SELF STUDY REPORT

FOR

1ˢᵗ CYCLE OF ACCREDITATION

THADOMAL SHAHANI ENGINEERING COLLEGE

ADVOCATE NARI GURSHAHANI MARG, TPS III, 37TH ROAD, OFF LINKING ROAD, BANDRA (WEST), MUMBAI.
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1. EXECUTIVE SUMMARY

1.1 INTRODUCTION

Policy intervention of the State of Maharashtra prompted Hyderabad (Sind) National Collegiate Board (HSNC Board) to realise the widening gap between demand and supply of trained engineers, the Board seized the opportunity to contribute to further the cause of the state and established Thadomal Shahani Engineering College (TSEC), in 1983. TSEC is recognized by Government of Maharashtra and affiliated to University of Mumbai. The Institute is approved by All India Council for Technical Education (AICTE). The college offers a 4-year Bachelor of Engineering (B.E.) Degree program in Artificial Intelligence and Data Science, Chemical Engineering. Computer Engineering, Electronics & Telecommunication, and Information Technology. The College also offers Post Graduate program by research leading to the award of Ph.D. degree in the subjects of Computer Engineering, Electronics & Telecommunication Engineering and Information Technology. At present we have 40 research scholars enrolled with us.

TSEC is hugely successful in creating an academic ambience where learners increasingly succeed in unleashing their potential. The college hugely succeeds in placing graduating students in leading enterprises and facilitating them for higher studies in the Post Graduate program of choice, in India and abroad. The college historically performed to its fullest potential with best of class practises and emerged as the most sought-after engineering college in the city of Mumbai. It has emerged as a single point solution for the students and parents who are seeking professional education in the realm of engineering and our professionalism gets accentuated by enterprises in queue to roll out "offer appointments" to our graduating students.

We were keen on establishing quality systems and procedures in academic setting and eventually that led to accreditation of our programs by National Board of Accreditation in multiple cycles. We are having a system in place to identify emerging / thrust areas in engineering and integrate in the course curriculum. We introduced courses like Artificial Intelligence, Machine Learning, Deep Learning and Blockchain Technology in tandem with the University to be abreast with nascent technologies. TSEC follows a gender agnostic and all-inclusive academic ambience and practises where pupils thrive and emerge as productive entities over a period of four years of engagement.

Vision

Perpetuating and transcending the processes of:

- Contributing to evolving supply chain of human capital for national economy.

- Creating entrepreneurs and 'game changers' to support heightened level of economic activities underpinning ever increasing human aspiration.

- Helping the nation evolve as a total solution provider.

- Value and wealth creation for the mankind.

Mission

Focusing and practicing:

- Product and processes innovation.

- Leveraging human cognitive and behavioural science for creating instructional content.

- Pervasive and ubiquitous Information Communication Technologies for customized content for learning.

- Acknowledge and facilitate various learning styles and learning abilities.

- Migrating from teaching paradigm to learning paradigm.

- Every day discourse shall inculcate research culture and further the cause of societal advancement.

- Understand various markets and cultures.

- Collaborative learning and emotional integrity.

- Sensitizing about opportunities in Energy, Education, Environment and Healthcare sectors.

- Extensively promoting computer aided design, analysis and manufacturing procedures.

- Theoretical rigor to develop conceptual clarity.

- Modelling and design of experiments to inculcate culture of investigation.

- Helping foot print on project management and collaborative human endeavour.

- Interdisciplinary studies and exposure to functional areas.

1.2 Strength, Weakness, Opportunity and Challenges(SWOC)

Institutional Strength

- Techno-market savvy academic leadership.

- Teaching faculty with missionary zeal and a high degree of competency.

- 90% of tuition fees is spent on salaries and we succeed in retaining resourceful and experienced teaching faculty with average teaching experience of 15+ years to optimize the learning experience of the students at large.

- Engineered academic ambience to help learners realize their true potential to evolve as a Human Capital.

- Placement cell capable of practice agility and Just-in-Time practices to have productive engagement with enterprises coming for placement activities.

- Well-equipped laboratories.

- Air-conditioned class rooms and laboratories.

- Campus-wide internet amounting to 700 Mbps bandwidth.

- 38 teaching faculty having highest academic degree of Ph.D.

- We are having three research departments facilitating Ph.D. programs namely

    - Computer Engineering

    - Electronics and Telecommunications

    - Information Technology

- More than 25 Ph.D. scholars successfully completed Ph.D. program and awarded with Ph.D. degree by University of Mumbai.

- Our research departments thrive on initiating Ph.D. scholars to multidisciplinary research problems, which are carved out from the immediate geography.

- 90% of placement aspiring students are getting placed through campus placement activities and rest of the population undertake higher

education, predominantly in American universities.

- Our Institute promotes NSS and other social outreach programs like "Unnat Bharat Abhiyaan", Rotaract Club activities, etc. The students participating in these activities are getting rewarded in placement as they demonstrate high level of empathy and understanding of the bottom of the social pyramid as a marketplace.

- We as a college identify with "Hackathon" initiated by Ministry of Education and AICTE and our students thrive on solving real time problems of our society.

- Hackathons are the single most important events engineered and managed by the college.

- We undertake to keep coding as our institutional core competency and bound to perpetuate for years to come.

- We organize Faculty Development Programs on regular basis to remain relevant to evolving technology marketplace.

- We invested time and resources to develop competency in emerging areas like Blockchain Technologies, Data Analytics, Artificial Intelligence (Natural language processing, Machine learning, Deep Learning) etc.

Institutional Weakness

- Lack of productive collaboration with Industries for product / process innovation to go up in the academic value chain.

- Limited scholarship offered to students from Corporate Social Responsibilities schemes of Industries.

- Being in metropolitan cities, we are devoid of stadium having 400-meter track, Olympic size swimming pool and also lacks infrastructure in the campus for sports and games training facilities.

- Being an affiliated college, curriculum design is very rigid and lacks requisite level of responsiveness / agility to map with market requirement

Institutional Opportunity

- We as an educational institute have all the conceivable quality systems in place and teaching faculty who remain focused for hand holding learners to help them reach higher echelons of academic excellence.

- We are seizing the opportunities in the evolving Global and National marketplace in the realm of Artificial Intelligence, Blockchain Technologies, Quantum Computing and Data Science by facilitating a supply chain of human capital.

- We envisage that the nation emerges as a total solution provider in Artificial Intelligence and Blockchain technologies as these sectors thrive on human capital than actual financial investments, and we are strengthening these areas of technology as our institute's core competency.

- We are evolving as single window solution provider for parents and students aspiring for higher and technical education.

- We are committed to further the cause of academic research especially multidisciplinary research to contribute to immediate neighbourhood and society at large in addition to transferring the trusteeship associated with academic research

Institutional Challenge

- We are witnessing accelerated changes in technology marketplace and massive disruptions happening in enterprises and corporations all around.

- Remaining relevant to evolving marketplace is going to be a tall order by subjecting the collective to a process involving 'Unlearn' and 'Relearn' virtuous cycles.

- We as an engineering college is attracting the cream of society / best talent around predominantly from middle and lower economic class. Growing cost of education is an antidote for pursuing a carrier in engineering and our supply chain of human capital can get disrupted for the want of sufficient aspiring learners.

- Perpetual disruptions are happening in the realm of Massive Open Online Courses (MOOCs) and adoption of the same into the curriculum needs to be designed and tested in a continuous fashion.

- We are also expected to build curriculum with activities which shall help learners develop emotional and spiritual integrity in addition

to intellectual maturity.

- Last but not the least, in formulating strategies to work with the Indian political establishment to devise policies leading to transformation of professional educational space transcending to high order collective consciousness to contribute to nation building process.

