of the Student Council 2011-12

Sr. No.	Name of the students council--- TCET members	Class
1	Chirag Sharma	SE-ETRX
2	Mahajan Shweta	TE-ETRX
3	SejalGanpule	TE-ETRX
4	PranotiWaingankar	BE-ETRX
5	Gore Mihir	SE-CMPN A
6	Ruplaisaboo	SE-CMPN B
7	Jain Hitesh	TE-CMPN A
8	Suraj Singh	TE-CMPN B
9	AdwaitKirtikar	BE-CMPN A
10	MayurJawdekar	BE-CMPN A
11	Singh Lavanya	BE-CMPN B
12	Kirti Gupta	FE-EXTC A

Sr. No.	Name of the students council--- TCET members	Class
13	SayaliNaringrekar	FE-EXTC A
14	JoglekarChinmay	FE-EXTC A
15	RichaShrimali	FE-EXTC B
16	Parekh Jigar	SE-EXTC A
17	Abhishekh Shah	SE-EXTC B
18	DharodJinkle	TE-EXTC A
19	Tanu Singh	TE-EXTC A
20	SiddharthSaxena	TE-EXTC B
21	Jain Shaily	BE-EXTC A
22	BarsaMohapatra	BE-EXTC B
23	JaydevNayyar	BE-EXTC B
24	Bhandari Priyanka	SE-IT A
25	VadhaiyaShraddha	SE-IT B
26	DattaSourabh	TE-IT A
27	Shah Disha	TE-IT B
28	Yusuf Kanorewala	BE-IT A
29	SiddhantKejriwal	BE-IT A
30	Siddhi Shah	BE-IT B

Students' Council for the Academic Year 2012-13

As per the Circular dated 13th September 2012 received from I/c. Directorof Students Welfare of University of Mumbai, regarding the formation of Students' Council under the section 40(2)(a), 40(2)(b), 40(3) &40(4)(a), for the year 2012-13, the Students' Council under section 40(2)(b) of the Maharashtra Universities Act, 1994 at college level has been formed.

The Students' Council at the college level shall consist of the following members:

1) **Principal**- Chairman of the Council
2) **Mr. N.T. Kulkarni**, Faculty member nominated by the principal.
3) **Ms.AradhanaManekar** - In-charge, Cultural Activities.
4) **Mr. YogeshBhalekar** - In-charge, Sports Activities.
5) **Mr.ShivajiLondhe/Dr.SunitaPachori** - National Service Scheme Programme Officer.

The core council of the Students Council- TCET formed at the college level for the academicyear 2012-13 is as given below:

Table 5.29: The Student's Council- TCET for the academic year 2012-13

Sr. No.	Name of the student	Class	Post
1	Singh ManvendraPratap	BE-IT B	General Secretary
2	Singh Alankar	BE-ETRX	Advisor
3	Jain Hitesh	BE-CMPN A	Advisor
4	Shah Abhishek	TE-EXTC B	Joint General Secretary
5	Gore Mihir	TE-CMPN B	Treasurer
6	KhuranaVineeta	BE-IT A	Cultural Secretary
7	KhandelwalHarshit	BE-IT A	Joint Cultural Secretary 1
8	VadhaiyaShraddha	TE-IT B	Joint Cultural Secretary 2
9	Singh Suraj	BE-CMPN B	Sports secretary 1
10	BhatkarAkshay	TE-ETRX	Joint Sports Secretary1
11	UpadhyayTarun	TE-EXTC B	Joint Sports Secretary2
12	Agarwal Avni	BE-ETRX	Lady Representative
13	Sharma Prerna	BE-EXTC B	Lady Representative

Students' Council for the Academic Year 2013-14

Table 5.30: The Students' Council for the Academic Year 2013-14

Sr.No.	Name	Class	Post
1	Shah Abhishekh	BE EXTC B	General Secretary
2	Panchal Vinit	BE CMPN A	General Advisor
3	Keshri Amit	TE EXTC B	Joint General Secretary
4	SahanaNayak	TE CMPN A	Treasurer
5	PriyanilShrija	BE CMPN B	Lady Representative
6	MansiBalani	BE ETRX	Lady Representative

Sr.No.	Name	Class	Post
7	Shah ALekh	BE CMPN B	Sports General Secretary
8	Arora Rishabh	BE CMPN A	Sports Advisor
9	UpadhyayTarun	BE EXTC B	Sports Secretary
10	Shah Umang	BE CMPN B	Joint Sports Secretary
11	Vikram Singh	TE EXTC A	Joint Sports Secretary
12	Chirag Sharma	BE ETRX	Joint Sports Secretary
13	Shah Pralam	BE IT A	Cultural General Secretary
14	Srivastava Mayank	BE EXTC B	Cultural Advisor
15	BavishiDisha	BE IT – A	Cultural Secretary
16	VaidhaiyaShraddha	BE IT-B	Joint Cultural Secretary
17	MrunmayeeShirodkar	TE IT-B	Joint Cultural Secretary

Students' Council for the Academic Year 2014-15

As per the guidelines laid down by University of Mumbai regarding the formation of Students council-TCET under the section 40(2)(a), 40(2)(b) &40(4)(a), for the academic year 2014-15, the Students' Council TCET under section 40(2)(b) of the Maharashtra Universities Act, 1994 at college level has been formed.

The Students' Council at the college level shall consist of the following members:

Table 5.31: The Students' Council for the Academic Year 2014-15

Sr.No.	Name of the student	Class	Post
1	Keshri Amit	BE EXTC B	General Secretary
2	Singh Vikram	BE EXTC B	Sports General Secretary
3	NayakSahana	BE CMPN A	Cultural General Secretary
4	Pandey Siddharth	BE CMPN B	General Advisor
5	Singh Raghavendra	BE IT B	Sports Secretary
6	Agarwal Akanksha	BE ETRX	Cultural Secretary
7	VishwakarmaRohit	TE CMPN B	Joint General secretary
8	Singh Mayank	TE CMPN B	Joint Sports secretary
9	Gupta Karan	TE MECH A	Joint Sports Secretary
10	RaveenaPai	TE EXTC A	Joint cultural secretary
11	RohitKarotia	TE CMPN A	Joint cultural secretary
12	Singh Priya	BE CMPN B	Lady Representative
13	BhatiDrishti	BE IT A	Lady Representative
14	Amin Meghna	TE CMPN A	Treasurer

Students' Council for the Academic Year 2015-16

Ad-hoc core committee of Student's Council- TCET

Table 5.32: Ad-hoc core committee of Student's Council- TCET

Sr. No.	Name of the student	Designation	Class/Branch/Div
1	Meghan Amin	General Secretary	BE-CMPN (A-Div)
2	RohitVishwakarama	Sports Secretary	BE-CMPN (B-Div)
3	RohitKarotia	Cultural Secretary	BE-CMPN (A-Div)
4	SnehalRansing	Lady Representative	TE-EXTC-(B-Div)
5	ShraddhaDhumale	Treasurer	TE-CMPN (A-Div)

Table 5.33: Organizing core committee of students council – TCET A.Y: 2015-16

Sr.No.	Name of the student	Designation	Class/Branch/Div
1	Meghan Amin	General Secretary	BE-CMPN (A-Div)
2	RohitVishwakarama	Sports Secretary	BE-CMPN (B-Div)
3	Mayank Singh	Sports Secretary	BE-CMPN(B-Div)
4	RohitKarotia	Cultural Secretary	BE-CMPN (A-Div)
5	ShraddhaDhumale	Treasurer	TE-CMPN (A-Div)
6	Rishabh Prakash	Joint Treasurer	TE-CMPN (B-Div)
7	SagarWaghela	Sports Treasurer	BE-CMPN (B-Div)
8	Rinal Jain	Cultural Treasurer	BE-IT (A-Div)
9	Nishant Singh	General Advisor	BE-CMPN (B-Div)
10	Meet Sheth	Sports Advisor	BE-ETRX

Sr.No.	Name of the student	Designation	Class/Branch/Div
11	Karan Gupta	Sports Advisor	BE-MECH (A-Div)
12	VarshaJha	Cultural Advisor	BE-IT (A-Div)
13	SaurabhChoudhary	Cultural Advisor	BE-EXTC (A-Div)
14	SushantPatil	Joint Cultural Secretary	TE-MECH (B-Div)
15	Uday Menon	Joint General Secretary	TE-CMPN(B-Div)
16	RaveenaPai	Joint Sports Secretary	BE-EXTC(A-Div)
17	Ganesh Naik	Joint Sports secretary	TE-CMPN (A-Div)
18	Amit Singh	Joint Sports Secretary	TE-ETRX
19	ShridharPrabhu	Joint Cultural Secretary	TE-ETRX
20	NayanSoni	Joint Cultural Secretary	TE-CMPN (B-Div)
21	Nisarg Kothari	Joint Cultural Secretary	TE-MECH (A-Div)
22	SnehalRansing	Lady Representative	TE-EXTC-(B-Div)
23	Tanushri Thakur	Lady Representative	BE-ETRX
24	Dinesh Prajapati	Discipline Secretary	TE-EXTC-(B-Div)

5.3.6 Give details of various academic and administrative bodies that have student representatives on them.

Objective of Professional Body
- To inculcate professional and ethical attitude among the students
- Knowledge Sharing
- Learning & career enhancement
- Nurturing new talent & innovation

Activity of Professional Bodies
- Technical Festival (TCET's Zephyr)
- Seminar
- Workshop
- Bridge Courses
- Industrial Visit
- Project Competition

Professional Bodies of TCET
- Association for Computing Machinery
- American Society of Mechanical Engineers
- Computer Society of India
- Institute of Electrical and Electronics Engineers.
- Indian Society for Technical Education.
- Institute of Electronics and Telecommunication Engineers

ACM-TCET
Branch Counselor – Dr.RajeshBansode
Faculty In charge – Mr. Rahul Neve

Table 5.34: Student Core Committee for AY 2015-16

Name	Position
Siddharth Vyas	Chair-person
Khushboo Bajaj	Vice Chairperson
Mihir Mehta	Treasurer
DharaKansagara	Secretary
Shruti Pandey	Sponsorship Head
KanikaNegi	Event Manager

CSI-TCET
Branch Counselor – Dr. R. R. Sedamakar
Faculty In charge – Mr. Vikas Singh

Table 5.35: Student Core Committee for AY 2015-16

Name	Position
Uday Menon	Chairperson
Nidhi Pandey	Vice Chairperson

Name	Position
Siddhant Gupta	Treasurer
AshwiniMahale	Secretary
Rohan Rander	Sponsorship Head
Nidhi Mishra	Event Manager

IETE-TCET
Branch Counselor – Ms.Jyoti Kori
Faculty In charge –Mr. Sumit Kumar

Table 5.36: Student Core Committee for AY 2015-16

Name	Position
ShubhamayKhebudkar (TE ETRX)	Chairperson
Rahul Dubey (TE ETRX)	Vice Chairperson
Amit Singh (TE ETRX)	Treasurer
SaumyaShrivastava (TE ETRX)	Secretary
Ronak Patel(TE ETRX)	Sponsorship Head
SiddheshNaik (TE ETRX)	Event Manager

ISTE-TCET
Faculty In charge –Mr. Rohitkumar Singh, Mr. Anil Vasoya, Ms.PrachiJanrao

Table 5.37: Student Core Committee for AY 2015-16

Name	Position
JinalBangur	Chairperson
Shreya Shrivastava	Vice Chairperson
Shubham Yadav	Treasurer
TanviBarnwal	Secretary
ShanidevJaiswar	Sponsorship Head
AkashSanghvi	Event Manager

IEEE-TCET
Branch Counselor – Dr.Lochan Jolly
Faculty In charge –Mr. BijuBalakrishnan, Mr. Deepak S. Shete

Table 5.38: Student Core Committee for AY 2015-16

Name	Position
AachalaSinghan	Chairperson
Parag Chakraborty	Vice Chairperson
Chirag Jain	Treasurer
Deepti Bhardwaj	Secretary
AneeshKarwarkar	Marketing Manager
Malya Mehta	Event Manager

ASME-TCET
Branch Counselor – Mr.JayantPatil
Faculty In charge – Mr.KrishnaGaikwad
Mr. Vinay Batkar
Mr.Pawan Tiwari

Table 5.39: Student Core Committee for AY 2015-16

Name	Position
Ratneshkumar Singh	Chairperson
RushabhRaikar	Vice Chairperson
SanjanaS.Shettigar	Treasurer
SushantPatil	Secretary
Nisarg Kothari	Sponsorship head
Nikhil	Event Manager

Table 5.40: Membership Count

Sr. No.	Professional Body	No of students
1	ACM	115
2	ASME	51
3	CSI	170
4	IEEE	71

Sr. No.	Professional Body	No of students
5	ISTE	1111
6	IETE	205
	Total	1730

5.3.7   How does the institution network and collaborate with the Alumni and former faculty of the Institution. Any other relevant information regarding Student Support and Progression which the college would like to include.

The institution network and collaborate with the alumni based on alumni meet. The alumni members are informed through e-mails and taking their consent through google docs. If the consent is positive the alumni members are called for alumni meet, they are contacted through phone, SMS and e-mails.

Table 5.41: Year wise Chart Detailing the Batch Wise Number of Alumni Present in the Meet

Sr. No.	Batch	Number of students present			
		Dec 2015	Dec 2014	Dec 2013	Dec 2012
1	2005	NIL	NIL	NIL	NIL
2	2006	NIL	2	5	NIL
3	2007	1	11	10	14
4	2008	13	5	8	2
5	2009	08	6	3	1
6	2010	01	8	10	17
7	2011	35	24	13	28
8	2012	16	18	17	48
9	2013	20	50	23	Not Applicable
10	2014	66	109	Not Applicable	Not Applicable
11	2015	115	Not Applicable	Not Applicable	Not Applicable
12	Unregistered	15	Nil	40	20
	Total	290	233	129	130
	Average no. of students	3480	3120	2700	2400
	Percentage	8.33%	7.46%	4.80%	5.38%
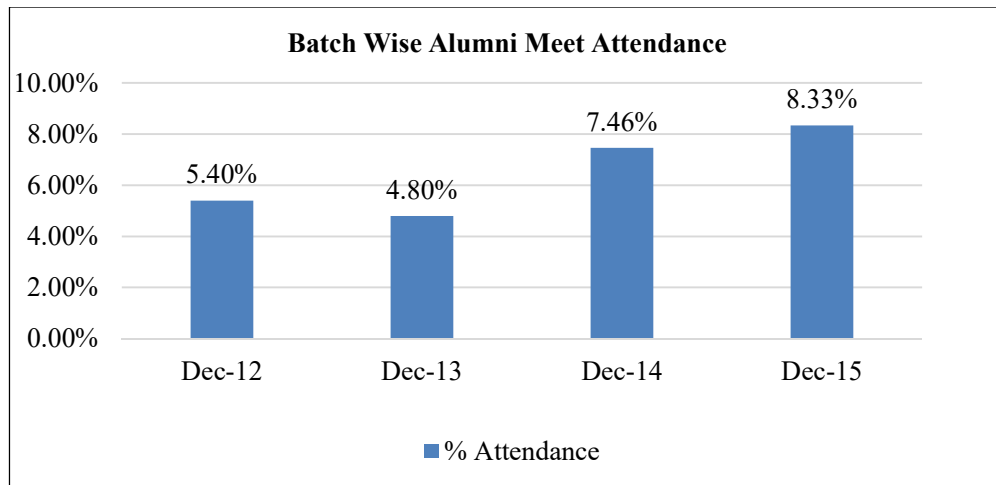
Fig. 5.10: Batch Wise Alumni Meet Attendance

Feedback Analysis:
- General feedback from students about institute
  1) Do you feel proud to associate as Alumni of TCET?
  2) Are you willing to contribute to the development of the college?
  3) Is the education imparted at TCET useful and relevant in your present job?
  4) Were the HOD's & Faculties cooperative?
  5) Has the T&P Cell provided ample on campus placement opportunities?
  6) Have you availed career counselling and guidance for higher studies from T&P Cell?

7) If you are invited to deliver A Guest Lecture/ A Special Talk / A Motivational Session for your juniors, will you be interested?
8) Do you like to join the college Alumni Association?
9) Have you participated in any alumni meet as of now?
10) Do you receive regular updates from the college through Mails / Calls / SMS etc.?
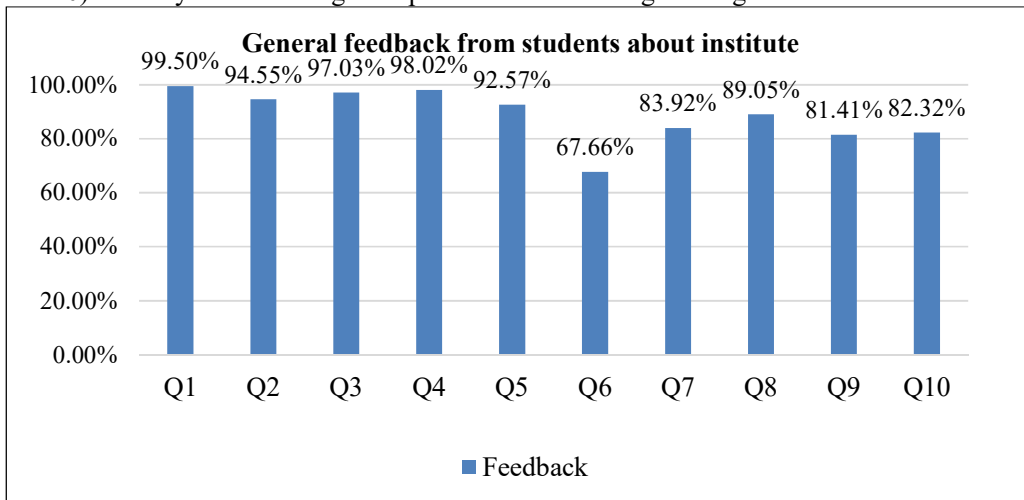
Fig. 5.11: General feedback from students about institute

- Rating about Institute
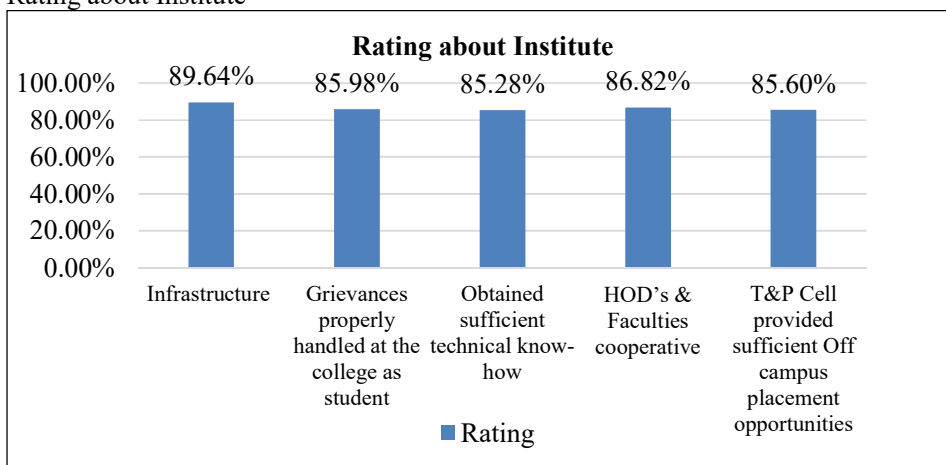
Fig.5.11:Rating about Institute

- Programme Rating
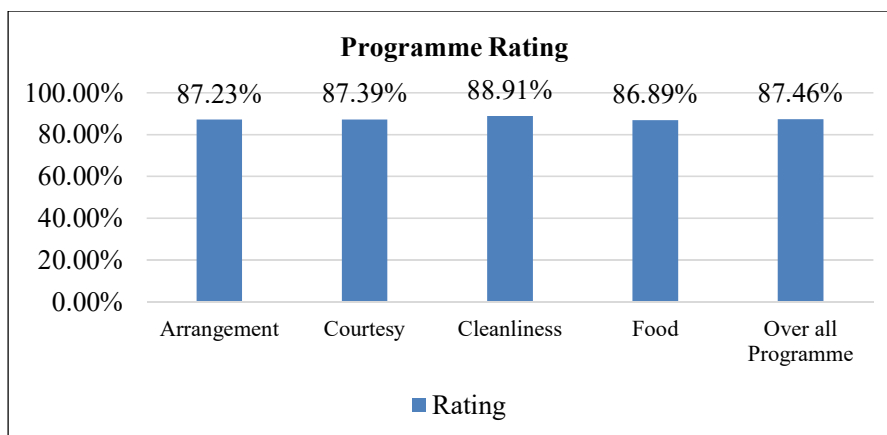
Fig.5.12: Programme Rating

- Contribution in percentage what Alumni want to do towards institute?
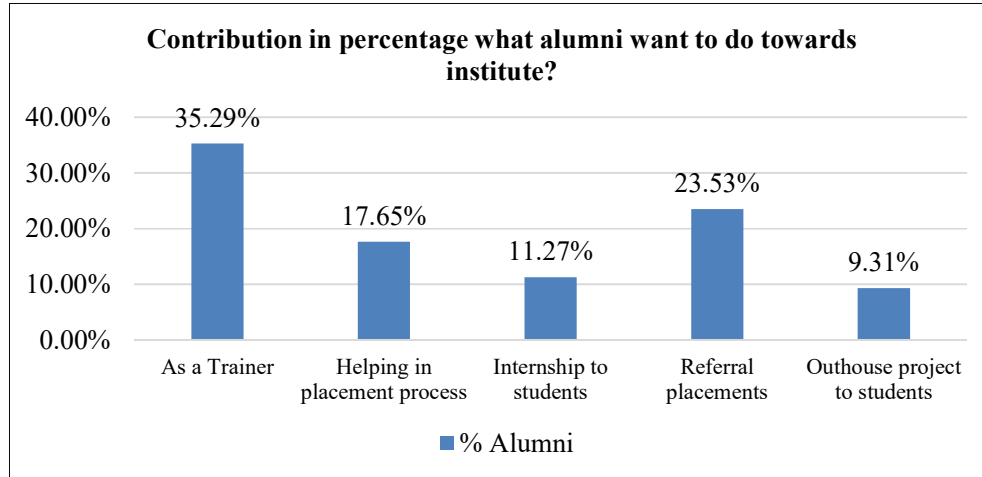
Fig.5.13: Contribution in percentage what Alumni want to do towards institute?

Outcomes:

- A common platform for alumni and faculty is provided by the institute to strengthen TCET Alumni interaction.
- With fruitful interactions, inputs were provided by alumni regarding what they can do for TCET.
- An opportunity for the institute to speak about their achievements and best practices followed in the Institute.
- Total number of Alumni participant is about 290.

Criterion - VI: Governance, Leadership and Management

6.1   Institutional Vision and Leadership

6.1.1   State the vision and mission of the Institution and enumerate on how the mission statement defines the institution's distinctive characteristics in terms of addressing the needs of the society, the students it seeks to serve, institution's traditions and value orientations, vision for the future, etc.

Vision: *Thakur college of Engineering and Technology will excel in Technical Education to become an internationally renowned premier institute of Engineering & Technology.*

Mission: *To provide state-of-the-art infrastructure and right academic ambience for developing professional skills as well as an environment for growth of leadership and managerial skills to students which will make them competent engineers to deliver quality results in the industry.*

The distinctive characteristics are stated by addressing the needs of society and institute's value orientation with its core competencies, core values and strategic objectives as mentioned below:

Core competencies:
a)   Structured and guided teaching learning
b)   System-driven student-centric services
c)   Proactive student professional & personality development schemes
d)   State-of-art infrastructure meeting international standards

Core Values:
a)   Integrity & accountability
b)   Respect for each individual
c)   Sensitivity towards social responsibilities
d)   Unfettered spirit of learning, exploration, rationality and enterprise
e)   Exploration & enterprise for both faculty & students

Strategic objectives:
a)   To become an institute of repute
b)   To become the preferred recruitment destination by the industry
c)   To become an institute fostering active R&D culture at undergraduate/post graduate level
d)   To become an institute nurturing budding engineers to become entrepreneurs

The vision for future addressed through our chairman's message of Thakur Education Group is:

Vision: *Our endeavour is to develop leaders, managers and responsible citizens for the country.*

Mission: *To provide quality education to learners at all levels.*

6.1.2   What is the role of top management, Principal and Faculty in design and implementation of its quality policy and plans?

Role of Top Management:

Top management role in design and implementation of quality policy and plans will be reflected in their commitment to the development, implementation of quality management system and continuously improving in effectiveness by communicating the customer (students) needs and meeting the statutory and regulatory requirement setting vision and frame work for the quality policy and objective to make the process outcome based with agility. Moreover, the management review meetings are conducted to find out the gaps and continual improvement in the process. They also need to make available resources so that there should not be any hindrance for design and implementation of its quality policy and plans. Moreover, it ensures the suitable model. Stakeholders meeting are also conducted. Their feedback is also shared with Chairman for necessary action.

Management calls the review meeting at the institute as well as the group level. The basic objective is to get an update of the various process results and its alignment with the set MVS statements. During the review process if any gaps are identified, time bound actions are to be taken to address the gaps. Management gives the necessary guidance and provide the resources required for design of quality policy and plan.

To ensure quality education happen at institute, institute has the well documented quality manual. All documents are approved by the Management and act as a reference for the design and implementation of quality policy and plan.

The institute's management has zero tolerance for non-compliance and violations of the code of conduct. Senior leaders' actions demonstrate and reinforce compliance to the code of conduct and

there have been no instances of violations by the senior leaders.

The code of conduct was initially created for the students and implemented in AY 2012-13 and is displayed in every department and made part of ISO system on 22nd January, 2015.

Role of Principal:

Since the quality policy and plan are to be implemented through the faculty members it is important to share the vision and mission related to quality policy and plan with faculty members. Principal also need to motivate the faculty members for the effective implementation as it may lead to the feeling among faculty that it will lead to extra workload

Moreover, he ensures all regulatory and statutory and legal compliances through their proactive involvement in the institutional processes and they themselves exhibit a very high degree of ethical conduct which is reflected in the discipline of the workforce in ensuring timeliness, responding with agility to student feedback and transparency and accountability in all the processes. Openness and transparency are encouraged in all discussions & meetings, the workforce and students are encouraged to speak without fear and reprisal.

The role of thePrincipalin design and implementation of its quality policy and plans is through imparting Quality Technical Education which is the guiding principle of TCET. The approach to performance improvement is by continuous leaning and innovation using the PDCA (Plan-Do-Check-Act) cycle to improve the effectiveness and efficiency of the various processes. Improving opportunities are identified through the following 5 processes:-

a) Annual strategic planning & curriculum planning
b) Ensuring accreditation of all programmes offered and attainment of Programme Educational Objectives (PEOs),
c) Internal and external ISO audits reports and the opportunity for improvement (OFI)
d) Formal and informal feedback and survey reports conducted with customer/stakeholder
e) Monitoring, control and improvement of the various programs offered and attainment of processes as per their schedule and deriving improvement targets.
f) Council meeting
g) statutory and regulatory compliances release time- to -time by the competent authority and study the competitive market trend
h) Semester review meeting conducted on the last date of the semester.
i) Discussion of quality policy and plan with quality expert for third party input and improvement.

These inputs are shared with managements and the senior leadership at the institute as well as in department/section. If any policy or plan are to be designed and developed, their inputs are vital as also set the specification for the process to be designed and implemented. If the process already exists, these policies and plan can be integrated which will lead to continual improvement of the process.

Principal is responsible for the design and development of the Quality Management System, institutional and management process and is also the approving authority for institutional and management process. Management Representative (MR) (senior faculty) is the implementing authority.

Role of Faculty:

Faculty members are the backbone of the system. Ground level inputs and the implementation problem of quality policy and plan can be understood from the faculty members, inputs and feedback. QMS should be designed in such a way that it should be acceptable to faculty and then only it can be implemented effectively for students. They also need to do brainstorming sessions for students and some faculty member are a part of quality assurance team. Quality assurance team should ensure the effective implementation of policy and plan in department.

6.1.3 What is the involvement of the leadership in ensuring?

- **The policy statements and action plans for fulfilment of the stated mission**
  The senior leaders use the strategic long and short term goals, directions from the Governing Council and Advisory Body, the chairman's directives to form the basis of identifying actions. The required actions are implemented through academic calendar, FDP (Faculty Development Programme), SDP (Student Development Programme) to address teaching-learning process (TLP) and improvement in various institutional processes for the institute's sustainable growth and development. The Roadmap of SDP is made on the basis to support university curriculum and content beyond syllabus to benefit the students.

The performance of the actions is reviewed at the end of each semester against the plans and goals. They also constantly review results of various processes and deploy improvement goals to create and balance values for all stakeholders.

The attainment of the Programme Educational Objective (PEO), along with their measurement is an enabler to determine progress of the academic intent of the college. The PEOs are linked to the Graduate Attributes (GA). By implementing objective metrics for the key processes and monitoring these metrics, the senior leaders are able to follow progress and also get an early alert of any lapses.

- **Formulation of action plans for all operations and incorporation of the same into the institutional strategic plan**

  The overarching strategic goal of the institute based on the vision, is sustained student success for growth of the institute with a comprehensive engineering program. The fig.6.1 below illustrates the strategic planning process cycle.

  While planning expansion and growth, which is the first step of the process, the principal and senior leaders make recommendations after a thorough study involving the previous year operational findings requests/recommendations from the stakeholders, future projections, learning from news covered in print and electronic media etc. Recommendation are made to top management

Fig. 6.1: Strategic Planning Process Cycle

The institute's objective measures, systematic processes, data driven review mechanism and agility to respond to changing requirement enable execution of the strategic plan. Overall, specific objectives and actions of the plan suggest the need to move on a number of fronts to keep abreast of the competition and enhance academic excellence.

a) TCET's key strategic objectives derived from the vision, the short and long-term goals and the status for the strategic objectives as mentioned in table 6.1 below.

b) The short-term goals of the strategic objectives are drawn up based upon review of the strategic challenges and advantages. If a new core competency, strategic advantage, or strategic challenge is identified during the SWOT (Strength, Weakness, Opportunity and Threat) analysis.

By focusing on the six key processes and capitalizing on the strategic challenges, the institute endeavours to overcome the strategic challenges. The main challenge is to increase the students' academic results and success rate and meet the all-round development through the graduate attributes, leading to increased employability and engagement.

- **Interaction with stakeholders**

  The key performance measures and indicators of TCET are derived from the key strategic

objectives. The performance measures/indicators for various stakeholders are as mentioned in Table 6.1

Table 6.1: Key Strategic Objectives with Goals

Sr. No.	Strategic Objective	Short-term Goal & Current Status	Long-term Goal & Current Status

1.	To become an Institute of Repute	1) 100% compliance to AICTE, DTE & UOM requirements – fully compliant
		 2) NBA Accreditation – reaccreditation of 4 current and accreditation of 1 additional programme in2019
		 3) Implementation of outcome based education by ensuring effective learning by defining learning/ course/program objectives leading to student results
		 4) Continuing education programs for life-long learning through program review
		 5) Engineering practices through academic projects and R&D activities
		 6) Achieving Research Excellence through:
		  i) Recognition as a Research Centre for running PhD programs. (EXTC PhD program began in AY 2014-15)
		  ii) Creating Centre of Excellence & Relevance (Research Labs) (Tata Motors, Texas Instruments CoE setup, National Institute &Kuka Robotics under process)
		 7) MOUs with International Institutes (currently discussions is going on with help from CII with Canadian, Australian and European Institutes)
			1) 100% compliance leading to permanent affiliation and good compliance track-record so as to not impact the permanent affiliation status. (Permanent Affiliation application pending with UOM)
			 2) Upon permanent affiliation and proven track record of running UG, PG programs secure academic autonomy
			 3) Secure Technical Campus status. (UOM to still define the process. TCET can comply with respect to the educational programs some modifications to the infrastructure may be required depending upon UOM guidelines)
			 4) Increase the number of CoEs
			 5) Introduce innovative programs and courses
			 6) Secure Deemed University status after academic autonomy, introduction of innovative programs and courses – tentative planned for 2019-20
			 7) Upon collaboration with International Institutes begin:
			  i) Joint R&D activities
			  ii) Training Programs
			  iii) Student & Faculty Exchange Programs
			  iv) Twining Programs

2	To become the preferred recruitment destination by the industry	1) Increase Industry participation in the Co-Curricular activities and training programs 2) Involve industry professionals in the Advisory Committee 3) Increase Industry Institute interaction between faculty & students 4) Increase the number of CoEs	1) With academic autonomy introduce specific industry required curriculum

There are objective metrics and goals for all processes. Hence review of monitoring of results against performance goals for each activity and responding with agility to changes or course corrections is the institutes' method to ensure that the overall action plan measurement system is aligned with the vision of the organization with a long-term perspective.

Table 6.2: Performance measure/indicators

Sr. No.	Stakeholder	Measure / Indicator	Current Performance	Short-term Projections	Long-term Projections
1	Student / Faculty	Attendance Monitoring	Performance for period Jan-15 to April-15 is good (>60% but less than <75%)	All semester's attendance for every Department to be good (>60%).	Faculty to create a "pull" factor by enhancing Teaching Learning and more than 80% good attendance for all Departments /all semesters
2	Student	Student Results for all tests/ exams	Results compliant with 3rd year and final year. Compliance is not consistent for 1st year and 2nd year results	To enhance the quality objective at least by 5% so that at least 80% of the students should become eligible for campus placement and the success rate should be >80%	All students to become eligible
3	Student	Feedback	Majority faculty members have more than a 75% score which is the Quality Objective	At least 2-3% improvement in the Dept. average yearly	To enhance the quality objective and setting a higher quality objective
4	Student	Placement Statistics (number placed, highest package)	Eligible students with academic score of 60% or above.　Around 80% of eligible students placed	Up to 5% yearly improvement in the number of students eligibility	100% placement for students and multiple offers with placements in MNCs through diversified mode of placements
5	Regulatory/ Affiliating / Accrediting Agencies	Compliances as required	Zero deficiency	Maintain zero deficiency	Exceed compliance requirements to meet national and international accreditation standards
6	Institute	Intake	UG: 660 PG: 54 PhD: 10 Total: 724	To keep the intake intact	Increase intake with increase in programs and course diversification
7	Institute	Revenue & Budgeting	Current expenses within the budget	Revenue should increase and budget should not exceed the revenue	Revenue should increase and budget should not exceed the revenue with enough surplus

- **Proper support for policy and planning through need analysis, research inputs and consultations with the stakeholders**
  Support for policy and planning:
  o Infrastructure facilities and laboratory development are supported by regulatory bodies' norms and standards, faculty and the students' feedback and industry needs technological development, thrust area for R & D, etc.
  o Trends for admission in the various courses are studied through market trends and demand, the inputs obtained from the industries, survey of the potential students

conducted at the time of the admission demand and supply of the programmes etc. This is also required as a part of "Detail Project Report" (DPR) required for starting new programme or increasing the intake capacity of existing programmes. It helps to re-design the programmes with bridge courses, value added courses and support activity along with outreach programme to ensure that all seats get filled up. Work is pursued by Dean (SSW) along with faculty members and support staff.

o Academic policy and planning need analysis is done based on university curriculum requirement and the syllabus contents. To comply with the requirement, the inputs are taken from the Dean (Faculty of Technology) and the member of Board of Studies of University to understand the industry relevance of the courses, rigorous literature survey is done and also discussed with the experts in the field from industry, the premier institutes and the members of the advisory committee consisting of the members from various fields.

o Programme/Course success need analysis is done through course and programme survey from students conducted by the department as per the academic calendar course survey is done at the end of every semester by course faculty and programme survey is done at the end of the programme by the HOD. Survey data compilation is done by the technical staff and the support staff in the department and the reports are prepared by the concern faculty under the supervision of HOD and the guidance from the Dean (Academic). Based on survey report, HOD in consultation with Dean (Academic) prepares the Action Taken Report (ATR) which is implemented by HOD.

o Students training and placement in industries, policy and planning need analysis is done through Training & Placement Team including Training & Placement Officer and the members of the advisory committee. Inputs are taken from industry through personal visit, official communication, feedback etc. In addition TPO meet is conducted every year where TPO, HODs and HR from industry are invited to discuss the various issues related to campus placement. At the end of the programme, report is generated which is the reference document to bring improvements in campus placement.

o Research & Development related policy and planning, need analysis is done through the interaction with the expert from research institutes/industry/academic and university authorities/ grant agencies. Research inputs are also taken from the resource persons visiting during the yearly international/national conferences known as MULTICON W conducted every year in the month of February.

- **Reinforcing the culture of excellence:**
  Principal rules the leadership to reinforce the culture excellence. Institutes activity are system based where there are 20+ committees with defined role and responsibilities and three level of operation so that chance of failure for any of the system should be minimum. All system is based on facts and figures. Every department /sections are required to prepare the result analysis of the key forming area with competitive and comparative data. Institute also maintains the yearly rolling data so that learning can be developed for past experiences.

  Institute has more than 100 faculty members as ISO certified internal auditor and more than 10 faculty members are ISO lead auditor. All are actively involved in effective implementation of ISO based QMS and they also audit. Therefore they have the grasp for quality and hence the culture of excellence. The culture helps for effective implementation of QMS with conducive work environment and continually improving processes and the systems which increases the productivity and the performance. After undergoing the process of NBA accreditation institute implemented outcome based education covered in Art.6.1.14. This has brought the new culture of learning environment. Moreover, lot of training programmes for faculty as well as student are conducted for the same. Induction training for new employees is also completed.

  Key quality models are also displayed with the key results in the departments which set the healthy competitive environments and provide the competitive edge to faculty and students.

  ISO manuals are made available on LAN. One can refer if don't have the thorough knowledge of the system in place in the institute.

  The culture of excellence is brought in TCET system by following the organogram as mentioned below which is explained in four major sections named as: Approach, Deploy, Learning and Integration (ADLI).

The outcome based education is explained with strategy, resource planning &control followed by design, deployment & optimization and later by execution, monitoring & student focus with feedback.

- **Champion organizational change**
  1) Self-sufficient and self-content institute.
  2) State of the art infrastructure at par with international standards.
  3) Three level of operation to mitigate risk, handle crisis and succession plan.
  4) Effective implementation of QMS at all level by adopting various quality models.
  5) Starting the concept of pool campus in the city to enhance the students' placement of the university affiliated engineering colleges.

6.1.4   What are the procedures adopted by the institution to monitor and evaluate policies and plans of the institution for effective implementation and improvement from time to time?

The institution plans to monitor and evaluate policies that would bring quality technical education among students in the campus. The perspective plan for educational success of students is depicted as shown in the figure 6.2 below which is the outcome based education (OBE) at TCET. It is broadly classified into: objective, activities to be performed, facilitating skill learning & grooming for employability, outcomes and final goals as professional placement with high success rate.
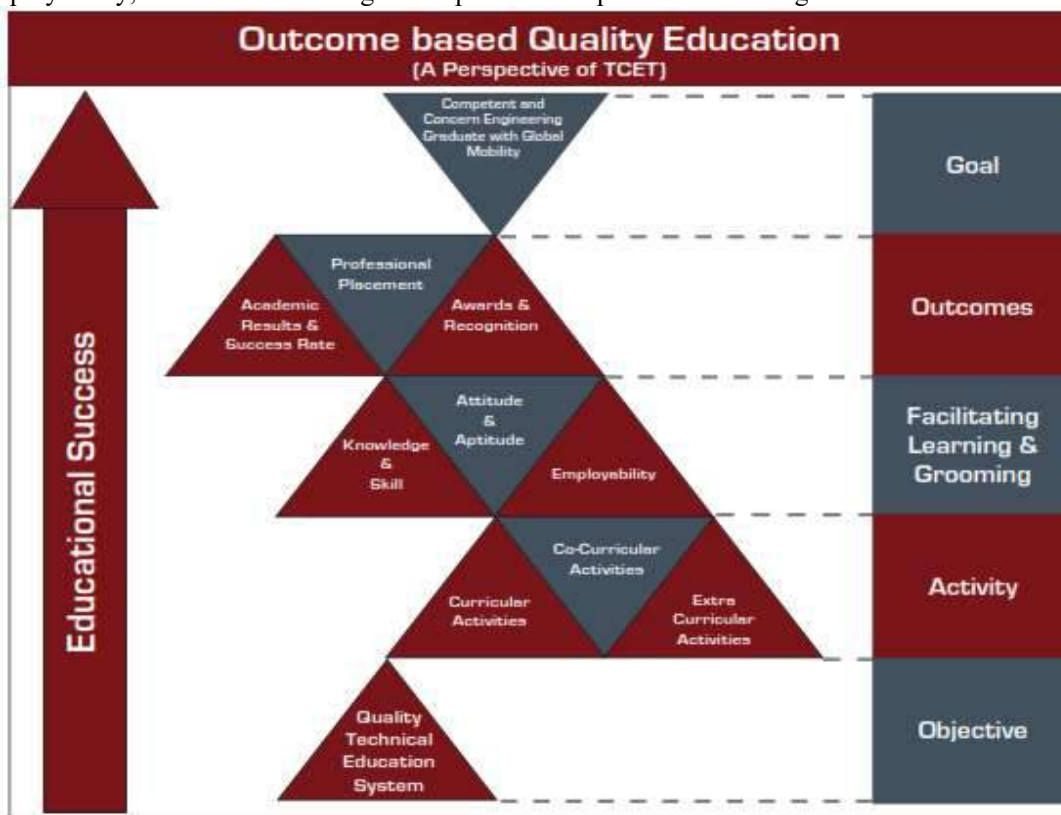
Fig. 6.2: Outcome based Quality Education (OBE) at TCET

Set procedures adopted by the institution to monitor and evaluate policies and plan for effective implementation and improvement from time-to-time include:

1) All Activity to be conducted as per the academic calendar and the plan which is reviewed on monthly basis by the Principal. Any disparity observed necessary action is taken.
2) Event reports are submitted by the concerned faculty members which need to be conducted as per the set process. Reports also include the SWOT analysis with scope for improvement (SFI). Report is presented to Principal and discussed. Quality assurance team check the compliance and SPI and accordingly action is taken.
3) Semester Review is conducted where the proceeding of entire semester is presented by HOD. They also submit the semester review report. Wherever action is required, accordingly acted. Hence it is expected that all the policies and plans shall be executed through set process. Faculty Members also present their semester review report to their respective HOD and is also

the basis for PRDP evaluation.
4) Interaction in formal and informal meetings
5) Outcome attainment and the achievement of objectives in alignment with MVS statement is also checked by the programme coordinator
6) Dean (SSW) and HOD takes the help of HOD and survey report to understand the stakeholder satisfaction and action required to meet their expectation.

6.1.5 Give details of the academic leadership provided to the faculty by the top management?
The flow of academic leadership is provided in the fig.6.3 as mentioned to the faculty by top management. The vision of the institute is to ensure a continual student success both academically and professionally. The objective for continual student success is to enable them to secure admissions in renowned institutes internationally and to instil in them the need to perform consistently well, which eventually brings recognition to the institute.

The senior leaders with guidance from the chairman, advisory board have created a positive, transparent and open culture and empowered the faculty to take timely action which has resulted in a heightened environment for institutional workforce learning. The institution by improving Teaching Learning methodology and bringing in latest teaching methods along with well-equipped class rooms with LCD projectors with internet facility, the IIT remote centre, web-based learning, e-library etc. adds to the heightened learning environment leadership system can be seen in Fig 6.3.

Fig. 6.3: Leadership system implemented at TCET

The chairman also encourages individual faculty members on their achievements personally and acknowledges their contribution publicly making the individual faculty member proud, promoting a "feel good" factor. The institution on its part encourages learning and development of the workforce through clear-cut policies for pursuing higher studies and the commitment required by the institute while availing of these facilities.

Faculty is provided opportunities to expand their knowledge through STTPs, FDP and attending various seminars/conferences etc. Institute also conducts several conferences which provide opportunities for students and faculty to demonstrate organizational and leadership skills as well as for networking and learning about the latest information/knowledge in the domain. They also get an opportunity to share their R&D work and technical papers with the experts and referees at these conferences. Empowerment and delegation are the two main tools used to lure faculty to hone their skills.

6.1.6 How does the college groom leadership at various levels?
The complete college leadership is groomed & governed as per the hierarchy as depicted in Fig 6.4.
As per the hierarchy, the roles and responsibilities for each member are well defined. To make the system risk free TCET has succession plan, for every designated leadership positions at the institute and department. For every leadership position there is deputy who is required to work in coherence with Principal/HOD. Moreover third level is the Coordinator level created to make the leadership level as 3 level.

Deans are considered as the deputy as well as succession plan for Principals. Therefore, they are required to be trained for leadership skills, grooming to be done on-job experience, attending various leadership programmes allowed to visit industries/institution/university to understand the various traits of leaders and also to understand the successful models. They are also asked to organise various programmes at state and national level to understand the attributes of social connects. Marketing and fiscal traits, administrative and managerial skills required, ground level processes and how to give successful programmes. Deputies in the system is mainly portfolio based which may be kept on

rotating as per the situation and system demand same is applicable at department level. However there it will be with the perspective of department /section. Moreover HOD post is on rotation for Esso. Professor (with Ph.D. degree) and Professors in the department based on sincerity, commitment, performance etc. Rotation cycle is 3 years.
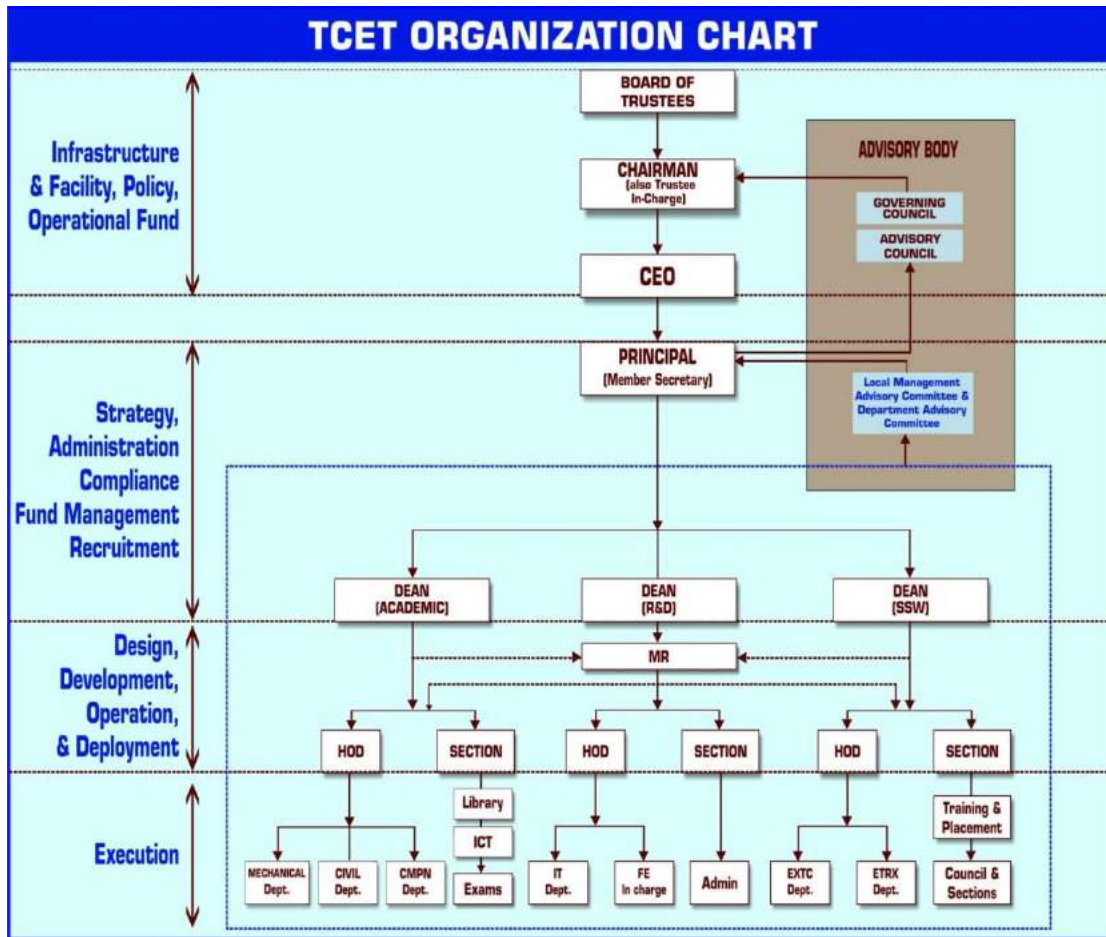
Fig. 6.4: Organisational structure
Fig. 6.5:

6.1.7   How does the college delegate authority and provide operational autonomy to the departments / units of the institution and work towards decentralized governance system?

The diagram below indicates the authorized delegation to check for autonomy of the work at department/institute level toward decentralized governance system.
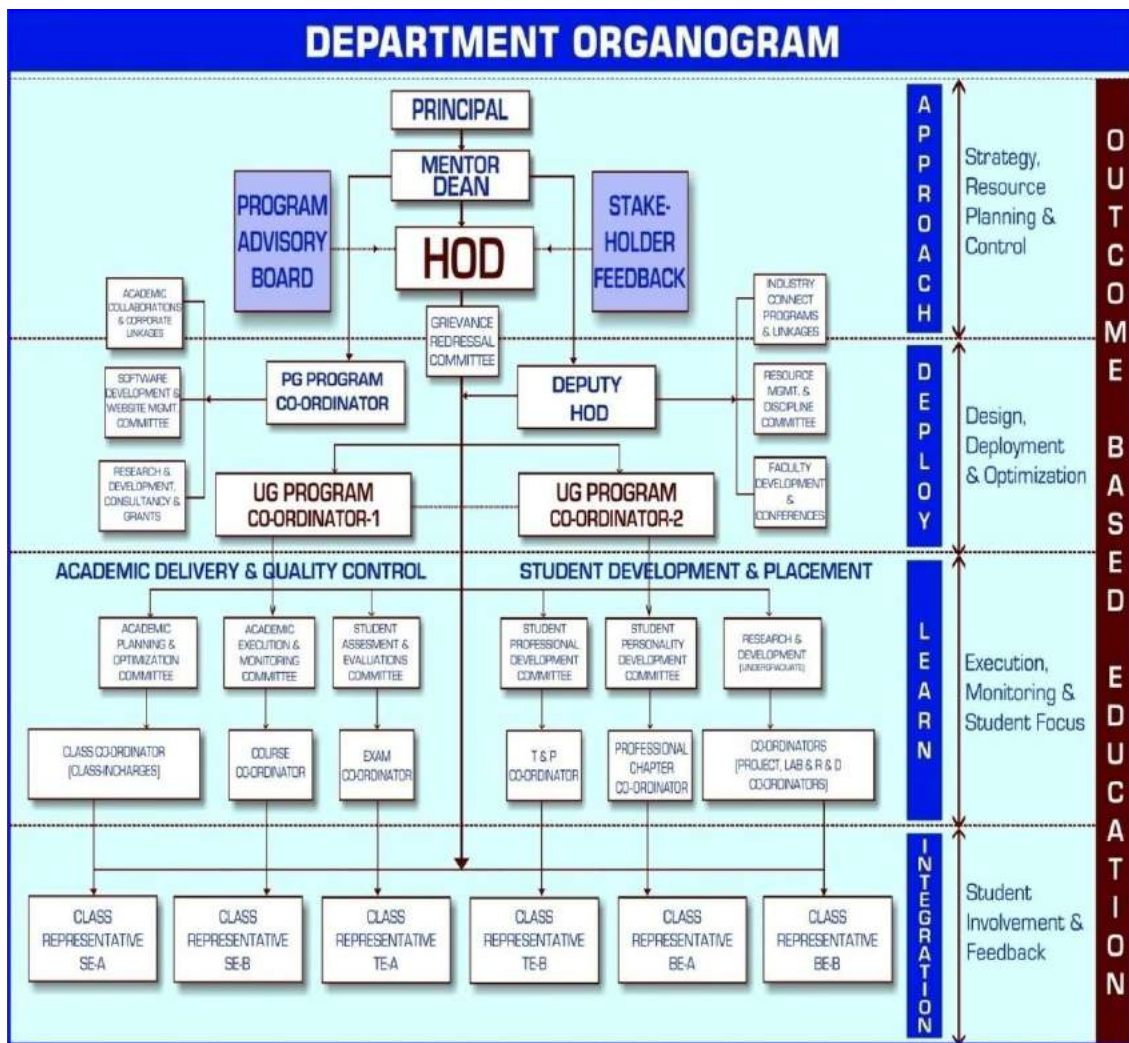
Fig. 6.6: Department function with autonomy

- Principal has autonomy for overall monitoring and control for academic, administrative, finance and institutional growth.
- Deans has the full autonomy for academic/Co-curricular/Extra-Curricular activities and take decision as per their portfolios at institute level to make the function of the department/section uniform across the institute
- HOD/Deputy HOD has the full autonomy for the success of programmes run in the department at UG/PG level
- TPO has been given the autonomy for the success of the students in campus placement
- Faculty has been given the autonomy for the success of the students in courses.
- In addition there are 20+ committee for various identified role and responsibilities for each cadre whether teaching or non-teaching are well defined for every process in ISO. This provides the clarity for action and brings commitment and engagement among the employees.

6.1.8   Does the college promote a culture of participative management? If 'yes', indicate the levels of participative management.

Yes, the roles defined of Dean-Academic, R&D and SSW indicates the decentralization of authority and their participative management in smooth conduct of all activities in the institute as in the fig. mentioned below.

Table 6.3: Participative Management (at Dean's level)

Dean(Academic) - Role & Responsibility	
Academic Planning & Optimization	1) To enhance the Academic standards as per the guidelines of University of Mumbai across all the programs offered by TCET. 2) To enhance creativity innovative skills amongst faculty for improving

Academic Execution & Monitoring	their delivery and all round development. 3) To maintain and enhance the rigor of the courses by adding value based practices. 4) To inculcate the enterprising skills in the faculty students. 5) To build the mind set of all faculty and students for enhancing research and developmental activities. 6) To initiate activities to improve the classroom teaching-learning activities by orienting teachers and students. 7) To monitor term work, semester conduct, academic activities. 8) Any other development work.
Student Assessment & Evaluation	
Software Development& Website Management	
Dean(R & D) - Role & Responsibility	
Research Development Committee	1) Policy making related to R&D Activities in coordination with Academic HOD, MR and Principal. 2) Establishment of research centres with approval from competent authority. 3) R&D projects and area identification at UG/PG/Research Level. 4) Industry Linkages and initiate Collaborative Research. 5) Faculty development with respect to R&D needs as per domain specialization. 6) Networking with foreign universities to initiate R&D Activities. 7) Establishment and enhancement of entrepreneurship cell along with incubation centres. 8) Motivate faculty students for Research Technical Publications. 9) Facilitate the Consultancy work in the institution. 10) To monitor the effective utilization funds of externally funded projects. 11) Any other related work.
Resource Mobilization & Management	
Entrepreneurship Development Cell	
Consultancy, Grants & Conference Committee	
Dean(SSW) - Role & Responsibility	
Student Personality Development Committee	1) To facilitate students and staff engagement and promote intellectual and personal growth. In order to maintain healthy and conducive organizational work environment. Also to create opportunities for students and staff cross-culture skill development and prepare them to become sensitive citizens. 2) To facilitate all the activities of professional personality development of students and staff engagement and initiate necessary support programmes and services. 3) To enhance learning and development of students outside the classroom. 4) To supervise activities of students council, student chapters and faculty forum. 5) To create awareness amongst students and staff to maintain the institute property equipment, and facilities by initiating appropriate training programmes. 6) To ensure the health, safety and welfare of students and staff of the institute and guests. 7) To initiate appropriate measures for students and staff to participate in various social and cultural activities. 8) To maintain status of ragging free campus. 9) Any other related work.
Student Professional Development Committee	
Student & Staff Welfare Committee	
Industry Connect Program & Linkages Committee	

Similarly at the department level, institute has HOD, Deputy HOD and coordinators their roles and responsibilities are as follows:

HODs
1) To ensure implementation of QMS and its continual improvement
2) To ensure the completion of module / question bank / question setsbefore the commencement of semester.
3) To ensure lecture schedules and the practical / tutorials sessions areplanned as per syllabus.
4) To ensure that lecture schedules and the practical / tutorialssessions are delivered / executed

as planned

5) To ensure that students' performance and attendance are monitoredand actions are taken to enhance the same
6) To ensure effective implementation of remedial work guidelines and maintaining its record.
7) To ensure the proper maintenance of personal and course file by every faculty members in the department
8) To update the Principal about the departmental activities on regularbasis
9) To ensure term work, oral and practical examinations are conductedon time and in efficient manner with effective result
10) Annual stock verification
11) To help the institute for compiling departmental information requiredfor university affiliation / AICTE Approval /NBA Accreditation/others.
12) Any other related work

Deputy HOD
1) To act as In-charge HOD in the absence of HOD
2) To assist HOD on academic / department administration
3) To assist HOD in effective implementation of QMS at department level and its continual improvement
4) Any other related work.

Department coordinator
1) To assist HOD and deputy HOD in departmental activities
2) To ensure timely compilation of attendance record for monthly display as per schedule
3) To ensure timely compilation and submission of term-test marks to examination section
4) To help HOD/Deputy HOD in implementing QMS and its continual improvement at departmental level
5) To help HOD/Deputy HOD/Discipline committee in maintaining the discipline amongst the student
6) To compile department achievements for the academic year and arrange the needful presentation as and when required
7) Any other related work.

6.2 Strategy Development and Deployment

6.2.1 Does the Institution have a formally stated quality policy? How is it developed, driven, deployed and reviewed?

Yes, institute has a formal stated quality policy.

Quality Policy:

We, the Staff, Faculty and the Management of Thakur College of Engineering and Technology, are committed to provide state-of-the-art infrastructure and facilities, conducive academic environment to deliver Quality Technical Education to our students.

We shall work as a team and interact with the students in proactive manner to achieve our Institutional Quality Objectives and fulfil all academic and regulatory requirements to continually enhance the satisfaction of our students.

The ISO manual was initially developed in the year 2005 with ISO 9000:2000 and current status of manual is having standard of 9001:2008. The ISO manual quality policy has driven to frame the quality objectives which govern the whole of the quality management system. It was deployed in 2005 and since then the objectives framed are continuously followed as bench marks.

The quality policy are reviewed on timely basis MRM with the support of audit (internal & external) that is conducted with a frequency of once in each quarter. The non-compliance generated during all audits are immediately closed within a stipulated period that is decided in management review meeting (MRM) conducted after each audit.

6.2.2 Does the Institute have a perspective plan for development? If so, give the aspects considered for inclusion in the plan.

Yes, institute has perspective plan for development where the short-term and long term goals are stated. It is developed in the A.Y.2013-14. The strategic objectives required to attain the development is mentioned below:

Table 6.4: Perspective Plans(10 Years)

Plan/ Time Horizon	Compliance Required	Current Status
Academic Autonomy (In 5 years from A.Y.2013 to 2018)	06 years in existence	
	Permanent affiliation from UOM	3 programmes (EXTC, CMPN, IT) which are accreditated in the first cycle of NBA, permanent affiliation has been received from UOM. In second cycle accreditation has been received for ETRX and process has been completed for permanent affiliation and result is awaited
	Proven track record for running UG & PG course	100% compliance. Zero deficiency report generated on AICTE website from 2011 onwards Consistent results of campus placement for UG as well as PG students. Institute has been recognised by AICTE CII Survey for achieving industry institute interaction
	NBA/NAAC accreditation	1st cycle from 16.9.2011 (3 years) Electronics & Telecommunication Engineering (EXTC) – UG Computer Engineering (CMPN) – UG Information Technology (IT) – UG 2nd cycle from 1.7.2016 (3 years) Electronics & Telecommunication Engineering (EXTC) – UG Computer Engineering (CMPN) – UG Information Technology (IT) – UG Electronic Engineering-(ETRX)-UG
Remark : Application for autonomy is likely to be submitted		With the current SSR we are applying before 31st March 2017 for 1st cycle of NAAC
Technical campus (In 5 years from A.Y.2013 to 2018)	Multi-program institutions having achieved 100% compliance with AICTE guidelines	Provision in AICTE which was introduced in the past has been removed in the A.Y.2014-15. However similar provision has been made in the Maharashtra University Act 2017 which will be effective from 2017.

Plan/ Time Horizon	Compliance Required	Current Status
		Moreover as per the new guidelines of AICTE institute can start their faculty programmes coming under other regulatory body. Hence institute will be exploring in future
Remark: Maharashtra University Act 2017 which will be effective from 1st March 2017. Therefore once the autonomy application is submitted we will be exploring the possibility		
Achieving Research Excellence (In 6 years from 2013 to 2019)	Creating Centre of Excellence & Relevance (Research Lab)	
	Recognition as a research centre	Ph.D. (Technology) degree in EXTC from 2014-15 Applied for Ph.D. (Technology) degree in IT & CMPN in A.Y.2016-17. LIC committee visited for CMPN and IT awaited
	Achieve Academic Autonomy	We are applying for Autonomy in the current A.Y.2016-17 may be immediately after the NAAC SRR is uploaded
Deemed University (Application will be made in 2019-2020)	15 years in existence	
	NOC from State Government and UOM	
	Proven Track record for running UG & PG courses	Zero deficiency report generated on AICTE website from 2011 onwards
	100% compliance with UGC/AICTE	100% compliance.
	Innovative programmes and courses	Innovative programmes, bridge courses, industry elective and innovation engineering practice has been introduced in the institute to make university curriculum relevant to industry base and future emerging technology.
Comment: Once the autonomy & NAAC are obtained the institute will explore for deemed university as per the schedule		
National and international collaboration (In 3 years from A.Y.2020-2023 (after getting deemed university status))	Joint R & D activities	To promote R & D culture, project based research activity has been started from current A.Y.2016-17. Institute has constituted Board of Studies which is one of the requirements of Autonomous institution. Application will be made. To promote R & D culture, project based research activity has been started from current A.Y.2016-17. For visibility of R & D activities international conferences has

Plan/ Time Horizon	Compliance Required	Current Status
		been organised from 2010 where proceeding are available on leading digital library portal. Various committees are required in Autonomy such as Governing Council, Advisory, and Local Managing Committee which already exists.
	Training programmes	Some certificate or diploma of foreign university we are planning may be through virtual model. facilities under development
	Student and faculty exchange programme	Bridge courses, industry elective has been introduced is seen by co-curricular team through SDP. Winter/summer internship
	Twining programmes	Twinning programme is basically the part of the course will be done in India and part will be in foreign university as per the Govt. guidelines of the two countries. The provision already exists in AICTE/UGC. As per the provision, possibility will be explored so that student can get the dual advantages of their study.

6.2.3   Describe the internal organizational structure and decision making processes.

Organisation Structure is shown in fig.6.4 with the role and responsibility and the decision power. Moreover, Action plans are developed from short-term goals and workforce capabilities of the institute. Every department/section makes their plans (budget & academic calendar) based on the key requirements (work items) as defined in the institutional processes as well as the short-term goals.

a)   The institute specifies an activity level of about how 40 hours per faculty member per week needs to be completed. Therefore, along with the work items and the 40 hour detailing of the faculty week, each individual faculty member can plan their workload for the academic year. Faculty use this workload to record their activity/findings in the faculty handbook which is monitored by the HOD to ensure that the courses are being conducted as per schedule. The faculty handbook is validated by principal every month and results of the planned activities recorded in the handbook are used during the PRDP (Performance Review Development Program) review.

b)   The T&P (training & placement) also creates the plans for the SDP programs, taking into account the number of students for training and this is communicated to industry partners along with requirements from them to complete placement to the students.

c)   Resource planning is done during of the academic calendar at the beginning of each semester. The allocation of the resources is done based on the requirements received from the various departments and sections and is done in three phases for the full academic year. Budget allocation is taken care in the institutional budget and if any financial emergency arises out of blind spots, the management always provides necessary support. This institute being a privately funded organization and the management and trust committed to providing quality education, funding is not a challenge.

d)   Workforce planning is based on the student intake, AICTE requirement of SFR (Student Faculty Ratio), availability of faculty, balancing of the workload and the capability of the faculty to deliver the courses. From 2013-14 after the introduction of domain specialization, planning faculty resources for capability and capacity is more effective and efficient. The

need for workforce reductions has not arisen since the institute is in the growth phase and uses a proactive approach to workforce change management by offering the faculty an opportunity to change disciplines and offers system wise training and re-training of faculty by MHRD courses, IIT sponsored programs and growth opportunities when they acquire additional qualification or skills.

e) At top management level mainly the policy fund and infrastructure and facility development decisions are taken. To facilitate the decision process, Principal prepares the office note with the background and current status, various provisions in regulatory body with SWOT analysis. Office Note is put up to the Chairman for discussion and necessary guidance followed by the approval process. Best part of the decision making process is that the top management is easily accessible on college working days.

6.2.4   Give a broad description of the quality improvement strategies of the institution for each of the Following

- **Teaching & Learning:**
  The teaching learning key process is defined in alignment with the directive arising from the trust & advisory functions of the council as well as the strategic objectives form the input for the operations of the key work processes. The activities and work units for each of the key processes are outlined in procedure manual (ISO manual) with objective measurement targets. The Outcome Oriented Model (OOM) process also details the learning objectives for each subject/course. TCET has created a faculty diary and all outcomes are recorded in the faculty diary which contains semester plan, student validation, conduct of lectures, student attendance, term test results etc. and reviewed by the HOD. This recording and monitoring mechanisms facilitates the effective day-to-day operations of the institute and also ensure the continual quality improvement as given in table 6.4

Table 6.5: QIP for TLP

Key process	Work process requirement	Work process indicators	Improvements / Innovations
Teaching-Learning	a) 100% success of engineering graduates at the first attempt b) Increase in the number of students securing first class and distinction c) TCET results to be better than those of competitor colleges	a) Timely availability of "Resource Book" that is prior to commencement of classes b) Term grant as per prescribed UOM guidelines c) Attendance & performance of the students d) 100% completion of the syllabus e) Workload balance f) Stakeholder feedback	a) Resource book b) Faculty Handbook c) Domain specialization d) Transference of new techniques/technology/subject e) Attendance monitoring f) Continuous evaluation & term test monitoring g) Remedial classes and doubt clearing sessions h) Teacher Guardian scheme

- **Research & Development:**
  The R&D cell was established in 2013-14 with the objective to help advance part of the strategic initiatives to obtain the "Deemed University" status. For the students, the cell engages their creative ability and provides a platform for them to check the feasibility of their ideas through projects. The projects developed are evaluated at various levels further validating the same. Necessary infrastructure such a space, Wi-Fi enabled seminar hall, a Robotic Lab. etc. are provided by the institute. Students are encouraged to develop entrepreneurial skills and can interact with entrepreneurs and industrialists. The institute assists them in securing IPR/patents for the products developed. Recognizing the potential of the institute as well as the progressive leadership with fiscal governance, UOM, AICTE, IITB and organizations such as Accenture, Tata Technologies and Texas instruments have provided grants, their expertise and knowledge. Product developed and the grant received can be seen in fig.6.7

Products Developed

Year	No. of Products Developed
2012-13	0
2013-14	2
2014-15	8
2015-16	13
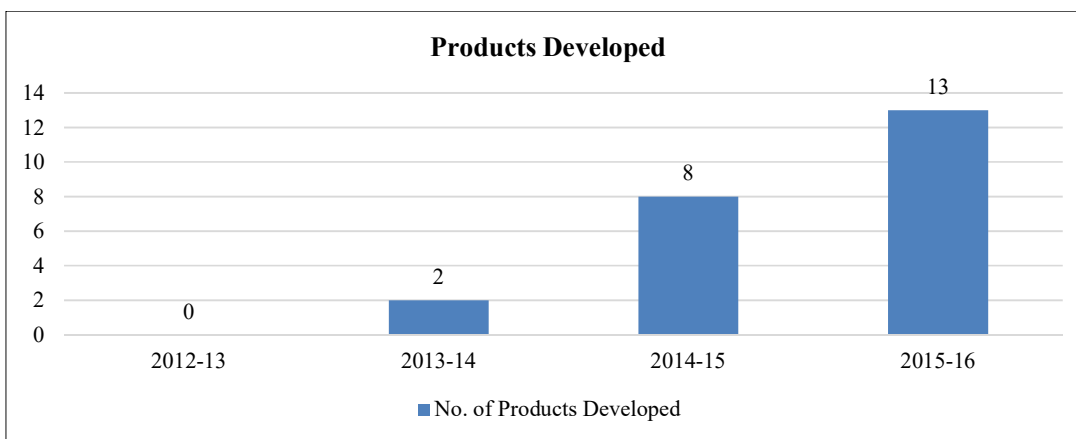
Fig. 6.7: R&D: Products developed

Grants for R&D Initiatives

Grants in Rupees

	UoM	AICTE	IIT-B	Industry	IEDC
2012-13	52000	725000	414598	2200000	0
2013-14	25000	50000	522153	0	0
2014-15	145000	0	548805	0	0
2015-16	282000	0	328878	102000	530000
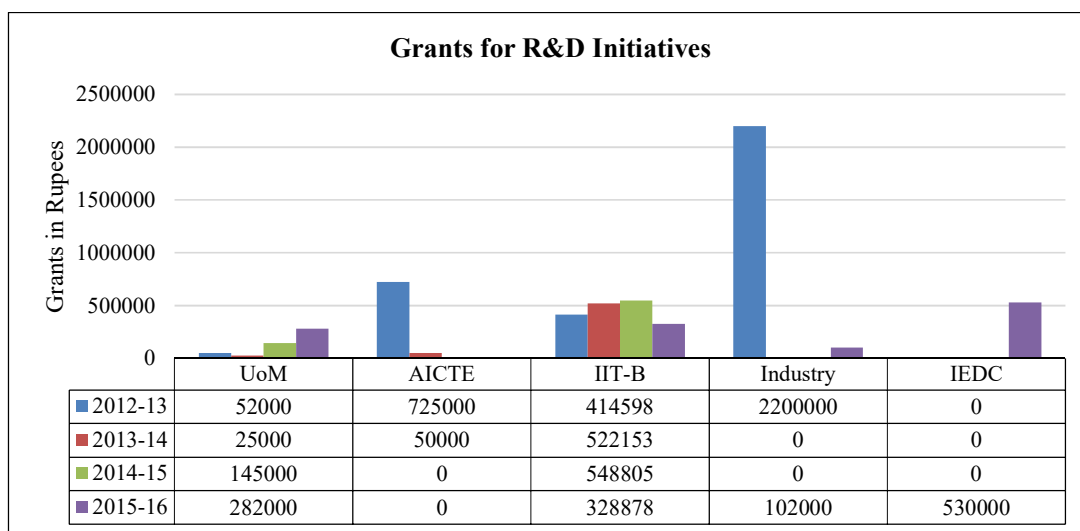
Fig. 6.8: Grants for R&D initiatives

Faculty Research Publications / IPR

	CIVIL	CMPN	ETRX	EXTC	IT	MECH	H&S
Faculty	16	28	14	28	28	9	32
Paper Publication	42	198	55	239	261	10	101
Book	0	4	2	3	16	0	8
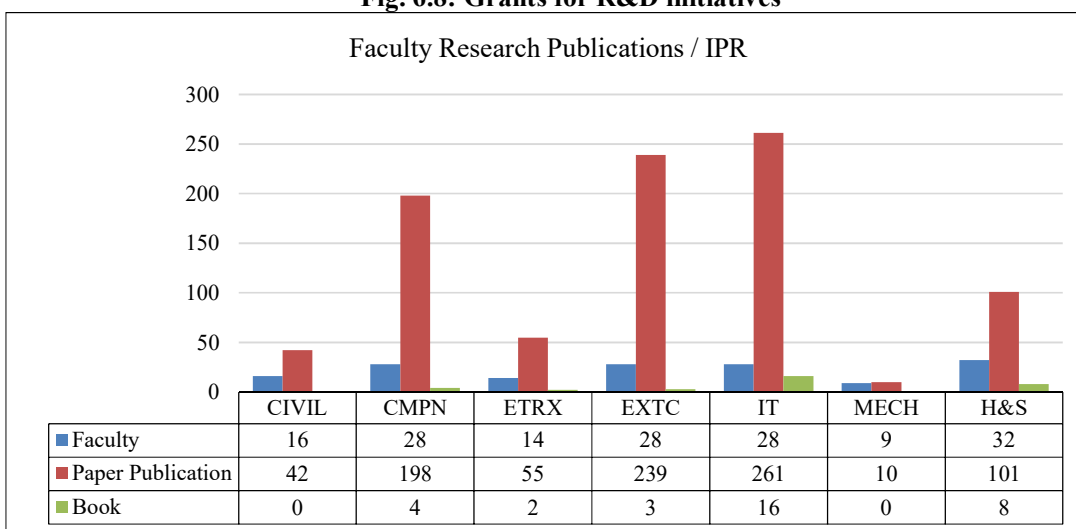
Fig. 6.9: Faculty Research Publications/IPR

Faculty members also develop and enhance their competency through self-learning and research. While this is also a mandated requirement of AICTE, publishing papers provides the faculty with a wider audience and recognition. TCET management provides opportunities through the various conferences and in-house publications to publish their research article. The fig.6.8 below indicates the number of such research publication/IPR for various branches at TCET. To bring the visibility to R & D culture TCET organises MULTICON W (a platform for multiple conferences and workshop) since

2010. In the process published more than fifteen conference proceeding with ISBN number and 2 proceeding are available in ACM digital library with more than 70KY download and one proceeding in ELSEVIER and one Proceeding published by McGraw Hill. Therefore over the 8 years institute has created their own research community. Institute to promote programme specific R & D with the perspective of programmes is in the process of developing four research laboratory with seminar rooms and digitally connected, an effort to get connected to the world for collaborative research.

- **Community engagement:**

   Key elements of community engagement for faculty along with amenities, provisions provided by TCET. The engagement factors are determined through the annual performance review process. A quick dipstick survey was carried out by the institute for faculty member to determine satisfaction levels on these key elements. A formal process for carrying out a workforce satisfaction and engagement survey will be initiated for the entire workforce, which will also contain open ended questions for a more insightful process of determining workforce satisfaction. The survey will address the differences in requirements for the non-teaching personnel and appropriate questions will be framed.

   The role of the Dean Student and Staff Welfare was created specifically to enable interaction of the workforce with the senior leaders and the institute's management to determine engagement areas needed.

   Student community in the campus is engaged through co/extracurricular activities, social and extension programmes. NSS wing also has adopted one village in Vasai, Palghar district (near to Mumbai). Lot of community services are taken up with the support of NGO and the village surpunch. In our township of Thakur village, lot of community programmes are arranged by our event management team and students.

- **Human resource management:**

   TCET has developed career growth schemes and table 6.5 below provide details of role changes & professional growth awarded to TCET faculty in the last three years.

<div align="center">Table 6.6: Professional Growth at TCET</div>

Academic Year	No. of Role / Cadre Change	Cadre/ Role Change details
2012-13	01	Assistant Professor to Associate Professor
2013-14	04	Additional 3 changes from Assistant Professor to Associate Professor
2013-14	01	Assistant to Professor and additional responsibility as a Dean
2014-15	06	Additional Assistant Professors to Associate Professors

Career progression and professional development are key workforce engagement initiatives by the management as in Fig.6.9 shown below illustrates that number of faculty members availing this facility along with their % satisfying the set benchmark for performance. Faculty is considered for performance evaluation if they work for two third of the semester.
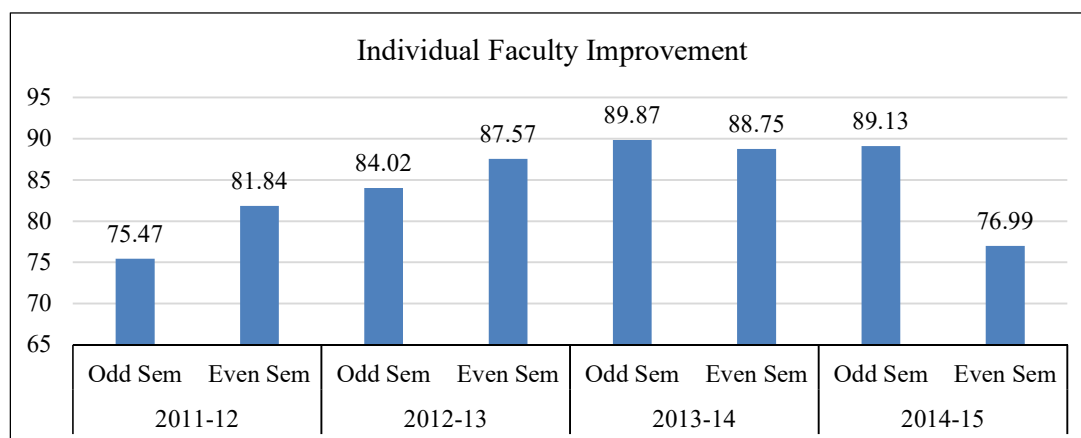
<div align="center">Fig. 6.10: Individual Faculty Improvement</div>

TCET support for faculty qualification improvement

	08-09	09-10	10-11	11-12	12-13	13-14	14-15
■ Faculty Persuing ME	5	8	10	19	18	11	4
■ Faculty Persuing PhD	1	0	7	2	5	7	12
■ Total Faculty Supported	6	8	17	21	23	18	16
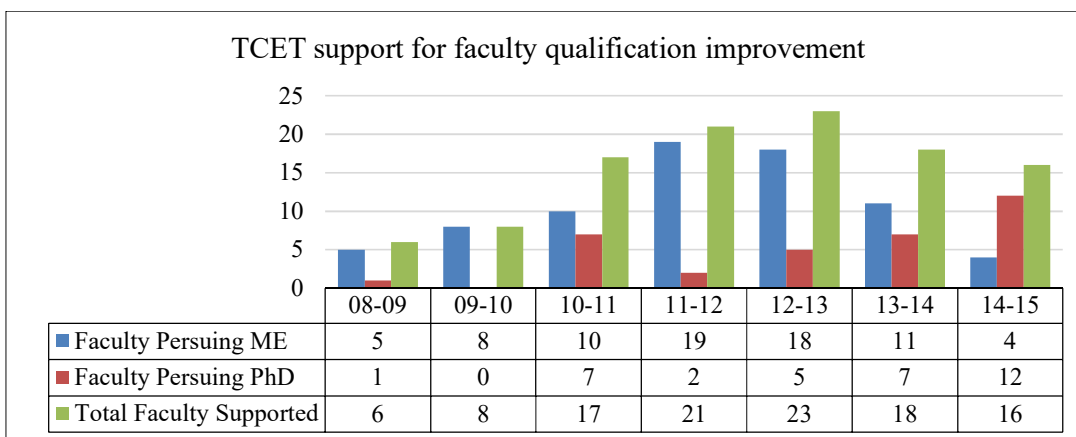
Fig. 6.11: TCET support for faculty qualification improvement

Growth in number of Staff

No. of Staff

	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17
■ Teaching Staff	12	19	38	55	66	82	86	103	118	121	121	127	136	158	167	176
■ Non-Teaching Staff	30	33	39	50	70	87	92	96	107	108	104	101	104	100	122	134
■ Total Staff	42	52	77	105	136	169	178	199	225	229	225	228	240	258	289	310
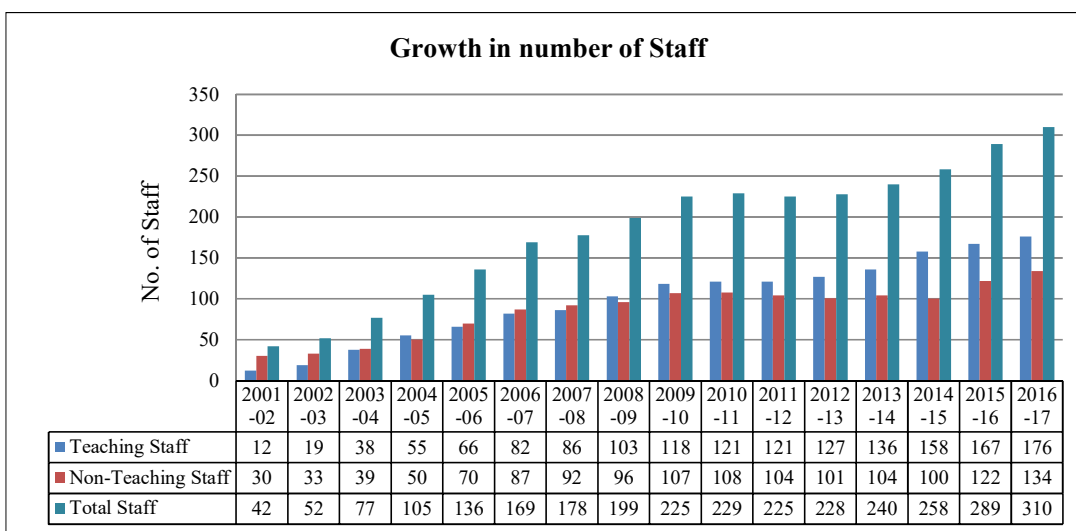
Fig. 6.12: TCET Workforce Growth

Faculty-industry Interaction

	2011-12	2012-13	2013-14	2014-15	2015-16
■ Target	0	15	25	25	45
■ Faculty / Industry Interaction	15	18	34	42	0
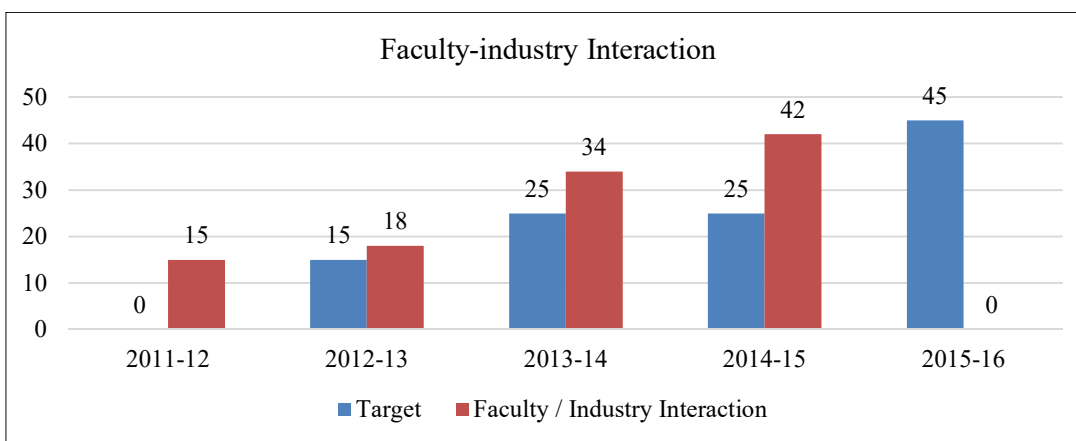
Fig. 6.13: Faculty-industry Interaction

- **Industry interaction:**

  TCET's strategic objective is to become a preferred employment destination for industry. For this, continuous increase in the interaction with industry is encouraged and as can be seen from fig. 6.12 below the number of faculty visits to the industry, including teachers trained by the industry is an increasing number with incremental increases year-on-year. This ensures that the faculty is aware of industry requirements and can recommend additional programs to ensure that the students are industry ready. Such courses are offered as the bridge course or

the industry electives to the students. It fulfils the requirement of learning beyond the syllabus and making them more relevant and acceptable to industry.

When Infosys Campus Connect program (ICCP) was initiated in 2005 many colleges participated and the training costs were borne by Infosys. Subsequently Infosys changed the mode and colleges were supposed to bear their own expenses to conduct the program. As a result of this, many colleges stopped the program and did not roll out the batches, but TCET continued the program. In recognition of this, Infosys gave awards to faculty who continued with the program. TCET is the only college amongst the competitors which are recognized by Infosys as Outstanding contribution in rolling out campus connect offering foundation programme during January 2015 to December 2015 and our institute has stood first. The result was announced on 30.3.16.