1.3 CRITERIA WISE SUMMARY

Curricular Aspects

- Thadomal Shahani Engineering College is affiliated to University of Mumbai and the curriculum prescribed by the University is bound to be adhered by the affiliating colleges. Academic calendar, which includes curricular, co-curricular and extracurricular activities, is prepared before the start of the academic year in alignment with timeline prescribed by the University. We also started integrating problem based learning, experiential learning and project based learning wherever it is necessitated. The college contributes to the curriculum development of the University based on the inputs and feedback analysis of various sources reflecting local, national and global requirements.

- Interactive teaching is promoted through students' participation in group discussions, quizzes, and seminars. Learning experience gets enhanced via pedagogical tools like animations, case study analysis, digital content from MOOCs and other resources from cyber space. Learning while doing and hands-on experimentation is non-negotiable for both teachers and students, and has a telling effect on the mental models of learners. This is a key differentiator for a professional student.

- The choice-based curriculum prescribed by the university is building flexibility in curriculum design and learners are also permitted to enrol for dual degree program offered by University of Mumbai. AICTE also facilitates enrolment into institutes of higher learning for specific degree programs on online mode for students having membership of any university.

- We keep track of evolving best of class practices in curriculum design and practice and succeed in influencing academic bodies of the university entrusted with the responsibility of curriculum design / enrichment. We remain focused on creating a collective consciousness which shall have a tremendous bearing on the academic activities getting perpetuated in the campus in alignment with contemporary

practices in enterprises which are cut above the rest.

- We started practising 360-degree feedback procedures and systems leveraging software tools provided by third-party vendors at the behest of AICTE. We are in the process of migrating to this technology driven feedback procedure to make it more realistic and effective for normalization of the opinionated feedbacks otherwise termed as "emotional".

Teaching-learning and Evaluation

- Historically the core competency of candidates getting admitted is their proficiency in mathematics and analytical subjects, independent of their soft skills and language proficiency. Majority of candidates seeking admission to four-year engineering program are hailing from lower and medium economic class and State government admission authority envisages student diversity by practising admission quota to various category like All India Quota, quota for Home University students in addition to regular reservation policy for candidates belonging to backward communities .Institute classified as minority institute 51% of seats belonging to linguistic/religious minority

- On incremental basis, we are trying to migrate to learner centric paradigm from the current teaching learning methodologies.

- We as an institute started evangelizing integration of ICT tools for building efficiencies in student engagement and assessment on the advent of pervasive technologies.

- The academic projects envisaged in the curriculum in multiple semesters initiate students to relate their theoretical understanding to real-time problem-solving strategies and practices. They develop insights into various problem-solving techniques to resolve complexities of manual procedures. At the formative years we also nudge the students to develop competency in computer programming (coding) skills independent of syllabus constraints using open-source platform like Hackerank, Hackerearth etc.

- The college has 38 Ph.D. holders and 27 are currently pursuing Ph.D., out of a total of 115 teachers. Combined publications amounts to 129 papers in last 5 years

- We observed that higher degree of difficulty in examination prompts students to study for examination and they fail to internalize the subject matter.

- There is a trade-off in reducing the difficulty level of the evaluation process to promote higher assimilation of knowledge and stimulate serious learning. Progressive / continuous assessment is having a high level of effectiveness in nudging pupils to remain focused for internalizing the subject matter at hand.

- The literature on student satisfaction survey formulated by NAAC is in complete sync with our procedures for the same. The single most important feedback is essentially from Exit Survey, quantifying the degree of satisfaction of graduating students. We prompt them to relate their learning experience with their cost of being student in the institute.

Research, Innovations and Extension

- Academic research projects and programs are occasionally getting funded from AICTE and university. Some amount gets consumed from development fees of the college for facilitating mini research projects. We also seek assistance from government, public sector, private sector undertaking to extend assistance to carry out research and innovation. Internship activities are happening in big way and that in turn contributes to furthering the cause of research in the institute.

- We enrol a maximum of 40 research scholars at any point of time and undertake research in emerging areas like Cloud Computing, Data analytics, Artificial Intelligence (Natural language processing, Machine/Deep learning), Block chain technologies, Quantum Computing, 5G communication technologies and other converging technologies. We are forerunner in assimilating these emerging technologies and facilitate introduction of new branches of study revolving around these technologies and we are succeeding in identifying newly evolving nascent technologies in tandem with Gartner's prediction about technology lifecycle. We also signed MOU with leading institutes in developing competency in the above mentioned research areas.

- Our experiment with Hackathon and initiating students to MOOC's and coding portals has been resulting in extra ordinarily positive results.

- We are committed to extending the envelope of this kind of innovation in engaging students shall be reinvented periodically. We are also devising procedure and methods to reduce the cost of education in addition to resorting to innovative procedure for building efficiencies in identifying suitable students for different co-

curricular & extracurricular activities.

- We are having a procedure in place to promote process and product innovation in terms of filing patents and research publications. We incentivise various activities and collaborative efforts which lead to innovations of all kinds including areas of administration/management, teaching learning getting practised in the institute. Internship activities are happening in big way and that in turn contributes to furthering the cause of research in the institute.

- We organise and participate in Hackathons getting organised by Govt. Of India, AICTE and multinational corporates essentially meant for developing solutions for public enterprises and succeeded in getting awards and cash prizes. The college undertake social outreach programs through NSS, "Unnat Bharat Abhiyan", "Ek Bharat Shreshta Bharat" and the Rotaract club of the college.

- We are having a strong association with instrumentation centre of University of Mumbai. Internship activities open up a new vista for carrying forward academic research by undergraduate students. Our Ph. D. program heavily relying on our association with corporate hospitals, e-governance projects and government establishments like Maharashtra Economic Council and Department of Agriculture and Agriculture Universities.

Infrastructure and Learning Resources

- We are succeeding in attaining zero deficiency by AICTE (reflected in AICTE portal against our digital account). TSEC has an effective policy in place for creating and enhancing the infrastructure that facilitates effective teaching and learning. We are serious about providing an academic ambience with ergonomically designed physical infrastructure to build efficiencies in teaching and learning. Our empirical experience shows that air-conditioned classrooms, creates an optimal learning ambience.

- We are located in the metro city, we hire (need based) stadium, playground and open auditorium located near the campus periodically. The institute is 4 km away from Mumbai airport and 1 km away from Bandra (local) railway station and Bandra Terminus and both sides of the college buildings bordering two different roads, 24 hrs transportation facilities inclusive of radio taxis, rickshaws and buses, shopping plazas and facilities for all world class brands across the road.

- The TSEC Library has 42,745 volumes with a total of 10,287 titles. It includes an online subscription to Science Direct as well as 40 print periodicals. There are up to 25 computers in the digital library for students and staff to access the online resources and e-content seamlessly.

- Computing facilities comprises of around 900 personal computers and proportionate laptops, servers, printers, scanners, copiers, routers, modems and massive computer networks. We are also having Internet bandwidth approximating 700 MBPS with building-wide Wi-Fi networking and hotspots that caters to all the staff and students at the college.

- Sizeable amount gets budgeted for periodic maintenance including AMCs and Dean Infrastructure is entrusted with the responsibility of maintenance, repairs and replacements of the campus facilities.

Student Support and Progression

- The architecture of the organizational dynamics is essentially student-centred, and all efforts are in place to help them evolve as human capital with the right kind of emotional and intellectual integrity.

- We have constituted multiple committees in alignment with statutory norms set by various regulatory bodies to safeguard the interest of students/student redressal processes. Sufficient display of signboards of various redressal mechanisms and an online student grievance facility are also part of the college website. The state is providing free ship /scholarships to many students belonging to disadvantaged groups of society. We also reach out to private agencies and private individuals to help needy students who are financially weak.

- The institute extends all possible support to students in academic guidance and progression to higher studies and career. We as an institute are committed to promote sports and cultural activities, essentially to help pupils practice collaborative activities and imbibe sense of cooperation, sportsmanship, team building and leadership.

- The culture of internship is emerging as a pervasive practice across start-ups, industry, and businesses at large across the city and all students are undergoing internships of various durations. We are having a Placement Cell and a system in place which remains focussed to facilitate placement activities following a strategy and

procedures.

- The college establishment understand the importance of life skills getting cultivated during the academic life of the students in the campus and organize programs which sensitize students about the goals of life and the necessity of emotional and spiritual integrities to lead a healthy and productive life.

- Students participate in inter-collegiate sports and cultural competitions and bring laurels to institute. Our success in numerous "Hackathons" organized at national level by AICTE / Ministry of Education gets publicized in various communication platforms and brings credibility to the education process followed in the institute.

- Institute is having a very strong alumni network and we leverage their experience and understanding for setting standards for various curricular and co-curricular activities. They act as goodwill ambassadors to industries and various government and non-governmental agencies. We are having a robust alumni portal to have productive engagement and facilitate registration for membership and interaction/feedback.

Governance, Leadership and Management

- The Hyderabad (Sind) National Collegiate Board (HSNC) registered under Bombay Public Trust Act, 1950. The HSNC Board established and governs our institute Thadomal Shahani Engineering College, which was started in 1983 to promote professional education in engineering and technology.

- Advisory Committee headed by Principal initiate important decisions and processes to build quality systems and procedures to further the cause of all stakeholders of the institute and professional education. We are committed to transform pupils entering into our educational system as human capital to be productive in their area of interest. We are heavily relying on very robust feedback system especially from placement cell and we keep track of the input from competing vendors who are trying to push their products and technology driven procedures.

- Strategies are in place to build brand equity as visible brands are attracting best of the students from all over the country. Multi layered approach is necessitated by drastic development in social media and the cultures associated with it. We proactively start new branch of study to align with evolving knowledge economy even at the

cost of underplaying existing branch of study

- We treat every faculty member as a university on themselves taking cue from the concept and construct of University conceived by Anglo-Saxon society. We approve differing world views and perspectives and respect descending voices. This democratization of organization structure gives structural stability and fosters creative thinking in the campus. The welfare of teaching faculties and other faculties is having a serious bearing on the way we engage students coming from various strata of society.

- The source of revenue is the tuition fees getting collected from enrolling students and there is a procedure in place to grow it and distribute in a staggered manner for various expenditure. We also generate income from facilitating online/offline test in the campuses.

- IQAC of the college is also trying to contribute to reinvention of quality systems and procedures by prompting to undertake academic research on formulating and modelling new age quality movement / quality procedures which can be integrated with the current accreditation process.

Institutional Values and Best Practices

We consciously engineer an academic ambience where participants realise their full potential as human beings to contribute to sustainable progress of society at large. Treating and training students as evolving human capital, productively researching on the ways and means of transcending technology education to help the nation evolve as Total Solution Provider to thrive in a carbon efficient world order.

The college endeavours to look after the total personality development of students leading to elevated self-confidence, positive self-image, mutual respect, etc. through co-curricular and extra-curricular activities. Both general and individualised counselling has been provided to the students. Social outreach programmes are undertaken as a philanthropic activity and also use these occasions to impress upon youngsters the virtues of aligning with rules and regulations of the society and one's responsibility for the environment and the society at large.

The two best practices implemented by the institution are:

- Social outreach for contributing to immediate neighbourhood / initiating pupils to collaborative efforts / exposing to ground level reality / understanding opportunities in the bottom of pyramid. This

practice aims to foster the spirit of social service in our students so that they learn to recognise it as a larger conditioning framework of their education.

- Creating "Coding" (Programming digital systems for engineered outcome/ "Conversion of problem to logic") as institutional core competency to nudge our pupils' problem-solving ability, competency in codifying problem definitions, developing computer codes with minimal time complexity, respect for extreme boundary conditions of problem definitions. We are also in perpetual communication with university to introduce nascent and productive programming languages in the regular curriculum even for non-computer/ IT/ Artificial Intelligence-Data Science students.

Their exist a system in place to build distinctive & complimentary skill sets and competencies amongst pupils getting enrolled with us. We treat ourself as a service provider and aspiring to go up in the professional education value chain in alignment with market aspirations which in turn contribute to wealth & value creation for the nation at large. We frequently revisit existing processes & procedures to align with new knowledge getting created in the knowledge market place facilitated by newer research in digital technologies, behavioural science & heavily relying on fundamental principles of design/system thinking.

2. PROFILE

2.1 BASIC INFORMATION

Name and Address of the College	
Name	THADOMAL SHAHANI ENGINEERING COLLEGE
Address	Advocate Nari Gurshahani Marg, TPS III, 37th road, Off linking Road, Bandra (West), Mumbai.
City	MUMBAI
State	Maharashtra
Pin	400050
Website	www.tsec.edu

Contacts for Communication					
Designation	**Name**	**Telephone with STD Code**	**Mobile**	**Fax**	**Email**
Principal	G.t.thampi	091-9594696888	9594696888	-	gtthampi@yahoo.com
IQAC / CIQA coordinator	Gopal Pardesi	091-9967729590	9867628298	-	gopal.pardesi@thadomal.org

Status of the Institution	
Institution Status	Private and Self Financing

Type of Institution	
By Gender	Co-education
By Shift	Regular

Recognized Minority institution	
If it is a recognized minroity institution	Yes Final Minority.pdf
If Yes, Specify minority status	
Religious	
Linguistic	Sindhi Linguistic Minority
Any Other	

Establishment Details	
Date of establishment of the college	31-10-1983

University to which the college is affiliated/ or which governs the college (if it is a constituent college)

State	University name	Document
Maharashtra	University of Mumbai	View Document

Details of UGC recognition

Under Section	Date	View Document
2f of UGC		
12B of UGC		

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

Statutory Regulatory Authority	Recognition/Approval details Institution/Department programme	Day,Month and year(dd-mm-yyyy)	Validity in months	Remarks
AICTE	View Document	02-07-2021	12	Current Academic Year Extension of Approval

Details of autonomy	
Does the affiliating university Act provide for conferment of autonomy (as recognized by the UGC), on its affiliated colleges?	No

Recognitions	
Is the College recognized by UGC as a College with Potential for Excellence(CPE)?	No
Is the College recognized for its performance by any other governmental agency?	Yes
If yes, name of the agency	National Institutional Ranking Framework
Date of recognition	09-09-2021

Location and Area of Campus				
Campus Type	Address	Location*	Campus Area in Acres	Built up Area in sq.mts.
Main campus area	Advocate Nari Gurshahani Marg, TPS III, 37th road, Off linking Road, Bandra (West), Mumbai.	Urban	6070	11332

2.2 ACADEMIC INFORMATION

Details of Programmes Offered by the College (Give Data for Current Academic year)						
Programme Level	Name of Programme/Course	Duration in Months	Entry Qualification	Medium of Instruction	Sanctioned Strength	No.of Students Admitted
UG	BE,Artificial Intelligence And Data Science	48	Higher Secondary Certificate of Maharashtra or equivalent	English	60	60
UG	BE,Computer Engineering	48	Higher Secondary Certificate of Maharashtra or equivalent	English	180	180