The fig. 6.13 below which illustrates the details of the faculty who received the awards in academic year 2014-15,2015-16 and in the current academic year 2016-17.
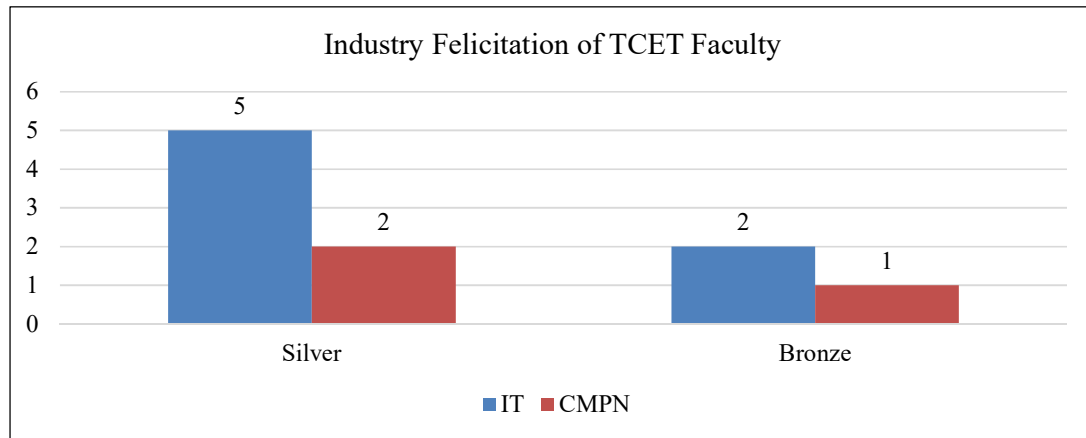
Fig. 6.14: Industry Felicitation of TCET Faculty

Moreover, every year during the odd semester TPO organises industry -institute symposium. In the current academic year it was organised in association with BOAT (Board of Apprenticeship Training) where representative from more than 150 industries and 100 institutions have participated for the alternative professional career to engineering graduate through apprenticeship. Next year we are planning to hold along with conference on technical education and skill development with the support of industry, many SDP's are conducted. Advance training certified laboratory are established and virtual training platforms are created.

6.2.5   How does the Head of the institution ensure that adequate information (from feedback and personal contacts etc.) is available for the top management and the stakeholders, to review the activities of the institution?

Students and stakeholder feedback (written & verbal) and student validation are two of the mechanisms used by TCET to obtain actionable information. In addition, the institute's processes for active interactions, meetings and surveys reveal actionable requirements of the stakeholders. A number of methods are used for listening to the students and stakeholders to obtain actionable information. These include direct, written, verbal and electronic communication. With the formal mechanism of feedback and other informal methods capture feedback and Teaching Learning Process (TLP) and the institute infrastructure processes, is the results which provide evidence about the effectiveness of the programs at TCET.

The college tracks and analyses student achievement data compares this with the UOM and competitor results and trends. Alumni feedback about the TLP was initiated in 2014-15 to determine attainment of the PEOs and the result of this feedback shows that most of the students participated in the survey feels that admission in TCET has helped them to meet their curriculum expectation by the effective delivery of teaching learning.

The feedback from the potential students helps to understand the college imposition in their mind.

The formal feedback mechanism along with review of the complaint data provides the institute with student's satisfaction, dissatisfaction and engagement levels. Dissatisfaction is inferred from the analysis of the responses to the feedback, analysis of the type of complaints, grievances, scanning of social media sites and by the general level of participation in the various co-curricular and extra-curricular activities. Upon analysis of the various formal and informal mechanisms for determining

Alumni & Ex-Student Feedback

■ EXTC	60	76	72	45	48
■ IT	95	97	97	97	99
■ CMPN	68	70	76	48	47
■ ETRX	51	87	84	88	81
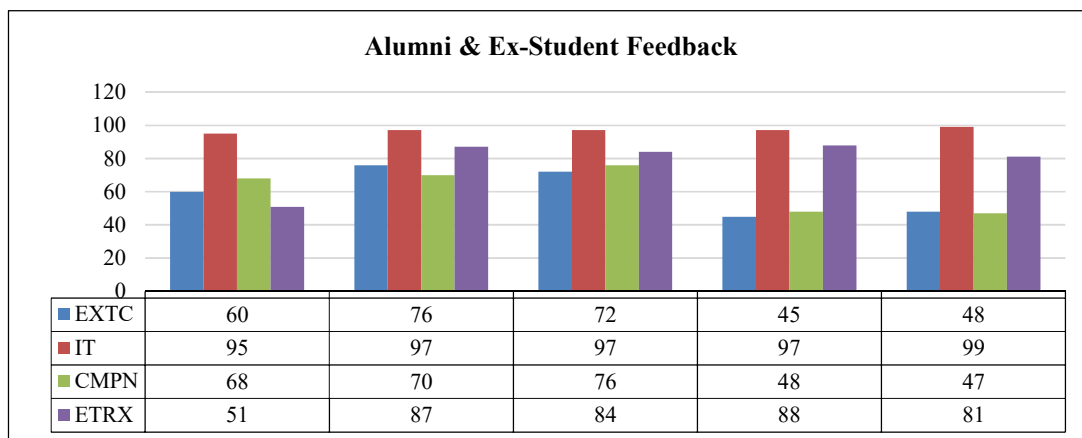
Fig. 6.15: Alumni & Ex-Student Feedback

Student Feedback (Infrastructure)

	Classroom Condition	Laboratories	Library	Canteen	Other Facillities / Amenities
■ 2012-13	8.51	8.53	8.22	8.09	8.28
■ 2013-14	8.62	8.85	8.57	8.08	8.35
■ 2014-15	8.2	8.65	8.4	7.85	8.16
■ 2015-16	6.58	7.78	7.98	7.57	8.08
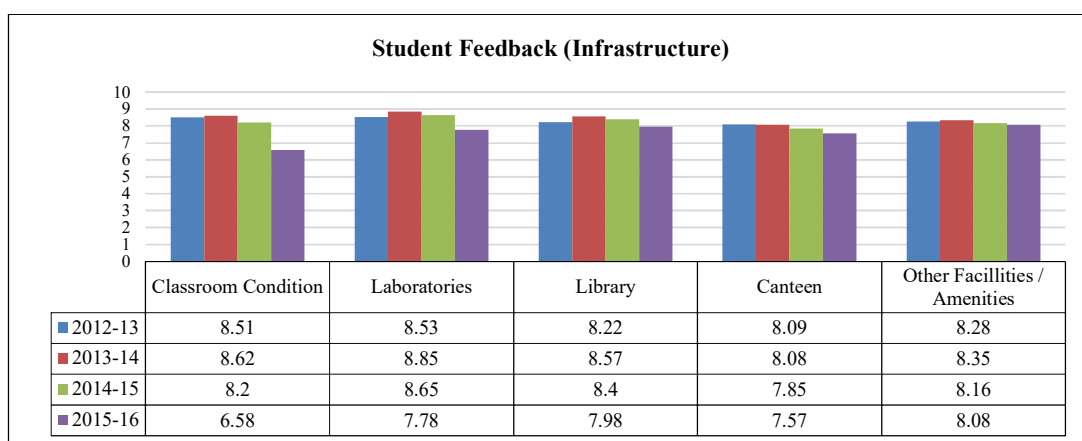
Fig. 6.16: Student Feedback (Infrastructure)

Potential Student Feedback

9.33 9.05 9.65 9.71 8.93 9.46 9.46

Advocacy by existing stake holders (1,10)
Connectivity of the Institute (3)
Impression of the Institute (6)
Institute Broacher Contents (13)
Proccess time (5)
Effectiveness of admission process and arrangements (11, 12)
Help desk and Safety of campus (7)

■ Feedback   — Target
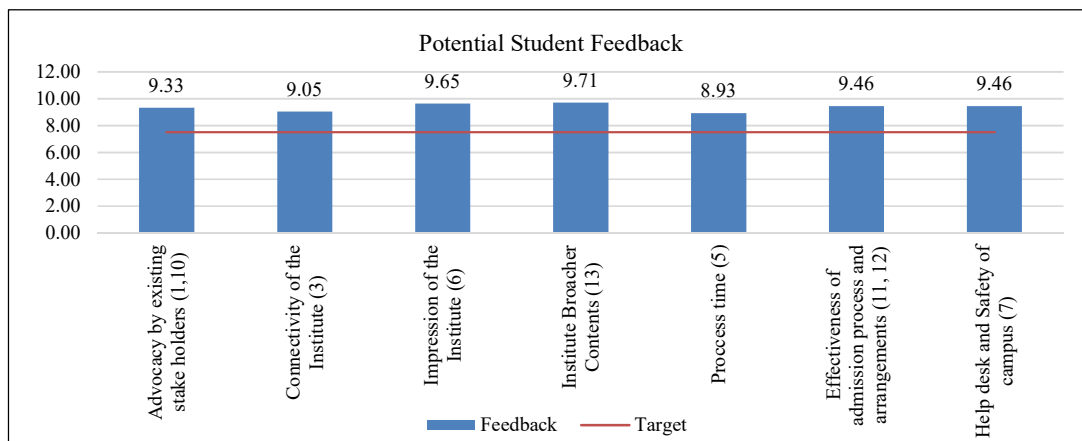
Fig. 6.17: Potential Student Feedback

student satisfaction a study is initiated to determine exact causes and based upon analysis recommendations for improvement. These recommendations are reviewed by senior leaders and corrective initiatives are taken in all segments- academic, administrative, even personal to eliminate the causes of dissatisfaction. The potential student feedback is shown in fig. 6.16.

Table 6.7: Relationship Management

Process	Relationship / Processes Deployed	Outcome
Students		
Acquire Students Most students are acquired	1) This is a core competency of TCET (service excellence),	Each year there is an increasing trend in prospective students

Process	Relationship / Processes Deployed	Outcome
during the FE admissions process Some students are also acquired for the ME courses Since the impact of sustainability for TCET is greatest for the FE process the relationship and results for this segment is reported.	and is achieved through the listen and learn mechanisms by ensuring that the admission process is smooth, timely and transparent. 2) The timely completion and transparency brings about trust in the prospective students 3) By providing a Help Desk, FAQ and updated information, the Institute commands respect of the prospective students	seeking admission. Besides the increase in the number of students taking the forms and applying for admissions, the college is able to complete the full intake which proves that the processes and relationship building measures deployed by TCET enable in acquiring more students.
Retain Students	1) Facilitating interaction between the students and faculty by the class teacher 2) Counselling by the Teacher Guardian bringing about personalized attention 3) Continuous evaluation and remedial classes for poorly performing students 4) Extra and co-curricular activities to enhance domain / subject knowledge and gain practical experience 5) Bridge courses beyond curriculum to impart latest technology information or to cater to student specific interests 6) Student Council: involvement in professional chapters to increase student involvement	1) Increase in the number of SDP programs leading to employability. 2) R&D and CoE facilities 3) Introduction of bridge courses and projects 4) Many extra-curricular activities to bring involvement and participation of the students 5) Increasing Alumni attendance at the annual meets and direct involvement by the Alumni. 6) Academic results of the UG courses better than UOM
Increase Engagement	1) During the admissions process engagement levels are increased by building trust and by respecting them as described above in the attract students methods 2) During the student life, through faculty interaction, mentoring, continuous evaluation, providing remedial classes & growth opportunities through additional courses/projects 3) As alumni members through maintaining contact and alumni meets	1) Consistent demand ratio for admission 2) Improved academic results and better performance in campus placement 3) Better understanding of the industry expectation.
Industry Partners		
Attract / Retain / Increase Engagement of Industry	1) Dedicated T&P officer and cell to liaise, interact and	1) Industry tie-ups in creating Centres of Excellence: Tata

Process	Relationship / Processes Deployed	Outcome
Partners	provide help to the industry partners 2) Principal directly involved in determining requirement and ensuring requirements met by implementing training as needed in the SDP 3) Involve industry partners in Advisory Council meetings as well as during planning the SDP 4) Resources with respect to infrastructure, people provided during assessments, interviews and training as well as for CoE 5) Hospitality provided to industry partner personnel 6) Feedback taken from project leaders whose team comprises of TCET students at industry partner organization	Technologies, Texas Instruments. Discussion on with Dussault and Microsoft 2) Pool campus recruitment provided so that industry partners can assess/ select students from multiple technical colleges 3) Dedicated training centres by Infosys & Accenture 4) Pre placement training programs conducted by industry partner on the campus reducing the time for in-house training after joining

6.2.6   How does the management encourage and support involvement of the staff in improving the effectiveness and efficiency of the institutional processes?
Institutes work systems and processes designed to meet the strategic objectives of the institute are for maximum student success rate and placement resulting in the effectiveness and efficiency improvement of institutional processes.

Table 6.8: Process & Data Measures

Sr. No.	Process	Process Measures	Frequency of Measure	Performance Indicator
1	Admissions	1) Daily report on no. of forms issued, no. of applications and the student results for HSE, FE, CAT, etc. 2) Admission status monitoring during the admission round 3) Comparisons with previous year and with other colleges 4) Approval & enrolment	Daily during the Admissions process	1) Demand for the various courses from the eligible applications received 2) No. of seats filled / No. of merit students seeking admissions, indicator of brand value 3) Status of the college with respect to student perception 4) Completion of full intake leads to sustainability
2	Teaching Learning	1) Planning & conduct of Semester 2) Results of Continuous Evaluation 3) Student Validation 4) Sharing of Best Practices 5) Mentoring records	1) HOD - weekly, Principal - Monthly , By class / subject teacher - Semester beginning 2) Trends and student performance on term tests, practical exams,	1) Semester completion as per schedule 2) Trends and improvement actions initiated 3) Student validation for effective instruction 4) Integration of best

Sr. No.	Process	Process Measures	Frequency of Measure	Performance Indicator
			etc. 3) Monthly review meetings	practices across the Institute & increased efficiency and effectiveness of work systems
3	Workforce	1) Workload balance 2) Hiring of Ad Hoc / Visiting faculty 3) Qualification & Delivery skills evaluation 4) Workforce Performance	1) Weekly / Monthly / Semester end 2) During Hiring process 3) Performance assessed semester wise but appraisal is done on yearly basis	1) Faculty Dairy for individual & Monthly report for efficiency and engagement 2) Load gap balancing and effective instruction for domain skills not available at the Institute 3) PRDP scores & increase in scores of faculty
4	Attendance	1) Monitoring student attendance 2) Monitoring workforce attendance	Daily / class – Dept. wise	1) Continuity in learning 2) Workforce involvement and engagement
5	Training	1) Employability Skill & competency development 2) Various professional certification	1) Performance throughout the AY from 2nd year 2) Increase in the type & no. of training	1) Increased placement 2) Professionally competent engineers 3) Employability and employment
6	Placement	1) Consistently meeting the eligibility requirement of 75% of the students 2) Increasing their employability through SDP and pre placement training	1) Tracking begins from the first year 2) Training begins from the 2nd year onwards (Sem III)	1) Increasing employability trends 2) Increased placement
7	Financial	Budget sanctioned & allocated / Income & expense / Pending balances.	Quarterly financial planning	Variance analysis / reallocation of resources
8	Feedback / complaints	1) Feedback from students 2) Resolving minor complaints	1) Feedback taken twice in a semester 2) Complaint register reviewed daily for compliance within the stipulated time	1) Improvement in TLP of the faculty scoring below 75%. Improvement in the infrastructure facilities 2) Reduction in complaints
9	Compliances	100% compliance to all regulatory / accrediting / affiliating bodies	As per the requirements and timelines of the various bodies	100% compliance

Based on these KPA, staffs are evaluated on yearly basis through PRDP (Performance Review and Development Programme). Staff complying with performance benefits will get the yearly benefit. Consistent performance supports them to get the promotional and other service benefits and incentives.

Further, to improve efficiency and effectiveness of system management had created senior leadership development level as Deans. Currently there are 3 Deans each with three different portfolios. These portfolios includes: Dean (Academic), Dean (R & D) and Dean (Student and Staff Welfare). This arrangement has helped the institute in the following way:

a) With the natural growth of the institute administrative load was increasing on Principal and therefore he has been off loaded

b) Empowerment and delegation of power to decentralisation of power

c) Step will load to succession plan for the institute and therefore sustainable leadership. Similar arrangement is done at department level where every HOD has their deputy and two coordinators.

As a subsequent improvement in this structure further division of activities was done, ensuring decentralization of the responsibilities and also ensuring leadership sustainability. Responsibility of Deans and HODs can be seen in table 6.8. The role of HODs was also made rotational on a 3-year basis, providing every faculty member qualifying for the role an opportunity to learn and an opportunity to demonstrate their skills for administration and leadership. Responsibility of Deans can be seen in table 6.3.

6.2.7 Enumerate the resolutions made by the Management Council in the last year and the status of implementation of such resolutions.

The institute uses a variety of formal and informal approaches to communicate key decisions, encourage frank, two-way communication and create an agile atmosphere to attain the vision of the institute. Table below illustrates the formal communication mechanism of meetings of the various governing bodies at the institute, the number of recommendations given by them and those implemented.

Table 6.9: Planned Senior Management Meetings

Sr.No.	Top Management & Institution Bodies	A.Y.	No. of recommendations given	No. implemented	Noteworthy recommendations
1	Meeting with Chairman	2012-13	8	8	Refer table 6.10
		2013-14	12	12	
		2014-15	16	16	
		2015-16	25	25	
2	Governing Council (as per AICTE guidelines)	2012-13	7	6	Action taken report in Minutes of the Meeting Register
		2013-14	10	6	
		2014-15	1	0	
		2015-16	0	0	
3	Advisory Committee (as per AICTE guidelines)	2012-13	12	7	Refer table 6.11
		2013-14	21	11	
		2014-15	9	3	
		2015-16	11	7	

The chairman's stewardship and the institute's timely action is reflected in the table shown below which describes some of the key decisions and noteworthy recommendations by the management, benefitting the various stakeholders of the institute.

Table 6.10: Implementing Chairman's Noteworthy Recommendations

A.Y.	Recommendation
2012-13	To accommodate students of Parshwanath Engineering College when this closed down to ensure student graduation completion without a break
2013-14	Begin processing for additional program of Civil Engineering to meet the Reality boom
	Order of Merit was converted to 3 year rotational process to develop leadership capabilities in the individuals
	HOD roles converted to 3 years rotational process to develop leadership capabilities in the individuals
2014-15	Sanctioned additional budget to develop training facilities at par with corporate training environment to benefit faculty and students
	Gratuity benefit was provided to the workforce and policy for the same developed

A.Y.	Recommendation
2015-16	Permission to form TCET Employees Co-operative Credit Society
	TCET extension facility
	Permission for start-ups of students
	Permission to apply for Ph.D. Centre in IT/CMPN

The Advisory body comprises of a mix of academicians and industry professionals who bring their knowledge and experience to the Advisory committee meetings and table below describes some of the recommendations provided by the distinguished members. The institute's agility in compliance is one of the key reasons for the growth of this 14-year old institute. The recommendations given in this table are those that have benefited not only the institute but also the main stakeholder –the student.

Table 6.11: Advisory Council Recommendations

A.Y.	Meeting Date	Recommendation
2012-13	6.10.2012	To collaborate with IIT B Robotic laboratory for technical education Syllabus to be completed a month prior to date and introduce more study workshops, bridge courses for direct SE
2013-14	16.3.2013	Project exhibition should be organised IPR registration
2014-15	5.4.2014	Student should attend summer school for innovation Once a month one faculty should visit the industry
	17.10.2014	Train students for e-retailing business, data analysis for placement
2015-16	3.10.15	Addition of second unit of NSS for 100 students due to increase in intake capacity of the institute
		Robot can be made which will help in Swacha Bharat Abhiyan
	2.4.2016	Faculty exchange training programme need to be conducted
		Alumni association is most important

6.2.8   Does the affiliating university make a provision for according the status of autonomy to an affiliated institution? If 'yes', what are the efforts made by the institution in obtaining autonomy?

Yes as University follow the guidelines of UGC for granting autonomy to the institution. TCET being the NBA accreditated for all eligible courses with 15 years of standing (against 10 years requirement), institute is well recognised among the potential student because of academic result and campus placement. TCET has huge campus with the state-of-the-art infrastructure and facilities with no finance finds it complying with autonomy criteria.

The institute has got the permanent affiliation of three programmes (EXTC, IT, CMPN) in 2016-17 of UOM (University of Mumbai) and waiting for the Electronics engineering results. It will enable the institute with academic autonomy and eventually accomplish the institute's strategic objective of becoming a Deemed University. The chairman provides directions about the goals and development for each academic year to the Principal. The principal has been given complete academic autonomy and day-to-day administration is guided by compliance to the regulatory, affiliating and accreditating bodies as well as strategic objectives of the institute. Autonomy is given to bring focus to achieve the ultimate goals of student development.

As per the current guidelines of autonomy, institute is eligible and therefore is in the process of applying for the same. Most likely the application will be submitted to the University for Autonomy by next month.

6.2.9   How does the Institution ensure that grievances/complaints are promptly attended to and resolved effectively? Is there a mechanism to analyze the nature of grievances for promoting better stakeholder relationship?

Yes, grievance/complaints are promptly attended and resolved effectively. The grievances of the stakeholder (students) are during admission, ongoing course, exams, sports, industrial visits issues etc. UOM has a Grievance Redressal Cell and all grievances by faculty, student can be addressed to this cell through Principal provided it is not head of institute or stakeholder is not satisfied with the

decision of hearing at the institute level. To date there have been no grievances reported at UOM by many of the institute stakeholders. As per the directives of UOM and AICTE there is also an Ombudsman at the institute. Female workforce members can also seek redressal of their grievances from the Women Development Cell (WDC). Quarterly feedback is proactively sought from the women employees. All departments report non compliances to the code of conduct are presented during the semester review. Grievances can be addressed directly to the grievance redressal cell or through a written complaint. All grievances/complaints which directly reflect lack of ethical behaviour or integrity are reported to the principal for resolution.

Table 6.12: Ethical Behaviour Results

Sr. No.	Ethical Behaviour Parameter	Key Measure / Indicator	Results
1	Ragging / teasing	Zero instances of ragging / teasing	No instances of ragging or teasing
2	Copying during exams / tests	1. Zero instances of copying. 2. Action against offenders as per UOM norms. 3. Educating the students on integrity and personal accountability	
3	Proper utilization of the funds collected by student bodies for various activities	All funds to be used for the purpose for which it was collected	No misuse of funds
4	Usage of mobile phone during lecture delivery	All mobile phones to be switched off during lectures	
5	Respect for all and maintain dignity of the students and peer group	Zero tolerance for any form of verbal or physical abuse	No verbal / physical abuse reported by students or the workforce
6	Sexual harassment / using abusive language	Zero tolerance for sexual harassment and use of abusive language	One incident reported in June 2015 and response was taken within one week of the complaint
7	No Favouritism by faculty & fair term work evaluation	Zero grievances in this regard.	No instances of favouritism reported for any of the faculty members
8	Misuse of college supplied resources for personal use	College supplied resources to be strictly used for academic purposes only	No instances of misuse reported
9	No gifting	No gifting. Exception is a box of sweets for festival celebrations	No instances of gifting reported

In point No.7- Results: after faculty members add in the recent years
In point No.8- Results: after reported add till date

6.2.10 During the last four years, had there been any instances of court cases filed by and against the institute? Provide details on the issues and decisions of the courts on these?
No, there are no instances of court cases file by and against the institute from any statutory/regulatory/affiliating body.

6.2.11 Does the Institution have a mechanism for analyzing student feedback on institutional performance? If 'yes', what was the outcome and response of the institution to such an effort?
The formal student satisfaction survey carried out twice in each academic year is another good indicator of the performance of the institute. The student feedback for infrastructure at the institute level is provided as shown in Fig. 6.15
The highest score by the students is for the laboratory facilities, which is also keeping with the institute's creation of laboratory facilities "beyond compliance". The lowest score, though higher than the institute's target of 75% is for canteen facilities, which will be improved in near future. In the

interim, additional lunch space facility was created for the students and the faculty. Students had complained about the seating and all class room chairs are being replaced phase wise. In addition to the formal feedback system. Institute also have meeting for getting the feedback for activities, infrastructure and facility. Moreover, complaint received from faculty and student are addressed immediately by maintenance department which has the work force for maintaining ICT infrastructure, plumber, electrician, carpenter for maintaining infrastructure quality related grievance, security supervisor is available. For cleanliness Class IV employees are available. Minor problems to be attended immediately and major problems to be sorted out within 24 hours.

6.3 Faculty Empowerment Strategies

Institute understands that faculty is the backbone of the educational system. Moreover, the role of technical staffs (particularly Lab.Asst. and Lab.Attn.) is equally important for the conduct of laboratory and to support the progress of the various projects that student pursue as a part of curriculum or various competitions or of the area of interest. Therefore the skill sets and the core competency of employees are required to be updated on regular basis including the people skills. For the purposes training programmes, seminars, workshops etc. are conducted on regular basis. Moreover, to bring the new knowledge in the system through faculty members yearly conferences and national seminars are conducted. All programmes are conducted as per the academic calendar. However ideal time is semester break. On job training is conducted during the ongoing semester. Teaching/non- teaching members are also encouraged for higher degree. Details can be seen in Fig 6.9(b) Art.6.2.4.

6.3.1 What are the efforts made by the institution to enhance the professional development of its teaching and nonteaching staff?
Teaching:
- Facility development for effective conduct of academic and R & D activities.
- Facilitating the professional body membership
- Revenue sharing for R & D and consultancy and also facilitating for research grant from various funding organisation
- Faculty Development Programme conducted preferably on Friday, working Saturday
- On job training conducted during the semester
- Training for being resource person conducted as part of FDP
- Training for creating IPR conducted during MULTICON W, yearly conference and workshop
- STTP to improve core competency conducted during semester break
- Technical reviewer training programme is conducted in the month of December particularly for review of papers of MULTICON W at three levels
- Developing organisational skills by allowing them to organise seminar/workshop/conference etc.
- Professional, motivational session on working Saturday or vacation period

In addition faculty members are encouraged to attain out house events organised by the institute, industry, professional body, university, regulatory body etc.
Faculty and staff are required to attend the programme as per institute guidelines or institute need.
Non-Teaching:
- Training for administration skill and increasing the use of technology
- Laboratory assistant received training from the company trainers supply equipment and training
- Facilitating to acquire higher qualification
- Teaching Assistant are trained for administrative as well as academic competency
- Soft skill trainings are conducted
- ISO training including induction training are conducted

These training helped them to understand the job profile with sense of responsibility and commitment.

6.3.2 What are the strategies adopted by the institution for faculty empowerment through training, retraining and motivating the employees for the roles and responsibility they perform?
- Brainstorming and training as per activity need
- Instruction/check list comply with activity needs promoting online courses viz., NPTL,

COURSE ERA, MIT series etc. wherever certification possible asked for certification.
- Professional training on various technology conducted by the institute which varies from 1-2 week during semester break

6.3.3 Provide details on the performance appraisal system of the staff to evaluate and ensure that information on multiple activities is appropriately captured and considered for better appraisal.

Performance is evaluated on the basis of Performance Review and Development Programme (PRDP) (PRDP) conducted on semester basis which is already discussed under At.6.2.4.

- Parameters for evaluation of the faculty members are as follows:
  - Efficiency and effectiveness in Academic & Research Activities   -200
  - Results in Academic   -200
  - Quality in Academic and Research   -150
  - Academic and Research Development   -200
  - Accreditation (Ranking/Rating) & Brand building activities   -150
  - Potential   -100
- With total score of 1000 points min 60% score is required to be scored to qualify in evaluation
- It is similar to API (Academic Performance Index of UGC/AICTE)
- Data are captured from the faculty diary, QMS files of departments, teacher-guardian book and HOD/Dean remarks
- Scope for improvement with strength are highlighted in the PRDP report
- Reports are shared with faculty members
- Similar system for non-teaching staff is also in place where qualifying score is 75%

6.3.4 What is the outcome of the review of the performance appraisal reports by the management and the major decisions taken? How are they communicated to the appropriate stakeholders?

- Work culture has improved
- Sense of responsibility and commitment has increased
- Some faculty members were promoted /re-designated
- Participation in FDP/STTP has improved
- Research contribution has positive trends
- Student satisfaction has increased

6.3.5 What are the welfare schemes available for teaching and non-teaching staff? What percentage of staff have availed the benefit of such schemes in the last four years?

- Conducive work environment
- Health care
- Insurance
- Credit society benefits
- Service benefits as per regulatory and affiliating bodies

6.3.6 What are the measures taken by the Institution for attracting and retaining eminent faculty?

- Faculty and university approvals, P.G teacher and Ph.D. (guide) recognition
- Guiding PG/Ph.D. scholar
- Organising and participating in seminar/workshop/conference
- IRP creation facility
- Advance laboratories and centre of excellence in association with industry where faculty can explore new technology
- Incubation centre under IEDC has the professional to be technology business bank and therefore faculty members are also encouraged for start-ups
- Platform for R & D activities and consultancy
- Ph.D. centre of UOM
- Professional body membership has given the flexibility for networking and intellectual

resourcesharing
* Respecting core values

6.4   Financial Management and Resource Mobilization
6.4.1   What is the institutional mechanism to monitor effective and efficient use of available financial resources?

Institute is required to use the financial resources against the budget provision and financial power given to the senior leader. Budget for the next academic year is prepared in the current academic year during December to March every year.

Budgets and compliance to budgets, financial data are closely monitored by the senior leadership as TCET is a privately funded institute and financial governance is strong.

Every department/section make their plans (academic calendar & budget) based on the key requirements (work items) as defined in the institutional processes as well as the goals set for the year. For e.g. if revision of syllabus by UOM requires faculty training in advance as well as additional laboratory resources, the faculty training is planned and the laboratory resources requisitioned and indicate in the budget for the year before the commencement of the academic year.

The institution has a mechanism to monitor available financial resources. The budget requirement of all department/ sections is submitted to principal's office. The items required along with their quantity are justified by respective HODs/section in-charges for along with submitted budget. The yearly budget is divided in three divisions of four months each. The efficient use of financial resources is done by providing the finance required to procure the items which are need based requirements from the departments/sections.

Table below illustrates the institutional costs and operational costs as a percentage of the budget and that TCET has successfully deployed resources to meet its mission and the strategic objectives.

Table 6.13: Budget-Percentage Utilization

Heads	2011-2012		2012-2013		2013-14		2014-2015	
	Budget	Utilisation	Budget	Utilisation	Budget	Utilisation	Budget	Utilisation
Recurring Expenditure								
Salary	42.32%	42.05%	45.28%	37.29%	36.01%	33.43%	38.07%	37.80%
Infrastructure	20.53%	19.55%	18.09%	15.43%	17.06%	17.15%	16.56%	17.80%
Administration	15.84%	14.35%	14.00%	16.65%	17.50%	13.58%	17.59%	13.64%
Students	4.88%	4.68%	4.57%	3.31%	3.57%	2.66%	3.71%	3.59%
Computer Maintenance	2.87%	2.78%	2.60%	1.81%	1.85%	1.75%	1.94%	1.65%
Other	1.66%	1.46%	1.95%	1.02%	1.06%	0.64%	0.99%	0.62%
Laboratory Expenses	1.91%	1.82%	1.93%	1.00%	1.65%	0.91%	1.43%	0.80%
Staff Welfare	1.53%	1.41%	1.37%	0.87%	0.75%	0.70%	0.69%	0.85%
Training & Placement	2.22%	2.05%	2.12%	1.33%	1.37%	1.15%	1.21%	1.29%
Library	1.77%	1.57%	1.54%	1.14%	2.06%	0.98%	2.04%	1.43%
Non Recurring Expenditure	4.47%	3.72%	6.55%	5.13%	17.12%	7.13%	15.77%	5.88%
TOTAL	**100%**	**95.44%**	**100%**	**84.98%**	**100%**	**80.08%**	**100%**	**85.35%**

6.4.2   What are the institutional mechanisms for internal and external audit? When was the last audit done and what are the major audit objections? Provide the details on compliance.

The financial audit is done at regular intervals by the external agency. The last audit was conducted in December 2016 and there were no major findings

6.4.3   What are the major sources of institutional receipts/funding and how is the deficit managed? Provide audited income and expenditure statement of academic and administrative activities of the previous four years and there serve fund/corpus available with Institutions, if any.

The major source of institution funding comes from students fees .The short fall are amount is managed from the trust or O.D. loan facility from Indian Bank.

6.4.4   Give details on the efforts made by the institution in securing additional funding and the utilization of the same (if any).

The additional funding is achieved by the project work sanctioned to different departments and the Faculties

- IEDC
- Minor Research Grant
- (MHRD) IIT Bombay

6.5   Internal Quality Assurance System (IQAS)
6.5.1   Internal Quality Assurance Cell (IQAC)
  a)   **Has the institution established an Internal Quality Assurance Cell (IQAC)? If 'yes', what is the institutional policy with regard to quality assurance and how has it contributed in institutionalizing the quality assurance processes?**

         Yes, the institutional policy is with regard to quality assurance with main focus on the student services academic audit. The quality assurance supports the quality policy to frame required quality objectives. The quality objectives help in institutionalizing the quality assurance process which are framed to achieve no error in admission, results, placement, technical seminars/industrial visit for students, books to be procured for students at central library, social activities such as-NSS and accreditation for the programs. IQCA is headed by management representative (as per ISO requirement), one technical staff and two faculty members from each department.

  b)   **How many decisions of the IQAC have been approved by the management/authorities for implementation and how many of them were actually implemented?**

         The decisions of the IQAC are approved as it follows the manual approved by management/ authorities. The ISO manual comprises of Quality manual and procedural manual. The manual includes 9 institutional processes and 13 management processes governing the functioning of the complete manual 9001:2008 standard. All decisions are approved by the authorities as IQAC is based on academic audit and the services to be rendered to stakeholders. In case there are any decisions which are to be approved are included through amendments. Major revisions are done every six years and in compliance with the revisions of ISO 9001 standards which change every six years or whenever need arises

  c)   **Does the IQAC have external members on its committee? If so, mention any significant contribution made by them.**

         Yes, Mr. SunilVarma, lead Auditor of ISO certifying agency IR class and subsidiary of IRQS. His contributions are for training guidance for revision in manual, review of the internal audit quality assurance committee members are from the institute and they are the trained internal auditor and also some of them are lead auditor by IRQS ISO certified agency. Moreover there are 30 faculty members trained as an examiner certified for IMC RBNQA quality award based on MALCOM BALRIDGE criteria where education is one of the key sectors. Ms.SumanPai, trainer and examiner for IMC RBNQA is the other external member who supports the institute for performance excellence model.

  d)   **How do students and alumni contribute to the effective functioning of the IQAC?**

         Students support the effective functioning of IQAC with attainment of results during their graduation, attainment of placement as per quality objective requirement, NSS social activities. In case of alumni they support in effective functioning of IQAC with placement for unplaced students (alumni) because the placement is possible and even carried out after their completion of graduation. They are also the part of programme advisory committee from where the various input comes.

  e)   **How does the IQAC communicate and engage staff from different constituents of the institution?**

         The IQAC communicates and engages staff during the internal audit held with a frequency of once in three months. For conduct of internal audit of any department/section a group of 3 staff members are appointed for audit at least15 days before the internal audit schedule. Once the audit is done the auditors prepare the non-conformity report (NCR) and communicate the same to auditee and management representative (MR).Meeting suitable dates are decided in MRM to close all the non-conformity. Moreover information are also shared.

6.5.2   Does the institution have an integrated framework for Quality assurance of the academic and administrative activities? If 'yes', give details on its operationalization.

Yes, the institution has an integrated framework for Quality assurance and administrative activities defined in institution/management process and for quality. The updation done in processes result in amendments of the processes where the revision is carried out. The updated manual is available both in hardcopy as manual and soft form on institute LAN for all staff members to use from anywhere in the campus.

Before the start of audit all staff members are informed about the date of audit and its effective conducted. Audit guidelines are given. The audit compliance is done for all the non-conformity generated on a stipulated date as decided during the MRM (post audit). This mechanism results in operationalization of IQAC. In addition faculty quality assurance in the department need to ensure the frame work of quality assurance to be implemented effectively.

6.5.3   Does the institution provide training to its staff for effective implementation of the Quality assurance procedures? If 'yes', give details enumerating its impact.

Yes, the training is provided to staff members by IRQS (Indian Register Quality System) to be an internal auditor for effective implementation of quality assurance procedures.
The impact of recognized auditors are:
   a)   Staff can understand the manual and processes
   b)   Effective internal audit conduct once in each quarter
   c)   Around 100 internal auditors team currently in the institute
   d)   Maintenance of effective records/file management and their traceability
   e)   Creation of analytic for performance prediction and finding out the market stand

6.5.4   Does the institution undertake Academic Audit or other external review of the academic provisions? If 'yes', how are the outcomes used to improve the institutional activities?

Yes, the institute undergoes 3 internal audits (frequency of 3 months) and 1 external audit (surveillance). The non-compliance generated during internal audits are closed before the start of next audit as per the stipulated date for closing of all non-compliances.

The outcome in case of external audit (surveillance) all the non-compliance if any as Opportunity For Improvement (OFI) received are closed as per the date mentioned by the committee and the same is reported to the external auditors. Finally, the extension of being audited institute is sent by the external auditors to the institute. Once in three years the renewal of the ISO (9001:2008) certificate is done. Moreover for OBE model of NBA effective implementation peer group review is done by the senior faculty from other institute.

6.5.5   How are the internal quality assurance mechanisms aligned with the requirements of the relevant external quality assurance agencies/regulatory authorities?

The internal quality assurance mechanisms align with external quality assurance agencies because the manuals are prepared by the guidance of the IRQS (Indian Register Quality Systems) body as per the standards. The manuals prepared comprises of Quality manual (QM), Procedure manual (PM) with a total 22 (IP & MP) processes being governed in the manual.

6.5.6   What institutional mechanisms are in place to continuously review the teaching learning process? Give details of its structure, methodologies of operations and outcome?

The teaching learning process is considered as second process in the manual. The teaching learning process comprises of semester planning followed by conduct of lectures/practical /tutorials, conduct of term test (continuous evaluation). The monitoring and control of teaching learning process is aligned with academic calendar. Technical seminars, industrial visits (local and out station) are conducted to improve technical skills of students. Monthly assignments to regular students and remedial assignments to monthly and final defaulter students to overcome the academic loss during semester.

Table 6.14: Structure of teaching-learning process

Items	Methodologies	Operations	Outcomes
Semester planning	Semester load allocation/planning of lectures/practical's/tutorials	To plan and execute the lectures/practical's	Completion of planned lectures/ practical's on

Items	Methodologies	Operations	Outcomes
			specified day/date
Conduct of lectures	To discuss the content with background of topic	Conducting lectures 4 per week as per time table	Completion of planned lectures
Conduct of practical's/tutorials	To discuss what to implement with respective components /hardware/software/tools etc.	Conduct of practical 2 hrs./week for each batch (around 20students) as per time table	Completion of planned practical's/tutorials
Conduct of term tests	To have 50% syllabus for each term test	To assess students for 50% syllabus taught for each term test	Understanding of content of 50% syllabus being taught
Conduct of technical seminars/industrial visits	Technical content to student which is required as per semester requirement	To deliver the concepts during seminars and industrial visit to understand the aspects of technicality	Shall get the technical aspects which help students to do their projects and placement.
Monthly assignments	To allow students understand the monthly academic conduct	To allow students complete and submit assignments as per academic calendar	To understand the content delivered each month as per academic calendar
Remedial assignments	To give questions to students which can cover their academic loss and help solve university based questions	To allow students complete and submit remedial assignments as per academic calendar	To understand the content delivered each month as per academic calendar
Term work submission (Continuous evaluation)	To conduct term tests, assignments etc.	To check for students ability to understand subject requirements	Successful completion of term work allows students to go for next higher semester.

6.5.7   How does the institution communicate its quality assurance policies, mechanisms and outcomes to the various internal and external stakeholders? Any other relevant information regarding Governance Leadership and Management which the college would like to include.

Institute communicates its quality assurance policies, mechanisms and outcomes to the various internal and external stakeholders as follows:

Table 6.15: Communication of quality assurance policy

Internal Stakeholders	Outcome/ Remarks	Communication	External Stakeholders	Outcome / Remarks	Communication
Students	Attendance, results & placements	Notice board, website, teacher guardian handbook	Industry	For placement of students	TPO communication
Parents	Results & placements	Website meeting with teacher guardian	Professional bodies	Professional chapters to provide platform for students to do good projects / get updated with latest technical	Report of activity

				issues discussed	
Faculty/staff	Requirements such as attendance, results, training to students for placement	Notice, IOM, email communication	Regulatory, affiliating and accreditating bodies	To be abreast as a institute and follow all the norms from time to time of all external bodies	Regulatory compliance committee visit
Management	Results & placement and other requirements for smooth conduct/running of the institute	Office Note	Alumni	Brand building of the institute	Formal & informal communication Alumni meet
			Society	To give society engineers as a good citizen, as entrepreneurs help society needs	NSS activity Website

Any other relevant information regarding Governance Leadership and Management which the college would like to include

The institute has been recognized as model self-finance private engineering college. As a result the institute has been considered for the survey of the engineering education in India by the delegates of Stanford University under MoU with MHRD to study the technical education in India. They have visited the institute as per the recommendation of AICTE.

The NITI Ayog, New Delhi, delegation team have visited the institute through BOAT (Board of Apprenticeship Training, Mumbai).

Criterion - VII: Innovations and Best Practices

7.1   Environment Consciousness

The Institute being located in Metropolitan City of Mumbai has the advantage of is its proximity to Sanjay Gandhi National Park which is considered as the largest forest within the city. Therefore the campus has natural advantage of being environment friendly. Apart from this institute has taken many initiatives through its management, student and faculty to make the campus green and clean. TCET is surrounded by large number of palm trees.

The land requirement for the institute in metro city as per AICTE guidelines is 1.5 acre where institute floor space is 0.79 acre.Institute follows all the norms of construction prescribed by Municipal Corporation from time to time. Therefore 50% of the land is utilized for five storey building and remaining area is used as open area where one can see landscape garden, tree plantation, flour bed, pot plantation and the other utilities. Moreover, for Waste Management, bio-degrading compost station has been created near canteen. In the campus water harvesting facility is also created as per guide lines of Municipal Corporation of Greater Mumbai (MCGM).Moreover, township of Thakur Village has been developed by same management. Proper town planning has been done and has been identified as SMART CITY project of Govt. of India.

Institute also has university approved NSS and Extension Wing through which lot of environment related projects are taken. One of the key projects under the same is TREE plantation. The TCET NSS unit took up the venture of tree plantation in association with local corporator Mr. YogeshBhoir in various societies of township every academic year. The project duration used to be 4 hours and they plant approximately 100 saplings. Moreover, tree plantation is also done in the college premises, national park, villages (during residential camp) and roadside of township.   In addition, to celebrate the traffic control week, the unit with the Rotary Club made posters and campaigned on the roads and signal near the Mahindra & Mahindra Junction and spread awareness about safety during driving and other road safety and traffic rules to minimize the ill effects of inattentive driving and violation of road safety rules and control pollution. The event is organized on yearly basis to educate about environment, carbon footprint and safety rules to be followed for auto user. Current academic year almost all the students have applied for GREEN ARMY, an initiative of Govt. of Maharashtra to spread the environment consciousness among the citizens and also to protect environment. Therefore, institute is constantly putting efforts to make the campus green and eco-friendly along with awareness and services to the society for the same. Many NGO's are also supporting the activities.

7.1.1   Does the Institute conduct a Green Audit of its campus and facilities?
Yes. Institute has the well-defined process in ISO manual and audit is conducted as per procedure.

7.1.2   What are the initiatives taken by the college to make the campus eco-friendly?
- Energy conservation – Yes, energy conservation is done during the semester break. All labs which are not operational are closed and the seating arrangement of the staff is generally arranged in a way that minimum electricity is consumed.
- Use of renewable energy - No
- Water harvesting - Yes
- Check dam construction- No
- Efforts for Carbon neutrality-Yes. Conducts awareness programmes, seminar and workshop as a part of EVS subject
- Plantation – Yes, plantations are done in the campus as well as nearby areas with the help of NSS/extension students
- Hazardous waste management – Institute does not conduct any such experiments by which hazardous waste gets generated but seminar and workshop is conducted to create awareness.
- E-waste management – Yes. E waste is mainly the computer and its hardware, electronic equipment, meters etc. which is normally weeded out under buy back policy of the institute.

7.2   Innovations

TCET was established in A.Y.2001-02 with a clear objective to excel in technical education and become internationally renowned premier institute of Engineering & Technology. Therefore institute is taking many initiatives which are evolved from innovative projects that have been adopted by the

institute to strengthen and build sustainable model which can be the role model for self-financed institution. The institute has implemented ISO system in 2005 where the outcome based education has been integrated which is based on innovative practices in 2008-09. It is further strengthened by integrating various student learning models such as BLOOM Taxonomy, 5W1H model, 4H Model and so on. In 2013 it was realized that efficiency and effectiveness of the work of faculty as well as staff including students can be increased through some performance model and therefore institute has adopted the MALCOM BALRIDGE Model for performance excellence in 2013. As a result, in current academic year, education and training model has been revised and made activities and project based. In the process of the strengthening of the activities and project based learning the institute has realized the importance of domain based learning which is in addition to university curriculum based learning. This is mainly the student on graduation should have some specialization along with engineering degree. In the process some Centre of Excellence has been developed with industry and some advance research laboratories are in the process of development. This is in addition to R & D centre, incubation centre which are already established in the A.Y.2014-15. Therefore scope of innovative practices intended.

- To reduce the cost of quality technical education
- To inculcate the R & D culture amongst the students
- To make process improvement
- To ensure Fruitful engagement of faculty and students
- To mitigate any kind of risk at a point of time

Some of the other innovative practices which improved the education system at TCET include:
1) Student centric and outcome oriented engineering education.
2) Innovative resource book to meet the requirement of outcome based learning.
3) Student mentoring- student for improving performances in key areas like result, attendance.
4) Project based learning: to enable the students for experienced based learning and to fecilitate the model of learning by doing.

Innovations are well documented in the ISO manual so that process should improve. To bring innovation, survey, feedback, interaction, visit to institution/industry, meeting with experts, etc are conducted based on the problems realized. These innovative practices have helped the institute to establish their brand value in short span of 15 years. Moreover, at the time of crisis during admission time the institute was able to fill up all the seats and best possible professional placement of student on graduation. Moreover faculty members should have large number of publications in peer national journal/proceeding and started filing the patent and copyright based on their R & D work. Everything we encourage on the concept of zero cost so that it should not unnecessarily burden the institute. Moreover, these innovative practices have created multiple opportunities   for professional placement of students.

7.2.1   Give details of innovations introduced during the last four years which have created a positive impact on the functioning of the college.

a)   **Teaching learning process:** Problem in the past has be realized as non-uniformity in lecture delivery and syllabus coverage and also in some case it was found that the faculty was biased in evaluation process.
Solution for the problem was found with the introduction of structured faculty diary introduced in the academic year 2013-14.The teaching learning is carried out with the support of faculty diary where each faculty has to update it in major four sections namely:
   i.   Approach - (Plan)
   ii.   Deployment- (Do)
   iii.   Learning - (Check)
   iv.   Integration - (Act)

The content to be taught is initially planned by each faculty termed as semester planning of theory & practical's in approach (plan) section.
The deployment (do) is based on conduct of lectures/practical on day-to-day basis entered in work report.
The learning (check) is the continuous evaluation part where the record of term test marks, assignment marks etc. for term work calculation.

The integration (act) part is done so as assess the overall performance and activities carried out in each semester, identify gaps in it and align process accordingly.

Introduction of this faculty diary has brought uniformity in syllabus coverage within the time limit with full transparency and accountability. It ensures every academic work for faculty is in sync with the academic calendar. Moreover, student performance records are also maintained in the diary which develops lot of learning and accordingly necessary corrective and preventive measures can be taken in case of non-conformity so that in future course of action such situation can be avoided. It also supports the continual improvement in the process.

a) **Performance validation and prediction:** Level of student understanding and their segregation as average, above average and below average is the objective of the student validation. The purpose is to design and develop the learning input for the students so that their performance in semester end examination (SEE) can be improved. Moreover, the engineering graduate attributes can be developed. Validation is done on the basis of previous semester marks, attendance, and performance in continuous evaluation. Rubric is used for the prediction of the SEE which is based on the truth- table. Student validation is started in the academic year 2012-13 where prediction component added in the current academic year. This has also been introduced for campus placement. Initiative has been taken to make the students faculty result orientation.

b) **Learning Resource Book:** problems that has been identified was the non –uniform content delivery in the classroom which differs from faculty to faculty teaching the same subject with lot of ambiguity and confusion in students minds while learning subject. This was mainly due to different notations, approach, content, understanding etc. which used to vary in books and the manuscripts. Moreover if any student misses lectures, difficult for him/her to learn the subject and loses the learning continuity. In other words, TLP was found to be unstructured and unguided teaching learning process.

To overcome the problem Learning Resource Book was introduced.

Evolutionary Resource book introduced in the academic year 2008-09 where it was in merely like the manuscript introduced for FE and in the academic year 2009-10 was also introduced for SE to BE. The content was based on 1W which was based on 'What" is the syllabus of university and the content was complying the university syllabus requirement. With the learning from industry about the learning and innovation 5W1H model was introduced to re-align the content of resource book in the academic year 2014-15. In the current academic year, contents in the resource book is re-structured further using Bloom's Taxonomy (BT) where the academic skills of the student shall be developed from low level to high level of learning attributes. Students learning activities viz. practices and evaluation are also aligned with BT. Innovation of resource book was simplified the mapping and attainment of course outcomes which impacts the programme outcomes and the achievements of programme educational objectives in alignment of mission and vision statement. In future we have the plan to further improve it w.r.t. 4H model which is extension of BT widely used in leading foreign universities.

c) **Industry Orientated Learning**
Being the self-financed private college with the comparatively much less standing in the city; institute finds it difficult to place the student in the industry through campus for early batches. Main reason identified was employability skill as per industry standards and low brand value. SDP was introduced in the A.Y.2010-11 followed by campus connect programme from A.Y.2012-13, pre-placement training in 2013-14 and corporate training from A.Y.2015-16. The constant effort and innovation has increased campus placement consistently. Moreover, institute takes the pride that many of the other institute /students are also getting the placement through TCET as institute organizes pool campus drive as a part of ISR. Pool campus placement concept to the corporate has for members colleges have been introduced by TCET in 2006. Since then such activity is conducted every year.

In the process Thakur Accenture Innovation Centre was started for the training and innovation on cutting-edge technology in the area of Information and Communication Technology (ICT). A number of faculty members have taken up research work and doing P.G (project)/Ph.D. to promote research. The College has established a Thakur Accenture Innovation Centre, Cloud computing and network laboratories with the support of industry and the AICTE under RPS in A.Y.2014-15. Tata Technologies Centre

developed in A.Y.2014-15 for learning the process digital manufacturing, 8 numbers of CoE developed in the department to learn the new technologies in the recent 2-3 years. This has supported the students to address the curriculum gap that exist w.r.t. industry requirement and has improved the campus placement, technological innovation and product development skill among faculty members and students.

d) R & D culture

To motivate faculty members, students for research and development activities and to interact with industry, government, professionals, experts from research laboratory etc. for research opportunities, TCET R & D was developed in the area of specialized domains defined by the institute from A.Y.2014-15 onwards. TCET-R&D cell is dedicated to help advance existing knowledge and nurture new ideas, by providing resources and facilities to create cutting edge products from which future research will emerge with domain specialization and life-long learning. As a result last academic year institute received yearly minor research grants from University of Mumbai.

i.   The web site for the company named Pragmatic Solutions is developed and available on www.pragmeticconsulting.co.in

ii.   Company called Vigyan Lab has installed its software on institute servers for reducing power consumption and give green IT solutions.

iii.   The Company Noesis consultancy has given the platform to our students for paid internship for android application development

iv.   NETVIGIL SOFTWARE SYSTEMS: Along with the internal staff of the TCET has developed S2-Paycanteen automation software.

Number of engineering products are developed which has the commercial values and supported by IEDC. Some of the products are also going to be patented. These products are in incubation centre for commercialization and financially supported by IEDC. It is identified as the practices giving the best result.

7.3   Best Practices

The scope of the best practice is defined the process which can yield the best result within the given timeframe. Best practices at TCET are captured through Semester Review which is conducted on the last day of semester where HOD/Section in-charges share development, progress of the department made during the semester. Moreover, it is also captured from other institutes through interaction, site visit, and expert visit to various campuses across India or prominent advocacy at National/International level. It is also captured from various website of premier institute at National/International level. Moreover, whatever innovative practices are identified, over period it attains maturity and becomes best practices.

Some of the best practices followed at institute level are as follows:

1)   System driven, Student Centric, Academic delivery as per the curriculum of UOM
2)   Continuous monitoring of teaching-learning activities based on facts and figures
3)   Special focus & extra coaching for low profile students based on student validation
4)   Industry and Research oriented mini & major project to provide industry oriented exponential learning
5)   Technical seminars/workshops, industrial visits & expert lectures from Industry & research institutes
6)   Student Development Program tailor made to Industry requirements to increase employability and employment
7)   Quality Improvement Programme and R&D activities to bring innovation and lifelong learning culture
8)   Tie-ups with Industry in specialized area of Technology to keep students and faculty updated with coming technology

Best practices followed in the institute have set reference for new departments and help them to implement the set processes so that they can be at par with established department.

7.3.1   Elaborate on any two best practices in the given format at page no. 98, which have contributed to the achievement of the Institutional Objectives and/or contributed to the Quality improvement of the core activities of the college.

1)   **Title of the Practice**: Academic Orientation Programme (AOP)

The AOP is offered in two parts as foundation programme (FP) and student orientation programme (SOP)

Goal: To build strong foundation for the course and domain with emphasis on self learning and project based learning for building positive impact for the course.

The Context: Ensuring effective learning by showing other modes of learning and better foundation for low profile students

The Practice:

- Followed in the first week of semester conduct
- Theory lecture plan with subject orientation, prerequisites, Subject content Gaps Research opportunities and any other relevant content
- Practical conduct plan with experiment list, industry skill gaps, bridge courses, mini, minor and major projects opportunities for higher studies and any other relevant content
- Explanation of evaluation and assessment of theory and practical expected course outcome, linking of outcome of bridge courses and to the graduate attributes
- The class in charges take the choices of the students about the Mini and minor projects.

Evidence of Success:

The programme offered is highly successful which can be seen in the feedback analysis of all faculties as per the AOP week activities and also can be seen in the student's portfolios. The other evidence can be seen in the form of increasing percentages of placements and inclination towards core and research/entrepreneurship activities.

Problems Encountered and Resources Required: Bringing all segments of student's and aligning all different mindset towards the orientation. Sustaining interest in core and interdisciplinary research areas. Shortage of senior faculties for carrying out R&D activities.

Number of Students groups working on projects Domain wise:
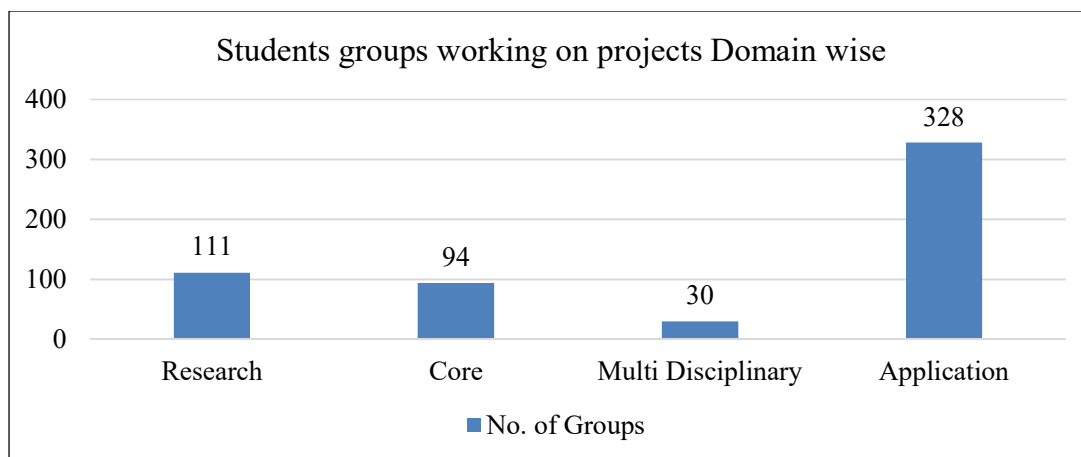
Fig.7.1Students groups working on projects Domain wise

2) **Title Of The Practice**: Student Development Programme(SDP)

Goal: To improve placement of students by providing them skills required in the form of soft skills, technical skills etc. and from industry experts.

The Context: Students joining our institute are from varied background lacking skills required by the industry. The curriculum is not as per the expectation of the industry for employment. Industry needs ready workforce to be competent enough to start contributing from day one and at the same time many industries do not have policy for internship.

The Practice: There is well defined student development programme(SDP) conducted every year for second and third year students during semester on weekends and in summer and winter semester breaks.

Evidence of Success:

- Increase in no of students becoming eligible after aptitude test
- Increase in number of students placed before & after conduct of SDP

Problems Encountered and Resources Required:

- In the Jam pack schedule of Semester students hardly get time to attend these programmes.

- Shortage of industry trained faculties.

Remark: Improvement is observed in placement of students after conducting SDP each year.
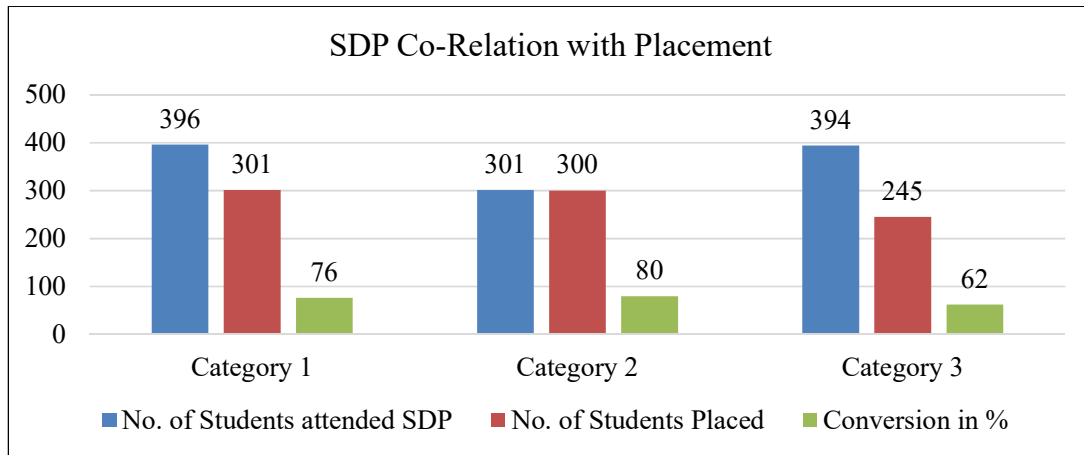
Fig.7.2 Placement improvement graph after conducting SDP

Evaluative Report: Department of Electronics and Telecommunication Engineering

1.   Name of the department: - Department of Electronics and Telecommunication Engineering

2.   Year of Establishment: - 2002

3.   Names of Programmes / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.)

      a.   UG: - B.E. - Electronics and Telecommunication Engineering
      b.   PG: - M.E. - Electronics and Telecommunication Engineering
      c.   Ph.D.: - Ph.D. (Engineering)

4.   Names of Interdisciplinary courses and the departments/units involved: -

Sr. No.	Names of Interdisciplinary course	Year / Semester	From Department
1	Applied Mathematics-III	Second Year/Sem III	Humanities & Sciences
2	Applied Mathematics-IV	Second Year/Sem IV	Humanities & Sciences
3	Business Communication And Ethics-V	Third Year/Sem-V	Humanities & Sciences

5.   Annual/ semester/choice based credit system (programme wise)

Sr. No.	Programme Name	System Pattern
1	UG programme	Semester - Pattern (choice based credit system implemented for FE from July 2016)
2	PG programme	Semester - Pattern (choice based credit system from July 2016)

6.   Participation of the department in the courses offered by other departments:

Sr. No.	Course	Year / Semester	Department
1	Basic Electrical and Electronics	1st Year / Sem I	Humanities & Sciences
2	Basic Workshop Practice-II	1st Year / Sem II	Humanities & Sciences

7.   Courses in collaboration with other universities, industries, foreign institutions, etc.

Sr. No.	Course Name	Collaborating Organization	Duration
1	Infosys Campus Connect	Infosys Systems Pvt. Ltd.	90 days

8.   Details of courses/programmes discontinued (if any) with reasons: - NA

9.   Number of Teaching posts

	Sanctioned (UG + PG)	Filled
Professors	2+1	1
Associate Professors	6+1	4 + 2* = 6
Assistant Professors	16+1	21

* Incumbent Assistant Professors of 5th Pay Commission

10.   Faculty profile with name, qualification, designation, specialization, (D.Sc./D.Litt./Ph.D./M. Phil. etc.)

Sr. No.	Name	Qualification	Designation	Specialization	No of years of Experience	No. of Ph.D. Students guided for the last 4 years
1	Dr. Lochan Jolly	Ph.D (Engg.)	Dean SSW / Professor	Communication and Electronic Devices	18 years 9 months	-
2	Dr. Vinitkumar Dongre	Ph.D (Engg.)	Associate Professor / HOD-EXTC;	Antenna and microwave	18 years 3 months	-
3	Dr. Madhuri Mavinkurve	Ph.D.	Associate Professor	Electronic Devices and Modelling	27 years 3 months	-
4	Mr. Sanjeev Ghosh	M.E.(ETRX)	Associate Professor / Dy. HOD-EXTC;	Communication and Signal processing	14 years 6 months	-
5	Mrs. Payel Saha	M.E. (Microprocessor)	Incumbent Assistant Professor / Management Representative	Embedded System	14 years 1 months	-
6	Dr. Sujata Kulkarni	Ph.D(Engg.)	Associate Professor	Communication	15 years 1 months	-
7	Ms. Aradhana Manekar	M.E.(ETRX)	Incumbent Assistant Professor	Embedded System and Communication	15 years 3 months	-
8	Mr. Shailendra Shastri	M.E.(EXTC)	Assistant Professor	Antenna and microwave	15 years 6 month	-
9	Mr. Manoj Chavan	M.E. (EXTC)	Assistant Professor	Signal processing	15 years 6 month	-
10	Mrs. Kalawati Patil	M.E.(EXTC)	Assistant Professor	Embedded System and Communication	17 years	-
11	Ms. Sonia Behra	M.E. (EXTC)	Assistant Professor	Electronic Devices and Modelling	14 years 2 Months	-
12	Ms. Archana Deshpande	M.E.(EXTC)	Assistant Professor	Electrical networks and Antenna	19 years 5 months	-

Sr. No.	Name	Qualification	Designation	Specialization	No of years of Experience	No. of Ph.D. Students guided for the last 4 years
13	Dr. Sangeeta Mishra	M.E.(EXTC)	Assistant Professor	Communication	12 years	-
14	Ms. Sukruti Kaulgud	.M.E.(EXTC)	Assistant Professor	Communication	11 years 9 months	-
15	Mr. Deepak Shete	B.E. (EXTC)	Assistant Professor	Communication and Signal processing	14 years	-
16	Ms. Anvita Birje	M.E(EXTC)	Assistant Professor	Electronic Devices and Modelling	11 years 4 months	-
17	Ms. Megha Gupta	M.E. (EXTC)	Assistant Professor	Antenna and Communication	10 years 1 months	-
18	Mrs. Rupali Mane	M.E. (EXTC)	Assistant Professor	Embedded System	14 years 4 months	-
19	Mrs. Rashmita Kumari Mohapatra	M.TECH.(ELECTRONICS & TELECOMM.)	Assistant Professor	Communication and Signal processing	11 years 1 months	-
20	Mr. Biju Balakrishnan	M.Tech.	Assistant Professor	Communication	27 years 1 months	-
21	Mrs.Rutvi Panchal	M.E. (EXTC)	Assistant Professor	Embedded System	4 years 9 months	-
22	Mr. Nikhil Tiwari	M.E. (EXTC)	Assistant Professor	Antenna and Communication	3 years 10 month	-
23	Ms. Sonali Singh	M.Tech	Assistant Professor	Electronic Devices and Modelling	12 years 8 months	-
24	Mr. Niket Amoda	M.E. (EXTC)	Assistant Professor	Electronic Devices and Modelling	8 years 8 months	-
25	Mr. Nishant Kumar	M.E. (EXTC)	Assistant Professor	Antenna and Communication	1 year 8 months	
26	Mr. Yogesh Kumar	M.E. (EXTC)	Assistant Professor	Electronic Devices and Modelling	2 years 9 months	
27	Ms. Purnima Chandrasekar	M.E. (EXTC)	Assistant Professor	Signal processing	3 years 9 months	-
28	Ms. Amruta Naik	M.E. (ETRX)	Assistant Professor	Electronic Devices and Modelling	5 years 9 months	-

11.   List of senior visiting faculty: Nil

12.   Percentage of lectures delivered and practical classes handled (programme wise) by temporary faculty:

Programme	Percentage of lectures delivered	Percentage of practical classes handled
UG	4.61	4.92
PG	0	0

13.   Student -Teacher Ratio (programme wise)

Sr. No.	Programme	Student -Teacher Ratio
1	UG	15:1
2	PG	12:1

14.   Number of academic support staff (technical) and administrative staff; sanctioned and filled

	Sanctioned	Filled
Academic support staff (technical)	10	11
Administrative staff	Nil	Nil

15.   Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ MPhil / PG.

Sr. No.	Programme	Number
1	Ph.D.	5
2	PG	23

16.   Number of faculty with ongoing projects from a) National b) International funding agencies and grants received

Sr. No.	Level	Number of faculty with ongoing projects	Grants received
a	National	07	5,72,000
b	International	NIL	NIL

17.   Departmental projects funded by DST – FIST, UGC, DBT, ICSSR, etc. and total grants received

Sr. No.	Project Title	Sponsoring Agency	Grant Received
1	Next Generation Farming	DST	1,00,000
2	Saral: An Interactive Device	DST	1,00,000
3	High Resolution FMCW RARAR Guage	DST	1,00,000
4	Slotted Dual Band Patch Antenna Embedded with Matamaterial for WLAN and WiMAX Application	University of Mumbai	20,000
5	Smart Parking Management System using IOT	University of Mumbai	25,000
6	Tele presence robot with stereoscopic vision	University of Mumbai	30,000
7	On panel signaling with autobreaking of train and monitoring of railway tracks	University of Mumbai	22,000
8	Smart Medibox	University of Mumbai	20,000
9	Image Processing Based Book Reader facial recognition along with GPS tracker visually impaired	University of Mumbai	35,000
10	Electronic Oxygen Tree	University of Mumbai	40,000
11	7am Arivu- The Seventh Sense	University of Mumbai	25,000
12	Quadra coppter using Android Application	University of Mumbai	30,000

Sr. No.	Project Title	Sponsoring Agency	Grant Received
13	Hidden Markov Model based online handwritten sign verification using Hybrid Wavelet Transform	University of Mumbai	25,000
		Total Grants in Rs.	**5,72,000/-**

18. Research Centre /facility recognized by the University

Approved Ph.D. Research Centre by University of Mumbai (2014-15).

19. Publications:

* Publication per faculty:

Sr. No.	Name of faculty	Number of papers published in peer reviewed journals (national / international)	Number of publications listed in International Database	Citation Index	SNIP	SJR	Impact factor	h-index
1.	Dr.Lochan Jolly	47	47	11	0	0	1.145	4
2.	Dr.VinitkumarDongre	35	35	1	0	0	4.135	1
3.	Mr.Sanjeev Ghosh	3	3	11	0	0	NA	2
4.	Ms.MadhuriMavinkurve	10	10	12	0	0	5.629	3
5.	Ms.Sujata Kulkarni	15	15	23	0	0	2.02	3
6.	Ms.PayelSaha	10	10	0	0	0	NA	0
7.	Ms.AradhanaManekar	05	05	0	0	0	NA	0
8.	Mr. Manoj Chavan	03	03	0	0	0	NA	0
9.	Mr. ShailendraShatri	4	4	2	0	0	5.629	0
10.	Ms.KalawatiPatil	6	6	1	0	0	NA	0
11.	Ms. Sonia Behra	10	10	0	0	0	NA	0
12.	Ms.Archana Deshpande	6	6	0	0	0	NA	0
13.	Dr.Sangeeta Mishra	22	22	45	0	0	3.8	4
14.	Ms.SukrutiKaulgud	5	5	1	0	0	NA	0
15.	Mr. Deepak Shete	4	4	25	0	0		2
16.	Ms.AnvitaBirje	7	7	0	0	0	NA	0
17.	Ms.Megha Gupta	8	8	2	0	0	4.101	0
18.	Ms.Rupali Mane	2	2	0	0	0	NA	0
19.	Ms.RashmitaKumariMohapatra	6	6	0	0	0	NA	0
20.	Mr. BijuBalakrishnan	03	03	13	0	0	5.629	2
21.	Mrs.RutviThakar	03	03	0	0	0	NA	0
22.	Mr. Nikhil Tiwari	04	04	0	0	0	NA	0
23.	Mrs.Sonali Singh	04	04	0	0	0	NA	0
24.	Mr. NiketAmoda	07	07	49	0	0	2.37	4
25.	Ms.PurnimaChandrasekar	03	03	0	0	0	NA	0
26.	Mr.Yogesh Kumar	0	0	0	0	0	NA	0
27.	Mr.Nishant Kumar	05	05	0	0	0	NA	0

Sr. No.	Name of faculty	Number of papers published in peer reviewed journals (national / international)	Number of publications listed in International Database	Citation Index	SNIP	SJR	Impact factor	h-index
28.	Ms.Amruta Naik	02	0	0	0	0	NA	0

* Books Publication

Sr. No.	Name of faculty	Chapter in Books	Books Edited	Books with ISBN/ISSN numbers with details of publishers
1.	Lochan Jolly	all	---	*Scilab Textbook Companion for Fiber Optic Communications,* Edition: 4, June 10, 2016, Available http://scilab.in.
2.	Lochan Jolly	all	--	*Scilab Textbook Companion for Optoelectronics an Introduction* , Edition: 2, August 24, 2016, Availablehttp://scilab.in
3.	Lochan Jolly	all	--	Scilab Textbook Companion for Introduction to Fiber Optics, Edition: 1, 27th October, 2016, Available http://scilab.in.

*Students Publications

Sr. No.	Name of student	Number of papers published in peer reviewed journals (national / international)	Number of publications listed in International Database	Citation Index	SNIP	SJR	Impact factor	h-index
1	Omkar Asukar	0	1	0	0	0	0	0
2	Tanmay Desai	0	1	0	0	0	0	0
3	Utsav Gundaraniya	0	1	0	0	0	0	0
4	Abhishek Gondhali	0	1	0	0	0	0	0
5	Snehal Ransing	0	1	0	0	0	0	0
6	Darshana Sapale	0	1	0	0	0	0	0
7	Ayushi Rathore	0	1	0	0	0	0	0
8	BhargavUpadhyay	0	1	0	0	0	0	0
9	Vignesh Iyer	0	1	0	0	0	0	0
10	Soham Warde	0	1	0	0	0	0	0
11	Parag Kumavat	0	1	0	0	0	0	0
12	Seema Pandey	0	1	0	0	0	0	0
13	Nishant Deherkar	0	1	0	0	0	0	0
14	Ankit Mittal	0	1	0	0	0	0	0
15	Aniruddha Arvind	0	1	0	0	0	0	0

Sr. No.	Name of student	Number of papers published in peer reviewed journals (national / international)	Number of publications listed in International Database	Citation Index	SNIP	SJR	Impact factor	h-index
16	Ajitkumar Chaurasiya	0	1	0	0	0	0	0
17	Reza Ali Lakhani	0	1	0	0	0	0	0
18	Smit Mistry	0	1	0	0	0	0	0
19	Jinit Thakkar	0	1	0	0	0	0	0
20	PriyankaJaiswal	0	1	0	0	0	0	0
21	Ashish Rawat	0	1	0	0	0	0	0
22	NidhiParmar	0	1	0	0	0	0	0
23	Shubham Bafna	0	1	0	0	0	0	0
24	YashPoojari	0	1	0	0	0	0	0
25	Anishkumar Shukla	0	1	0	0	0	0	0
26	Rohan Joshi	0	1	0	0	0	0	0
27	AkashDubey	0	1	0	0	0	0	0
28	Vighnesh Phanase	0	1	0	0	0	0	0
29	Kaushik Mishra	0	1	0	0	0	0	0
30	Sudhir Nair	0	1	0	0	0	0	0
31	Gaurav Singh	0	1	0	0	0	0	0
32	Neethu Mukundan	0	1	0	0	0	0	0
33	Sudeepto	0	1	0	0	0	0	0
34	Rushali Patil	0	1	0	0	0	0	0
35	Sanmith Shetty	0	1	0	0	0	0	0
36	Nikita Sharma	0	1	0	0	0	0	0
37	Arjun Sharma	0	1	0	0	0	0	0
38	Bharat Garhewal	0	1	0	0	0	0	0
39	Vinayak Kandu	0	1	0	0	0	0	0
40	Payal Khandelwal	0	1	0	0	0	0	0
41	Vikas Yadav	0	1	0	0	0	0	0
42	Akhil Yadav	0	1	0	0	0	0	0
43	Parag Chakraborty	0	1	0	0	0	0	0
44	Aachala Singhan	0	1	0	0	0	0	0
45	ArshdeepSood	0	1	0	0	0	0	0
46	Manav Nayak	0	1	0	0	0	0	0
47	Jash Desai	0	1	0	0	0	0	0
48	Vivek Dodia	0	1	0	0	0	0	0
49	Vishal Rai	0	1	0	0	0	0	0
50	Priya Gupta	0	1	0	0	0	0	0
51	Pratik Agarwal	0	1	0	0	0	0	0
52	Mehul Jain	0	1	0	0	0	0	0
53	Smriti Bhardwaj	0	1	0	0	0	0	0
54	RachanaSamant	0	1	0	0	0	0	0
55	Roshan Jha	0	1	0	0	0	0	0
56	Priya Singh	0	1	0	0	0	0	0

20.   Areas of consultancy and income generated: -

Sr. No	Name of Faculty	Title of Project	Awarding Agency	Income Generated
1	Dr. Vinitkumar Dongre	Design consultancy for Radar Level Measurement System FMCW Radar for 30 meters range with 2 mm resolution	AGV systems Private Limited, Mumbai	Nil
2	Ms. Sukruti Kaulgud	SMS Ticketing for Western Railway	Western Railway, Mumbai	Nil

21.   Faculty as members in a) National committees, b) International Committees, c) Editorial Board

Sr. No.	Name of Faculty	Committee	Type
1	Dr. Vinitkumar Dongre	International conference & workshop on electronics and telecommunication engineering (ICWET) 2016, TCET, Mumbai, February 26-27, 2016.	Editorial Board
		Reviewer for IEEE International Conference of Information and Communication Technology (ICoICT 2013), Bandung, Indonesia, March 20-22, 2013.	International Committees
		Reviewer for 2012 IEEE Asia-Pacific Conference on Applied Electromagnetics (APACE), Melaka, Malaysia, December 11-13, 2012.	International Committees
		Reviewer for 2012 IEEE Symposium on Wireless Technology & Applications (ISWTA), Bandung, Indonesia, September 23–26, 2012.	International Committees
2	Dr .Madhuri Mavinkurve	Reviewer- International conference on Technology for Education (T4E 2014).	International Committees
		Reviewer- International Conference on Computers and Education (ICCE2015).	International Committees
		Reviewer- International conference on Technology for Education (T4E 2015).	International Committees
		Reviewer- International Conference on Computers and Education (ICCE2016).	International Committees
		Reviewer- IEEE International Conference on Advanced Learning Technologies (ICALT 2016)	International Committees
3	Dr. Sujata Kulkarni	International conference & workshop on electronics and telecommunication engineering (ICWET) 2016, TCET, Mumbai, February 26-27, 2016.	Editorial Board
		IEEE International Conference on Circuits, Systems, Communication and Information Technology Applications (CSCITA 2014), April 4-5, 2014	International Committees

22.   Student projects

    a. Percentage of students who have done in-house projects including inter departmental / programme

Programme	2015-16	2014-15	2013-14	2012-13
UG	98%	100%	98%	98%
PG	89%	84%	89%	100%

    b. Percentage of students placed for projects in organizations outside the institution i.e. in Research laboratories / Industry / other agencies

Programme	2015-16	2014-15	2013-14	2012-13
UG	2%	0%	2%	2%
PG	11%	16%	11%	0%

23.   Awards / Recognitions received by faculty and students:

    a. Awards / Recognitions received by faculty:

Sr. No.	Name of Faculty	Achievements/ Award / Recognitions	Awarding Agency	Year
1	Dr. VinitkumarDongre	Research grants of Rs. 1,00,000 from under IEDC	IEDC	2017
2	Dr. VinitkumarDongre	Research grants of Rs. 20,000	University of Mumbai	2017
3	Dr. Sujata Kulkarni	Research grants of Rs. 25,000	University of Mumbai	2017
4	Ms. AradhanaManaker	Research grants of Rs. 30,000	University of Mumbai	2017
5	Mrs. SukrutiKaulgud	Research grants of Rs. 22,000	University of Mumbai	2017
6	Mrs.Rupali Mane	Research grants of Rs. 20,000	University of Mumbai	2017
7	Dr. Lochan Jolly	Recognition as PhD guide	University of Mumbai	2016
8	Dr. Lochan Jolly	published three book companions	IIT	2016
9	Dr. VinitkumarDongre	Recognition as PhD guide	University of Mumbai	2016
10	Dr. B.K. Mishra and Dr. VinitkumarDongre	Threepatents filed	Indian Patent Office	2015
11	Dr. Lochan Jolly	Research grant of Rs 1,00,000	IEDC	2015
12	Dr. Sangeeta Mishra	Research grants of Rs 1,00,000	IEDC	2015
13	Mr. Sanjeev Ghosh	research grants of Rs. 35,000/-	University of Mumbai	2015
14	Mr. ManojChavan	minor grants from the University of Mumbai of Rs. 25,000/-	University of Mumbai	2015
15	Ms. Sangeeta Mishra	minor grants from the University of Mumbai of Rs 40,000/-	University of Mumbai	2015
16	Mr. Deepak Shete	minor grants from the University of Mumbai of	University of Mumbai	2015

Sr. No.	Name of Faculty	Achievements/ Award / Recognitions	Awarding Agency	Year
17	Ms. AnvitaBirje& Ms. Rupali Mane	Rs. 25,000/- minor grants from the University of Mumbai of Rs 30,000/-	University of Mumbai	2015
18	Ms. SukrutiKaulgud	received consultancy for the project 'SMS Ticketing for Western Railway'	Western Railway	2015
19	Ms.Sangeeta Mishra	Won award from NEN	NEN	2015

b. Awards / Recognitions received by students:

Sr. No.	Student Count	Year
1	90	2015-16
2	66	2014-15
3	102	2013-14
4	41	2012-13
5	42	2011-12

24.   List of eminent academicians and scientists / visitors to the department

Sr. No.	Name of academicians and scientists / visitors	Designation	Organization
1	Mr.Rizwan Sheikh	CTO	Pristine Infosolutions
2	Mr. R. V. BalasubramanianIyer	Vice President	Reliance Jio
3	Mohan Raju	Deputy General Manager	Airtel Business
4	Pradeep Tilara	Sr. Executive Engineer	NPCIL
5	ShekharBandhavkar	Founder & M.D.	TRFL Ideas Unbound
6	K.N.Rao	Director- Energy and Environment	ACC Limited
7	Vidulakagal	Executive officer	Confederation of Indian Industry
8	BhargavThakar	Sr.Engineer- Technical Communication Networks	Power and Productivity for a better world ABB
9	JatinPravin Panchal	Business Development Manager	L&T Technology Services
10	DnyaneshwarKamble	Treasurer IEEE Bombay Section	IEEE Bombay Section
11	Mr. ShaileshTiwari	Sales, IndianHead	Ball Corporation
12	Mr. Priyank Mehta	Propreitor	Fortis Technologies
13	Mr. Vinod Johri	General Manager	Reliance Jio
14	Mr. SarangPimpalkar	Senior Manager	Prolific Systems & Technologies Pvt. Ltd
15	Mr. Shrinivas Kulkarni	Senior Manager	Prolific Systems & Technologies Pvt. Ltd
16	Mr. Nitesh Sharma	Manager	GE Oil & Gas
17	Dr. KushalTakaley	Director	AGV Systems
18	Mr. Sanjay Choudhary	Director	Electronics Study Centre

19	Mr. TejasSura	Managing Director	Cubic Turnkey Pvt.Ltd
20	Dr. AlokVerma	Scientist	SAMEER, Mumbai
21	Mr. SaketTawde	Senior Associate	L&T
22	Mr.B. M. Wagale	Manager, R&D	Microbytes solutions
23	Mr.Vaibhav Sharma	Senior Associate	Kuka Robotics
24	Dr. Shailesh Jain	Associate Professor	IIT Bombay
25	Mr.Vijian C. A.	Director Engineering	Emerson Network Power India Pvt ltd
26	Mr. Vinit Panchal	Development Enginner,	LibrathermInsruments Pvt Ltd
27	Mr. Mahesh Bhatkal	Director R&D	ADM applied Signal, Microsystems Pvt Ltd
28	Dr.Prasad Joshi	HOD,	D.J Sanghavi College of Engg, Vile Parle
29	Dr.AmitGoradia	Director,	Automata Systems
30	Dr. Y.S Rao	Principal,	SPIT
31	Dr. N. K .Rana	Principal,	Theem COE
32	Dr. Vivek Deshpande	MIT	Pune
33	Mr. NarandraBabu	Technical Associate	Texas Instrument
34	Dr. ShankarvNawale	Principal	Sinhagad COE Solapur
35	Dr. Ajay Shetty	Director	Bhaktivedanta Hospital
36	Mr. Vikrant Urankar	Free Lance consultant	-
37	Dr. Snehal And Kamal Dala	Doctors	Bhaktivedanta Hospital
38	Mr.VijayKaulgud	Innovation Head	Igate Technologies
39	Dr. P N ChaVda	Principal	B.E.D College
40	Mrs. SumanPai	consultant	-
41	Dr.PravinMulay	consultant	-

25.   Seminars / Conferences / Workshops organized & the source of funding
       National

Sr. No.	Event	Title	Sourceof Funding	Year
1	Workshop	Introduction to Research Methodologies	NMEICT MHRD	2012-13
2	Workshop	2 Days ISTE Workshop on Aakash for Education	NMEICT MHRD	2012-13
3	Workshop	2-Day ISTE Workshop On Research Methods In Educational Technology	NMEICT MHRD	2012-13
4	Workshop	4-Day Aakash Android Application Programming Workshop for Students	NMEICT MHRD	2012-13
5	Workshop	Two-Week ISTE workshop on "Database Management Systems"	NMEICT MHRD	2012-13
6	Workshop	Two-Week ISTE workshop on 'Analog Electronics' conducted by IIT-Kharagpur	NMEICT MHRD	2012-13
7	Workshop	Two week ISTE workshop on Signal and Systems conducted by IIT-Kharagpur	NMEICT MHRD	2013-14
8	Workshop	Two week ISTE workshop on Computer Programming	NMEICT MHRD	2013-14
9	Workshop	Two week ISTE workshop on Computer Programming	NMEICT MHRD	2013-14

10	Workshop	Research in Electromagnetics and Antenna	Self Funded	2013-14	Internationa l
11	Workshop	DBMS workshop	Self Funded	2013-14	
12	Workshop	Leadership quality enhancement	Self Funded	2013-14	
13	Workshop	Analog Electronics workshop	Self Funded	2013-14	
14	Workshop	CCNA CISCO training	Self Funded	2013-14	
15	FDP	Positive Attitude	Self Funded	2013-14	
16	FDP	Effective use of visualization in classroom	Self Funded	2013-14	
17	FDP	Android for education	Self Funded	2013-14	
18	FDP	SAR writing	Self Funded	2013-14	
19	FDP	Departmental FDP	Self Funded	2013-14	
20	Workshop	Two week ISTE workshop on Cyber Security	NMEICT MHRD	2014-15	
21	Workshop	Two day ISTE-CSI e-Seminar on Steps 2 Research	NMEICT MHRD	2014-15	
22	Workshop	Two week ISTE workshop on Control Systems	NMEICT MHRD	2014-15	
23	Workshop	Two week ISTE workshop on Pedagogy for Effective use of ICT in Engineering Education	NMEICT MHRD	2014-15	
24	Workshop	Two week ISTE workshop on Introduction to Design of Algorithms	NMEICT MHRD	2014-15	
25	Workshop	Two week ISTE workshop on Environmental Studies	NMEICT MHRD	2014-15	
26	Workshop	IOT -workshop	Texas Instruments	2014-15	
27	Workshop	Workshop on texas instruments	Texas Instruments	2014-15	
28	STTP	Embedded Systems & Microcontrollers	Self Funded	2014-15	
29	STTP	Recents trends in WSN & Simulation	Self Funded	2014-15	
30	STTP	Enhancing Educational Productivity	Self Funded	2014-15	
31	STTP	Academic excellence in campus of 21st	Self Funded	2014-15	
32	STTP	IOT - recent trends and multi-disciplinary Applications	Self Funded	2014-15	
33	Workshop	Two-Week ISTE STTP on Technical Communication	ICT MHRD	2015-16	
34	Workshop	Two-Week ISTE STTP on Engineering Physics	ICT MHRD	2015-16	

Sr. No.	Event	Title	Sourceof Funding	Year
1	Conference	International conference and workshop on Electronics and Telecommunication Engineering *ICWET* - 2013	Self Funded	2012-13
2	Conference	International conference and workshop on Electronics and Telecommunication Engineering *ICWET* - 2014	Self Funded	2013-14
3	Conference	International conference and workshop on Electronics and Telecommunication Engineering *ICWET* - 2015	Self Funded	2014-15
4	Conference	International conference and workshop on Electronics and Telecommunication Engineering *ICWET* - 2016	IET	2015-16
5	Conference	International conference and workshop on Electronics and Telecommunication Engineering *ICWET* - 2017	IET	2015-16

26.   Student profile programme/course wise:

Name of the Course/program me (refer question no. 4)	Academic Year	DSE		Selected	Students from First Year	Total	Enrolled		Pass Percentage
		Applications received					*M	*F	
		Minority	Open						
UG	2012-13	45	03	26	129	155	124	31	97.93%
	2013-14	64	04	24	129	153	125	28	Awaited
	2014-15	77	06	34	125	159	130	29	Currently in Fourth Year
	2015-16	79	0	34	117	151	120	31	Currently in Third Year
	2016-17	14	60	#34	122	156	108	48	Currently in Second Year

Note:- 1)#   Lateral Entry Seats + Vacant Seats + 51% Minority quota filled up through CAP (Centralised Admission Process) conducted by DTE(Mh.) (Directorate of Technical Education)
*M = Male   *F = Female

27.   Diversity of Students

Name of the Course	% of students from the same state		% of students from other States		% of students from abroad	
	Students from First Year 15-16	DSE-2016	Students from First Year 15-16	DSE-2016	Students from First Year 15-16	DSE-2016
ELECTRONICS & TELECOMMUNICATION ENGG.	93%	0	7%	0	0	0

28.   How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defence services, etc.?

Examination	2015-16	2014-15	2013-14	2012-13
GATE	7	5	6	2
Civil services	Nil	Nil	Nil	Nil
Defence services	Nil	Nil	Nil	Nil
Others (GRE, TOEFL etc.)	29 (GRE:15, TOEFL:11, IELTS:1, CET:2)	28	24	16

29.   Student progression

Student progression	Against % enrolled			
	2015-16	2014-15	2013-14	2012-13
UG to PG	0	22.92%	20.83%	12.5%
PG to M.Phil.	0	0	0	0
PG to Ph.D.	0	0	0	5.56%
Ph.D. to Post-Doctoral	0	0	0	0
Employed - Campus selection	0	62.5%	49.31%	56.25%
Employed - Other than campus recruitment	0	6.94%	9.03%	0%
Entrepreneurship / Self-employment	0%	0%	0.69%	0%

30.   Details of Infrastructural facilities

a. Library: -

Sr. No.	Items	Qty.
1	Books	630
2	Magazines	-
3	NPTEL Videos	74
4	DVDs / CDs	-
5	Project Reports	514

b. Internet facilities for Staff & Students: - All the laboratories have computers (Total 194 Nos.) with internet connection having speed of 52 Mbps broadband leased line. Staff room is provided with internet facility via individual LAN connection in each cubical.

c. Class rooms with ICT facility: - Six spacious classrooms are well equipped with internet facility, White screen and LCD projector.

d. Laboratories: - Seventeen well equipped laboratories having C2D (101) & i5 (93) computers. All computers in labs have internet connections via LAN having speed of 52 Mbps broadband leased line.