UG	BE,Information Technology	48	Higher Secondary Certificate of Maharashtra or equivalent	English	120	120
UG	BE,Electronics And Telecommunication	48	Higher Secondary Certificate of Maharashtra or equivalent	English	60	57
UG	BE,Chemical Engineering	48	Higher Secondary Certificate of Maharashtra or equivalent	English	60	47
Doctoral (Ph.D)	PhD or DPhil,Computer Engineering	72	Post Graduation in Engineering or equivalent	English	10	10
Doctoral (Ph.D)	PhD or DPhil,Information Technology	72	Post Graduation in Engineering or equivalent	English	20	20
Doctoral (Ph.D)	PhD or DPhil,Electronics And Telecommunication	72	Post Graduation in Engineering or equivalent	English	10	10

Position Details of Faculty & Staff in the College

Teaching Faculty											
	Professor				**Associate Professor**				**Assistant Professor**			
	Male	Female	Others	Total	Male	Female	Others	Total	Male	Female	Others	Total
Sanctioned by the UGC /University State Government				10				21				84
Recruited	2	8	0	10	11	10	0	21	27	57	0	84
Yet to Recruit				0				0				0
Sanctioned by the Management/Society or Other Authorized Bodies				0				0				0
Recruited	0	0	0	0	0	0	0	0	0	0	0	0
Yet to Recruit				0				0				0

Non-Teaching Staff				
	Male	**Female**	**Others**	**Total**
Sanctioned by the UGC /University State Government				88
Recruited	75	13	0	88
Yet to Recruit				0
Sanctioned by the Management/Society or Other Authorized Bodies				0
Recruited	0	0	0	0
Yet to Recruit				0

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Technical Staff				
	Male	**Female**	**Others**	**Total**
Sanctioned by the UGC /University State Government				13
Recruited	11	2	0	13
Yet to Recruit				0
Sanctioned by the Management/Society or Other Authorized Bodies				0
Recruited	0	0	0	0
Yet to Recruit				0

Qualification Details of the Teaching Staff

Permanent Teachers										
Highest Qualification	**Professor**			**Associate Professor**			**Assistant Professor**			
	Male	Female	Others	Male	Female	Others	Male	Female	Others	Total
D.sc/D.Litt/ LLD	0	0	0	0	0	0	0	0	0	0
Ph.D.	2	8	0	6	3	0	5	13	0	37
M.Phil.	0	0	0	0	0	0	0	1	0	1
PG	0	0	0	5	5	0	19	34	0	63

Temporary Teachers									
Highest Qualification	**Professor**			**Associate Professor**			**Assistant Professor**		
	Male	Female	Others	Male	Female	Others	Male	Female	Others	Total
D.sc/D.Litt/ LLD	0	0	0	0	0	0	0	0	0	0
Ph.D.	0	0	0	0	0	0	0	1	0	1
M.Phil.	0	0	0	0	0	0	0	0	0	0
PG	0	0	0	0	0	0	1	7	0	8

Part Time Teachers									
Highest Qualification	**Professor**			**Associate Professor**			**Assistant Professor**		
	Male	Female	Others	Male	Female	Others	Male	Female	Others	Total
D.sc/D.Litt/ LLD	0	0	0	0	0	0	0	0	0	0
Ph.D.	0	0	0	0	0	0	0	0	0	0
M.Phil.	0	0	0	0	0	0	0	0	0	0
PG	0	0	0	0	0	0	0	0	0	0

Details of Visting/Guest Faculties				
Number of Visiting/Guest Faculty engaged with the college?	**Male**	**Female**	**Others**	**Total**
	7	0	0	7

Provide the Following Details of Students Enrolled in the College During the Current Academic Year

Programme		From the State Where College is Located	From Other States of India	NRI Students	Foreign Students	Total
Doctoral (Ph.D)	Male	15	0	0	0	15
	Female	25	0	0	0	25
	Others	0	0	0	0	0
UG	Male	370	7	0	0	377
	Female	106	3	0	0	109
	Others	0	0	0	0	0

Provide the Following Details of Students admitted to the College During the last four Academic Years						
Programme		Year 1	Year 2	Year 3	Year 4
SC	Male	1	0	1	0
	Female	1	2	0	3
	Others	0	0	0	0
ST	Male	0	0	0	0
	Female	0	0	0	0
	Others	0	0	0	0
OBC	Male	28	20	9	11
	Female	4	7	5	3
	Others	0	0	0	0
General	Male	257	219	187	180
	Female	71	78	86	104
	Others	0	0	0	0
Others	Male	91	78	94	94
	Female	33	27	36	51
	Others	0	0	0	0
Total		486	431	418	446

Institutional preparedness for NEP

1. Multidisciplinary/interdisciplinary:	Our Institute started Ph.D. program in 2013 and at the outset, we have initiated Ph.D. scholars to undertake multidisciplinary research in majority of the cases because the institute realises the potential of undertaking multidisciplinary/interdisciplinary studies and research as they can bring out solutions for real time problems of immediate neighbourhood and the national issues at large. Event though we are constrained by University syllabus & curriculum, within that framework we massively undertake and initiate students to multidisciplinary project work to make them ready for market place and we are much ahead of the curve of NEP preparedness & implementation.
2. Academic bank of credits (ABC):	As an affiliated college, we are heavily regulated by the University and the University in turn is ready with the process of facilitating academic bank of credits. In couple of years, the complete implementation practise of academic bank of credits will be operational.
3. Skill development:	Our curriculum facilitates higher credits to experiential learning with skill laboratories. Our academic project work also initiates students to learn while doing which results in developing skills and compressing the time required for making graduates industry ready.
4. Appropriate integration of Indian Knowledge system (teaching in Indian Language, culture, using online course):	The institutional background being Sindhi linguistic minority institute is managed by people belonging to Sindhi community who had come from Sindh province of an erstwhile undivided India. By default, they bring plethora of literature and culture underpinning Indus Valley civilisation and remain focused to maintain and preserving the same. In recent years we undertake to organise village festivals through NSS.We celebrate Indian cultures and their markets by organising Ek Bharat Shrestha Bharat as we find loads of learning. We pursue these activities in its fullest possible way throughout the academic year.
5. Focus on Outcome based education (OBE):	Our people got exposed to the concept and construct of outcome based education at an early stage through seminars/workshops and training programs. We appreciate these new understanding and disseminate the same to all the people in the organisation as we developed insights into the constructs. We were

	rewarded accreditation by National Board of Accreditation (NBA) to all the departments.
6. Distance education/online education:	We as an institute undertake faculty training through MOOC's & incentivised faculty and students to develop new knowledge in emerging areas through various e-learning platforms & MOOC's. We seriously believe that distance education can go a long way specially as they are cost effective which can bring the cost of professional education down & We have prepared ourself for carrying out flipped classrooms/blended learning.