31.   Number of students receiving financial assistance from college, university, government or other agencies

Agency	Number of students receiving financial assistance			
	2015-16	2014-15	2013-14	2012-13
College	0	0	0	0
University	0	0	0	0
Government Agencies	33+(3 in process)	33	31	23
Other Agencies	8	5	14	17

32.   Details on student enrichment programmes (special lectures / workshops / seminar) with external experts

Sr.No.	Student Enrichment Programmes	2015-16	2014-15	2013-14	2012-13
1	Bridge Course	3	2	0	0
2	Guest Lectures by Industry persons	5	10	3	1
3	Workshops / Training programmes	2	2	4	3

33.   Teaching methods adopted to improve student learning: -

• Students are prepared to take up challenges in their professional life using various teaching methods. In regular teaching methods faculty adopt teaching tools like power point presentations, videos, animations, simulations to explain concepts. This improves conceptual understanding and motivates students for deep learning. Faculty members plan lessons as per syllabus, timetable and academic calendar one month before commencement of semester. Regular conduction of lectures and practical is ensured through work reports.

• Student validation is carried out to identify low achievers and slow learners. Remedial assignments are conducted for low achievers and slow learners to improve their understandings.

Extra lecture are conducted for late admitted diploma students to ensure completion of syllabus. Mini projects are conducted using project based learning method to improve practical skills and problem solving skills. Guided minor and major projects are conducted to enhance open problem design skills. Expert speakers from industry or academic institutes are invited to conduct special guest lecture to expose students to latest technology. Domain based bridges courses are conducted to upgrade students with latest technological development in the field, to bridge gap between curriculum and industrial requirements.

- To enhance teaching competencies, a faculty induction program, FDP (Faculty development programme) for various courses are conducted at department level. Course modules are presentations, assignments and question banks are ready right at the beginning of the semester. This activity helps the faculty members of the same subject to maintain quality and uniformity across divisions.

34.   Participation in Institutional Social Responsibility (ISR) and Extension activities: -

- The staff and students of the department take part in various social activities.
- Under NSS, activities like organizing and attending Blood donation camp, Swachh Bharat Abhiyaan, tree plantation, rural development activities in Saivan village (Virar).
- Organized technical workshop (Techworld) by Dr.Lochan Jolly &Ms.AnvitaBirje for various English medium and Marathi medium school teachers and students to create an excitement in young minds and develop their interest in Engineering and technology.
- In this workshop teachers/students had hands on experience with setups of small experiments using electronic components and experience output.
- TCET provided electronic laboratory set up to various schools in free of cost which included with 11 experimental kits, a manual to guide or a demo CD
- TCET Students participate in many extension activities they had visited Alibag (Raigad) BMC school conducted workshop on Technical (Techworld), technical teaching, Rover making, technical quiz, fitness camp like exercise and yoga ,competition on poster making & coloring.
- TCET arranged school students visit in campus on technical fest Zhyphr.

35.   SWOC analysis of the department and Future plans: -

Strengths:
- Re-accredited by NBA w.e.f. 01-07-2016 for a period of three years
- ISO 9001:2008 certified
- Permanent affiliation to University of Mumbai
- PhD Research Centre of University of Mumbai
- Minor Research Grants received from University of Mumbai
- Research grants received from Department of Science & Technology (DST), Govt. of India
- Qualified and experienced faculty
- 4 Faculty members with PhD and 6 are pursuing their PhD
- Dedicated and motivated faculty
- Remote Centre of IIT, Bombay since May 2012 (21 STTPs conducted which are funded by National Mission on Education through ICT MHRD; Government of India)
- Better results than that of the affiliating university
- Good placements
- Strong Industry Collaboration (Cisco, Texas Instruments)
- Active Student Chapter of Professional Body (IEEE)
- Good number of faculty publications
- Alumni involvement in academic and placement activities
- Stakeholder (Alumni, Parents & Industry Experts) involvement in Department Advisory Body

Weakness:
- Few Consultancy Projects (No income)

- Few Intellectual Property Rights (IPRs)
- Placement of students in Core industry is very less

Opportunity:
- Become Centre of Excellence in UG, PG, PhD
- Improve Faculty and student publications
- Improving research culture in the department
- Increase alumni involvement in academic and placement activities

Challenges:
- Attracting good quality intake
- Attracting consultancy projects

Future Plans:
- To obtain research funds from funding agencies like AICTE, RGSTC, and other funding schemes
- To develop faculty expertise in the identified thrust areas in a focused way and to become a centre of excellence in at least two out of the five identified domains for attracting consultancy
- To be counted amongst the top five colleges in the state and become the preferred choice of department among students aiming to take admission in Electronics & Telecommunication Engineering.

Evaluative Report: Department of Computer Engineering

1. Name of the department: - Department of Computer Engineering

2. Year of Establishment: - 2002

3. Names of Programmes / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.)

    a) UG   : Bachelor of Engineering (Computer Engineering)
    b) PG   : Master of Engineering (Computer Engineering)

4. Names of Interdisciplinary courses and the departments/units involved: -

Sr. No.	Names of Interdisciplinary course	Year / Semester	From Department
1	Applied Mathematics-III	2nd Year, SemIII	Humanities and Sciences
2	Applied Mathematics-IV	2nd Year, Sem IV	Humanities and Sciences
3	Business Communication and Ethics	3rd Year, Sem V	Humanities and Sciences

5. Annual/ semester/choice based credit system (programme wise)

Sr. No.	Programme Name	System Pattern
1	UG programme	Semester - Pattern (Credit based Grading System implemented for FE from 2012)
2	PG programme	Semester - Pattern (Choice based Credit Grading system from 2016)

6. Participation of the department in the courses offered by other departments:

Sr. No.	Course	Year / Semester	Department
1	Structured Programming Approach	1st Year / Sem II	Humanities and Sciences
2	Database and Information Retrieval System	2nd Year / Sem III	Mechanical and Civil Department

7. Courses in collaboration with other universities, industries, foreign institutions, etc.

Sr. No.	Course Name	Collaborating Organization	Duration
1	Infosys Campus Connect	Infosys Systems Pvt. Ltd.	22 Days
2	ZenSar ESD	ZenSarPvt Ltd	19-29 Days

8. Details of courses/programmes discontinued (if any) with reasons: - NA

9. Number of Teaching posts

	Sanctioned	Filled
Professors	3	1
Associate Professors	6	3
Assistant Professors	17	18

10. Faculty profile with name, qualification, designation, specialization, (D.Sc./D.Litt./Ph.D./M. Phil. etc.) (Refer Sample Form)

Sr. No.	Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. Students guided for the last 4 years
1	Dr. Raghavendra R. Sedamkar	Ph.D.	Professor	Networking & Data Compression	23	03
2	Dr. Sheetal Rathi	Ph.D.	Associate Professor	Data Mining, Computer Graphics	14	NA
3	Ms. Shiwani Gupta	M. Tech (CSE)	Incumbent Associate professor	Biometrics, Signature Recognition, Artificial Intelligence	13	NA
4	Dr. Rekha Sharma	Ph.D.	Associate Professor	Software Localization, Computer Graphics, Web Mining, Database	21	NA
5	Mr. Kiran A. Bhandari	M.E.(ECT) Ph.D. (pursuing)	Associate Professor	Image Processing, Computer Vision Multimedia Signal Processing	17	NA
6	Mrs. Harshali Patil	M.E.(CSE) Ph.D. (pursuing)	Assistant Professor	Networking & Data Mining	14	NA
7	Mrs. Megharani Patil	M.Tech.(CST) Ph.D. pursuing)	Assistant Professor	Programming, Mobile Computing, Data Mining	13	NA
8	Mr. Anand Khandare	M.E.(CE) Ph.D. (pursuing)	Assistant Professor	Computer programming, Database, Mobile Computing, Data Mining and OOPM	11	NA
9	Mrs. Rashmi Thakur	M.Tech. (CE) Ph.D. (pursuing	Assistant Professor	Data Mining, Computer Network, System Security	16.5	NA
10	Mrs. Vaishali Nirgude	M.E.(CE)	Assistant Professor	Microprocessors, System Software, Embedded systems, Web Mining	12	NA
11	Mrs. Vidyadhari R. Singh	M.Tech.(CE) Ph.D. (pursuing)	Assistant Professor	System & Networks Security Distributed Systems	08	NA
12	Ms. Prachi Janrao	M.E.(CS) Ph.D. (pursuing)	Assistant Professor	Data Structure, Application Development, Data Mining	13	NA
13	Mr. Vikas Singh	M.E.(CE)	Assistant Professor	Robotics	9	NA

Sr. No.	Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. Students guided for the last 4 years
14	Mrs. Lydia Suganya	M.E.(CSE)	Assistant Professor	Computer Networks, Web Technology, Operating Systems	7	NA
15	Mr. Manish Rana	M.E.(CE)	Assistant Professor	Artificial Intelligence	14	NA
16	Mrs. Veena Kulkarni	M.E.(CE)	Assistant Professor	Software Engineering, Database, Data Mining, E-Commerce, Storage Area Network	16	NA
17	Mrs. Ruta Pathak	M.Tech.(CS)	Assistant Professor	Computer Networks, Distributed Systems	7	NA
18	Ms. Harshala Yadav	M.E.(CE)	Assistant Professor	Networking, Data Mining	7	NA
19	Mrs .Jesalkumari Varolia	M.Tech.(CS)	Assistant Professor	Visual Cryptography	6	NA
20	Mr. Shailesh Sangle	M.E.(CE)	Assistant Professor	Image Processing, Computer Graphics	8	NA
21	Mr. Rajesh Singh	M. Tech.(CE)	Assistant Professor	Mobile Adhoc Network(MANET), DBMS	25	NA
22	Mr. Harne Nitin	M. Tech.(CE)	Assistant Professor	Programming, Data Structures, Operating System	8	NA
23	Ms. Ashwini Patil	M.E.(CSE)	Assistant Professor	Data Mining, System Design and Development	7	NA
24	Ms. Radhika Desai	M.E.(CE)	Assistant Professor	Database Management System, Computer security	2	NA
25	Ms. Sonam Soni	M.E.(CE)	Assistant Professor	Multimedia and Computer Graphics	0.8	NA
26	Ms. Deepali Joshi	M.E.(CE)	Assistant Professor	Data Mining	4	NA
27	Mr. Arul Shalom	B.E (CE) M.E.(CE) Pursuing	Lecturer	Data Mining	0.8	NA
28	Mr. Yash Shah	B.E (CE) M.E.(CE) Pursuing	Lecturer	Network and Security	0.2	NA

11. List of senior visiting faculty: NIL

12. Percentage of lectures delivered and practical classes handled (programme wise) by temporary faculty:

Programme	Percentage of lectures delivered	Percentage of practical classes handled
UG	24%	34%

13. Student -Teacher Ratio (programme wise)

Sr. No.	Programme	Student -Teacher Ratio
1	UG	15:1
2	PG	6:1

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled

	Sanctioned	Filled
Technical staff	7	7
Administrative staff	-	-

15. Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ MPhil / PG.

    a. Ph.D.: - 03
    b. PG: - 23

16. Number of faculty with ongoing projects from a) National b) International funding agencies and grants received

Sr. No.	Level	Number of faculty with ongoing projects	Grants received
a	National	NIL	NIL
b	International	NIL	NIL

17. Departmental projects funded by DST – FIST, UGC, DBT, ICSSR, etc. and total grants received

Sr. No.	Project Title	Sponsoring Agency	Grant Received
1	Smart weighing machine	DST-FIST	100000/-
		Total Grants in Rs.	100000/-

18. Research Centre /facility recognized by the University: - NIL(Applied, in process)

19. Publications:

    *   Publication per faculty:

Name of the faculty	Number of papers published in Peer Reviewed Journal(National / International)	Number of publications listed in international database	Monographs/ Chapters in books/ Books Edited	Books with ISBN/ISSN Numbers with details of publishers	Citation Index	SNIP/SJR	Impact Factor	h-Index
Dr. Raghavendra R. Sedamkar	28	24	-	-	38	-	5	3
Dr. Sheetal Rathi	12	12	-	-	8	-	6.32	2
Ms. Shiwani Gupta	14	9	-	-	14	-	-	2
Dr. Rekha Sharma	26	12	1	-	-	-	-	-
Mr. Kiran A. Bhandari	7	6	-	1	10	-	3.5	2
Mrs. Harshali Patil	10	10	-	-	-	-	-	-
Mrs. Megharani Patil	7	7	-	-	-	-	3.7	-
Mr. Anand Khandare	6	6	-	-	3	-	3	3
Mrs. Rashmi Thakur	10	10	-	-	SJR-0.526 SNIP-1.46	-	6.57	-
Mrs. Vaishali Nirgude	5	5	-	-	-	-	-	-
Mrs. Vidyadhari R. Singh	5	5	-	-	-	-	3.7	-
Ms. Prachi Janrao	4	4	-	-	19	-	2.35	2
Mr. Vikas Singh	3	3	-	-	-	-	4.29	1
Mr. Manish Rana	9	7	-	-	-	-	3	2
Mrs. Lydia Suganya	-	-	-	-	-	-	-	-
Mrs. Veena Kulkarni	11	10	-	-	-	-	3.0	-
Mrs. Ruta Pathak	2	3	-	-	-	-	-	-
Ms. Harshala Yadav	1	-	-	-	-	-	-	-
Mr. Rajesh Singh	14	14	-	-		-		-
Mrs. Jesal Joshi	1	1	-	-	-	-	3.0	-
Mr. Shailesh Sangle	4	4	-	-	-	-	4.6	2
Mr. Nitin Harane	2	2	-	-	-	-	3.0	-
Mrs. Ashwini Patil	3	4	-	-	-	-	-	-
MS. Radhika Desai	4	4	-	-	-	-	-	-
Ms. Deepali Joshi	3	3	-	-	-	-	-	-
Ms. Sonam Soni	2	0	-	-	-	-	-	-
Mr. Arul Shalom A	1	1	-	-	-	-	-	-
Mr. Yash Shah	4	4	-	-	-	-	-	-

    *   Books Publication: NIL

20. Areas of consultancy and income generated: -

Sr. No.	Areas of consultancy	Income Generated
01	Software Development	60,000/-
02	Training Consultancy	42,000/-

21.　Faculty as members in a) National committees, b) International Committees, c) Editorial Board

Sr. No.	Name of Faculty	Committee	Type
01	Dr. R. R. Sedamkar/Mr. Vikas Singh	Book Publication	University Level
02	Mr. Anand Khandare/Mr.Megharani patil	Book Publication	University Level
03	Dr. Sheetal rathi / Dr. Rekha Sharma	RBNQ Examiners	International Committees
04	Dr. R. R. Sedamkar/Dr. Sheetal rathi/ Dr. Rekha Sharma/ Mrs. Shiwani Gupta	Syllabus Setting	University Level

22.　Student Projects

　　a.　Percentage of students who have done in-house projects including inter departmental / programme

Programme	2015-16	2014-15	2013-14	2012-13
UG	98.92%	83.33%	93.33%	95.55%
PG	94.5%	100%	100%	94.5%

　　b.　Percentage of students placed for projects in organizations outside the institution i.e. in Research laboratories / Industry / other agencies

Programme	2015-16	2014-15	2013-14	2012-13
UG	1.08%	16.67%	6.67%	4.45%
PG	5.5%	0%	0%	5.5%

23.　Awards / Recognitions received by faculty and students:

　　a.　Awards / Recognitions received by faculty:

Sr. No.	NameofFaculty	Achievements/ Award/ Recognitions	Awarding Agency	Year
1	JesalVarolia	Nominated for award Best Techno Faculty	ICT Tamilnadu	2015-16

　　b.　Awards / Recognitions received by students:

Sr. No.	Student Count	Year
1	10	2014-15
2	12	2015-16
3	19	2016-17

24.　List of eminent academicians and scientists / visitors to the department

Sr. No.	Name of academicians and scientists / visitors	Designation, Organization
1	Dr. AmeyaTripathi	Dean R&D, DBIT
2	Mr. VivekBharatiya	TCS, Principal Consultant and Enterprise Architect
3	Dr. S. N Merchant	Professor, IIT
4	Dr. Sunil Gupta	Director, Technosoft
5	Mr. OmkarPhatak	Project Manager, Eclerx

25. Seminars / Conferences / Workshops organized & the source of funding
     a. National (2012-13 to 2015-16)

Sr. No.	Event	Title	Source of Funding	Year
1	National Seminar	Academic excellence and opportunities	AICTE	2013-14
2	ISTE approved STTP	Data mining and Analytics	Self	2014-15
3	ISTE approved STTP	Multimedia System	Self	2015-16
4	International Conference	International Conference on Communication Computing & Virtualization	Institute	2016-17

26. Student profile programme/course wise:

Name of the Course/programme (refer question no. 4)	Academic Year	DSE			Students from First Year	TOTAL	Enrolled		Pass Percentage
		Applications received		Selected			*M	*F	
		Minority	Open						
UG	2012-13	65	03	27	130	157	107	50	95.57%
	2013-14	95	06	25	134	159	111	48	Awaited
	2014-15	95	05	24	131	155	111	44	Currently in Fourth Year
	2015-16	107	0	24	125	149	118	31	Currently in Third Year
	2016-17	14	60	#24	134	158	115	43	Currently in Second Year

*M = Male   *F = Female

Note:- 1)#   Lateral Entry Seats + Vacant Seats + 51% Minority quota filled up through CAP (Centralised Admission Process) conducted by DTE(Mh.) (Directorate of Technical Education)

27. Diversity of Students:

Name of the Course	% of students from the same state		% of students from other States		% of students from abroad	
	Students from First Year 15-16	DSE- 2016	Students from First Year 15-16	DSE-2016	Students from First Year 15-16	DSE-2016
COMPUTER ENGG.	98%	0	2%	0	0	0

28. How many students have cleared national and state competitive examinations such as NET, SET, GATE, Civil services, Defense Services, etc.?

Examination	2014-15	2013-14	2012-13	2011-12
GATE	--	--	--	--
Defence services	--	--	--	-
Others (GRE, TOEFL etc.)	30	32	18	02

29.   Student progression

Student progression	Against % enrolled			
	2015-16	2014-15	2013-14	2012-13
UG to PG	0%	1.8%	5.6%	16.9%
PG to M.Phil.	0	0	0	0
PG to Ph.D.	0	0	0	0
Ph.D. to Post-Doctoral	0	0	0	0
Employed - Campus selection	75.96%	77.86%	73.84%	65.24%
Employed - Other than campus recruitment	0%	0.6%	0%	5.77%
Entrepreneurship / Self-employment	3.44%	3.44%	0%	0%

30.   Details of Infrastructural facilities

a.   Departmental Library: The department has a separate library with a seating capacity of 10 students. Students can read books and magazines available in this library.   Details are as follows:

Sr. No.	Items	Qty.
1	Books	289
2	Magazines	36
3	NPTEL Videos	48
4	DVDs / CDs	3

a.   Internet facilities for Staff & Students: - An internet lab is provided for students having internet speed of 52 Mbps broadband leased line. All the laboratories also have computers with internet connections. All staff cabins are provided with internet facility. Wi-Fi facility is also available in board room & seminar hall 3.

b.   Class rooms with ICT facility: - Eight spacious classrooms are well equipped with computer, internet facility, screen and LCD projector out of which one classroom has video conferencing facility in seminar hall.

c.   Laboratories: - Seven well equipped Computer Labs having i5/ i3 machines and laser printers & dot matrix printer. All computers in labs have internet connections via LAN.

31.   Number of students receiving financial assistance from college, university, government or other agencies

Agency	Number of students receiving financial assistance			
	2015-16	2014-15	2013-14	2012-13
College	0	0	0	0
University	0	0	0	0
Government Agencies	31(1 in process)	29	30	32
Other Agencies	11	15	5	5

32.   Details on student enrichment programmes (special lectures / workshops / seminar) with external experts

Count of Enrichment Programs Organized for Students	2015-16	2014-15	2013-14	2012-13	2011-12
Guest Lectures by Industry persons	6	6	6	6	6
Workshops/Training programs	2	3	2	3	

33. Teaching methods adopted to improve student learning: -
   - Department has initiated collaborative learning among peer faculty teaching lab subjects in CBGS. The senior faculty members guide the other faculty members of the subject in understanding the fundamentals.
   - Resource Bookon each module alongwith subjective, objective and university question solution are ready right at the beginning of the semester. These include GATE questions. This activity helps the faculty members of the same subject to maintain quality and uniformity across divisions.
   - To enhance teaching competencies, a Domain wise STTP is inducted during each semester break. The sessions are delivered by in house as well as external experts in the area.
   - Various Modes of Delivery as Power point presentations, case studies, group discussions, online tests, quizzes etc. liberally used in classroom teaching to deepen learning in classroom.
   - Online self-learning platforms have been introduced to students to fruitfully engage them.
   - To inculcate project based learning, Mini and Minor projects have been introduced in second and third year respectively to facilitate deeper understanding of the subject.
   - Practice sessions are arranged for slow learners.
   - Guidance and motivation provided to prospective topper students.
   - Expert speakers from industry or academic institutes are invited to conduct technical seminars/ workshops.
   - Students are motivated towards internship programs.
   - The department organizes annual conference to encourage faculty and students towards research.
   - Assignment and term test questions are mapped to learning levels of bloom's taxonomy.
   - Feedback is a key tool which is used for continuous improvement in the quality of teaching-learning process.

34. Participation in Institutional Social Responsibility (ISR) and Extension activities: -
   The staff and students of the department take part in various social activities.
   - Under NSS, activities like organizing and attending Blood donation camp, Swachh Bharat Abhiyaan, tree plantation, etc.
   - Under TCET-Extension Work, book donation activities etc are conducted.
   - BE students have developed social projects like license plate recognition, automatic garbage collector, automatic car parking, automatic fire sensing and extinguishing, remote home automation, smart weighing machine, obstacle detecting walking cane for visually impaired, etc.
   - Students participate in events under various cells or clubs or professional body chapters like Entrepreneurship Development Cell (EDC), Computer Society of India (CSI), FOSS, TCET Code Cyphers, etc.
   - Machine Learning using R Framework Course by a faculty for all branches all students.

35. SWOC analysis of the department and Future plans: -

   Strengths:
   - Accredited by NBA from Jul 2016- Jun 2019 and ISO 9001:2008 certified
   - PG Qualified and dedicated faculty
   - Better results than that of the overall affiliating university
   - Good placements and placement packages. Placement opportunities are open for a certain time period to unplaced students
   - Rigorous pre-placement training and student development programmes for students.
   - Strong Industry Collaboration (TIFR, Microsoft Technologies, Infosys, IBM Systems)
   - Good number of faculty publications
   - **Strong Mentoring Scheme:** As the students make a transition from FE to their branch, they require constant mentoring in terms of academics, personality building, skill building, future guidance etc. Highly committed mentors are readily available to counsel the students and

records show measurable improvement through counselling. If required counselling can reach to the level of Mentor Dean or even by a professional counsellor.

- **Unity:** The faculty and staff work in a cohesive manner to achieve the common goal of the department.
- **Strong Academic Monitoring:** A self-driven team of Course Coordinators, Programme Coordinators, Deputy HOD and HOD coordinate in fruitfully engaging students.
- **Stakeholder Involvement:** The department has a Department Advisory Committee (DAC), Faculty Advisory Committee (FAC) and Student Advisory Committee (SAC) which provides inputs that help in aligning academic activities with the requirement of the industry. The department also holds meeting with parents twice in a semester.
- **Learning beyond curriculum:** The department has initiated various modes of learning through bridge courses, technical seminars, online learning platforms, research paper writing, various activities under professional body etc.
- **Professional Development:** Activities towards skill and attitude building of graduates
- **Promotion for Higher Studies:** In coordination with IMS, students are prepared for GRE and they can also avail concession in exam fee. GATE qualified faculty train students for GATE exam. Seminar are conducted on Opportunities for higher studies abroad in consultation with Mission Career. Seminar on ILETS exam is planned.
- **Value Education Courses:** Students from diverse background lack in value education and professional ethics. Hence such bridge courses are conducted.

Weakness:
- Few Consultancy Projects
- Few Ph.D. qualified faculty
- No IPRs

Opportunity:
- Become Centre of Excellence in UG, PG
- Improving research culture in the department
- Increase alumni involvement in academic and placement activities

Challenges:
- Attracting good quality intake
- Attracting consultancy projects
- The faculty faces the challenge of updating their knowledge to keep pace with the sharp young minds.
- Students come from diverse academic, social and regional backgrounds. Bridging the
- Academic gap and bringing them on a common platform is a challenge.
- Content and technology in Computer Engineering are available online. Hence it is a challenge to bring students to class for learning.
- Strengthening research activities is challenging because of time constraint.
- Funded project and publication
- Placement opportunity for non-eligible students.

Future Plans:
- To establish a Ph.D. Research Centre in the department.
- To obtain research funds from funding agencies like AICTE, DST and other funding schemes
- To develop faculty expertise in the identified thrust areas in a focused way and to become a centre of excellence for attracting consultancy
- To be counted amongst the top five colleges in the city and become the preferred choice of department among students aiming to take admission in Computer Engineering.
- Collaboration with international universities.
- To have faculty participation in industrial training

Evaluative Report: Department of Information Technology

1. Name of the department: - Department of Information Technology

2. Year of Establishment: - 2002

3. Names of Programmes / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.)

    a. UG: - B.E. - Information Technology
    b. PG: - M.E. - Information Technology

4. Names of Interdisciplinary courses and the departments/units involved: -

Sr. No.	Names of Interdisciplinary course	Year / Semester	From Department
1	Applied mathematics-III,IV	2nd Year, Sem-III &IV	H&S
2	Business Communication & Ethics	3rd Year, Sem V	H&S

5. Annual/ semester/choice based credit system (programme wise)

    a. UG: - Semester Pattern
    b. PG: - Semester Pattern

6. Participation of the department in the courses offered by other departments:

Sr. No.	Course	Year / Semester	Department
1	Structured Programming Approach	1st Year, Sem-II	HNS
2	Object Oriented Programming & Methodology	2nd Year, Sem III	ETRX

7. Courses in collaboration with other universities, industries, foreign institutions, etc.

Sr. No.	Course Name	Collaborating Organization	Duration
1	Infosys Campus Connect	Infosys Systems Pvt. Ltd.	90 Days
2	ZESD	Zensar	60 Days
3	Accenture Head Start Foundation Programme	Accenture	30 Days

8. Details of courses/programmes discontinued (if any) with reasons: - NA

9. Number of Teaching posts

Post	Sanctioned		Filled	
	UG	PG	UG	PG
Professors	02	01	02	Nil
Associate Professors	06	01	03+1@	Nil
Assistant Professors	16	01	15+3*	Nil

@ incumbent AP,*FE Load

10. Faculty profile with name, qualification, designation, specialization, (D.Sc./D.Litt./Ph.D./M. Phil. etc.)

Sr. No.	Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. Students guided for the last 4 years
1	Dr. Kamal Shah	Ph.D.(ENGINEERING), ME (EXTC), BE (ELEC)	Professor, Dean R & D	Image & Video Processing	17	--
2	Dr. Deven Shah	Ph.D.(ENGINEERING), ME (IT), BE EXTC	Professor	Image Processing,Network Security ,E-Business	22	4
3	Dr. Rajesh Bansode	Ph.D.(ENGINEERING), M.Tech, BE (E.C.E)	Associate Professor	Communication Networking,Design Of Algorithms For Mimo – Ofdm Detection System ,Quality Of Service Parameters Measurement.	16	--
4	Mr. Vikas Kaul	Ph.D.(Pursuing), ME (CMPN), BE (ETRX)	Deputy HOD-IT ,Assistant Professor	Computer Networking ,Information Security Communication	17	--
5	Mr. Zahir Aalam M.M.	Ph.D.(Pursuing), M.Tech, (EXTC), BE (EXTC)	T & P Officer, Associate Professor	Embedded Sysytems,Wireless Networks,Sensor Networks	17	--
6	Dr. Bijith Marakarkandy	Ph.D.(Management), M.Tech, (IT),B.E.(Instru.)	M.E. Coordinator , Associate Professor	Signal &Image Processing E-Business &E-Commerce,Business Management	22	--
7	Mr. Namdeo B. Badhe	M.E.(CMPN), B.E.(CSE)	Assistant Professor	Data Structures & Algorithms,Database Management,Datawareh ouse &Data Mining	13	--
8	Mrs. Vandana Munde	M.E.(CMPN), B.E.(COMP.TECH.)	Department Coordinator (1), Assistant Professor	Datawarehouse & Business Intelligence,Object Oriented Analysis And Design	16	--
9	Mrs. Pranjali Kasture	M.E.(CMPN), B.E.(CSE)	Department Coordinator (2), Assistant Professor	Data Mining E-Commerce	14	--
10	Ms. Sangeeta Vhatkar	Ph.D.Pursuing., M.Tech, (CSE), BE (IT)	Assistant Professor	Operating System Distributed Operating System Microprocessor Wireless Web Programming Software Enginering Advanced Database System	15	--
11	Mr. Anil K. Vasoya	Ph.D.(Pursuing), M.E.(CMPN), B.E.(IT)	HOC Incharge, Assistant Professor	Database Management System Microprocessor &Microcontroller Software Engineering Data Mining	12	--

Sr. No.	Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. Students guided for the last 4 years
12	Mr. Bhushan Nemade	M.E.(CMPN), B.E.(I.T)	Assistant Professor	Operating System Data Structures And Algorithms	13	--
13	Mr. Vijaykumar Yele	M.E.(EXTC), B.E. (EXTC)	Examination Coordinator, Assistant Professor	Logic Circuit Design & Analogue Communication Analogue & Digital Circuit Design Computer Networks Image Processing	15	--
14	Mr. Aaditya A. Desai	Ph.D. (Pursuing), M.E.(I.T), B.E.(I.T), MBA (I.T)	Assistant Professor	Software Testing Knowledge Management Android Application	7	--
15	Mrs. Hetal Amrutia	M.E.(CMPN), B.E.(CMPN)	Assistant Professor	Data Mining Web Mining Software Engineering	11	--
16	Mrs. Purvi Sankhe	M.E.(CMPN), B.E.(CMPN)	Assistant Professor	Programming Computer Graphics	12	--
17	Ms. Neha Kapadia	M.E.(CMPN), B.E.(I.T)	Assistant Professor	Data Mining Database Management System Software Engineering	10	--
18	Mr. Rahul Neve	M.E.(CSE), B.E.(IT)	Assistant Professor	Database Management System Software Engineering Operating System	11	--
19	Mr. Shridhar Kamble	M.E.(I.T), B.E.(CMPN)	Assistant Professor	Database Management System Internet Programming Web Programming Computer Graphics & Virtual Reality	6	--
20	Mrs. Mary Margarat V	M.E.(CMPN), B.Tech.(CSE)	Assistant Professor	Data Structures Programming Web Mining	9	--
21	Mr. Sudhir Dhekane	M.E.(CMPN), B.E.(CMPN)	Assistant Professor	Data Structures Programming	9	--
22	Mrs. Neha Patwari	M.Tech.(CMPN), B.E.(CMPN)	Assistant Professor	Intelligence System Software Engineering	8	--
23	Mr.Sandip Bankar	M.E.(CMPN), B.E.(CMPN)	Assistant Professor	Data Mining Algorithm	8	--
24	Mrs.Shruti Mathur	M.Tech. (CSE), B.E.(CSE)	Assistant Professor	Software Engineering Artificial Intelligence	6	--
25	Ms. Ratna Nayak	M.Tech.(CSE), B.E.(CSE)	Assistant Professor	Big Data Analytics Cloud Computing	7	--
26	Ms.Deepti Chavan	M.E.(CMPN), B.E.(CMPN)	Assistant Professor	Image Processing	3	--
27	Ms.Shital More	M.E.(CMPN), B.E.(CMPN)	Assistant Professor	Data Mining	4.5	--
28	Ms.Swati Abhang	M.E.(CSE), B.E.(IT)	Assistant Professor	Data Mining Image Processing	10	--

11. List of senior visiting faculty:
    a. Nil
    b. Nil

12. Percentage of lectures delivered and practical classes handled (programme wise) by temporary faculty:

Programme	Percentage of lectures delivered	Percentage of practical classes handled
UG	13.04	23.4
PG	-	-

13. Student -Teacher Ratio (programme wise)

Sr. No.	Programme	Student -Teacher Ratio
1	UG	15:1
2	PG	12:1

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled

	Sanctioned	Filled
Academic support staff (technical)	10	10
Administrative staff	Nil	Nil

15. Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ MPhil / PG.
     a. Ph.D.: - 04
     b. PG: - 24

16. Number of faculty with ongoing projects from a) National b) International funding agencies and grants received

Sr. No.	Level	Number of faculty with ongoing projects	Grants received
A	National	06	1,53,000/-
B	International	Nil	Nil

17. Departmental projects funded by DST – FIST, UGC, DBT, ICSSR, etc. and total grants received

Sr. No.	Project Title	Sponsoring Agency	Grant Received
1	Bus Tracking Geographical object tracking system	IEDC	1,00,000/-
2	Low Power smart class room teaching system using Raspberry pi	IEDC	1,00,000/-
		Total Grants in Rs.	2,00,000/-

18. Research Centre /facility recognized by the University

   NIL (Applied, Under Process)

19.   Publications:
  *   Publication per faculty:

Sr. No.	Name of faculty or student	Number of papers published in peer reviewed journals (national / international)	Number of publications listed in International Database	Citation Index	SNIP	SJR	Impact factor	h-index	i10-index
1	Dr. Kamal Shah	20	20	86	0	0	0	4	1
2	Dr.Deven Shah	20	20	98	0	0	0	6	3
3	Dr.Rajesh Bansode	43	43	32	0	0	0	3	1
4	Mr. Vikas Kaul	19	19	27	0	0	0	3	1
5	Mr. Zahir Aalam M.M.	20	20	10	0	0	0	2	0
6	Dr.Bijith Marakarkandy	19	19	29	0	0	0	4	0
7.	Mr.Namdeo B. Badhe	4	4	1	0	0	0	1	0
8	Mrs.Vandana Munde	2	2	3	0	0	0	1	0
9.	Mrs.Pranjali Kasture	3	3	3	0	0	0	1	0
10	Ms.Sangeeta Vhatkar	20	20	27	0	0	0	3	0
11	Mr.AnilK. Vasoya	9	9	2	0	0	0	1	0
12	Mr. Bhushan Nemade	16	16	44	0	0	0	1	1
13	Mr.Vijaykumar Yele	3	3	0	0	0	0	0	0
14	Mr. Aaditya A. Desai	11	11	30	0	0	0	3	2
15	Mrs.Hetal Amrutia	4	4	1	0	0	0	1	0
16	Mrs.Purvi Sankhe	10	10	4	0	0	0	1	0
17	Ms.Neha Kapadia	4	4	0	0	0	0	0	0
18	Mr. Rahul Neve	1	1	4	0	0	0	1	0
19	Mr.Shridhar Kamble	4	4	5	0	0	0	2	0
20	Mrs.Mary Margarat	9	9	6	0	0	0	1	0
21	Mr.Sudhir Dhekane	2	2	0	0	0	0	0	0
22	Mrs.Neha Patwari	2	2	0	0	0	0	0	0
23	Mr.Sandip Bankar	1	1	0	0	0	0	0	0
24	Mrs.Shruti Mathur	3	3	12	0	0	0	2	0
25	Ms. Ratna Nayak	6	6	12	0	0	0	0	0
26	Ms.Deepti Chavan	2	2	0	0	0	0	0	0
27	Ms.Shital More	1	1	0	0	0	0	0	0
28	Ms.Swati Abhang	3	3	7	0	0	0	1	0

*   Books Publication

Sr. No.	Name of faculty	Chapter in Books	Books Edited	Books with ISBN/ISSN numbers with details of publishers
1	Dr.Deven Shah	12	--	1. Co-author: "Cloud Computing Black book", published by Dreamtech 2. Co-author: " open Source and Linux Lab: published by Dreamtech 3. Author : "Complete Guide to Internet and Web Programming", published by Dreamtech and Distributed by Wiley publication. 4. Co-author :" Information Security", Publish and distributed by Wiley Publication 5. Co-author : " Linux Lab" by Wiley Publication 6. Co-author : "Software Engineering", published by Dreamtech 7. Co-author :" Object Oriented Software engineering", published by Dreamtech 8. Co-author : " Security in Computing:; published by Pearson 9. Co-author : "Advanced Computer Networks: Published by Dreamtech 10. Coauthor : " Advanced Computing Technique: Published by Dreamtech 11. Author::"AdvancedInternet Technology" Wiley Publication 12. Co-author: " Cloud Computing" Black Book Series.
2	Dr.Bijith Marakarkandy	1	4	1.Bijith Marakarkandy, Digital Signal Processing,Mumbai,VipulPrakashan,1997 2. Bijith Marakarkandy,Signals and Systems an Introduction, Mumbai, Vipul Prakashan, 2003 3. Bijith Marakarkandy,Image Processing an Introduction, Mumbai,Vipul Prakashan, 2002 4.A Sawant, V.Bharadi, B Marakarkandy Satellite Image Retrieval using MBTC and Kekre Patterns: CBIR on Satellite Image Data, LAMBERT Academic Publishing GmbH & Co. KG, ISBN, 978-3-659-45515-5, 27th August 2013

20.   Areas of consultancy and income generated: -

Sr. No.	Consultancy Name	Initiator of Programme	Income Generated
1	Project on Samay Lab	Dr. Deven Shah	5000/-
2	Google Docs for work (Bhaktivedanta hospital)	Dr. Vinayak Bharadi, Mr. Vikas Kaul	1,79,400
3	TIMSR (Online Examination Software)	Dr. Kamal Shah	10,000/-

21.   Faculty as members in a) National committees, b) International Committees, c) Editorial Board

Sr. No.	Name of Faculty	Committee	Type
1	Dr. Kamal Shah	ISTE	National
		IETE	International
2	Dr Devan Shah	ACM	International
		IEEE	
		Chairman BOS IT, UOM	National
		Advisory-Terna Research Society	
3	Dr. Bijith M.	National Advisory Committee IEEE Branch Counsellor ISTE CSI Association of Computing Machinery	National
		International Association of Engineers International Association of Computer Science and Information Technology	International

22.   Student projects

   a.   Percentage of students who have done in-house projects including inter departmental / programme

Programme	2015-16	2014-15	2013-14	2012-13
UG	100	100	92.15	93.61
PG	88.88	100	88.88	94.44

   b.   Percentage of students placed for projects in organizations outside the institution i.e. in Research laboratories / Industry / other agencies

Programme	2015-16	2014-15	2013-14	2012-13
UG	00	00	5.8	6.3
PG	11.11	00	11.11	5.55

23.   Awards / Recognitions received by faculty and students:

   a.   Awards / Recognitions received by faculty:

Sr. No.	Nameof Faculty	Achievements/ Award / Recognitions	Awarding Agency	Year
1	Dr. Kamal Shah	Excellent Examiner	IMC	2016-17
		IEDC grant for project	IEDC	2016-16
2	Mr Zahir Alam	The literary work titled "Technical and Programming Skills" which was published in April 2011 got the Copyright in January	TCET	2014

Sr. No.	Name of Faculty	Achievements/ Award / Recognitions	Awarding Agency	Year
		2014 as per the Copyright Act, 19		
2	Dr. Bijith M.	Research Grant	Mumbai University	2012-13, 2016-17
3	Ms. Sangeeta Vhatkar	Silver	Infosys Campus Connect	2014-15 2015-16
4	Mr. Aaditya Ajit Desai	Silver	Infosys Campus Connect	2014-15 2015-16
5	Mr. Zahir Aalam	Bronze	Infosys Campus Connect	2015-16
6	Ms. Vandana Munde	Silver	Infosys Campus Connect	2014-15 2015-16
7	Mr. Bhushan Pitamber Nemade	Bronze	Infosys Campus Connect	2014-15 2015-16
8	Mr. Namdeo Baban Badhe	Bronze	Infosys Campus Connect	2014-15 2015-16
9	Ms. Pranjali Kasture	Bronze	Infosys Campus Connect	2014-15 2015-16
10	Mrs. Marry M.	Bronze	Infosys Campus Connect	2014-15

b. Awards / Recognitions received by students:

Sr. No.	Student Count	Year
1	07	2015-16
2	15	2014-15
3	07	2013-14
4	04	2012-13

24. List of eminent academicians and scientists / visitors to the department

Sr. No.	Name of academicians and scientists / visitors	Designation	Organization
1	Mr. Ashish Pandey	Software Developer	L&T InfoTech Pvt.Ltd
2	Mr. Mahesh Gosemath	Software Developer	Trampoline Tech PVT. LTD
3	Mr. Sudhir Mhaiskar	Software Developer	L&T InfoTech Pvt.Ltd
4	Mr. Micheal Trevasso	Professional and Trainer	Network Security, Technica
5	Mr. Mahindra Mehra	Assistant Professor	FRCE, Bandra
6	Mr. Ranganathan B. Iyer	BI Analyst	Bhaktivedant Hospital, Miraroad
7	Mr. Manish Vanvari	VP & Practice Head	Fraklin Covey
8	Mr. GirishMuthian	Operational Risk Management	Bank of America

25.   Seminars / Conferences / Workshops organized & the source of funding

    a.   National *(2012-13 to 2015-16)*

Sr. No.	Event	Title	Source of Funding	Year
1	STTP	Cloud Computing Ethical Hacking and N/W Security	Self	2012-13
2	STTP	Database Management System	ISTE, IIT	2012-13
3	STTP	Advanced Web Programing	ISTE,IIT	2013-14
4	STTP	Padagogy for effective use of ICT in engineering education	ISTE,IIT	2014-15

Sr. No.	Event	Title	Source of Funding	Year
1	FDP	Apache Drill and unseen testing of Java	Self	2015-16
2	STTP	ISTE Approved 2 weeks "Tools and Technology"	Self	2015-16
3	STTP	Recent Trends in Wireless Sensor Networks & Its Simulation using NS-2	Self	2015-16
4	STTP	Design and development of smart city	In association with INTEL & TEXAS Instruments	2015-16
5	STTP	Introduction to design of Algorithm	ISTE,IIT	2015-16

    b.   International *(2012-13 to 2015-16)*

Sr. No.	Event	Title	Source of Funding	Year
1	Conference	MULTICON-W 13- ICWAC	Self	2012-13
2	Conference	MULTICON-W 14-ICWAC	Self	2013-14
3	Conference	MULTICON-W 15-ICWCCV	Self	2014-15
4	Conference	MULTICON-W 16-ICCCV	Self	2015-16

26.   Student profile programme/course wise:

Name of the Course / programme (refer question no. 4)	Academic Year	DSE		Students from First Year	TOTAL	Enrolled		Pass Percentage
		Applications received	Selected			*M	*F	
		Minority	Open						
UG	2012-13	65	3	24	133	157	108	49	96.71%
	2013-14	95	6	31	128	159	101	58	Awaited
	2014-15	95	5	34	123	157	106	51	Currently in Fourth Year
	2015-16	107	0	28	124	152	109	43	Currently in Third Year
	2016-17	14	60	#24	129	153	112	41	Currently in Second Year

Note:- 1)#   Lateral Entry Seats + Vacant Seats + 51% Minority quota filled up through CAP (Centralised Admission Process) conducted by DTE(Mh.) (Directorate of Technical Education)

    *M = Male   *F = Female

27. Diversity of Students

Name of the Course	% of students from the same state		% of students from other States		% of students from abroad	
	Students from First Year 15-16	DSE- 2016	Students from First Year 15-16	DSE-2016	Students from First Year 15-16	DSE-2016
INFORMATION TECHNOLOGY	97%	0	3%	0	0	0

28. How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defence services, etc.?

Examination	2015-16	2014-15	2013-14	2012-13
GATE	01	00	00	00
Civil services	Nil	Nil	Nil	Nil
Defence services	Nil	Nil	Nil	Nil
Others (GRE, TOEFL etc.)	22	36	40	26

29. Student progression

Student progression	Against % enrolled			
	2015-16	2014-15	2013-14	2012-13
UG to PG	1.34	1	1	-
PG to M.Phil.	-	-	-	-
PG to Ph.D.	-	-	-	-
Ph.D. to Post-Doctoral	-	-	-	-
Employed - Campus selection	68.86	79	80.95	78.99
Employed - Other than campus recruitment	-	10.67	2.85	13.44
Entrepreneurship / Self-employment	1	1.5	2	1.5

30. Details of Infrastructural facilities
    a. Library: - Thedepartmenthasaseparatelibrary.

Sr. No.	Items	Qty.
1	Books	500+
2	Magazines	-
3	NPTEL Videos	available
4	DVDs / CDs	-
5	Project Reports	234

    b. Internet facilities for Staff & Students: - All the laboratories also have computers with internet connections having speed of 52 Mbps broadband leased line. All staff room are provided with internet facility. (Sample Answer, draft your own answer)

    c. Class rooms with ICT facility: - Six spacious classrooms are well equipped with internet facility, screen and LCD projector. (Sample Answer, draft your own answer)

    d. Laboratories: - Thirteen well equipped laboratories. Computer Labs having latest computers. All computers in labs have internet connections via LAN. (Sample Answer, draft your own answer)

31. Number of students receiving financial assistance from college, university, government or other agencies

Agency	Number of students receiving financial assistance			
	2015-16	2014-15	2013-14	2012-13
College	0	0	0	0
University	1	1	0	3
Government Agencies	29+(1 in process)	29	31	36
Other Agencies	11	3	2	2

32. Details on student enrichment programmes (special lectures / workshops / seminar) with external experts

Sr. No.	Student Enrichment Programmes	2015-16	2014-15	2013-14	2012-13
1	Bridge Course	02	02	01	01
2	Guest Lectures by Industry persons	06	05	06	07
3	Workshops / Training programmes	05	03	03	02

33. Teaching methods adopted to improve student learning: -

Following outcome based education model based on Blooms Taxonomy.
Use of Multimedia.
Use of resource books.
Conduct of Technical Seminars for emerging areas of engineering.
Project based learning based on domains.
Local and Outstation Industrial Visits to expand the engineering exposure amongst students.

34. Participation in Institutional Social Responsibility (ISR) and Extension activities:

The staff and students of the department take part in various social activities

- Under NSS in Health category, activities like organizing and attending Blood Donation Camp, Malaria Awareness/Medical Camp/HIV AIDS Seminar/Cancer week project/Organ donation is organised.

- Under NSS in Cleanliness category Manori/ Cleaniness Drive/ Swachata Abhiyan is organised.

- Under NSS in Education category BMC School Training/Constitution Café/Bajaj BMC is organised.

- Under NSS in social category Ganesh Visarjan /Traffic control/Tree Plantation/Mumbai Marathon/ Child Abuse Seminar/Woman empowerment/Self Defense /Mirtyunjay /NCFW SEMINAR/Complain management system/Know your NETA/Equal Streets is organised.

35.   SWOC analysis of the department and Future plans: -

Strengths:
- Second time Accredited by NBA w e f July 2016 for three years.
- Permanent Affiliation with UoM.
- ISO 9001:2008 certified.
- Well equipped classrooms and labs with projectors, internet facility.
- Well qualified and university approved faculty.
- Department has effective teaching learning process in view of Outcome Based Education.
- B.E results consistently above 90% since inception which meets our institute quality objectives.
- Success Rate consistently above 70% for last nine years with an average of around 77%.
- Placement is above 80% for last three years.
- Minimum 20% Students are opting higher studies every year and the number is increasing.
- Good number of faculty publications.
- Well-coordinated system for conducting the curricular, co and extracurricular activities.
- Good industry institute interaction.
- Good advisory board with involvement of stakeholders.
- Involvement in outhouse and consultancy projects.
- The department has admirably risen to the challenge of finding its own solutions regarding activities, admission, placement and collaboration with industries irrespective of the market trends.

Weakness:
- Performance in examinations at First Year and lateral entry students not up to the expectation.
- For campus placement high pay package offering companies are less.
- Non-availability of competent technical staff, since requirement is of engineering diploma where they opt for campus placement and higher studies.
- Creation of IPR is not is not up to the standards of premier institutes of international repute.

Opportunity:
- The institute-institute interaction can further be strengthened by developing bridge courses and industry electives as a collaborative efforts.
- Research can further be strengthened and channelized by staring Ph.D. in IT Engineering.
- Industry should be encouraged to endow consultancy, internship and outhouse projects for faculty and students.
- Better coordination of R&D and improved links with international universities, research groups and companies required to be established.
- For better future opportunities more number of students should be encouraged and trained for competitive exams like GATE, GRE, GMAT, TOEFL through HOC Cell.
- Faculty involvement to encourage students for effective utilization of incubation center and Entrepreneurship Development Cell.
- As institute has permanent affiliation for the IT program the autonomy for programs can be sought provided status of accreditation is maintained.

Challenges:
- Attracting final year students to classrooms for academic conduct is a challenge mainly because of campus placement & competitive exams such as GRE, GATE, TOEFL etc.
- Drop in academic standard of students at admission level because of mismatch in demand & supply.
- Decreasing demand of engineering program.
- Number of institutes running similar/same courses in vicinity at UG, PG and Ph.D. level including minority institutions.
- Employability of graduates as per the high standards of industries is a concern.
- Sustainability in success rate and placements.

Future Plans:
- To strengthen domains(UC,AI&SP,DBT) and develop center of excellence for them.
- To start Ph.D. program in IT Engineering.

Evaluative Report: Department of Electronics Engineering

1.   Name of the department: - Department of Electronics Engineering

2.   Year of Establishment: - 2009

3.   Names of Programmes / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.)

      a.   UG: - B.E. - Electronics Engineering

4.   Names of Interdisciplinary courses and the departments/units involved: -

Sr. No.	Names of Interdisciplinary course	Year / Semester	From Department
1	Object Oriented Programming And Methodology	2nd year / SEM III	IT / CMPN

5.   Annual/ semester/choice based credit system (programme wise)

    UG: - Semester Pattern (Credit based system implemented for FE from 2015)

6.   Participation of the department in the courses offered by other departments:

Sr. No.	Course	Year / Semester	Department
1	Industrial Electronics(UG :R-2012)	2nd / IV	Mechanical
2	Basic Electrical Engineering(UG :R-2016)	FE1st /I	Common to all departments
3	Digital signal Processing and Application (DSPA) (PG :R-2012)	ME 1st /I	Electronics and Telecommunication
4	VLSI and Mixed Signal Circuits and System(VMSCS) (PG :R-2012)	ME 1st /I	Electronics and Telecommunication
5	Image and Video Processing and Broadcasting(IVPB) (PG :R-2012)	ME 1st /I	Electronics and Telecommunication
6	Statistical Signal Analysis(PG :R-2012)	ME 1st /I	Electronics and Telecommunication
7	Nano Electronics (NE)(PG :R-2012)	ME 1st /II	Electronics and Telecommunication
8	Modern Digital Signal Processing Applications(PG :R-2016)	ME 1st /I	Electronics and Telecommunication

7.   Courses in collaboration with other universities, industries, foreign institutions, etc.

Sr. No.	Course Name	Collaborating Organization	Duration
1	National Conference on Role of Engineers in Nation Building(2014)	National	2 days
2	ISO training 9000:2008	Quient Essential	3 days
3	One day conference on Green Conclave by CII(2015)	Confederation of Indian Industry (CII)	1day
4	TCAD Training(2016)	M/S CADRE Design System	1week
5	Texas Instruments Installation Training By EDGATE(2015)	In collaboration with, EdGate Technologies Private Limited which is Texas Instruments India University Program Partner.	2days

Sr. No.	Course Name	Collaborating Organization	Duration
6	Texas Instruments(2016)	In collaboration with, EdGate Technologies Private Limited which is Texas Instruments India University Program Partner	3days
7	Intel FICE certificate – Faculty Training(2016)	In collaboration with, Intel FICE Education Private Limited (Intel Program FICE)	5days
8	Summer Industrial Training on "Embedded systems and IoT"(2016)	In collaboration with Arm University Program(Worldwide Education Program), Cypress Semiconductors University Alliance, IUCEE(Indo-US collaboration for Engineering Education) and EAGLEEduVance (Education Partner)	20 days
9	ISO training 9000:2015 awareness training (2015)	IRQS	2days

8.   Details of courses/programmes discontinued (if any) with reasons: - NA

9.   Number of Teaching posts

	Sanctioned	Filled
Professors	01	01
Associate Professors	03	03
Assistant Professors	08	10

10.   Faculty profile with name, qualification, designation, specialization, (D.Sc./D.Litt./Ph.D./M. Phil. etc.)

Sr. No.	Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. Students guided for the last 4 years
1	Dr.Sandhya Save	Ph. D.(Technology) M.Tech (Electronics)	HOD (Electronics), Professor	Electronic Devices ,VLSI Design, Analog and mixed signal and system	17 years	NIL
2	Dr. S. C. Patil	Ph.D (EXTC Engg) B.E. (Electronics) M.E (Electronics)	Deputy HOD-ETRX; Associate Professor	Microwave communication and optical fiber communication	23 years 11 months	NIL
3	Mrs.Poorva G. Waingankar	Ph. D. Pursuing, M.Tech (Microelectronics)	Associate Professor	Electronic Devices ,VLSI Design.Video Processing	28years	NIL
4	Mr. Hemant Kasturiwale	PhD Pursuing, M.E.(Digital Electronics),B.E.(Electrical)	Associate Professor ; I/c. Examination	Industrial Automation, Biosignal Processing	21 years 1 month	NIL

Sr. No.	Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. Students guided for the last 4 years
5	Ms.Jyoti Kori	B.E. (Electronics) M.E (EXTC) PGDCS	Assistant Professor	Mobile Communication, Antennas, Embedded systems	16 years 3 months	NIL
6	Ms.Sujata Alegavi	PhD. (EXTC) Pursuing, M.E. (EXTC), PGDBA (Finance), B.E. (EXTC)	Assistant Professor	1. Image Processing, 2. Video Processing, 3. Communication Networks	9 years 8 months	NIL
7	Mrs.Archana Belge	Ph.D. Pursuing (Electrical Engineering Technology) M.Tech (IPS), B.E. (EXPO),DBM	Assistant Professor	Power system, Power Electronics, Electrical Machines	9 years 10 months	NIL
8	Mrs.Sonal Barvey	B.E. Electrical Engg., M.E. (EXTC)	Assistant Professor	Power Electronics, Electrical Machines	9 years 3 months	NIL
9	Mr. Vaibhav Gijare	B.E. Electronics Engg., M.E. (EXTC), MBA (Education Management)	Assistant Professor	Networking, Embedded Systems, Microprocessor and Microcontroller	14 years 6 months	NIL
10	Mrs.Leena Chakraborty	B.E. Instrumentation Engg. M.Tech. (Electronics)	Assistant Professor	Signal processing, Microprocessor and Microcontroller	10 years 6 months	NIL
11	Mr. Sumit Kumar	B.E.(Electronics and Communication), M.Tech(Electronics and Communication)	Assistant Professor	Electronics and Communication	5 years 6 months	NIL
12	Mrs.Shaweta Gulati	B.Tech(ETRX),M.Tech(ETRX)	Assistant Professor	Signal Processing	1 Year 6 months	NIL
13	Ms.Roohi Mehta	B.Tech(EXTC),M.Tech(EXTC)	Assistant Professor	Signal Processing	7 Years 6 months	NIL

Sr. No.	Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. Students guided for the last 4 years
14	Ms.Jalpaben Pandya	M.E.(EXTC), B.E.(ETRX)	Assistant Professor	VLSI, Embedded system	4 years 6 months	NIL

11. List of senior visiting faculty: NIL

12. Percentage of lectures delivered and practical classes handled (programme wise) by temporary faculty:

Programme	Percentage of lectures delivered	Percentage of practical classes handled
UG	6.66	7.05

13. Student -Teacher Ratio (programme wise)

Sr. No.	Programme	Student -Teacher Ratio
1	UG	15:1

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled

	Sanctioned	Filled
Academic support staff (technical)	04	04
Administrative staff	00	00

15. Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ MPhil / PG.

   a. Ph.D.: - 02
   b. PG: - 12

16. Number of faculty with ongoing projects from a) National b) International funding agencies and grants received

Sr. No.	Level	Number of faculty with ongoing projects	Grants received
a	National	1.Steps Towards Clean City IEDC 2016 – 17 2. Artificial Simulation of Brain Using Binaural Frequency IEDC 2016-17	Rs.1,00,000/- each (Total 2,00,000/- Lacs)
b	International	nil	nil
		Total Grants in Rs.	2,00,000/-

17. Departmental projects funded by DST – FIST, UGC, DBT, ICSSR, etc. and total grants received

Sr. No.	Project Title	Sponsoring Agency	Grant Received
1	Solar Harvesting and its Efficient Utilization	MoU Minor Research Grant 2014 - 15	25,000/-
2	AVR Development Board	MoU Minor Research Grant 2015 - 16	10,000/-
3	PLC based waste segregation system for green environment	MoU Minor Research Grant 2016 - 17	30,000/-
		Total Grants in Rs.	55,000/-

18.   Research Centre /facility recognized by the University: NIL

19.   Publications:

   *   Publication per faculty:

Sr. No.	Name of faculty or student	Number of papers published in peer reviewed journals (national / international)	Number of publications listed in International Database	Citation Index	SNIP	SJR	Impact factor	h-index
1	Dr.Sandhya Save	15	15	27	-	-	-	02
2	Dr. S. C. Patil	13	07	09	-	-	-	02
3	Mrs.Poorva G. Waingankar	06	18	49	-	-	-	01
4	Mr. Hemant Kasturiwale	04	05	03	-	-	-	02
5	Ms.Jyoti Kori	02	-	-	-	-	-	-
6	Ms.Sujata Alegavi	03	-	-	-	-	-	-
7	Mrs.Archana Belge	02	-	-	-	-	-	-
8	Mrs.Sonal Barvey	01	-	-	-	-	-	-
9	Mr. Vaibhav Gijare	02	-	-	-	-	-	-
10	Mrs.Leena Chakraborty	01	-	-	-	-	-	-
11	Mr. Sumit Kumar	02	-	-	-	-	-	-
12	Mrs.Shaweta Gulati	01	-	-	-	-	-	-
13	Ms.Roohi Mehta	01	-	-	-	-	-	-
14	Ms.Jalpaben Pandya	02	-	-	-	-	-	-

   *   Books Publication

Sr. No.	Name of faculty	Chapter in Books	Books Edited	Books with ISBN/ISSN numbers with details of publishers
1	Sujata Dubal	4	1	ISBN: 978-3-659-14979-5
2	Dr. S. C. Patil	Wave shaping techniques	1	Vipul Publication

20.   Areas of consultancy and income generated: - NIL

21.   Faculty as members in a) National committees, b) International Committees, c) Editorial Board

Sr. No.	Name of Faculty	Committee	Type
1	Dr.Sandhya Save	as a reviewer at ICACCI2017 (approved by IEEE) 6th International Conference in Computing, Communications and Informatics (ICACCI) September 2017	International Committees
	Dr.Sandhya Save	a reviewer at CSCITA 2017 (approved by IEEE) 2nd International Conference on Communication Systems, Computing and IT Applications (CSCITA 2017) January 2017	International Committees
	Dr.Sandhya Save	member of Technical Program Committee and reviewer for the International Conference on Global Trends in Signal Processing, Information Computing and Communication (ICSPICC – 2016), 22 – 24 December 2016	International Committees
	Dr.Sandhya Save	a reviewer on the technical program committee for the 2014 International Conference on Circuits, Systems, Communication and Information Technology Applications (CSCITA) (CSCITA-2014).	International Committees
	Dr.Sandhya Save	proceeding of ICWET -16 in collaboration with IET :IETDL - published content: International Conference & Workshop on Electronics & Telecommunication Engineering (ICWET 2016)	Editorial Board
	Dr.Sandhya Save	Technical Academic Advisor For Atuograder and Remote Lab : EduVance	National Committees
2	Ms.Poorva Waingankar	Review Committee for International Conference on Recent Advances and Challenges in Engineering and Management 2016,VIT,Mumbai	International Conference (paper ReviewCommitte)
3	Ms.Sujata Alegavi	proceeding of ICWET -16 in collaboration with IET :IETDL –published content: International Conference & Workshop on Electronics & Telecommunication Engineering (ICWET 2016)	Editorial Board
4	Dr. S. C. Patil	As reviewer for the International Conference on Global Trends in Signal Processing, Information Computing and Communication (ICSPICC – 2016), 22 – 24 December 2016	International Committees

22.   Student projects

a.   Percentage of students who have done in-house projects including inter departmental / programme

Programme	2015-16	2014-15	2013-14	2012-13
UG	94.5%	95.3%	95%	84%

b. Percentage of students placed for projects in organizations outside the institution i.e. in Research laboratories / Industry / other agencies

Programme	2015-16	2014-15	2013-14	2012-13
UG	05.5%	04.7%	05%	16%

23. Awards / Recognitions received by faculty and students:

a. Awards / Recognitions received by faculty:

Sr. No.	Name of Faculty	Achievements/ Award / Recognitions	Awarding Agency	Year
1	Dr.Sandhya Save	Lab migration Proposal in Scilab	Fossee : better education IIT, Bombay	2017
2	Ms.Poorva Waingankar	IMC RBNQA Examiner training	IMC RBNQA	2016
3	Mr. Hemant Kasturiwale	Training IRQS: ISO Lead Assessor	IRQS	2016

b. Awards / Recognitions received by students:

Sr. No.	Student Count	Year
1	08	2015-16
2	14	2014-15
3	09	2013-14
4	09	2012-13
5	18	2011-12

24. List of eminent academicians and scientists / visitors to the department

Sr. No.	Name of academicians and scientists / visitors	Designation	Organization
1	Mr. Saurabh Shrivastava	VP	Reliance Jio Ltd
2	Dr. G. C.Sabnis	GM	Air India
3	Dr.S.K.Ukrande	Dean, Technology	Mumbai University
4	Dr.Archana Bhise	Professor	NMMIS University
5	Dr. D.V. Bhoir	Professor& HOD	Fr.C.R. College of Engineering
6	Dr. Y.S. Rao	Vice Principal	SPIT
7	Mr. Sanjay Chaudhari	Director	Electronics Study centre
8	Mr. Shirishkumar Joshi	Director	ADM Technologies Pvt. Ltd
9	Dr. Jonathan Joshi	Founder & CEO	EduVance
10	Mr. AdarshRai and Mr Manoj Sharma	Solution Architect,Security IBM and AVP - Security	IBM India Ltd and Kotak Mahindra Bank
11	Dr. Naveen Vasishta	Scientist	DST,GoI
12	Mr. Vinod Johri	General Manager	Reliance Jio Ltd.
13	Dr.Kushal Takley	Director	AGV Systems
14	Dr.Alok Verma	Sr.Scientist	SAMEER, Mumbai
15	Dr.Manoj Kowar	Ex-Director	BhilaiInst Of Technology
16	Mr. Tejas Sura	Managing Director	Cubic Turnkey Pvt.Ltd
17	Mr.Saurabh Mehta	Co-Founder& Chief Technical	Vayve technologies

Sr. No.	Name of academicians and scientists / visitors	Designation	Organization
		Officer	

25.   Seminars / Conferences / Workshops organized & the source of funding

a.   National

Sr. No.	Event	Title	Source of Funding	Year
1	Workshop	Workshop on Embedded Systems	Self Financed	Feb 2016
2	Workshop	Workshop on PCB Design	Self Financed	Feb 2016
3	STTP	2 week STTP on CMOS Mixed Signal and radio frequency VLSI Design	IITKGP	Jan- Feb,2017
4	STTP	NPTEL course on Digital Image Processing	NPTEL	12 weeks
5	STTP	Two week ISTE approved STTP on "Technical Communication "	MHRDC	Dec 2015
6	STTP	STTP on Pedagogy for for effective use of ICT	MHRDC	Jan 2015
7	STTP	STTP on Control systems by IITB	MHRDC	Dec 2014
8	STTP	2 week Sttp on Signals &system by IITB	MHRDC	Jan 2014
9	STTP	2 week Sttp on Analog Electronics	MHRDC	July 2013
10	Workshop	Summer Industrial Training on "Arm Mbed and IoT Training"	Self Financed	June/July 2016
11	Workshop	Workshop on Raspberry Pi	Self Financed	Feb 2013
12	Workshop	IETE PCB Workshop	Self Financed	Mar 2014
13	Workshop	Web Development Workshop	Self Financed	Aug 2012
14	Workshop	Adobe Photoshop workshop	Self Financed	Aug 2011

b.   International

Sr. No.	Event	Title	Source of Funding	Year
1	Conference	International Conference and Workshop in Emerging Trends in Electronics and Telecommunication 2010	Self Financed + Industry Sponsorship	Feb 2010
2	Conference	International Conference and Workshop in Emerging Trends in Electronics and Telecommunication 2011	Self Financed + Industry Sponsorship	Feb 2011
3	Conference	International Conference and Workshop in Emerging Trends in Electronics and Telecommunication 2012	Self Financed + Industry Sponsorship	Feb 2012
4	Conference	International Conference and Workshop in Electronics and Telecommunication	Self Financed + Industry	Feb 2013

Sr. No.	Event	Title	Source of Funding	Year
		2013	Sponsorship	
5	Conference	International Conference and Workshop in Electronics and Telecommunication 2014	Self Financed + Industry Sponsorship	Feb 2014
6	Conference	International Conference and Workshop in Electronics and Telecommunication 2015	Self Financed + Industry Sponsorship	Feb 2015
7	Conference	International Conference and Workshop in Electronics and Telecommunication 2016	Self Financed + IET	Feb 2016
8	Conference	International Conference and Workshop in Electronics and Telecommunication 2017	Self Financed + Industry Sponsorship	Feb 2017

26.   Student profile programme/course wise:

Name of the Course/programme (refer question no. 4)	Academic Year	DSE		Selected	Students from First Year	Total	Enrolled		Pass Percentage
		Application received					*M	*F	
		Minority	Open						
UG	2012-13	45	03	21	55	76	56	20	75.68%
	2013-14	64	04	12	57	69	55	14	Awaited
	2014-15	77	06	23	57	80	66	14	Currently in Fourth Year
	2015-16	79	0	22	54	76	59	17	Currently in Third Year
	2016-17	14	60	#29	44	73	59	14	Currently in Second Year

*M = Male   *F = Female

Note:- 1)#   Lateral Entry Seats + Vacant Seats + 51% Minority quota filled up through CAP (Centralised Admission Process) conducted by DTE(Mh.) (Directorate of Technical Education)

27.   Diversity of Students

Name of the Course	% of students from the same state		% of students from other States		% of students from abroad	
	Students from First Year 15-16	DSE- 2016	Students from First Year 15-16	DSE-2016	Students from First Year 15-16	DSE-2016
ELECTRONICS ENGG.	92%	0	8%	0	0	0

28.   How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defence services, etc.?

Examination	2015-16	2014-15	2013-14	2012-13
GATE	1	2	1	3
Civil services	0	0	0	0
Defence services	0	0	0	0
Others (GRE, TOEFL, CET etc.)	4	11	10	5

29. Student progression

Student progression	Against % enrolled			
	2015-16	2014-15	2013-14	2012-13
UG to PG	10.29%	36.66%	27.11%	40.63%
PG to M.Phil.	0	0	0	0
PG to Ph.D.	0	0	0	0
Ph.D. to Post-Doctoral	0	0	0	0
Employed - Campus selection	45.31%	48.33%	67.21%	65.21%
Employed - Other than campus recruitment	4	5	4	2
Entrepreneurship / Self-employment	1.35%	5%	3.39%	1.56%

30. Details of Infrastructural facilities

a. Library: - The department has a separate library.

Sr. No.	Items	Qty.
1	Books	218
2	Magazines	02
3	NPTEL Videos	123
4	DVDs / CDs	-
5	Project Reports	77

b. Internet facilities for Staff & Students: - There are dedicated 8 laboratories in Electronics department. There are total 60 computers connected to LAN/Internet having 100Mbps broadband connection which students can use for academic purpose. Department has one faculty seating room equipped with 4 computers with LAN/Internet, 1 laser printer. The HOD cabin is equipped with one computer with LAN/internet and Laser printer.

c. Class rooms with ICT facility: - Electronics engineering Department has 3 dedicated, spacious, air conditioned classrooms well illuminated and have internet/LAN facility. All classrooms have platform with podium, LCD projectors with screens and portable mikes. Individual seating with 72 chairs & benches are provided in each classroom.

d. Laboratories: - There are dedicated 8 laboratories in Electronics department. These laboratories are well equipped with necessary hardware and software resources. There are total 60 computers connected to LAN/Internet having 100Mbps broadband connection which students can use for academic purpose.

31. Number of students receiving financial assistance from college, university, government or other agencies

Agency	Number of students receiving financial assistance			
	2015-16	2014-15	2013-14	2012-13
College	0	0	0	0
University	0	0	0	0
Government Agencies	13+(1 in process)	9	13	13
Other Agencies	3	3	1	10

32. Details on student enrichment programmes (special lectures / workshops / seminar) with external experts

Sr. No.	Student Enrichment Programmes	2016-17	2015-16	2014-15	2013-14	2012-13
1	Bridge Course	4	-	-	-	-
2	Guest Lectures by Industry persons	2	2	5	2	6
3	Webinar	2	2	-	-	-
4	Workshops / Training programmes	-	2	1	1	1

33. Teaching methods adopted to improve student learning: -

- The academic calendar for institute is prepared well before commencement of semester. The entire planning of teaching activities along with co-curricular and extracurricular activities is done before semester begins. Students are also made aware of the same. Department conducts FDP (Faculty development programme) for enhancement of faculty skills. The senior faculty members are also involved in delivering lectures in such programmes.
- All faculty members are assigned teaching load before proceeding on vacation so that they can prepare their course. The course modules are designed by individual /group of faculty in which contents are improvised every year. Question banks, University paper solutions are provided in each module.
- Use of multimedia, video lectures, case studies is incorporated for learning enhancement. Students are encouraged to take up NPTL courses.
- In various subjects design based experiments and small projects are given to students to improve practical learning.
- Remedial assignments are given to students to compensate for attendance loss due to valid reasons. Practice sessions, class tests, mock vivas are arranged for all students as well as with special focus on slow learners. Bridge courses,workshops and internship programs are organized to bridge the gap between curriculum and industry needs.

34. Participation in Institutional Social Responsibility (ISR) and Extension activities: -

Under the guidance of Dean (Staff & Student welfare) various activities are conducted for students and faculty pertaining to ISR.
- TCET has strong National Student Service (NSS) wing .The staff and students of the department take part in various social activities under this such as, organizing and attending Blood donation camp, Swachh Bharat Abhiyaan,Ganapati Visarjan, tree plantation, rural development activities inSawaan Village, Thane District. Students also participate in many activities conducted by Extension wing of Mumbai University in rural areas.
- Yoga sessions are conducted for students and faculty on IYD(International Yog Day).For faculty medical camp is organised every year along with facility of mediclaim. Under Women development cell lectures by eminent people are organized on different topics viz. diet, health, financial planning etc.

35.   SWOC analysis of the department and Future plans: -

Strengths
- The Department is having well qualified and approved staff since inception (A.Y 2009-10) and maintained STR throughout.
- Staff are of high academic quality with a strong academic background and are enthusiastic in regard to teaching
- Though the undergraduate level students are of average academic background in comparison with other disciplines, final year (B.E) results are good and consistent over last 3 years
- The degree is of high quality and the calibre of the taught program is recognized internationally as many students are pursuing higher studies in universities abroad.
- The Department has admirably risen to the challenge of finding its own solutions in a situation in which the University has failed to deliver proper support services
- Computing resources and laboratory facilities are good

Weaknesses
- Emphasis upon research is not significant resulting in gaining research funding from Government organizations /Industry
- A major weakness arises from the difficulty in attracting core industry placements
- There is room for more interaction with other Departments and Faculties
- Lack of technical staff (lab assistants) particularly in equipment maintenance and repair
- Very less interaction among core Electronics Industries
- Performance in examinations at Second Year is of major concern

Opportunities
- Contact across the divide within the Faculty should be encouraged in order to stimulate interdisciplinary activity
- The relationship among postgraduate work-groups should be strengthened
- More number of departmental seminars by outside speakers for faculty could broaden experience
- Industry should be encouraged to endow internship for faculty and students
- Core Industrial placement of students could provide further opportunities especially from skill development point of view.
- Additional training for faculty and staff by industry professionals would add to the quality of teaching
- Better coordination of R&D developments and improved links to international research groups and companies

Challenges
- Drop in academic standard of students at admission level
- Drop in number of admissions due to overall drop in Engineering admissions across the state
- Maintaining overall quality of students performance, thereby problems in achieving set goals by department
- Number of institutes running similar/same courses in vicinity

Future Plans
- To obtain research funds from funding agencies like AICTE,DST and other funding schemes
- To become centre of excellence in atleast two domain areas out of five and generate consultancy.
- To become preferred choice for engineering aspiring students in Mumbai and nearby areas.

Evaluative Report: Department of Mechanical Engineering

1. Name of the department: - Department of Mechanical Engineering

2. Year of Establishment: - 2012

3. Names of Programmes / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.)

    a. UG: - B.E. - Mechanical Engineering

4. Names of Interdisciplinary courses and the departments/units involved: -

Sr. No.	Names of Interdisciplinary course	Year / Semester	From Department
1	DBIRS	2nd Year / Sem III	CMPN
2.	Applied Maths-III	2nd Year / Sem III	H&S
3.	Applied Maths-IV	2nd Year / Sem IV	H&S
4.	Industrial Electronics	2nd Year / Sem IV	ETRX
5.	Business communication & Ethics	3rd Year / Sem V	H&S

5. Annual/ semester/choice based credit system (programme wise)

    a. UG: - Semester Pattern

6. Participation of the department in the courses offered by other departments:

Sr. No.	Course	Year / Semester	Department
1	Engineering Drawing	1stYear / Sem II	H&S

7. Courses in collaboration with other universities, industries, foreign institutions, etc.

Sr. No.	Course Name	Collaborating Organization	Duration
1	CATIA & PLM Softwares	TATA Technologies	10 Days

8. Details of courses/programmes discontinued (if any) with reasons: - NA

9. Number of Teaching posts

	Sanctioned	Filled
Professors	2	1
Associate Professors	6	NIL
Assistant Professors	16	20

10. Faculty profile with name, qualification, designation, specialization, (D.Sc./D.Litt./Ph.D./M. Phil. etc.)

Sr. No.	Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. Students guided for the last 4 years
1	Dr. Siddesh Siddappa	Ph.D.(Mech)	Mentor(Mechanical), Professor	Mechanical Engineering	25	NIL
2	Mr. J.K.Patil	Ph.D.(Pursuing),M.E.(Prod) B.E.(Mech.)	I/c HOD , Asst Prof.	Prod	17	NIL
3	Mr. R.S.Deshmukh	Ph.D.(Pursuing),M.E.(CAD/CAM)B.E.(Prod.)	Dy. HOD Asst. Prof.	CAD/CAM	22	NIL
4	Mr.Rajesh Behra	M.E.(CAD/CAM & Robotics)B.E.(Mech.)	Dept Co-ordinator, Asst. Prof	CAD/CAM & Robotics	17	NIL
5	Mr.Jitendra Thombre	M.Tech.(Heat Power),B.E.(Mech.)	Assistant Professor	Heat Power	21	NIL
6	Mr.Krishna Gaikwad	M.Tech(CAD/CAM)B.E.(Mech.)	Assistant Professor	CAD/CAM	3	NIL
7	Mrs.Nikita Gawai	M.Tech.(Machine Design),B.E.(Mech.)	Assistant Professor	Machine Design	6	NIL
8	Mr Rupesh Deshbhratar	M.Tech.(Heat Power),B.E.(Mech.)	Assistant Professor	Heat Power	6	NIL
9	Mrs Rajeshwari Jaisinghani	M.E.(CAD/CAM)B.E.(Prod.)	Assistant Professor	CAD/CAM	6	NIL
10	Mrs Neha Chauhan	M.E.(CAD/CAM)B.E.(Mech.)	Assistant Professor	CAD/CAM	9	NIL
11	Mrs Shwetha Suresh Kumar	M.Tech.(Machine Design),B.E.(Mech.)	Assistant Professor	Machine Design	5	NIL
12	Mr Mahendra L Shelar	M.Tech.(Automobile),B.E.(Mech.)	Assistant Professor	Automobile	6	NIL

Sr. No.	Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. Students guided for the last 4 years
13	Mr Iqbal Muzawar	M.E.(Thermal)B.E.(Mech.)	Assistant Professor	Thermal	5	NIL
14	Mr Vinay Bhatkar	M.E.(Machine Design),B.E.(Mech.)	Assistant Professor	Machine Design	6	NIL
15	Mr. Shanmugaraja T.	M.Tech.(Nano-Technology), B.E.(Mech.)	Assistant Professor	Nano-Technology	5	NIL
16	Mr. Abhijeet Rane	M.E.(CAD/CAM & Robotics)B.E.(Mech.)	Assistant Professor	CAD/CAM & Robotics	1	NIL
17	Mr. Pawan Tiwari	M.E.(Thermal)B.E.(Mech.)	Assistant Professor	Thermal	5	NIL
18	Mr. A.K.Bisaria	B.Sc.(PCM), B.Tech.(Honours)-Mech	I/c.Workshop Superintendent	B.Tech.(Honours)-Mech	30	NIL
19	Amol Sapkal	M.Tech.(Automobile),B.E.(Mech.)	Assistant Professor	Automobile	1	NIL
20	Vikas Somankar	M.Tech.(Automobile),B.E.(Mech.)	Assistant Professor	Automobile	0	NIL
21	Sirsikar Saurabh	M.Tech.(Automobile),B.E.(Mech.)	Assistant Professor	Automobile	1	NIL

11. List of senior visiting faculty: NIL

12. Percentage of lectures delivered and practical classes handled (programme wise) by temporary faculty:

Programme	Percentage of lectures delivered	Percentage of practical classes handled
UG	15.76	16.82

13. Student -Teacher Ratio (programme wise)

Sr. No.	Programme	Student -Teacher Ratio
1	UG	19:1

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled

	Sanctioned	Filled
Academic support staff (technical)	06	05
Administrative staff	NIL	NIL

15. Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ MPhil / PG.

      a. Ph.D.: - 01
      b. PG: - 20

16. Number of faculty with ongoing projects from a) National b) International funding agencies and grants received

Sr. No.	Level	Number of faculty with ongoing projects	Grants received
a	National	02	70,000/-

17. Departmental projects funded by DST – FIST, UGC, DBT, ICSSR, etc. and total grants received:

NIL

18. Research Centre /facility recognized by the University: NIL

19. Publications:
   *   Publication per faculty:

Sr. No.	Name of faculty or student	Number of papers published in peer reviewed journals (national / international)	Number of publications listed in International Database	Citation Index	SNIP	SJR	Impact factor	h-index
1	Siddesh Siddappa D	02	04	0	0	0	1.95	0
2	Iqbal Mujawar	01	0	0	0	0	1.95	0
3	Mr.Abhijeet Rane	01	0	0	0	0	1.95	0
4	Nikita Gawai	01	0	0	0	0	1.95	0
5	Rajesh Behra	01	0	0	0	0	1.95	0
6	Shanmugaraja.T	01	0	0	0	0	1.95	0
7	Pawankumar Tiwari	01	0	0	0	0	1.95	0
8	Mr. Rupesh Mahajan	01	0	0	0	0	1.95	0
9	Mr.Jitendra Chavan	01	0	0	0	0	1.95	0

   *   Book's Publication: NIL

20. Areas of consultancy and income generated: - NIL

21. Faculty as members in a) National committees, b) International Committees, c) Editorial Board : NIL

22. Student projects

     a. Percentage of students who have done in-house projects including inter departmental / programme

Programme	2015-16
UG	35

     b. Percentage of students placed for projects in organizations outside the institution i.e. in Research laboratories / Industry / other agencies

Programme	2015-16
UG	02

23. Awards / Recognitions received by faculty and students:

     a. Awards / Recognitions received by faculty: NIL

     b. Awards / Recognitions received by students:

Sr. No.	Student Count	Year
1	8	2015-16
2	03	2014-15

24. List of eminent academicians and scientists / visitors to the department

Sr. No.	Name of academicians and scientists / visitors	Designation	Organization
1	Mr. S.P. Srivastava	Head, Quality Control & Industrial Engineering Section	BARC
2	Mr. Rajan Sukhtankar	Director	SVAR Associates pvt ltd
3	Mr.John Narekutte	Sr. SAP Consultant	I-Gate ,Mumbai
4	Mr. Ashok Asawale,	Vice President Corpaorate IT	Mahindra & Mahindra Ltd
5	Mr.B.N.Borse.	Dy.Manager(Design and development)	Forbes & company Ltd

25. Seminars / Conferences / Workshops organized & the source of funding

     a. National

Sr. No.	Event	Title	Source of Funding	Year
1	FDP	Bridging gap between Academic and industry	Institute	2013
2	FDP	Applications of Android TAB	Institute	2013
3	FDP	Effectiveness in Academic Delivery	Institute	2014
4	STTP	CATIA V6 DASSAULT System	Participant Fees	2015
5	Workshop	Dynamic Street	Participant Fees	2014-15
		Modelling of RC- Aircraft	Participant Fees	2015-16

     International: NIL

26.   Student profile programme/course wise:

Name of the Course/programme (refer question no. 4)	Academic Year	DSE		Selected	Students From First Year	Total	Enrolled		Pass Percentage
		Applications received					*M	*F	
		Minority	Open						
UG	2012-13	0	0	0	0	0	0	0	91.84%
	2013-14	36	01	26	125	151	139	12	Awaited
	2014-15	57	02	25	128	153	141	12	Currently in Fourth Year
	2015-16	78	0	24	125	149	141	8	Currently in Third Year.
	2016-17	14	60	#26	126	152	145	7	Currently in Second Year.