Extended Profile

1 Program

1.1

Number of courses offered by the Institution across all programs during the last five years

2020-21	2019-20	2018-19	2017-18	2016-17
358	371	348	335	324

File Description	Document
Institutional data prescribed format	View Document

1.2

Number of programs offered year-wise for last five years

2020-21	2019-20	2018-19	2017-18	2016-17
5	5	6	6	6

2 Students

2.1

Number of students year-wise during last five years

2020-21	2019-20	2018-19	2017-18	2016-17
2047	1966	1986	2055	2048

File Description	Document
Institutional data in prescribed format	View Document

2.2

Number of seats earmarked for reserved category as per GOI/State Govt rule year-wise during last five years

2020-21	2019-20	2018-19	2017-18	2016-17
245	230	214	214	214

07-01-2022 04:35:22

File Description	Document
Institutional data in prescribed format	View Document

2.3

Number of outgoing / final year students year-wise during last five years

2020-21	2019-20	2018-19	2017-18	2016-17
535	468	502	541	541

File Description	Document
Institutional data in prescribed format	View Document

3 Teachers

3.1

Number of full time teachers year-wise during the last five years

2020-21	2019-20	2018-19	2017-18	2016-17
115	109	118	114	114

File Description	Document
Institutional data in prescribed format	View Document

3.2

Number of sanctioned posts year-wise during last five years

2020-21	2019-20	2018-19	2017-18	2016-17
115	109	118	114	114

File Description	Document
Institutional data in prescribed format	View Document

4 Institution

4.1

Total number of classrooms and seminar halls

Response: 34

4.2

Total Expenditure excluding salary year-wise during last five years (INR in Lakhs)

2020-21	2019-20	2018-19	2017-18	2016-17
460.05	493.42	514.05	666.59	548.14

4.3

Number of Computers

Response: 927

4. Quality Indicator Framework(QIF)

Criterion 1 - Curricular Aspects

1.1 Curricular Planning and Implementation

1.1.1 The Institution ensures effective curriculum delivery through a well planned and documented process

Response:

As an affiliated Institute, we administer the curriculum recommended and designed by the University of Mumbai (MU), the institution has developed a structured and effective implementation of the curriculum for imparting quality education. College Academic Advisory Committee meets to communicate crucial changes required in academic activity and newly formulated academic policy measures based on empirical studies, observations and inputs from various statutory bodies. The committee also discusses the plan of action for curriculum delivery, placements scenario, new changes to be adopted and various issues of the departments. The dissemination of these consensus arrived at this meeting is through Heads of the Departments, Deans and IQAC coordinator who are members of this body for its effective implementation.

The heads of the departments meet with the department academic advisory committee to discuss and formulate a plan of action for effective curriculum implementation. The heads of departments also hold meetings with all faculty members, instructing them to follow the curriculum delivery plan prepared by the department academic advisory committee. Faculty members are reoriented to create competency in freshly changing subject matter and to assist the development of teaching proficiency in that subject matter. Faculty members are encouraged to use a variety of blended teaching approaches, including presentations, tutorials, coursework, seminars, mini-projects, and real-time simulations among others. Seminar presentations and role reversals have been found to be extremely effective in engaging students and enhancing learning efficiency.

The Academic Calendar, which is created at the start of each academic year based on suggestions and proposals from various departments and student representatives and is aligned with national and university calendars, assists stakeholders in achieving their objectives. Through its persistent efforts, the college provides effective curriculum delivery. Faculty members are encouraged to arrange and participate in Orientation, Refresher Courses, Workshops, FDPs, STTPs, and Seminars to re-equip themselves with new technologies and methods. A virtuous cycle of learn-unlearn-relearn is also triggered by participation in various training programmes.

Teachers are passionate in their profession and they are succeeding in creating an academic ambience which promotes positive engagement of students. They also take utmost care to complete the coursework in time to facilitate the learner carry out the revisiting of the subject matter for higher degree of internalisation. Tutorials/projects, class tests and internal assessments comprise the formal evaluative processes, and students are encouraged to meet faculty beyond classroom hours for doubt-clearing and curricular discussions. Interactive teaching is promoted through students' participation in group discussions, quizzes and seminars.

File Description	Document
Upload Additional information	[View Document](#)

1.1.2 The institution adheres to the academic calendar including for the conduct of CIE

Response:

The continuous internal evaluation (CIE) is absent from university curriculum, but as natural teaching-learning process we undertake continuous evaluation process through quizzes & other unannounced/spontaneous engagement of pupil to ascertain the level of internalization before recapping the previous lectures. An academic calendar consisting of various curricular, extra and co-curricular activities is prepared in line with the University's calendar by the concerned coordinator at the beginning of each semester, with inputs from counselors of various societies. The calendar is communicated to students and staff. It is updated and revised with respect to any changes suggested by the university. All the classes and examinations are planned as per the calendar, thus ensuring complete adherence.Classes and Lab time-table – Time table Coordinator of each department prepares the time table as per the guidelines of University of Mumbai for the number of credit hours for each subject and the academic calendar prior to the start of the semester. Time-table is uploaded on the college website and displayed on notice boards of every department.
Course files and Lecture Plan - After the allocation of subjects to faculty, course file of each subject is prepared consisting of detailed teaching plan. It also contains the assignments to be uploaded, experiment designed, implementation plan, remedial action, teaching methodology etc. This course file is duly approved by the Head of the depa

rtment.
Internal Examinations / Evaluations - Detailed Examination schedule is announced in advance, by respective HODs. To maintain further compliance, exam sheets are checked within a week after the commencement of each examination. In case of labs and projects, internal viva and practical exams are conducted by respective departments before university examinations. Laboratory experiments / tutorials / assignments are evaluated on weekly basis.
University Exams- The tentative dates for university exams are indicated in the academic calendar. The final university exam schedule is also displayed on students' notice boards.
Student feedback – At the end of academic session students submit their feedback for each subject through online feedback forms maintaining complete anonymity.

File Description	Document
Upload Additional information	[View Document](#)

1.1.3 Teachers of the Institution participate in following activities related to curriculum development and assessment of the affiliating University and/are represented on the following academic bodies during the last five years

1. **Academic council/BoS of Affiliating university**
2. **Setting of question papers for UG/PG programs**
3. **Design and Development of Curriculum for Add on/ certificate/ Diploma Courses**
4. **Assessment /evaluation process of the affiliating University**

Response: A. All of the above

File Description	Document
Institutional data in prescribed format	[View Document](#)
Details of participation of teachers in various bodies/activities provided as a response to the metric	[View Document](#)
Any additional information	[View Document](#)

1.2 Academic Flexibility

1.2.1 Percentage of Programmes in which Choice Based Credit System (CBCS)/ elective course system has been implemented

Response: 100

1.2.1.1 **Number of Programmes in which CBCS / Elective course system implemented.**

Response: 5

File Description	Document
Minutes of relevant Academic Council/ BOS meetings	View Document
Institutional data in prescribed format	View Document
Any additional information	View Document

1.2.2 Number of Add on /Certificate programs offered during the last five years

Response: 20

1.2.2.1 **How many Add on /Certificate programs are offered within the last 5 years.**

2020-21	2019-20	2018-19	2017-18	2016-17
6	5	5	2	2

File Description	Document
List of Add on /Certificate programs	View Document
Brochure or any other document relating to Add on /Certificate programs	View Document

1.2.3 Average percentage of students enrolled in Certificate/ Add-on programs as against the total number of students during the last five years

Response: 28.04

1.2.3.1 **Number of students enrolled in subject related Certificate or Add-on programs year wise during last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
1212	665	457	238	258

File Description	Document
Details of the students enrolled in Subjects related to certificate/Add-on programs	[View Document](#)
Any additional information	[View Document](#)

1.3 Curriculum Enrichment

1.3.1 Institution integrates crosscutting issues relevant to Professional Ethics ,Gender, Human Values ,Environment and Sustainability into the Curriculum

Response:

The institution follows Curriculum of Mumbai University. It offers a course on Professional Communication and Ethics- I and Professional Communication and Ethics- II as part of the syllabus of Second and Fifth semester for all branches. These subjects provide free environment for inculcating values and developing ethical competence among the students. It is in response to a long- felt and urgent need to integrate value education with decision making skills in their personal, social and professional life. Twenty-one days Induction programme related to values and ethics is an integral part of the curriculum of the first year. The college has Women Grievance Cell and Grievance Redressal Cell to provide counselling to students, promote gender equity among students and also deal with related issues of safety and security of female students, staff and faculty. Our everyday discourses and practices are integrated with our understanding of Universal human values, professional ethics, and gender neutrality and are underpinning sustainability of the human race at large. Our academic curriculum heavily relies on Mumbai University practices and content. University in its wisdom incorporates many of these crosscutting issues as part of curriculum and exhorts all stake holders to uphold the spirit of diversity and inclusiveness. We positively undertake these civilizational and sustainable practices as non-negotiable doctrines. University prescribed courses such as Energy Audit and Management, Human Resource Management, Professional Ethics and CSR and Environment Management create awareness and evolve importance of environment among students. Awareness about environment is necessary for the protection of the environment and survival of human life. The basic aim of these subjects is to make the students aware about the importance of environmental protections for sustainability of life forms. We remain committed to fostering a collective consciousness that will h

ave a significant impact on the academic activities that are carried ou
t on campus in accordance with current practises in cutting-edge busine
sses. We too realised the scope of developing an ecosystem based on new
er behavioural patterns of the people and their heightened sensibilitie
s   and   sensitivities.
College celebrates days of National and International importance as Rep
ublic Day, Women's Day, Independence Day, Teacher`s day, Human Right Da
y, International Yoga Day etc. These celebrations nurture the moral, et
hical and social values in the students.

File Description	Document
Upload the list and description of courses which address the Professional Ethics, Gender, Human Values, Environment and Sustainability into the Curriculum.	View Document

1.3.2 Average percentage of courses that include experiential learning through project work/field work/internship during last five years

Response: 43.3

1.3.2.1 **Number of courses that include experiential learning through project work/field work/internship year-wise during last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
139	146	153	159	152

File Description	Document
Programme / Curriculum/ Syllabus of the courses	View Document
MoU's with relevant organizations for these courses, if any Average percentage of courses that include experiential learning through project work/field work/internship	View Document
Any additional information	View Document

1.3.3 Percentage of students undertaking project work/field work/ internships (Data for the latest completed academic year

Response: 98

1.3.3.1 **Number of students undertaking project work/field work / internships**

Response: 2006

File Description	Document
List of programmes and number of students undertaking project work/field work/ /internships	[View Document](#)
Any additional information	[View Document](#)

1.4 Feedback System

1.4.1 *Institution obtains feedback on the syllabus and its transaction at the institution from the following stakeholders 1) Students 2)Teachers 3)Employers 4)Alumni*

Response: A. All of the above

File Description	Document
Any additional information (Upload)	[View Document](#)
Action taken report of the Institution on feedback report as stated in the minutes of the Governing Council, Syndicate, Board of Management (Upload)	[View Document](#)
URL for stakeholder feedback report	[View Document](#)

1.4.2 Feedback process of the Institution may be classified as follows: Options:

1. **Feedback collected, analysed and action taken and feedback available on website**
2. **Feedback collected, analysed and action has been taken**
3. **Feedback collected and analysed**
4. **Feedback collected**
5. **Feedback not collected**

Response: B. Feedback collected, analysed and action has been taken

File Description	Document
Upload any additional information	[View Document](#)
URL for feedback report	[View Document](#)

Criterion 2 - Teaching-learning and Evaluation

2.1 Student Enrollment and Profile

2.1.1 Average Enrolment percentage (Average of last five years)

Response: 100.79

2.1.1.1 **Number of students admitted year-wise during last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
486	431	418	446	425

2.1.1.2 **Number of sanctioned seats year wise during last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
480	450	420	420	420

File Description	Document
Institutional data in prescribed format	[View Document]
Any additional information	[View Document]

2.1.2 Average percentage of seats filled against reserved categories (SC, ST, OBC, Divyangjan, etc. as per applicable reservation policy) during the last five years (exclusive of supernumerary seats)

Response: 60.37

2.1.2.1 Number of actual students admitted from the reserved categories year-wise during the last five years

2020-21	2019-20	2018-19	2017-18	2016-17
124	105	130	145	165

File Description	Document
Average percentage of seats filled against seats reserved	[View Document]
Any additional information	[View Document]

2.2 Catering to Student Diversity

2.2.1 The institution assesses the learning levels of the students and organises special Programmes for advanced learners and slow learners

Response:

The institute succeeded in filing a patent for developing Instructional content for catering to pupils with different Learning abilities and different learning styles. Every day discourses in the institutes comprising of emotional / intellectual integrity to be enhanced among learners in addition to helping them develop spiritual awareness and Yoga practices. Pupils with high level of aspirations are nudged to take up academic project work approximating real world problems and initiated to emerging technologies and technology driven practices. To augment all these efforts, we as an institute promote MOOCs like Coursera / NPTL/ EDX etc. MOOCs combined with Research databases and Research Journals gives a robust learning platform to go up in the academic value chain. Highly motivated learners are also initiated to Hackathon kind national and corporate level. We are also started sensitising the learners about the virtues of Intellectual property rights juxta positioning with unproductive monopolistic practices. We are also encouraging them to file patents which can contribute to the cause of society at large.

Slow learners are also engaged differently by providing appropriate counselling and remedial classes. They are also initiated to develop competencies in Coding (computer/ machine programming: Conversion of problem to logic) through open sources like web portals of Hacker Rank, Hacker Earth etc. We extensively promote internship activities amongst all the students starting with first year to initiate them to "learning while doing" and M/S Internshala is our internship partner who is engaging highest number of students for internship activities, our effort has been appreciated by the statutory authorities like AICTE. We are also undertaking to carryout experiential learning practices to strengthen the learning progress of slow learners.

File Description	Document
Upload any additional information	[View Document](#)
Past link for additional Information	[View Document](#)

2.2.2 Student- Full time teacher ratio (Data for the latest completed academic year)

Response: 18:1	
File Description	**Document**
Any additional information	[View Document](#)

2.3 Teaching- Learning Process

2.3.1 Student centric methods, such as experiential learning, participative learning and problem solving methodologies are used for enhancing learning experiences

Response:

Historically Indian education system thrives on Mathematical rigor starting from schools and that approach induced a level of clarity in thinking. Higher and Technical education too thrived on mathematical integrity and majority of the Engineering College entrants are there because of their mathematical ability and obviously not because of higher level of soft skills. Majority of the engineering students are blessed to have higher level of problem-solving abilities Engineering curriculum has already incorporated workshop practices to all students independent of the branch of study, which on re-examination, we are forced to reckon that it is the single most differentiating factor, imparting respect for human labor of all kinds / collaborative learning and skill development

for

creating

artifacts   to   a
certain   degree   of   dimensional   accuracy.

Historically engineering colleges give more weightage for practical / laboratory sections to facilitate experiential learning, to help learner develop multiple perspectives for different parameters influencing the physicality of processes/ procedures behind man made/ natural phenomena. Our institute understands the trade-off between more hands-on learning and theoretical rigor. India thrived on theoretical clarity combined with a healthy dose of experience learning, as well as a willingness to cover a wide range of topics. We recognized the importance of Indian heritage and the educational process that underpins Indian ethos and culture as an institute. We identified "Coding as Institute's Core competencies", and orienting majority of curricular activities orienting towards that. Coding is essentially "Conversion of problem to logic", which prompt/ nudges learners to relate theoretical moorings to real time applications and leaner undergo metamorphic changes in their perspective of   the   real-
world   problems   to   be   addressed.
We engineered programs to make learner become market savvy like "chemergence" an annual get together of students, academics from best of class

institutes and industry practitioners. We also promote similar activities through multiple student's societies without getting trapped into the designs ("catch them young") of FMCG behemoths. Our students' chapters of Institution of Electronics and Telecommunication Engineers (IETE) & Computer Society of India (CSI) organize multiple programs essentially promoting co-curricular activities nudging students to get exposed to nascent technologies & initiate them to undertake participation in technical paper presentations, technical workshops especially for coding for mobile/circuit design & python programming for Artificial Intelligence/Image Processing. They also organize coding & hardware design competitions which is contributing to the culture of developing technological competencies in emerging areas. Hackathon conceived by the political establishment at the PMO level and disseminated by AICTE and Innovation cell of Ministry of Education has been the single most important co-curricular activity. We remain focused in a state of "No stone Unturned" to impress inextricably to embrace the culture of Hackathon amongst our leaners, that culture of ours is also the biggest key differentiator. NSS activities are reimagined to help our pupil develop heightened sense of Empathy toward other fellow human being and also towards interconnected global environmental systems under pinning the sustainability issues. It helps learners develop social outreach as a non-negotiable virtue to be ingrained in their DNA and to be perpetuated in their life span.