*M = Male   *F = Female
Note:- 1)#   Lateral Entry Seats + Vacant Seats + 51% Minority quota filled up through CAP
(Centralised Admission Process) conducted by DTE(Mh.) (Directorate of Technical Education)

27.   Diversity of Students

Name of the Course	% of students from the same state		% of students from other States		% of students from abroad	
	Students from First Year 15-16	DSE- 2016	Students from First Year 15-16	DSE-2016	Students from First Year 15-16	DSE-2016
MECHANICAL ENGINEERING	96%	0	4%	0	0	0

28.   How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defence services, etc.?

Examination	2015-16
GATE	16
Civil services	NIL
Defence services	01
Others (GRE, TOEFL etc.)	26

29.   Student progression:

Student progression	Against % enrolled
	2015-16
UG to PG	9.92
PG to M.Phil.	NIL
PG to Ph.D.	NIL
Ph.D. to Post-Doctoral	NIL
Employed - Campus selection	58.76
Employed - Other than campus recruitment	3.09
Entrepreneurship / Self-employment	NIL

30. Details of Infrastructural facilities

    a. Library: - Department Library

Sr. No.	Items	Qty.
1	Books	90
2	Magazines	02
3	DVDs / CDs	04
4	Project Reports	34

    b. Internet facilities for Staff & Students: - CAMD, IC Engine & Mechatronics laboratories have computers with internet connections having speed of 52 Mbps broadband leased line. All staff room are provided with internet facility.

    c. Class rooms with ICT facility: - Six spacious classrooms are well equipped with internet facility, screen and LCD projector.

    d. Laboratories: - Eleven well equipped laboratories. Computer Labs having i5 computers. All computers in labs have internet connections via LAN

31. Number of students receiving financial assistance from college, university, government or other agencies

Agency	Number of students receiving financial assistance			
	2015-16	2014-15	2013-14	2012-13
College	0	0	0	0
University	1	0	0	0
Government Agencies	28+(2in process)	23	14	0
Other Agencies	6	9	12	0

32. Details on student enrichment programmes (special lectures / workshops / seminar) with external experts*(2012-13 to 2015-16)*

Sr. No.	Student Enrichment Programmes	Title	Year
1	Seminar by Industry persons	Production process	2013-14
2	Seminar by Industry persons	Mechatronics	2014-15
3	Seminar by Industry persons	Vibrations.	2015-16
4	Seminar by Industry persons	Introducing SAP as the career	2015-16
5	Seminar by Industry persons	Planning for readiness- For Mechanical Engineering Students	2015-16
6	Seminar by Industry persons	Advanced Cutting tools	2015-16

33. Teaching methods adopted to improve student learning: -
    - Department has initiated FDP (Faculty Development Programme) for every subject. The senior faculty members guide the other faculty members of the subject in understanding the fundamentals. Common strategies are finalized by senior faculty.
    - Workshops/ Conferences: Faculty is encouraged to attend workshops/conferences in order to enhance their technical skills and keep themselves updated with the current technologies.
    - Assignments: Assignments are given on regular basis to make students familiar with the problems asked during examination
    - Feedback Analysis: Feedback is a key tool which is used for continuous improvement in the quality of teaching-learning process. The feedback is taken from students and parents in order to analyse and implement their Suggestions.

34. Participation in Institutional Social Responsibility (ISR) and Extension activities: -
The staff and students of the department take part in various social activities. Under NSS, activities like organizing and attending Blood donation camp Swachha Bharat Abhiyaan, tree plantation, rural development activities in village.

35. SWOC analysis of the department and Future plans: -

Strengths:
- Dedicated and motivated faculty
- Better results than that of the overall affiliating university
- Head-academic coordinator-class representative/batch representative network help in academic monitoring.
- Institute Collaboration with TATA Technologies (Thakur TATA Center of excellence)
- **Counseling** by a professional counselor helps students to find their bearing in their transitional phase and also set goals & achieve them.

Weakness:
- No Consultancy Projects
- Few Ph.D. qualified faculties
- Few Research Papers in free journals.

Opportunity:
- Improving research culture in the department
- Become Centre of Excellence in UG, PG

Challenges:
- Attracting consultancy projects
- To improve quality of research in department

Future Plans:
- To have more faculty for Ph.D.
- To increase industry institute interaction

Evaluative Report: Department of Civil Engineering

1. Name of the department: - Department of Civil Engineering

2. Year of Establishment: - 2015

3. Names of Programmes / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters, Integrated Ph.D., etc.)

    a. UG: - B.E. - Civil Engineering

4. Names of Interdisciplinary courses and the departments/units involved: -

Sr. No.	Names of Interdisciplinary course	Year / Semester	From Department
1	C Programming	1st Year / Sem I	CMPN
2	Database and Information Retrieval System	2nd Year/ Sem III	CMPN

5. Annual/ semester/choice based credit system (programme wise)

    a. UG: - Semester Pattern

6. Participation of the department in the courses offered by other departments: NIL

7. Courses in collaboration with other universities, industries, foreign institutions, etc.: NIL

8. Details of courses/programmes discontinued (if any) with reasons: - NA

9. Number of Teaching posts

	Sanctioned	Filled
Professors	1	-
Associate Professors	3	-
Assistant Professors	12	12
Lecturer	-	4

10. Faculty profile with name, qualification, designation, specialization, (D.Sc./D.Litt./Ph.D./M. Phil. etc.)

Sr. No.	Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. Students guided for the last 4 years
1	Dr.Seema Jagtap	Ph.D. M.Tech. (Civil-Hydraulics Engineering)	Assistant Professor	(Civil-Hydraulics Engineering)	Teaching – 14years Industrial – 05 year	NA

Sr. No.	Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. Students guided for the last 4 years
2	Mr. Nilesh Patil	M.E. (Construction Management)	Assistant Professor	(Construction Management)	Teaching – 3.5years Industrial – 01 year	NA
3	Ms.Ugandhara G	M.Tech. (Water Resources Engineering)	Assistant Professor	(Water Resources Engineering)	Teaching – 4years Industrial – 01 year	NA
4	Ms.Rutuja Shinde	M.E. (Water Resources & Environmental Engineering)	Assistant Professor	(Water Resources & Environmental Engineering)	Teaching – 5years Industrial – 01year	NA
5	Mr. Arpit Vyas	M.Tech. (Construction Management)	Assistant Professor	(Construction Management)	Teaching – 14years Industrial – 05 year	NA
6	Mr.Pritesh Bhana	M.E. (Transportation Engineering)	Assistant Professor	(Transportation Engineering)	Teaching – 2years	NA
7	Ms.Ashwini Shanbagh	M.Tech. (Transportation Engineering and Management)	Assistant Professor	(Transportation Engineering and Management)	Teaching – 2years	NA
8	Mr. Vinayak Bachal	M.Tech. (Structural Engineering)	Assistant Professor	(Structural Engineering)	Teaching – 1years Industrial – 1.6 year	NA
9	Mr. Basheshwar Bansode	M.Tech. (Construction Management)	Assistant Professor	(Construction Management)	Teaching – 1years Industrial – 2.5 year	NA
10	Mr.Prashant Narayane	M.E. (Environmental Engineering)	Lecturer	(Environmental Engineering)	Teaching – 2.5years Industrial – 0.5 year	NA

Sr. No.	Name	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. Students guided for the last 4 years
11	Mr. Ashok Kattimani	M.Tech. (Transportation Engineering)	Assistant Professor	(Transportation Engineering)	Teaching – 1years	NA
12	Mr. Darshan Mali	M.E. (Water Resources Engineering)	Assistant Professor	(Water Resources Engineering)	Teaching – 4.6years	NA
13	Mr. Rahul Patil	B.E.(CIVIL) Pursuing-M.E. (Structural Engineering)	Lecturer	(Structural Engineering)	Teaching – 2.5years Industrial – 0.6 year	NA
14	Mr .Jitendra Kachare	B.E.(CIVIL) Pursuing-M.E. (Water Resources Engineering)	Lecturer	(Water Resources Engineering)	Teaching – 3.6years Industrial – 1 year	NA
15	Ms.Chaitaly Mehta	B.E.(CIVIL) Pursuing-M.E. (Water Resources Engineering)	Lecturer	(Water Resources Engineering)	Teaching – 3.6years Industrial – 1 year	NA
16	Mr. Vinod Salunkhe	B.E.(CIVIL) Pursuing-M.E. (EnvironmentalEngineering)	Lecturer	(Environmental Engineering)	Teaching – 3.6years Industrial – 1 year	NA

11.   List of senior visiting faculty: NIL

12.   Percentage of lectures delivered and practical classes handled (programme wise) by temporary faculty:

Programme	Percentage of lectures delivered	Percentage of practical classes handled
UG	98	100

13.   Student -Teacher Ratio (programme wise)

Sr. No.	Programme	Student -Teacher Ratio
1	UG	15:1

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled

	Sanctioned	Filled
Academic support staff (technical)	2	2
Administrative staff	NIL	NIL

15. Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ MPhil / PG.

     a. Ph.D.: - 01
     b. PG: - 11

16. Number of faculty with ongoing projects from a) National b) International funding agencies and grants received

     a. National: - NIL
     b. International: - NIL

17. Departmental projects funded by DST – FIST, UGC, DBT, ICSSR, etc. and total grants received:

NIL

18. Research Centre /facility recognized by the University: NIL

19. Publications:
    * Publication per faculty:

Sr. No.	Name of faculty or student	Number of papers published in peer reviewed journals (national / international)	Number of publications listed in International Database	Citation Index	SNIP	SJR	Impact factor	h-index
1	Dr.Seema Jagtap	11	-	-	-	-	6.301	-
2	Mr. Nilesh Patil	4	-	-	-	-	1.53	-
3	Ms.Ugandhara G	3	-	-	-	-	1.53	-
4	Ms.Rutuja Shinde	2	-	-	-	-	1.53	-
5	Mr. Arpit Vyas	1	-	-	-	-	1.53	-
6	Mr.Pritesh Bhana	3	-	-	-	-	1.53	-
7	Ms.Ashwini Shanbagh	2	-	-	-	-	1.53	-
8	Mr. Vinayak Bachal	1	-	-	-	-	3.14	-
9	Mr. Basheshwar Bansode	1	-	-	-	-	1.53	-
10	Mr.Prashant Narayane	4	-	-	-	-	3.55	-
11	Mr. Ashok Kattimani	2	-	-	-	-	1.53	-
12	Mr. Darshan Mali	2	-	-	-	-	1.53	-
13	Mr. Rahul Patil	2	-	-	-	-	1.53	-
14	Mr .Jitendra Kachare	1	-	-	-	-	1.53	-
15	Ms.Chaitaly Mehta	2	-	-	-	-	1.53	-
16	Mr. Vinod Salunkhe	1	-	-	-	-	1.53	-

     * Books Publication: NIL

20. Areas of consultancy and income generated: - NIL

21. Faculty as members in a) National committees, b) International Committees, c) Editorial Board

Sr. No.	Name of Faculty	Committee	Type
1	Dr.Seema Jagtap	Indian Society for Technical Education (ISTE)	National committee
		Indian Society for Hydraulics	National committee
		Indian Water Works Association	National committee
		Hydraulic Data User Group	National committee
2	Rutuja Shinde	American Society for Civil Engineers	International Committee

22. Student projects: (First batch is in third year)

    a. Percentage of students who have done in-house projects including inter departmental / programme: NIL
    b. Percentage of students placed for projects in organizations outside the institution i.e. in Research laboratories / Industry / other agencies: NIL

23. Awards / Recognitions received by faculty and students:

    a. Awards / Recognitions received by faculty: NIL

    b. Awards / Recognitions received by students:

Sr. No.	Student Count	Year
1	28	2016-17
2	17	2015-16

24. List of eminent academicians and scientists / visitors to the department

Sr. No.	Name of academicians and scientists / visitors	Designation	Organization
1	Dr. S. K. Ukarande	1) Principal 2) Dean FOT	1) KJ Somaiya Institute of Engineering and Information Technology, Sion 2) University of Mumbai
2	Dr. D. M. Devaikar	Professor	IIT Bombay
3	Dr.D. Datta	Senior Scientist	BARC

25. Seminars / Conferences / Workshops organized & the source of funding

    a. National

Sr. No.	Event	Title	Source of Funding	Year
1	STTP	Environmental Studies	IIT Bombay	2014-15
2	Workshop	Auto CADD and 3D Max	Participants	2015-16
3	Workshop	Advanced Surveying Techniques	AimilLmt.	2015-16
4	STTP	Introduction to Structural Engineering	IIT Khargpur	2015-16

    b. International

Sr. No.	Event	Title	Source of Funding	Year
1	Conference	International Conference on Advances in Civil Engineering-2016	Participants	2015-16
2	Conference	International Conference on Advances in Civil Engineering-2017	Participants	2016-17

26.   Student profile programme/course wise:

Name of the Course/programme (refer question no.4)	Academic Year	DSE			Students from First Year	Total	Enrolled		Pass Percentage
		Applications received		Selected			*M	*F	
		Minority	Open						
UG	2012-13	0	0	0	0	0	0	0	Civil Engineering Course started in the AY 2014-15.
	2013-14	0	0	0	0	0	0	0	
	2014-15	0	0	0	0	0	0	0	
	2015-16	93	0	34	120	154	142	12	Currently in Third Year.
	2016-17	14	60	#40	114	154	138	16	Currently in Second Year.

Note:- 1)#   Lateral Entry Seats + Vacant Seats + 51% Minority quota filled up through CAP (Centralised Admission Process) conducted by DTE (Mh.) (Directorate of Technical Education) *M = Male*F = Female

27.   Diversity of Students

Name of the Course	% of students from the same state		% of students from other States		% of students from abroad	
	Students from First Year 15-16	DSE- 2016	Students from First Year 15-16	DSE-2016	Students from First Year 15-16	DSE-2016
CIVIL ENGG.	98%	0	2%	0	0	0

28.   How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defence services, etc.?: NIL (First batch is in third year)

29.   Student progression: NIL (First batch is in third year)

30.   Details of Infrastructural facilities

   a.   Library: - The department has a separate library.

Sr. No.	Items	Qty.
1	Books	28
2	DVDs / CDs	2

   b.   Internet facilities for Staff & Students: - All staff room are provided with internet facility.

   c.   Class rooms with ICT facility: - Four spacious classrooms are well equipped with internet facility, screen and LCD projector.

   d.   Laboratories: - Ten well equipped laboratories.

31.   Number of students receiving financial assistance from college, university, government or other agencies

Agency	Number of students receiving financial assistance			
	2015-16	2014-15	2013-14	2012-13
College	0	0	0	0
University	1	0	0	0
Government Agencies	12+(1 in process)	0	0	0
Other Agencies	0	0	0	1

32. Details on student enrichment programmes (special lectures / workshops / seminar) with external experts

Sr. No.	Student Enrichment Programmes	Title	Year
1	Seminar by Industry persons	Higher Education Opportunities-MS/MBA	2015-16
2	Seminar by Industry persons	Modern Soft wares for Civil Engineers	2015-16
3	Seminar by Industry persons	NDT-Non Destructive Testing	2016-17
4	Seminar by Industry persons	GATE- Orientation	2016-17
5	Workshops / Training programmes	Concrete mix design (Ambuja Knowledge Centre; Andheri)	2016-17

33. Teaching methods adopted to improve student learning: -

- To develop teaching competencies, a faculty induction program is conducted at the institute level.
- Power point presentations, case studies, are used in classroom teaching to intensify learning in classroom
- Mini projects for better understanding of the subjects.
- Remedial lectures are arranged for slow learners.
- Expert speakers from industry or academic institutes are invited to conductspecial guest lectures.
- Workshops and internship programs are organized to bridge the gap betweencurriculum and industry needs.
- Industrial visits organized for social and technical understanding.

34. Participation in Institutional Social Responsibility (ISR) and Extension activities: -

The staff and students of the department take part in various social activities.

Under NSS, activities like organizing and attending Blood donation camp Swachh Bharat Abhiyaan, tree plantation, awareness of organ donation, Rakhiselling (manufactured by blinds), candle marching-yaadkaro kurbani, yoga day, easy writing and debate competition, constitional cafe, word café in college campus.
Rural development activities like zilhaparishad school teaching, street play on, 'BetiBachao, BetiPdhao', constructed village road, green garden at Saiwan village, Vasai East, Mumbai.

Students participate in many extension activities like the Mumbai marathon and road safety and traffic management, 1916 awareness, railway station painting (Kandivali and Jogeswari station), Leptopirosis awareness (Kandivali- East). Poster making- voting awareness, road safety.
Eleven faculties were involved in BMC election as assistant polling residing officer and polling officer.

35.   SWOC analysis of the department and Future plans: -

Strengths:

- Dedicated and motivated faculty
- Better results than that of the overall affiliating colleges in university of Mumbai
- Teaching with regard to state and national level competitive examinations

Weakness:

- No Consultancy Projects
- Few Ph.D. qualified faculties

Opportunity:

- Become Centre of Excellence in UG
- Improving research culture in the department

Challenges:

- Attracting good quality intake
- Attracting consultancy projects

Future Plans:

- To apply for and establish a P.G. and Ph.D. Research Centre in the department.
- To obtain research funds from funding agencies like AICTE, and other funding schemes
- To become the preferred choice of department among students aiming to take admission in Civil Engineering.

Evaluative Report: Department of Humanities and Sciences

1. Name of the department: - Department of Humanities and Sciences

2. Year of Establishment: - 2008
   (Earlier the department was merged with other engineering departments.)

3. Names of Programmes / Courses offered (UG, PG, M.Phil., Ph.D., Integrated Masters; Integrated Ph.D., etc.)

   Department of H&S runs First Year (F.E.) of all six undergraduate programs.

4. Names of Interdisciplinary courses and the departments/units involved: -

Sr. No.	Names of Interdisciplinary course	Year / Semester	From Department
1	Engineering Mechanics	1st Year / Sem I	Mechanical, Civil
2	Engineering Drawing	1st Year / Sem II	Mechanical, Civil
3	Basic Electrical Engineering	1st Year / Sem I	EXTC & ETRX
4	Structured Programming Approach	1st Year / Sem II	CMPN & IT

5. Annual/ semester/choice based credit system (programme wise)

   a. UG: - Semester Pattern
   b. PG: - Semester Pattern

6. Participation of the department in the courses offered by other departments:

Sr. No.	Course	Year / Semester	Department
1	Applied Mathematics - III	2nd Year / Sem III	All Departments
2	Applied Mathematics - IV	2nd Year / Sem IV	All Departments
3	Business Communication Ethics	3rd Year/ Sem V	All Departments

7. Courses in collaboration with other universities, industries, foreign institutions, etc.: -NIL

8. Details of courses/programmes discontinued (if any) with reasons: - NA

9. Number of Teaching posts

	Sanctioned	Filled
Professors	NA	-
Associate Professors	NA	-
Assistant Professors	NA	34

10. Faculty profile with name, qualification, designation, specialization, (D.Sc./D.Litt./Ph.D./M. Phil. etc.) (Refer Sample Form)

Sr. No.	Name of the Faculty	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. Students guided for the last 4 years
1.	Dr. Vivek Mishra	PhD	Assistant Professor	Non-Liner Dynamics, Fractional Calculus	15 Years	-

Sr. No.	Name of the Faculty	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. Students guided for the last 4 years
2.	Mr. Rohitkumar Singh	M.Sc., M.Tech	Assistant Professor	Green Technology	12 Years & 10 months	-
3.	Dr. SunitaPachori	Ph.D	Assistant Professor	Organic Chemistry	22 Years	-
4.	Ms. Mukul Bhatt	M.Sc	Assistant Professor	Special Functions	22 Years	-
5.	Dr. RajniBahuguna	Ph.D	Assistant Professor	Physics- Solid State Physics	26 Years	-
6.	Dr. Nita Jain	Ph.D	Assistant Professor	Fluid Mechanics	20 Years	-
7.	Dr. Poonam Ojha	Ph.D	Assistant Professor	English Language & Literature	22 Years	-
8.	Mr. Krishnakant Mishra	MSc, MTech	Assistant Professor	Liquid Crystals and Electronics	13 Years & 5 months	-
9.	Mr. YogeshBhalekar	M.Sc	Assistant Professor	Pure Mathematics	12 Years	-
10.	Mr. Sajjankumar Lal	M.E.	Assistant Professor	Manufacturing	12.5 Years	-
11.	Dr. Vinita Agarwal	PhD	Assistant Professor	Special function	18 Years	01
12.	Mr. Amol Dapkekar	M.A.	Assistant Professor	English Language & Literature	14 Years	-
13.	Mr. Ashwin Pathak	M.E.	Assistant Professor	Manufacturing	7 Years	-
14.	Dr. Satishkumar Singh	Ph.D	Assistant Professor	Fluid Dynamics	13.5 Years	-
15.	Dr. Sandhya Maheshwari	Ph.D	Assistant Professor	Queuing Theory	13 Years	-
16.	Dr. KiranSanap	Ph.D	Assistant Professor	Catalysis	2.5 Years	-
17.	Dr. Ela Agarkar	Ph.D	Assistant Professor	Ferroelectricity	13 Years	-
18.	Dr. Neha Mishra	Ph.D	Assistant Professor	Synthesis	0.5 Years	-
19.	Mr. AmolSapkal	M.Tech	Assistant Professor	Automobile Engineering	1.5 years	-
20	Ms. JyotiVanawe	M.A.	Assistant Professor	English Literature	4.5 Years	-
21.	Ms. Priya Pawaskar	M.A.	Assistant Professor	Business Communication	7 Years	-
22.	Mr. Bhim Kunte	M.A.	Assistant Professor	English Literature & Language	7.5 Years	-
23.	Mr. Sagar Parekh	M.Sc	Lecturer	Pure Mathematics	1.5 Years	-
24.	Mr. VimalGosar	M.E.	Lecturer	Manufacturing Systems	5 Years	-
25.	Mr. Vipin Kallingal	M.Tech	Assistant Professor	Thermal & Fluid	1.5 Years	-
26.	Mr. Aditya Shinde	B.E., ME Pursuing	Lecturer	Machine Design	3.5 Years	-
27.	Mr. Deepak Sinha	M.E.	Lecturer	MEMS & VLSI Design	4.5Years	-
28.	Mr. Sahil Attar	M.E.	Assistant Professor	Thermal Engineering	2 Years	-
29.	Mr. Nikhil V.S.	M.Tech	Assistant Professor	Manufacturing	0.5 Years	-

Sr. No.	Name of the Faculty	Qualification	Designation	Specialization	No. of Years of Experience	No. of Ph.D. Students guided for the last 4 years
30.	Mr. Pratik Joshi	M.Tech	Assistant Professor	Manufacturing	3 Years	-
31.	Mr. Vishal Tendulkar	M.Sc	Assistant Professor	General Physics	2.5 Years	-
32.	Dr. Asha Bhave	Ph.D	Assistant Professor	Thermoelectricity	6 Years	-
33.	Mr. Parmeshwar Paul	M.Tech	Assistant Professor	Thermal Engineering	1.5 Years	-
34.	Mr. Mushtaq Ahmed Shaikh	M.A.	Lecturer	Language & Literature	3 Years	-

11. List of senior visiting faculty: NIL
12. Percentage of lectures delivered and practical classes handled (programme wise) by temporary faculty:

Programme	Percentage of lectures delivered	Percentage of practical classes handled
UG	26.82	50.51
PG	-	-

13. Student -Teacher Ratio (programme wise)

Sr. No.	Programme	Student -Teacher Ratio
1	First Year - UG	19:1

14. Number of academic support staff (technical) and administrative staff; sanctioned and filled

	Sanctioned	Filled
Academic support staff (technical)	06	06
Administrative staff	-	-

15. Qualifications of teaching faculty with DSc/ D.Litt/ Ph.D/ MPhil / PG.
    a. Ph.D.   : - 12
    b. PG   : - 22
16. Number of faculty with ongoing projects from a) National b) International funding agencies and grants received

Sr. No.	Level	Number of faculty with ongoing projects	Grants received
a	National	01	30,000/-
b	International	-	-

17. Departmental projects funded by DST – FIST, UGC, DBT, ICSSR, etc. and total grants received (Refer Sample Data)

Sr. No.	Project Title	Sponsoring Agency	Grant Received
1.	Microwave assisted synthesis of Diphenolic acid by using Solid acid catalyst	UOM-Minor Research Grant	40,000/-
2.	Design & Development of an electrolytic cell for production of hydrogen from urine	IEDC-DST	100,000/-
3	Study of Nanocomposite	UOM-Minor Research Grant	40,000
4	Uses of Nanocomposite for Gas Detection	UOM-Minor Research Grant	50,000
5	Heat Transfer Analysis of Magneto Hydrodynamic Non Newtonian fluids	UOM-Minor Research Grant	25,000
6	Ethical Behaviour in engineering students	UOM-Minor Research Grant	25,000
7	Electro optical study of quantum dots doped in liquid crystal system	UOM-Minor Research Grant	30,000
	Total Grants in Rs.		310,000

18.   Research Centre /facility recognized by the University: - NIL

19.   Publications:
  *   Publication per faculty:

Sr. No.	Name of faculty or student	Number of papers published in peer reviewed journals (national / international)	Number of publications listed in International Database	Citation Index	SNIP	SJR	Impact factor	h-index
1.	Dr. Vivek Mishra	6	6	0	0	0	0	2
2.	Mr. Rohitkumar Singh	02	0	0	0	0	1.95	0
3.	Dr.Sunita Pachori	2	0	0	0	0	0	0
4.	Ms. Mukul Bhatt	5	0	0	0	0	0	0
5.	Dr. (Mrs.) RajniBahuguna			0	0	0	0	4
6.	Dr. Nita Jain	6		0	0	0	0	1
7.	Mr. Krishnakant Mishra	6	6	0	0	0	1.7	1
8.	Mr. Yogesh Bhalekar	1	0	0	0	0	0	0
9.	Mr. Sajjankumar Lal	1	0	0	0	0	0	1
10.	Dr. (Mrs.) Vinita Gupta	9	0	0	0	0	0	0
12.	Mr. Amol Dapkekar	3	0	0	0	0	3.28	0
13.	Mr. Ashwin Pathak			0	0	0		0
14	Dr. Neha Mishra	9	9	0	0	0	4.23	2
15.	Dr. Satish kumar Singh	0	0	0	0	0	0	0
16.	Dr. Sandhya Maheshwari	0	0	0	0	0	0	0
17.	Dr.KiranSanap	5	5	0	0	0	0	2
18.	Dr. Ela Agarkar	0	0	0	0	0	0	0
19.	Mr. AmolSapkal	2	0	0	0	0	0	0
21.	Mr. VimalGosar	3	3	0	0	0	0	0
22.	Mr. Vipin K	1	1	0	0	0	0	0
23	Mr. Pratik Joshi	1	1	0	0	0	0	0
24	Mr. Sahil Attar	1	0	0	0	0	0	0
25	Mr. Nikhil V.S.	1	0	0	0	0	1.65	0
26	Mr. Mushtaq Ahmed	3	1	0	0	0	0	0
27	Mr. Aditya Shinde	1	1	0	0	0	0	0
28	Mr. Bhim Kunte	3	0	0	0	0	0	0

Sr. No.	Name of faculty or student	Number of papers published in peer reviewed journals (national / international)	Number of publications listed in International Database	Citation Index	SNIP	SJR	Impact factor	h-index
29	Ms. J.S. Vanawe	0	0	0	0	0	0	0
30.	Mr. Parmeshwar Paul	0	0	0	0	0	0	0
31.	Mr. Sagar Parekh	0	0	0	0	0	0	0
32.	Mr. Vishal Tendulkar	0	0	0	0	0	0	0
33.	Mrs. PriyaPawaskar	4	0	0	0	0	3	0
34.	Dr. Asha Bhave	4	2	0	0	0	1.02	0

*   Books Publication

Sr. No.	Name of faculty	Chapter in Books	Books Edited	Books with ISBN/ISSN numbers with details of publishers
1	Dr. Vivek Mishra	Nil	-	978-93-5224-282-5 Tech -Max publication
2	Dr. Nita Jain	Nil	-	978-93-5224-282-5 Tech -Max publication
3	Mr. Yogesh Bhalekar	Nil	-	978-93-5224-282-5 Tech -Max publication
4	Dr.Vivek Mishra	Nil	-	978-93-5224-446-1 Tech -Max publication
5	Dr. Nita Jain	Nil	-	978-93-5224-446-1 Tech -Max publication
6	Mr. Yogesh Bhalekar	Nil	-	978-93-5224-446-1 Tech -Max publication
7	Dr.Rajni Bahuguna	NIl	-	IK International
8	Dr.Rajni Bahuguna	NIl	-	IK International

20.   Areas of consultancy and income generated: -

Sr. No.	Name of Faculty	Consultancy	Income
1	Dr. Vivek Mishra	IMC Ramkrishna Bajaj Award Examiner	Rs. 25000 (Approx.)
2	Dr.Rajni Bahuguna	IMC Ramkrishna Bajaj Award Examiner	Rs. 25000 (Approx.)

21.   Faculty as members in a) National committees, b) International Committees, c) Editorial Board

Sr. No.	Name of Faculty	Committee	Type
1	Dr. Vivek Mishra	National Conference in Applied Sciences & Humanities (NCASH-2016)& (NCASH-2017)	Editorial Board
2.	Dr.Rajni Bahuguna	National Conference in Applied Sciences & Humanities (NCASH-2016) & (NCASH-2017)	Editorial Board

Sr. No.	Name of Faculty	Committee	Type
3.	Amol Dapkekar	National Conference in Applied Sciences & Humanities (NCASH-2016) & (NCASH-2017)	Editorial Board
4.	Ashwin Pathak	National Conference in Applied Sciences & Humanities (NCASH-2016) & (NCASH-2017)	Editorial Board
5.	Vimal Gosar	National Conference in Applied Sciences & Humanities (NCASH-2016) & (NCASH-2017)	Editorial Board
6.	Kiran Sanap	National Conference in Applied Sciences & Humanities (NCASH-2016) & (NCASH-2017)	Editorial Board

22. Student projects

  a. Percentage of students who have done in-house projects including inter departmental / programme

Programme	2015-16	2014-15	2013-14	2012-13
UG	42.85%	4%	-	-
PG	-	-	-	-

  b. Percentage of students placed for projects in organizations outside the institution i.e. in Research laboratories / Industry / other agencies

Programme	2015-16	2014-15	2013-14	2012-13
UG	-	-	--	-

23. Awards / Recognitions received by faculty and students:

  a. Awards / Recognitions received by faculty:

Sr. No.	Nameof Faculty	Achievements/ Award / Recognitions	Awarding Agency	Year
1	Rajesh Behra, J. K. Patil, , Ashwin Pathak, SajjankumarLal, Dr. B. K. Mishra	1 Copyrights registered No. L-58290/2014	Copyright office, Govt. ofIndia	2014

  b. Awards / Recognitions received by students:

Sr. No.	Student Count	Year
1	5	2015-16
2	3	2014-15

24. List of eminent academicians and scientists / visitors to the department

Sr. No.	Name of academicians and scientists / visitors	Designation	Organization
1	Dr.D.A.R. Babu	Former Head	Radiology Department, AERB.

Sr. No.	Name of academicians and scientists / visitors	Designation	Organization
2	Dr.Vinayak Kulkarni	Associate Professor	University of Mumbai
3	Dr.Prakash Prahad	ResearchScientist	Institute of Chemical Technology (ICT)
4.	Dr.AjazulHaque	Assistant Professor-Head	Viva College of Engineering
5.	Dr. Rita Das	Associate Professor & Head	SPIT
6.	Dr.Jayshree Parikh	Ex. Associate Principal	Dilkap Research Institute of Engineering and Management Studies

25. Seminars / Conferences / Workshops organized & the source of funding
   a. National

Sr. No.	Event	Title	Sourceof Funding	Year
1	Conference	National Conference in Applied Sciences &Humanities	Self-finance	2015-16
2	FDP	National Seminar	Self-finance	2013-14
		Akash Tablet	Self-finance	2012-13
		Workshop on neutron scattering of latest materials 51th DAE symposium	Institute	2012-13
		Research methodology	Institute	2012-13
		ISTE IITB workshop	Institute	2013-14
		SPSS workshop	Institute	2013-14
		ISTE Workshop on pedagogy	Institute	2014-15
		ISO training	Institute	2014-15
		Workshop on enhancing educational productivity	Self-Financed	2015-16
		ISO auditor training	Self-Financed	2015-16
4	STTP	Control System	Sponsored by MHRD	2014-15
		Technical communication for engineers & scientist	Self-Financed	2015-16
		Engineering Physics	Sponsored by MHRD	2015-16

   b. International: Nil
26. Student profile programme/course wise:

Name of the Course/programme (refer question no. 4)	Academic Year	Applications received		Selected	Enrolled		Pass Percentage
		MINORITY	OPEN		*M	*F	
Undergraduate Courses.							
F.E.	2012-13	974	846	574	451	123	49.34%
F.E.	2013-14	865	866	571	454	117	60.44%
F.E.	2014-15	933	1354	696	579	117	55.28%
F.E.	2015-16	922	1232	695	565	130	50.59%
F.E.	2016-17	Admission done by DTE. Application received for Open Category only.	#401	695	559	136	-

*M = Male   *F = Female
Note:- 1)# 20% seats filled at Institute Level, 80% seats (51% Minority & 29% Maharashtra & All India Seats.) filled through CAP (Centralised Admission Process) conducted by DTE(Mh.) (Directorate of Technical Education)

27.   Diversity of Students

Name of the Course	% of students from the same state	% of students from other States	% of students from abroad
CMPN	97%	3%	0
IT	96%	4%	0
EXTC	97%	3%	0
ETRX	98%	2%	0
MECH	99%	1%	0
CIVIL	98%	2%	0

28.   How many students have cleared national and state competitive examinations such as NET, SLET, GATE, Civil services, Defence services, etc.?

       NA (Only First Year - UG Students in department)

29.   Student progression
       -NA (Only First Year - UG Students in department)

30.   Details of Infrastructural facilities

       a.   Library: - The department has a separate library.

Sr. No.	Items	2015-16	2014-15	2013-14	2012-13
1	Books	165	138	116	95

       b.   Internet facilities for Staff & Students: - One language lab with 49 computers having internet connections. Two staff room are provided with five computers with internet facility having speed of 52 Mbps
       c.   Class rooms with ICT facility: - 11 spacious classrooms are well equipped with internet facility, screen and LCD projector.

   d. Laboratories: - 7 well equipped dedicated laboratories for the subjects Applied Physics, Applied Chemistry, Engineering Mechanics, Engineering Drawing, Workshop and Language lab. We share 2 labs for Auto CAD Practicals, 2 labs for Structured Programming Approach practical and 2 lab for Basic Electrical and Electronic Engineering Practical from CMPN, IT and EXTC.

31.   Number of students receiving financial assistance from college, university, government or other agencies

Agency	Number of students receiving financial assistance			
	2015-16	2014-15	2013-14	2012-13
College	0	0	0	0
University	1	4	0	0
Government Agencies	32+ (3 in Process)	44	36	34
Other Agencies	3	3	0	7

32.   Details on student enrichment programmes (special lectures / workshops / seminar) with external experts

Count of Enrichment Programs Organized for Students	2016-17	2015-16	2014-15	2013-14	2012-13

Bridge Course - General English Proficiency Test (GEPT)	-	1	1	1	1
Workshops / Training programmes - Engineering Workshop and Paper Presentation Contest (EWPPC)	1	1	1	-	-

33. Teaching methods adopted to improve student learning: -
    i)   Structured Guided -Resource Book provided to each student
    ii) Power Point Presentation and animated video for each module

34. Participation in Institutional Social Responsibility (ISR) and Extension activities: -
    Department of Humanities& Sciences handles the activity of National Service Scheme (NSS) of the institute and also felicitate the extension activities of the institute. The following is the number of activities in the respective heads.

    NSS

Sr. No.	Year	No. of Activity
1	2015-16	37
2	2014-15	33
3	2013-14	26
4	2012-13	26

    Extension Work Team Activity (EWT)
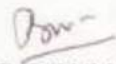
Sr. No.	Year	No. of Activity
1	2016-17	25

35. SWOC analysis of the department and Future plans: -
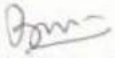
No.	Strength	Weakness	Opportunities	Challenges
1	Good Cooperation among Staff Members	It is Difficult sometimes to implement new things easily	Understanding among staff for better alignment among them	Balancing disparity in mindset among Staff Members
2	Perfect Mixture of Youngsters with the Experienced staff members	Staff Members leave for better opportunities in core department/ Degree Colleges	Recruiting People who are ready for long term	Creation of Environment so that staff members can be retained for long term
3	Staff Members are sincerely dedicated towards their job		Flexibility among members for better alignment among them	Helping Staff members in understanding the importance of other/departmental work
4	Good Training Environment for Freshers and Newly joined	Lot of Time is Utilized in training newly joined members	Better pre-decided training in subject would enhance time management	Proper designing of training sessions for new staff members

5	Staff Members readily accept any work	Work taken cannot be done easily with low tech savvy	Selection of new work in department can be done as per the expertise of staff members	Staff members can be trained for adapting work in multidisciplinary nature
6	Healthy Research Environment is generated due to mixture of multidisciplinary Faculty members	Multidisciplinary research stops scope of self-discipline research	Proper research environment can be developed where interdisciplinary staff members can participate	Selection of suitable research topic

Declaration by the Head of the Institution

THAKUR COLLEGE OF ENGINEERING & TECHNOLOGY
(Approved by AICTE, Govt. of Maharashtra & Affiliated to University of Mumbai*)
(Accredited Programmes by National Board of Accreditation, New Delhi**)

A - Block, Thakur Educational Campus,
Shyamnarayan Thakur Marg, Thakur Village,
Kandivali (East), Mumbai - 400 101.
Tel.: 6730 8000 / 8106 / 8107
Fax : 2846 1890
Email : tcet@thakureducation.org
Website : www.tcetmumbai.in - www.thakureducation.org

Ref.No.TCET/ 652 of 2017.   Date : 30/03/2017.

DECLARATION BY THE HEAD OF THE INSTITUTION

I certify that the data included in this Self-study Report (SSR) is true to the best of knowledge.

This SSR is prepared by the institution after internal discussions and no part thereof has been outsourced.

I am aware that the Peer team will validate the information provided in this SSR during the Peer team visit.

(Dr.B.K.Mishra)
Principal

With Seal:

Place: Mumbai, Kandivali

Date :- 30/03/2016.

Certificate of Compliance

Annexure II(i) First AICTE approval to CMPN/EXTC/IT (UG courses) for the AY.2001-02.

18 JUL 2001

अखिल भारतीय तकनीकी शिक्षा परिषद्
ALL INDIA COUNCIL FOR TECHNICAL EDUCATION
(भारत सरकार का एक सांविधिक संस्था) (A STATUTORY BODY OF THE GOVERNMENT OF INDIA)

F.No.: 740-89-040(NDEG)/ET/2001
Date : 28.06.2001

To
The Secretary
Higher & Technical Education &
Employment Department,
Govt. of Maharashtra
Mantralaya, Mumbai – 400 032.

Sub: AICTE approval to ZAGDU SINGH CHARITABLE TRUST THAKUR HOUSE, AHOKE NAGAR KANDIVALI (EAST) MUMBAI- 400 101 MAHARASHTRA for establishment of **THAKUR COLLEGE OF ENGG. & TECH. THAKUR VILLAGE, EAST OF WESTERN EXPRESS HIGHWAY KANDIVALI (E), MUMBAI- 400 101 MAHARASHTRA**

Sir,

I am directed to state that based on the consultations with the concerned State Govt., the concerned affiliating body and on recommendations of the Regional Committee, the Expert Committee constituted by the Council and as per the provisions of AICTE Act and Regulations, the All India Council for Technical Education (AICTE), is pleased to accord approval to ZAGDU SINGH CHARITABLE TRUST THAKUR HOUSE, AHOKE NAGAR KANDIVALI (EAST) MUMBAI- 400 101 MAHARASHTRA for establishment of **THAKUR COLLEGE OF ENGG. & TECH. THAKUR VILLAGE, EAST OF WESTERN EXPRESS HIGHWAY KANDIVALI (E), MUMBAI- 400 101 MAHARASHTRA** for the academic year2001-02, for course(s) and intake as given below with specific condition that admission shall be made through the Central Counseling by the Government of Maharashtra only. This approval is valid only for the academic years 2001-2002 and cannot be extended for the next year 2002-2003. In the event the establishment of the institutions having not been operationalised, this approval is not valid unless AICTE specifically revalidates.

COURSE(S)	INTAKE	LEVEL	DURATION (YEARS)	PERIOD OF APPROVAL
INFORMATION TECHNOLOGY	60	Degree	4	2001-02
COMPUTER ENGINEERING	60	Degree	4	2001-02
ELECTRONICS & TELECOMM. ENGINEERING	60	Degree	4	2001-02

This approval has been accorded subject to fulfillment of general conditions and as per the Norms and Standards of the AICTE, and also specific conditions (if any, given).

The attention of the management is drawn to the fact that the approval given now is only for one academic session before the end of which an expert committee shall visit to assess if the norms and standards as stipulated by AICTE are fulfilled, and only then will the continuation or otherwise shall be intimated.

The admission will be made in accordance with Regulations notified by the AICTE vide GSR 476(E) dated 20.05.1994 based on the Hon'ble Supreme Court Judgement dated 04.02.1993 with regard to WP(C) No. 607 of 1992 in the case of Unni Krishanan JP and other etc. V/s. State Government of Andhra Pradesh and others etc. and later judgements. No Management/Institute/Trust or Society shall announce admissions directly under any circumstances. Any action by the institute contrary to any provisions laid down by the Council and concerned State Government shall make it liable for actions.

PRINCIPAL
Thakur College of Eng. & Tech.
evam Narayan Marg, Thakur Village
Kandivli (E), Mumbai-400101

F.NO.740-89-040(NDEG)/ET/2001.
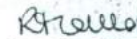
- 2 -

In the event of infringement/contravention or non-compliance of the provisions of AICTE Regulations, Guidelines or the norms and standards as prescribed by the AICTE, the Council shall take further action to withdraw approval, and the liability arising out of such withdrawal of approval will be solely that of Management/Trust/Society and/or Institution

The Council may inspect/ visit the Institution any time it may deem fit to verify the progress/ compliance.