File Description	Document
Upload any additional information	View Document
Link for additional information	View Document

2.3.2 Teachers use ICT enabled tools for effective teaching-learning process.

Response:

We as an institute started eventualizing integration of ICT tools for building efficiencies in student engagement even at the advent of pervasive technologies. We iteratively build optimal use of ICT driven teaching learning process to enhance the learning experience of the pupils involved. As time progresses we started leveraging internet technologies coupled with multimedia/digitization tools to improve the effectiveness of just in time learning with detailed images with appropriate labels to reduce the cognitive load of the learners. Last few years, we have also started using smart classroom instrumentation to build efficiencies for both teachers and students. While doing all this, we are also keeping alive about various learning styles & abil

ities. We are also using various LMS platforms and predominately relying on open source software and we are in the process of acquiring new age commercial solutions. The faculty use digital content from MOOC's platforms like NPTEL, SWAYAM, COURSERA, Spoken Tutorial and the Digital Library for updating themselves with the emerging technologies. MS Teams, Zoom and Google classrooms are also used as online classrooms. These platforms facilitate sharing the learning materials, their resources, quizzes and assignments with the students. This also helps in continual and easy assessment of the students' learning progress. We look forward for a scenario where we succeed in creating customized instructional content for various learners. We also envisage integration of virtual reality/augmented reality and mixed reality tools and devices to drastically improve the learning experiences of pupil concerned. Independent of its multiple advantages, technology integration in enterprises is a way of life and it shall be non-negotiable and it is irreversible.

File Description	Document
Upload any additional information	[View Document](#)
Provide link for webpage describing the ICT enabled tools for effective teaching-learning process	[View Document](#)

2.3.3 Ratio of students to mentor for academic and other related issues (Data for the latest completed academic year)

Response: 21:1

2.3.3.1 Number of mentors

Response: 96

File Description	Document
Upload year wise, number of students enrolled and full time teachers on roll.	[View Document](#)
mentor/mentee ratio	[View Document](#)
Circulars pertaining to assigning mentors to mentees	[View Document](#)

2.4 Teacher Profile and Quality

2.4.1 Average percentage of full time teachers against sanctioned posts during the last five years

Response: 100

File Description	Document
Year wise full time teachers and sanctioned posts for 5years(Data Template)	
List of the faculty members authenticated by the Head of HEI	
Any additional information	

2.4.2 Average percentage of full time teachers with Ph. D. / D.M. / M.Ch. / D.N.B Superspeciality / D.Sc. / D.Litt. during the last five years (consider only highest degree for count)

Response: 24.8

2.4.2.1 **Number of full time teachers with *Ph. D. / D.M. / M.Ch. / D.N.B Superspeciality / D.Sc. / D.Litt.* year wise during the last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
38	34	26	24	19

File Description	Document
List of number of full time teachers with Ph. D. / D.M. / M.Ch. / D.N.B Superspeciality / D.Sc. / D.Litt. and number of full time teachers for 5 years (Data Template)	
Any additional information	

2.4.3 Average teaching experience of full time teachers in the same institution (Data for the latest completed academic year in number of years)

Response: 15.7

2.4.3.1 **Total experience of full-time teachers**

Response: 1805

File Description	Document
List of Teachers including their PAN, designation, dept and experience details(Data Template)	

2.5 Evaluation Process and Reforms

2.5.1 Mechanism of internal assessment is transparent and robust in terms of frequency and mode

Response:

We observed that progressive/ continuous assessment having a high level of effectiveness in nudging pupils to remain focused for internalizing the subject matter at hand. We carry out at least two internal tests whose marks gets accounted for final graduation at the end of semester. Professors are encouraged to carryout surprise test/ short quizzes periodically while recapping the previous sessions. Internal assessment is mandated to be oral / written / online depending on the courses getting taught and evaluation of the same is notified to students to understand the mistakes committed while undertaking the test. Students are encouraged to contest any error in evaluation and advised to bring to the notice of Evaluator. Course work and assignments gets documented as a practice and getting evaluated at the end of the semester. These exercises promoting participation in the lecture and practice sessions and the grade assigned to this "Term Work" is reflecting the degree of involvement of the pupils in the subject matter also reflecting their regularity, punctuality, attitude toward academic processes undertaken and temperament to remain focused for a set goal We are committed to make evaluation processes more robust, continuous and transparent to be aligned with altruism envisaged by the concept and construct of universities.

File Description	Document
Any additional information	[View Document](#)

2.5.2 Mechanism to deal with internal/external examination related grievances is transparent, time-bound and efficient

Response:

Internal Examination Grievances are handled by the teacher in charge of the subjects themselves. Students are requested to approach the subject in charge within one week of the declaration of results of individual subject internal examination and immediate corrective steps are taken to modify/correct any discrepancy in awarding of the marks. At the behest of AICTE, we created Online Grievance facility which is professionally managed by the outside party. We also created student grievance com

mittee to align with University & UGC norms.

File Description	Document
Any additional information	[View Document](#)

2.6 Student Performance and Learning Outcomes

2.6.1 Programme and course outcomes for all Programmes offered by the institution are stated and displayed on website and communicated to teachers and students.

Response:

Our institute is affiliated to the University of Mumbai, we adhere to the university's academic calendar, course content, teaching, and test schedule. Program Outcomes (POs) are established based on 12 graduate attributes that an engineer should possess after completing courses in the given program. These are as per Washington Accord document and accepted by the National Board of Accreditation (NBA) and AICTE. These are also mentioned in the syllabus of the University of Mumbai (portal)

On the basis of the specialisation of the field and the courses taught in the program, Program Specific outcomes (PSOs) are framed by the department. All the courses taught in the program are grouped together for framing the program specific outcomes.

Course Outcomes (COs) are the significant and essential learnings that a learner obtains upon completion of the course, which are framed on the basis of the course's syllabus contents. The University's syllabus specifies the course objectives and outcomes. If the university does not specifically mention the COs, the subject experts, in consultation with the faculty handling the course, define the CO. At the start of the academic year, all faculty members prepare course files that include information about the Course Objectives, Course Outcomes, modules, reference material, teaching plan, and credits.

Disseminating (POs), (PSOs) and (COs): The POs, PSOs and COs are disseminated through various means.

- Website

- Curriculum/ regulations books

- Departmental display boards

- Laboratories through display boards

- Student Induction Programs

- Faculty meetings

- Library

During the lecture of every module, the course outcome of that particular module is discussed with the students in class. Department's vision, mission, POs, PSOs, COs are uploaded on the college website and displayed on various structures of the building.