You are requested to kindly monitor the progress made by this institution towards fulfilling the norms and standards prescribed by the Council and keep the concerned Regional Office and AICTE, New Delhi informed.

Yours faithfully,

(Prof. R.S. Gaud)

Copy to :

1. The Regional Officer, WRO, AICTE, 2nd Floor, Industrial Assurance Building, Opp.: Churchgate Railway Station, Veer Nariman Road, Mumbai- 400 020, Maharashtra
He is requested to monitor compliance with the Norms and Standards and conditions stipulated by the Council and keep the concerned Regional Committee and the AICTE informed of the same.

He is also requested to ensure the receipt of notorised undertaking as specified by the Council from the institution/management concerned within the stipulate time frame.

2. The Director of Technical Education, Govt. of Maharashtra, Mumbai – 400 001

3. The Registrar, UNIVERSITY OF MUMBAI
He is requested to complete the process of affiliation for facilitating admissions.
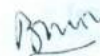
4. The Principal, THAKUR COLLEGE OF ENGG. & TECH, THAKUR VILLAGE, EAST OF WESTERN EXPRESS HIGHWAY KANDIVALI (E), MUMBAI- 400 101 MAHARASHTRA
(i) The institution should submit a notorised undertaking on non-judicial stamp paper as per format given in Annexure I to the concerned Regional Office, AICTE with a copy to the Headquarters, AICTE, New Delhi within one month from the date of receipt of this approval letter.

(ii) The institution/management should also submit a notorised undertaking from the Governing Body to the concerned Regional Office, AICTE with a copy to Headquarters, AICTE, New Delhi and to the concerned State Government, that all the infrastructural and instructional facilities shall be in place as per the norms of AICTE prior to the admissions of any student for the academic year 2001-2002.

5. Guard File.

File No.:740-89-040(NDEG)/ET/2001

SPECIFIC CONDITIONS:

1. NECESSARY CONSTRUCTION, PROCUREMENT AND INSTALLATION OF EQUIPMENT AND FURNITURES SHALL BE DONE LATEST BY 15 JULY, 2001.
2. QUALIFIED FACULTIES SHALL BE ENGAGED AS PER AICTE NORMS AND DETAILS, THEROF, BE SUBMITTED BY 31ST AUGUST, 2001.
3. STATUTORY PROVISIONS OF P.F. ETC TO BE FOLLOWED AND DETAILS, THEREOF, BE SUBMITTED BY 31ST AUGUST, 2001.
4. PAY SCALES AS PER 5TH PAY COMMISSSION ALONG WITH USUAL STATE GOVT. D.A. BE FOLLOWED AND PROOF IN THIS REGARD BE SUBMITED BY 31ST AUGUST, 2001.
5. DETAILED PLAN IN RESPECT OF INFRASTRUCTURE DEVELOPMENT TO MEET THE FULL REQUIREMENT OF INFRASTRUCTURES,, AS PER AICTE NORMS OVER A PERIOD OF 2 YEARS BE SUBMITTED BY 31ST AUGUST, 2001.

PRINCIPAL
Thakur College of Engg. & Tech.

Annexure II (ii) AICTE Extension of Approval to UG / PG Engg. courses for AY.2016-17.

All India Council for Technical Education
(A Statutory body under Ministry of HRD, Govt. of India)

7th Floor, Chandralok Building, Janpath, New Delhi- 110 001
PHONE: 23724151/52/53/54/55/56/57 FAX: 011-23724183 www.aicte-India.org

F.No. Western/1-2809808254/2016/EOA

Date: 05-Apr-2016

To,

The Secretary,
Tech. & Higher Education Deptt.
Govt. of Maharashtra, Mantralaya,
Annexe Building, Mumbai-400032

Sub: Extension of approval for the academic year 2016-17

Ref: Application of the Institution for Extension of approval for the academic year 2016-17

Sir/Madam,

In terms of the provisions under the All India Council for Technical Education (Grant of Approvals for Technical Institutions) Regulations 2012 notified by the Council vide notification number F-No.37-3/Legal/2012 dated 27/09/2012 and norms standards, procedures and conditions prescribed by the Council from time to time, I am directed to convey the approval to

Regional Office	Western	Application Id	1-2809808254
Name of the Institute	THAKUR COLLEGE OF ENGINEERING & TECHNOLOGY	Permanent Id	1-5937743
Name of the Society/Trust	ZAGDU SINGH CHARITABLE TRUST	Institute Address	SHYAMNARAYAN THAKUR MARG, THAKUR VILLAGE, KANDIVALI (EAST), MUMBAI - 400101., MUMBAI, MUMBAI SUBURBAN, Maharashtra, 400101
Institute Type	Unaided - Private	Society/Trust Address	THAKUR HOUSE, ASHOK NAGAR - I, KANDIVALI (EAST),MUMBAI,MUMBAI SUBURBAN,Maharashtra,400101

Opted for change from Women to Co-ed and Vice versa	No	Opted for change of name	No	Opted for change of site	No
Change from Women to Co-ed approved and Vice versa	Not Applicable	Change of name Approved	Not Applicable	Change of site Approved	Not Applicable

To conduct following courses with the intake indicated below for the academic year 2016-17

Application Id: 1-2809808254			Course		Affiliating Body		Intake 2015-16	Intake Approved for 2016-17	NRI Approval status	PIO / FN / Gulf quota Approval status	Foreign Collaboration/Twining Program Approval status
Program	Shift	Level		Full/Part Time							
ENGINEERING AND	1st Shift	POST GRA	COMPUTER ENGINEERING	FULL TIME	Mumbai University, Mumbai		18	18	NA	NA	NA

Application Number: 1-2809808254
Note: This is a Computer generated Report.No signature is required.

Printed By : AE4175591

Page 1 of 3
Letter Printed On:28 April 2016

All India Council for Technical Education
(A Statutory body under Ministry of HRD, Govt. of India)

7th Floor, Chandralok Building, Janpath, New Delhi- 110 001
PHONE: 23724151/52/53/54/55/56/57 FAX: 011-23724183 www.aicte-India.org

TECHNOLO GY		DUA TE								
ENGINEERIN G AND TECHNOLO GY	1st Shift	POS T GRA DUA TE	ELECTRONICS & TELE-COMMUNICATI ON ENGINEERING	FULL TIME	Mumbai University, Mumbai	18	18	NA	NA	NA
ENGINEERIN G AND TECHNOLO GY	1st Shift	POS T GRA DUA TE	INFORMATION ENGINEERING	FULL TIME	Mumbai University, Mumbai	18	18	NA	NA	NA
ENGINEERIN G AND TECHNOLO GY	1st Shift	UND ER GRA DUA TE	CIVIL ENGINEERING	FULL TIME	Mumbai University, Mumbai	120	120	NA	NA	NA
ENGINEERIN G AND TECHNOLO GY	1st Shift	UND ER GRA DUA TE	COMPUTER ENGINEERING	FULL TIME	Mumbai University, Mumbai	120	120	NA	NA	NA
ENGINEERIN G AND TECHNOLO GY	1st Shift	UND ER GRA DUA TE	ELECTRONICS ENGINEERING	FULL TIME	Mumbai University, Mumbai	60	60	NA	NA	NA
ENGINEERIN G AND TECHNOLO GY	1st Shift	UND ER GRA DUA TE	ELECTRONICS & TELE-COMMUNICATI ON ENGINEERING	FULL TIME	Mumbai University, Mumbai	120	120	NA	NA	NA
ENGINEERIN G AND TECHNOLO GY	1st Shift	UND ER GRA DUA TE	INFORMATION TECHNOLOGY	FULL TIME	Mumbai University, Mumbai	120	120	NA	NA	NA
ENGINEERIN G AND TECHNOLO GY	1st Shift	UND ER GRA DUA TE	MECHANICAL ENGINEERING	FULL TIME	Mumbai University, Mumbai	120	120	NA	NA	NA

The above mentioned approval is subject to the condition that THAKUR COLLEGE OF ENGINEERING & TECHNOLOGY shall follow and adhere to the Regulations, guidelines and directions issued by AICTE from time to time and the undertaking / affidavit given by the institution along with the application submitted by the institution on portal.

In case of any differences in content in this Computer generated Extension of Approval Letter, the content/information as approved

Application Number: 1-2809808254
Note: This is a Computer generated Report.No signature is required.

Page 2 of 3
Letter Printed On:28 April 2016

Printed By : AE4175591

All India Council for Technical Education
(A Statutory body under Ministry of HRD, Govt. of India)

7th Floor, Chandralok Building, Janpath, New Delhi- 110 001
PHONE: 23724151/52/53/54/55/56/57 FAX: 011-23724183 www.aicte-India.org

by the Executive Council / General Council as available on the record of AICTE shall be final and binding.

Strict compliance of Anti-Ragging Regulation:- Approval is subject to strict compliance of provisions made in AICTE Regulation notified vide F. No. 37-3/Legal/AICTE/2009 dated July 1, 2009 for Prevention and Prohibition of Ragging in Technical Institutions. In case Institution fails to take adequate steps to Prevent Ragging or fails to act in accordance with AICTE Regulation or fails to punish perpetrators or incidents of Ragging, it will be liable to take any action as defined under clause 9(4) of the said Regulation.

Note: Validity of the course details may be verified at www.aicte-india.org

Dr. Avinash S Pant
Vice - Chairman, AICTE

Copy to:
1. The Regional Officer,
    All India Council for Technical Education
    Industrial Assurance Building
    2nd Floor, Nariman Road
    Mumbai - 400 020, Maharashtra

2. The Director Of Technical Education,
    Maharashtra

3. The Registrar,
    Mumbai University, Mumbai

4. The Principal / Director,
    THAKUR COLLEGE OF ENGINEERING & TECHNOLOGY
    SHYAMNARAYAN THAKUR MARG, THAKUR VILLAGE, KANDIVALI   (EAST), MUMBAI -400101.,
    MUMBAI,MUMBAI SUBURBAN,
    Maharashtra,400101

5. The Secretary / Chairman,
    ZAGDU SINGH CHARITABLE TRUST
    THAKUR HOUSE, ASHOK NAGAR - I, KANDIVALI   (EAST),
    MUMBAI,MUMBAI SUBURBAN,
    Maharashtra,400101

6. Guard File(AICTE)

Application Number: 1-2809808254
Note: This is a Computer generated Report.No signature is required.

Printed By : AE4175591

Page 3 of 3
Letter Printed On:28 April 2016

Annexure III(i) Permanent Affiliation to CMPN/EXTC/IT(UG Courses) from the AY.2015-16.

University of Mumbai

URGENT/BY HAND
No.Aff-II./ICD/15-16/ 398
Mumbai-400 032.
02 June, 2016.

To,
The Principal,
Zagadu Singh Charitable Trust
Thakur College of Engineering & Technology,
A-Block, Thakur Educational Campus,
Shyamnarayan Thakur Marg,
Thakur Village, Kandivali (E),
Mumbai-400 101

THAKUR COLLEGE OF ENGINEERING AND TECHNOLOGY
KANDIVALI (EAST)
MUMBAI - 400101
Received on 02/06/16 Time 6.00 P.m.
Inward No 7030 By bond
Inward Type : Correspondence / Bill

Sir,

This has reference to your Letter No.TCET/1286 of 2013, dated 27th August, 2013 in the matter of Permanent Affiliation relating to the B. E. degree courses of your college from the academic year 2015-16.

In this connection, I am to inform you that the Academic Council at its meeting held on 31st August, 2015 **vide** item No 3.4 considered the report of Local Inquiry Committee and resolved as under:-

"It is resolved that the report of the Local Inquiry Committee be accepted, and that in accordance therewith, the Thakur College of Engineering & Technology, Kandivali (E), Mumbai be granted Permanent affiliation for the teaching of the course leading to the Examination of Information Technology (120), Computer Engineering (120) and Electronics & Telecommunication Engineering (120) from the academic year 2014-15 and 2015-16.

Further the aforesaid affiliation is granted subject to condition that the college authorities gives an undertaking in writing that they will fulfill the conditions mentioned in the report to the satisfaction of the Academic Council and payment of the requisite affiliation fees for the respective years. Also the concerned college will participate in the examinations related work and the teachers will involve in the Central Assessment Scheme of the University in both halves of the examinations."

In pursuance of the resolution of the Academic Council, I am to inform you that Zagadu Singh Charitable Trust, Thakur College of Engineering &Technology, A-Block, Thakur Educational Campus, Shyamnarayan Thakur Marg, Thakur Village, Kandivali (E), Mumbai-400 101 has been granted permanent affiliation for teaching of the course of studies for the Bachelor of Engineering Degree course imparting (1) Information Technology (120) , (2) Computer Engineering (120) and (3) Electronics & Telecommunication Engineering (120) from the academic year 2015-16, subject to condition that the college authorities gives an undertaking in writing that they will participate in the examinations related work and the teachers will involve in the Central Assessment Scheme of the University in both halves of the examinations.

A copy of the report of Local Inquiry Committee is enclosed for your information, accordingly.
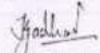
Yours faithfully

(SANTOSH SONAVANE)
Offg. DEPUTY REGISTRAR
Affiliation Section

Annexure III(ii) Continuation/Extension of Affiliation to ETRX/MECH/CIVIL (UG) for AY.2016-17.

University of Mumbai

URGENT/BY HAND
No.Aff-II./ICD/16-17/399
Mumbai-400 032.
02 May,2016.
June,

To,
The Principal,
Zagdu Singh Charitable Trust's
Thakur College of Engineering & Technology,
A-Block, Shaymnarayan Thakur Marg,
Thakur Village, Samata Nagar,
Kandivli (E), Mumbai - 400 101

THAKUR COLLEGE OF ENGINEERING AND TECHNOLOGY
KANDIVALI (EAST)
MUMBAI - 400101
Received on 02/06/2016 Time: 6.08 P.m.
Inward No ...7031... By ...hand...
Inward Type : Correspondence / Bill

Sir,

    With reference to your application dated 26th August 2015 for granting continuation/extension of affiliation for teaching the course of the Engineering degree course for the academic year 2016-17, I am to inform you that the Academic Council at its meeting held on 23rd May, 2016 **vide item No. 3.1** resolved as under.
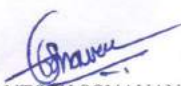
    "The Institutions to whom, the AICTE has granted extension of affiliation and where LIC committees of Mumbai University have also recommended the approval for Continuation / Extension, the same be granted to such Engineering Colleges for the academic year 2016-17".

    In pursuance to the above resolution of the Academic Council, I am to inform you that your college be granted continuation of affiliation of the teaching courses (1) Electronics Engineering (60) (2) Mechanical Engineering (120) (3) Civil Engineering (120) for the academic year 2016-17.

    Further that aforesaid affiliation is granted subject to condition that the college authorities gives an undertaking in writing that they will fulfill the conditions mentioned in the report to the satisfaction of the Academic Council and payment of the requisite affiliation fees for the respective years. Also the concerned college will participate in the examinations related work and the teachers involve in the Central Assessment Scheme of the University in both halves of the examinations

    A copy of the report of the Local Inquiry Committee is enclosed for your information & compliance, accordingly.

Yours faithfully,

(SANTOSH SONAVANE)
Offg. DEPUTY REGISTRAR
AFFILIATION SECTION

Encl.:As above

Annexure III(iii) Continuation of Affiliation to EXTC/CMPN/IT (PG courses) for AY.2016-17.

Computer/Local Disk (F:)/Affiliation.Praveen/ATR

University of Mumbai

URGENT/BY HAND
No.Aff./ICD/16-17/ 2414
Mumbai- 400 032.
20ᵗʰ March, 2017

To,
The Principal,
Zagdu Singh Charitable Trust's,
Thakur College of Engineering and Technology,
A-Block, Thakur Educational Campus,
Shyamnarayan Thakur Marg,
Thakur Village, Kandivali (E),
Mumbai- 400 101.

Sir,

With reference to your application for continuation of affiliation for teaching the courses of study for (1) M.E.- Computer Engineering, (2) M.E.- Electronics & Telecommunication and (3) M.E.- Information Technology degree courses for the academic year 2016-17, I am directed to inform you that the report of the local inquiry committee on your application had been placed before the Academic Council at its meeting held on 28ᵗʰ February, 2017 vide item No. 3.1, when the council resolved as under:-

"It is resolved that, the reports of the Local Inquiry Committee be accepted and that in accordance therewith, Post Graduate Colleges/ Institutes Affiliated to University be granted Continuation/ Extension of Affiliation for the teaching of the various degree courses leading to the Examination of M.M.M., M.F.M., M.I.M., M.M.S., M.H.R.D.M., M.Arch, M.Pharm, M.E., M.C.A., M.Sc., M.Com. & M.A. Post Graduate Degree Courses of the Colleges/ Post Graduate Institutes as per the list annexed herewith for the academic year 2016-17 and previous years, if any.

Further the aforesaid affiliation is granted subject to condition that the college authorities gives an undertaking in writing that they will fulfill the conditions mentioned in the report to the satisfaction of the Academic Council and payment of the requisite affiliation fees for the respective years. Also the concerned college will participate in the examinations related work and the teachers will involve in the Central Assessment Scheme of the University in both halves of the examinations."

In pursuance of the resolution of the Academic Council, I am to inform you that, Zagdu Singh Charitable Trust's, Thakur College of Engineering and Technology, A-Block, Thakur Educational Campus, Shyamnarayan Thakur Marg, Thakur Village, Kandivali (E), Mumbai- 400 101, has been granted continuation of affiliation for the teaching of the courses of study for (1) **M.E.- Computer Engineering with intake of 18 students, (2) M.E.- Electronics & Telecommunication with intake of 18 students and (3) M.E.- Information Technology with intake of 18 students for the academic year 2016-17**, subject to conditions mentioned in the report and also subject to the condition that the college authorities gives an undertaking in writing that they will fulfill the conditions mentioned in the report to the satisfaction of the Academic Council and payment of the requisite affiliation fees for the respective years. Also the concerned college will participate in the examinations related work and the teachers will involve in the Central Assessment Scheme of the University in both halves of the examinations.

A copy of the report of the local inquiry committee is enclosed herewith for your perusal.

Yours faithfully

(Dr. Jaydatt Jadhav)
Assistant Registrar
Affiliation

Encl: LIC Report

Annexure IV (i) Recognition for Ph.D.(Technology) in EXTC branch for AY.2016-17.

University of Mumbai

URGENT/COURIER
Th./ICD/2014-15/S71)
Mumbai-400 032,
16th January, 2015.

The Principal,
Zagdu Singh Charitable Trust,
Thakur College of Engineering & Technology
Shyam Narayan Thakur Marg,
Thakur Village,Kandivali (E),
Mumbai-400 101.

Sir,

This has reference to your proposal dated 27th August, 2014, for Extention of Recognition to enroll the students for **Ph.D.(Technology)** degree in the branches of **Electronic & Telecommunication Engineering** and **Computer Engineering** from the year 2014-15.

In this connection, I write to inform you that the report of the Local Inquiry Committee for Extention of Recognition to enroll students for the **Ph.D.(Technology)** degree in the branchea of **Electronic & Telecommunication Engineering** and **Computer Engineering** placed before Board of University Teaching and Research (B.U.T.R.) in the Faculty of Technology at its meeting held on 19th September, 2014 vide item No. 07, when it was resolved as under:-

"Resolved that the report of the Local Inquiry Committee be accepted and Permission **be not granted** the extension of recognition to **Computer Engineering** branch and be **granted in Electronic & Telecommunication Engineering branch** to Zagdu Singh Charitable Trust, Thakur College of Engineering & Technology Shyam Narayan Thakur Marg, Thakur Village,Kandivali (E), **Mumbai-400 101.**,for recognition to enroll 10 (ten) students for **Ph.D.(Technology)** degree in the branch of **Electronic & Telecommunication Engineering** for the acadmic year-2014-15."

The above recommendations have been accepted by the Academic Council at its meeting held on 23rd September, 2014 vide item No 8.1.

In pursuance to the above resolution of the Board of University Teaching and Research (B.U.T.R.), I am to inform you that **Zagdu Singh Charitable Trust,** Thakur College of Engineering & Technology, Shyam Narayan, Thakur Marg, Thakur Village,Kandivali (E), **Mumbai-400 101,** has been granted permission for Recognition to enroll **10 (Ten) students** for the **Ph.D.(Technology)** degree in the branch of **Electronic & Telecommunication Engineering** for the academic year 2014-15 and permission **has not been granted** to **Computer Engineering** branch.

You are requested to submit the proposal for continuation of recognition for the acadmic year 2015-16 with the prescribed fee to the University **for the Electronic & Telecommunication Engineering branch** only.

Yours faithfully,

Yogini Surve
for **Controller of Examinations.**

AnnexureIV(ii)Continuation of Recognition for Ph.D.(Technology)in EXTC branch till AY 2019-20.

University of Mumbai

URGENT/COURIER
Th./ICD/2015-16/ 5127
Mumbai-400 032,
9th October, 2015

The Principal,
Thakur College of Engg & Technology,
Shyam Naryan Thakur Marg,
Thakur Village,
Kandivali (E),
Mumbai – 400 101.

Sir,

This has reference to your proposal dated 26th March, 2015 for **Continuation of Recognition** to enroll the students for **Ph.D. (Technology)** degree in the branch of **Electronics & Telecommunication Engineering** from the year 2015-16.

In this connection, I write to inform you that the report of the Local Inquiry Committee for **Continuation of Recognition** to enroll students for the **Ph.D. (Technology)** degree in the branch of **Electronics & Telecommunication Engineering** placed before Board of University Teaching and Research (B.U.T.R.) in the Faculty of Technology at its meeting held on 27th August, 2015 vide item No.07 when it was resolved as under :-

"Resolved that the report of the Local Inquiry Committee be accepted and permission **be granted** to Thakur College of Engg & Technology, Shyam Naryan Thakur Marg, Thakur Village, Kandivali (E), Mumbai – 400 101, requested for **Continuation of Recognition** to enroll 10 (ten) students for the **Ph.D. (Technology) Degree** in the subject of **Electronics & Telecommunication Engineering** for a period of 05 (Five) years from the academic year 2015-16, subject to fulfill the conditions to the satisfaction to the Academic Council.

Subject to fulfillment od the following condition:
- Adequate number of national and International journals be subscribed.
- Adequate application software be made available for research work.
- Required number of high and equibement be made available.."

The above recommendations have been accepted by the Academic Council at its meeting held on 31st August, 2015 vide item No. 6.4.

In pursuance to the above resolution of the Board of University Teaching and Research (B.U.T.R.), I am to inform you that, **Thakur College of Engg & Technology, Shyam Naryan Thakur Marg, Thakur Village, Kandivali (E), Mumbai – 400 101,** has been granted permission for **Continuation of Recognition** to enroll **10 (ten)** students for the **Ph.D.(Technology)** degree in the branch of **Electronics & Telecommunication Engineering** for a period of 5 years from the academic year **2015-16** subject to fulfilled the conditions mentioned above in the resolution.

Further, you are requested to pay the fees of Rs.3,00,000/-(Three Lakh only) towards the continuation of recognition for the acadmic year 2016-17 to 2019-20, since, you have remitted short payment at the earlier and submit the proposal for continuation of recognition for the acadmic year 2020-21, with the prescribed fee to the University.

Yours faithfully,

for Asistant Registrar.

Annexure V(i) First Time NBA Accreditation for EXTC/CMPN/IT (UG courses).

Kind Attentation to Chairman.

NATIONAL BOARD OF ACCREDITATION

Bisham Pitamah Marg, Pragati Vihar, Lodhi Road,
4th Floor, NBCC Building, East Tower,
(An Autonomous Body of All India Council for Technical Education)
Tel: 011-2436081, Tel Fax: 011-2436082
New Delhi- 110 003

Dr. D.K. Paliwal
Member Secretary, NBA

File No. 28-175/2010-NBA

Dt.22.09.2011

To

The Director/ Principal
Zagdu Singh Charitable Trust's,
Thakur College of Engg. & Technology,
Shyamnarayan Thakur Marg, Thakur Village,
Kandivli (East), Mumbai – 400 101, (Maharashtra)

Subject-Accreditation status of programmes offered by Zagdu Singh Charitable Trust's,Thakur College of Engg. & Technology, Shyamnarayan Thakur Marg, Thakur Village, Kandivli (East), Mumbai – 400 101, (Maharashtra)

Dear Sir/ Madam,

This has reference to your application dated 28.04.2009 seeking accreditation of National Board of Accreditation to various Programmes.

2.   An Expert Committee conducted an on-site evaluation of the programmes. The report submitted by the expert committee was considered by the Engineering & Technology Accreditation Evaluation Committee (EAEC) for the concerned programmes. The Chairman of Executive Committee (EC) of the National Board of Accreditation considered the recommendations of the relevant Accreditation Evaluation Committee for each programme on 16-09-2011. The Chairman approved the accreditation status of each programme of your institution which is as under:

S. No	Name of the Programme(s)	Accreditation status	Period of validity w.e.f 16-9-2011
1	B.E. Information Technology	Accredited	3 years
2	B.E. Electronics & Telecommunication Engg.	Accredited	3 years
3	B.E. Computer Engg.	Accredited	3 years

3.   The accreditation status awarded to the programmes as indicated in the above paragraph does not imply that the accreditation has been granted to the **Zagdu Singh Charitable Trust's,Thakur Collegeof Engg. & Technology,** Shyamnarayan Thakur Marg, Thakur Village, Kandivli (East), Mumbai – 400 101, (Maharashtra) as a whole. The complete name of the programme(s) accredited, level of programmes (UG or PG as the case may be) and the period of validity of accreditation, as well as the date from which the accreditation is effective, should be mentioned unambiguously whenever and wherever it is required to indicate the status of accreditation by NBA.

4.   The accreditation status of the above programme (s) is subject to change on periodic review by the NBA Secretariat if major deficiencies are noticed. It is desired to comply with the mandatory disclosure of pertinent information in respect of accredited programmes indicated in table in paragraph 2 above in proforma prescribed on the website of the National Board of Accreditation. The same information is also required to appear on the website and information bulletin of your institution.

5.   The accreditation status awarded to the programmes as indicated in table in paragraph 2 above is subject to maintenance of the current standards during the period of accreditation. If there are any changes in the status (major changes of faculty strength, organizational structure etc.), the same are required to be communicated to the NBA, with an appropriate explanatory note.

6.   A copy of the comprehensive Report submitted by the Chairman of the Expert Committee which visited your institution is enclosed for reference and taking necessary action to overcome the shortcomings, if any, observed by the Expert Team.

7.   If the institution is not satisfied with the decision of NBA, appeal may be filed within thirty days of receipt of this communication giving reasons for the same and by paying the requisite fee.

Yours faithfully,

(Dr. D.K. Paliwal)
Member Secretary

Encls: Copy of Report of Chairman of the Visiting Team

Copy to

1. The Vice Chancellor
    University of Mumbai
    M.G. Road Fort
    Mumbai-400 032

2. The Director,
    Directorate of Technical Education,
    Govt. of Maharashtra,
    3, Mahapalika Marg,
    Mumbai-400 001 (MS)

3. The Regional Officer, AICTE,
    Western Regional Office,
    Industrial Assurance Building,
    2nd Floor, Nariman Road,
    Mumbai-400 020 (Maharashtra)

4. Accreditation File

5. Master accreditation file of the State.

Annexure V(ii) Second Time NBA Accreditation for EXTC/CMPN/IT&ETRX (UG courses).

NATIONAL BOARD OF ACCREDITATION

NBCC Place, East Tower, 4ᵗʰ Floor, Bhisham Pitamah Marg,
Pragati Vihar, New Delhi-110 003
Tel: +91 11 2436 0620-22, 2436 0654 Telefax: +91 11 2436 0682
Website: www.nbaind.org

NATIONAL BOARD of ACCREDITATION

File No: 28-175/2010/NBA   ४|४|१६ 3.00
                                          6841 Enter

Date : 14.04.2016

To

    The Principal,
    Zagdu Singh Charitable Trusts Thakur College of Engg. & Technology,
    Shyam Narayan Thakur Marg,
    Thakur Village, Kandivali (E),
    Mumbai 400101. Maharashtra .

Subject: Accreditation status of programs applied by Zagdu Singh Charitable Trusts Thakur College of Engg. & Technology, Shyam Narayan Thakur Marg, Thakur Village, Kandivali (E), Mumbai 400101 Maharashtra

Sir,

    This has reference to your application dated 11-06-2014 seeking accreditation by National Board of Accreditation to UG Engineering programmes offered by Zagdu Singh Charitable Trusts Thakur College of Engg. & Technology, Shyam Narayan Thakur Marg, Thakur Village, Kandivali (E), Mumbai 400101 Maharashtra.

2.   An Expert Team conducted an on-site evaluation of the programs during 12ᵗʰ to 14ᵗʰ February, 2016. Report of the Expert Team was considered by the concerned Committees constituted for the purpose in NBA. The competent authority in NBA has approved the accreditation status to the following program as given in the table below:

Sl. No.	Name of the Programmes	Level	Basis of Evaluation	Accreditation Status	Period of validity w.e.f. 01.07.2016	Remarks
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	Computer Engineering	UG	Tier-II Document	Provisionally Accredited	2 years	Accreditation status granted is valid for the period indicated in col.6 or till the program has the approval of the competent authority, whichever is earlier
2.	Information Technology	UG	Tier-II Document	Provisionally Accredited	2 years	
3.	Electronics and Telecommunication Engineering	UG	Tier-II Document	Provisionally Accredited	2 years	
4.	Electronics Engineering	UG	Tier-II Document	Provisionally Accredited	2 years	

3.   It may be noted that only students who graduate during the validity period of accreditation, will be deemed to have graduated with an NBA accredited degree.

4.   The program has been granted Provisional Accreditation for 2 years. As such Zagdu Singh Charitable Trusts Thakur College of Engg. & Technology, Shyam Narayan Thakur Marg, Thakur Village, Kandivali (E), Mumbai 400101 Maharashtra is required to submit the Compliance report after 18 months. It may require submission of pre-qualifier before sending the Compliance report for granting further Accreditation. The process for submitting Pre-Qualifiers and Compliance report has been notified on the website of National Board of Accreditation.

5.   The accreditation status awarded to the programmes as indicated in the above table does not imply that the accreditation has been granted to Zagdu Singh Charitable Trusts Thakur College of Engg. & Technology, Shyam Narayan Thakur Marg, Thakur Village, Kandivali (E), Mumbai 400101 Maharashtra as a whole. **As such the institution should nowhere along with its name including on its letter head etc. write that it is accredited by NBA because it is programme accreditation and not institution accreditation. If such an instance comes to NBA's notice, this will be viewed seriously.** Complete name of the programme (s) accredited, level of programmes and the period of validity of accreditation, as well as the date from which the accreditation is effective should be mentioned unambiguously whenever and wherever it is required to indicate the status of accreditation by NBA.

Contd/...

-2-

6.   The accreditation status of the above programmes is subject to change on periodic review, if needed by the NBA. It is desired that the relevant information in respect of accredited programmes as indicated in the table in paragraph 2, appears on the website and information bulletin of the Institute.

7.   The accreditation status awarded to the programmes as indicated in table in paragraph 2 above is subject to maintenance of the current standards during the period of accreditation. If there are any changes in the status (major changes of faculty strength, organizational structure etc.), the same are required to be communicated to the NBA, with an appropriate explanatory note.

8.   Copies of the Report of Chairman of the Visiting Team and Evaluators' Report in respect of the above programme are also enclosed.

9.   If the Institute is not satisfied with the decision of NBA, it may appeal within thirty days of receipt of this communication giving reasons for the same and by paying the requisite fee.

Thanking you,

Yours faithfully,

(Dr. Anil Kumar Nassa)
Member Secretary

Encls: 1.Copy of Report of Chairmen of the Visiting Teams.
         2.Copies of Expert Reports of the Visiting Teams.

Copy to:

1.   The Director of Technical Education,
     3, Mahapalika Marg,
     Opp. Metro Cinema,
     Chhatrapati Shivaji Terminus Area,
     Mumbai, Maharashtra 400001

2.   The Registrar,
     Mumbai University,
     Mumbai

3.   Accreditation File

4.   Master Accreditation File of the State

29/4/16   CAYM
chairman briefed and also
shown the score with analysis
• to be used for Improvement.
29/4/16

NATIONAL BOARD OF ACCREDITATION

NBCC Place, East Tower, 4th Floor, Bhisham Pitamah Marg,
Pragati Vihar, New Delhi-110 003
Tel: +91 11 2436 0620-22, 2436 0654 Telefax: +91 11 2436 0682
Website: www.nbaind.org

NB7

NATIONAL BOARD
of ACCREDITATION

File No. 28-175-2010-NBA   3rd October, 2016

To,

The Principal
Zagdu Singh Charitable Trusts Thakur College Of Engg.& Technology,
Shyam Narayan Thakur Marg,
Thakur Village, Kandivali (E),
Mumbai 400101, Maharashtra

Subject: Extension of the Period of Accreditation Status granted to UG Engineering Program(s) offered by Zagdu Singh Charitable Trusts Thakur College Of Engg. & Technology, Shyam Narayan Thakur Marg, Thakur Village, Kandivali (E), Mumbai 400101, Maharashtra.

Sir,

This has reference to NBA's letter of even number dated 14-04-2016 under which some of the UG Engineering program(s) offered by your Institution were granted provisional accreditation for 2 years in Tier II by National Board of Accreditation.

2.   National Board of Accreditation (NBA) has now decided that in all cases where UG Engineering program(s) of an Institution were granted provisional accreditation for a period of 2 years in Tier I/Tier-II format, the period of provisional accreditation of these programs shall be extended from 2 to 3 years subject to the condition that they meet the essential Pre-visit qualifiers. The Pre-visit qualifiers submitted by **Zagdu Singh Charitable Trusts Thakur College Of Engg. & Technology, Shyam Narayan Thakur Marg, Thakur Village, Kandivali (E), Mumbai 400101, Maharashtra** have been considered and approved by NBA in respect of the following UG Engineering program(s). Accordingly, the competent authority in NBA has approved the following accreditation status to the program(s) as given in the Table below:

Sl. No.	Name of the Program(s) (UG)	Basis of Evaluation	Accreditation Status	Period of extended validity	Remarks
(1)	(2)	(3)	(4)	(5)	(6)
1.	Computer Engineering	Tier-II Document	Provisionally Accredited	Academic Year 2018-2019, i.e., upto 30-06-2019.	Accreditation status granted is valid for the period indicated in col.5 or till the program has the approval of the competent authority, whichever is earlier
2.	Information Technology				
3.	Electronics & Telecommunication Engineering				
4.	Electronics Engineering				

3.   It may be noted that only students who graduate during the validity period of accreditation, will be deemed to have graduated with an NBA accredited degree.

4.   The programs have been granted provisional accreditation. **Zagdu Singh Charitable Trusts Thakur College Of Engg. & Technology, Shyam Narayan Thakur Marg, Thakur Village, Kandivali (E), Mumbai 400101, Maharashtra** should submit the Compliance Report at least six months before the expiry of validity of accreditation mentioned above to be eligible to be considered by the concerned Committee in NBA for further processing of the accreditation status. This could entail further extension of accreditation or a revisit, as deemed appropriate by NBA Committees.

Contd/...

-2-

5.   The accreditation status awarded to the program(s) as indicated in the above table does not imply that the accreditation has been granted **Zagdu Singh Charitable Trusts Thakur College Of Engg. & Technology, Shyam Narayan Thakur Marg, Thakur Village, Kandivali (E), Mumbai 400101, Maharashtra** as a whole. As such the Institution should nowhere along with its name, including on its letter head etc. write that it is accredited by NBA because NBA only accredits program(s), and not Institutions. If such an instance comes to NBA's notice, this will be viewed seriously. Complete name of the program(s) accredited, level of programs and the period of validity of accreditation, should be mentioned unambiguously whenever and wherever it is required to indicate the status of accreditation by NBA.

6.   The accreditation status of the above program(s) is subject to change on periodic review, as deemed necessary by the NBA. It is desired that the relevant information in respect of accredited program(s) as indicated in the Table in paragraph 2, appears on the website and information bulletin of your College/Institution.

7.   The accreditation status awarded to the program(s) as indicated in Table in paragraph 2 above is subject to maintenance of the current standards during the period of accreditation. If there are any changes in the status (major changes of faculty strength, organizational structure etc.), the same are required to be communicated to the NBA, with an appropriate explanatory note.

Yours faithfully,

(Dr. Anil Kumar Nassa)
Member Secretary

Copy to:

1.   The Director of Technical Education,
     3, Mahapalika Marg,
     Opp. Metro Cinema,
     Chhtarapati Shivaji Terminus Area,
     Mumbai, Maharashtra- 400001

2.   The Registrar
     Mumbai University,
     Mumbai

3.   Accreditation Files

4.   Master Accreditation Folder of the State

Annexure VI. ISO 9001:2008 Certificate

IRCLASS
SYSTEMS AND SOLUTIONS PRIVATE LIMITED

Annexure to Certificate No. IRQS/1410715

with respect to the following scope:

1. Computer Engineering

2. Electronics & Telecommunication Engineering

3. Electronics Engineering

4. Information Technology

5. Mechanical Engineering

Shashi Nath Mishra
Head IRQS

Annexure VII. Master Plan of the Institution

Umesh Bhatt

ARCHITECT

205/206/212 Shiv Plaza Shopping Centre, Station Road, Kandivali (W), Mumbai - 400 067.
REG. NO. CA/87/10412   Mob. : 98210 11486
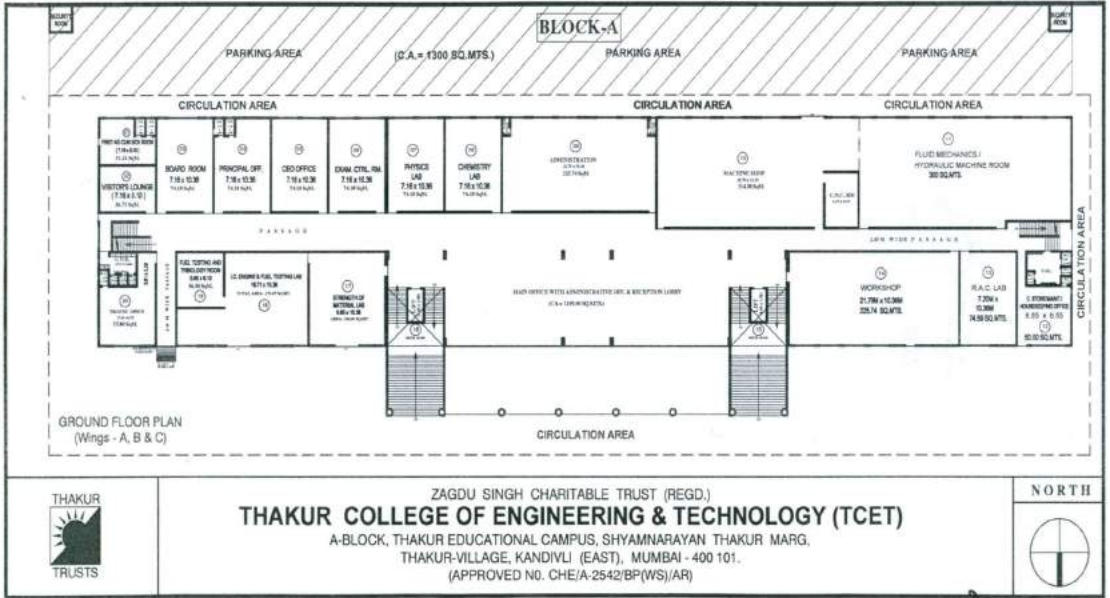
Date: 21/10/2013

TO WHOMSOEVER IT MAY CONCERN

This is to state that the total carpet area of Thakur College of Engineering & Technology in A Block from ground floor to 5th floor of college building on property bearing C.T.S. No 818-A/1/3-B of Village Poisar at Kandivali (East) Mumbai is 20261.78 sq.mt the instructional, administrative, amenities, and circulation area required for and existing courses and new course (civil engineering) area details as follows:

Particulars	Carpet area in sq. mt.
Instruction Area	11535.22
Administrative Area	2692.27
Amenities	3240.99
Circulation & Other Area	2793.3
Total	**20261.78**

UMESH BHATT
ARCHITECT

Telefax : 2861 5444 / 2801 1921 / 2801 4816 • E-mail : ar_umeshbhatt@yahoo.co.in

Ground Floor Plan (Wings - A, B & C)

ZAGDU SINGH CHARITABLE TRUST (REGD.)
THAKUR COLLEGE OF ENGINEERING & TECHNOLOGY (TCET)
A-BLOCK, THAKUR EDUCATIONAL CAMPUS, SHYAMNARAYAN THAKUR MARG,
THAKUR-VILLAGE, KANDIVLI (EAST), MUMBAI - 400 101.
(APPROVED NO. CHE/A-2542/BP(WS)/AR)

UMESH BHATT
ARCHITECT & INTERIOR DESIGNER
212, Shiv Plaza Shopping Center,
Station Road, Kandivali (W), Mumbai-67
Tele-Fax:-(O)28615444, 28011821.

FIRST FLOOR PLAN
(Wings - A, B & C)

ZAGDU SINGH CHARITABLE TRUST (REGD.)

THAKUR COLLEGE OF ENGINEERING & TECHNOLOGY (TCET)

A-BLOCK, THAKUR EDUCATIONAL CAMPUS, SHYAMNARAYAN THAKUR MARG,
THAKUR-VILLAGE, KANDIVLI (EAST), MUMBAI - 400 101.
(APPROVED NO. CHE/A-2542/BP(WS)/AR)

NORTH

UMESH BHATT
ARCHITECT & INTERIOR DESIGNER
212, Shiv Plaza Shopping Center,
Station Road, Kandivali (W), Mumbai-67
Tele-Fax-(O)28616444, 28011921.

FOURTH FLOOR PLAN
(Wings - A, B & C)

ZAGDU SINGH CHARITABLE TRUST (REGD.)
THAKUR COLLEGE OF ENGINEERING & TECHNOLOGY (TCET)
A-BLOCK, THAKUR EDUCATIONAL CAMPUS, SHYAMNARAYAN THAKUR MARG,
THAKUR-VILLAGE, KANDIVLI (EAST), MUMBAI - 400 101.
(APPROVED NO. CHE/A-2542/BP(WS)/AR)

NORTH

UMESH BHATT
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Tele-Fax:-(O)28615444, 28011921.