File Description	Document
Upload COs for all Programmes (exemplars from Glossary)	View Document
Upload any additional information	View Document
Past link for Additional information	View Document

2.6.2 Attainment of programme outcomes and course outcomes are evaluated by the institution.

Response:

Course outcomes describe what students will be able to demonstrate in terms of knowledge and values once they have completed a course. The PO assessment is done at the end of each course based on the CO attainment of all curriculum components. Each course has its own set of course outcomes and evaluation criteria. For quantitative measurement of programme outcome attainment, course results are mapped to programme outcomes.

CO Attainment:

To track the progress of each Course Outcome, assessment methods are identified. There are two types of assessment methods: direct and indirect. The course result assessment process is based on internal assessments and semester end examinations. The matching CO is assigned to each question in the midterm. The average of all the students' grades is used to calculate the CO's overall achievement.

Direct assessment methods include:

- Theory Courses – Internal and End Semester exams

Indirect assessment methods include:

- Course end survey

Course Outcomes – Assessment Process

- Direct and indirect assessments account for 80 percent and 20 percent of overall course achievement, respectively.
- The direct assessment weightage is shared between internal and external assessments based on the prescribed university regulations.
- The attainment level of each student can be studied and it can also be checked if the entire COs are attained or are met with the set performance goal.
- In correlation of CO-PO tables, '3' indicates strong correlation, '2' indicates moderate correlation, '1' indicates low correlation with the respective PO.
- Indirect assessment is executed through Course end survey.
- The final attainment of the COs is calculated from the average attainment obtained by all the students

PO Attainment:

All courses that contribute to PO are identified, and these courses are assessed using both direct assessment instruments (internal and external examinations) and indirect evaluation tools (Course End Survey). The overall findings from the PO evaluations are compared to the expected attainment after the POs have been assessed using both direct and indirect assessment methodologies. The PO is judged satisfied if the expected attainment level is met. If the expected level of achievement is not met, the responsible faculty, with guidance from the Head of Department, will work to take extra steps to enhance the overall improvement of the class.

CO Attainment Method	Attainment Level		
	1	2	3
University Examination	60% student scoring more than 50% marks in the final examination	70% student scoring more than 50% marks in the final examination	80% student scoring more than 50% marks in the final examination
Internal Assessment	50% students score more than 60% marks in in the internal assessment	60% students score more than 60% marks in in the internal assessment	70% students score more than 60% marks in in the internal assessment
Course Exit Survey	60% student scoring more than 60% marks in the course exit analysis	70% student scoring more than 60% marks in the course exit analysis	80% student scoring more than 60% marks in the course exit analysis

The above table shows the attainment of course outcomes through an internal assessment scheme, which is similarly followed by drafting the rubrics for course attainment through university examinations. The table below describes the setting up of a target & its attainment through the internal & external assessments through

LO Attainment Method	Attainment Level		
	1	2	3
Term work	*More than 50% student scoring more than 60% marks in the final examination*	*More than 60% student scoring more than 60% marks in the final examination*	*More than 70% student scoring more than 60% marks in the final examination*
Oral/ Practical	*More than 50% students score more than 60% in the internal assessment*	*More than 60% students score more than 60% in the internal assessment*	*More than 70% students score more than 60% in the internal assessment*

File Description	Document
Upload any additional information	[View Document](#)

2.6.3 Average pass percentage of Students during last five years

Response: 98.76

2.6.3.1 **Number of final year students who passed the university examination year-wise during the last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
535	468	502	541	541

2.6.3.2 **Number of final year students who appeared for the university examination year-wise during the last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
535	468	518	548	551

File Description	Document
Upload list of Programmes and number of students passed and appeared in the final year examination (Data Template)	View Document
Upload any additional information	View Document
Paste link for the annual report	View Document

2.7 Student Satisfaction Survey

2.7.1 Online student satisfaction survey regarding teaching learning process

Response:

File Description	Document
Upload database of all currently enrolled students (Data Template)	View Document

Criterion 3 - Research, Innovations and Extension

3.1 Resource Mobilization for Research

3.1.1 Grants received from Government and non-governmental agencies for research projects, endowments, Chairs in the institution during the last five years (INR in Lakhs)

Response: 14.88

3.1.1.1 **Total Grants from Government and non-governmental agencies for research projects , endowments, Chairs in the institution during the last five years (INR in Lakhs)**

2020-21	2019-20	2018-19	2017-18	2016-17
0	13.90	0.50	0	0.48

File Description	Document
List of endowments / projects with details of grants	[View Document](#)
e-copies of the grant award letters for sponsored research projects / endowments	[View Document](#)

3.1.2 Percentage of teachers recognized as research guides (latest completed academic year)

Response: 6.96

3.1.2.1 **Number of teachers recognized as research guides**

Response: 8

File Description	Document
Institutional data in prescribed format	[View Document](#)
Any additional information	[View Document](#)

3.1.3 Percentage of departments having Research projects funded by government and non government agencies during the last five years

Response: 32.14

3.1.3.1 **Number of departments having Research projects funded by government and non-government agencies during the last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
0	5	2	0	2

3.1.3.2 **Number of departments offering academic programes**

2020-21	2019-20	2018-19	2017-18	2016-17
5	5	6	6	6

File Description	Document
Supporting document from Funding Agency	[View Document](#)
List of research projects and funding details	[View Document](#)
Paste link to funding agency website	[View Document](#)

3.2 Innovation Ecosystem

3.2.1 Institution has created an ecosystem for innovations and has initiatives for creation and transfer of knowledge

Response:

We started our Ph.D. program essentially to promote multi-disciplinary research which in turn leads to solution building process for the immediate neighbourhood / state/ country / society at large. We as an institute introduced our research scholars to original research problems in applied areas leveraging nascent technologies. Majority of research topics are formulated to resolve the complexities of real time problems in health care, Agriculture, Ecommerce, E-Governance, oil and gas industries. These applied research results in innovations and leading to redesign of existing business processes. Pursuit of truth is the single most common thread connecting all research endeavour and resulting in creation of new knowledge and contributing to the very existence of higher education in the civilised society.

We successfully engineered an academic ambience wherein knowledge sharing is democratised and taken utmost care in building diversity and incl

usiveness. Researchers incentivised to contribute to the existing body of knowledge.
Everyday discourse revolved around keeping abreast with evolving Digital Technology (Product& processes) marketplace and ways and means of internalising the same at the institute, more specifically amongst all actors who are perpetuating the productive existence of the institute vying for a place in the galaxy of institute of higher learning.
We actualised these set goals of going up in the academic value chain by nudging them to publish their research work periodically to have claim on the intellectual property rights of their original research findings and formulations. We also started building the culture of patenting of original innovations and creative formulations which can result in co
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alisatio
n of the same and contributing to the national economy.
A sample of research undertaken by the institute through Ph.D. program has been listed as under.

Sr. NO.	Ph.D. Scholars Research Topics
1	Models for making e-commerce and M-commerce ubiquitous and pervasive to improve National productivity in India
2	Re- energizing E-governance Practices by Integrating Mobile Technology Platform
3	Forecasting cloud computing life cycle
4	Information Communication Technologies for Entrepreneurship Incubation/ Start-up Projects
5	Software engineering challenges for synchronizing enterprise resource planning and business intelligence
6	Investigating Big Data Analytics in Indian Industries for Building Efficiencies
7	Transcending Information Technology Enterprises in India to Evolve as Total Solution Providers
8	Investigating Efficacy of Graphical User Interface in Indian E-Governance and M-Governance Projects
9	Investigation of Mass Customisation technique in Indian Consumer Electronic Sector
10	Forecasting and Modeling Automation in Indian IT Service Industry
11	Predicting Futuristic Quality Movements in Indian Manufacturing.
12	Modeling Futuristic E-governance Practices Leveraging Deep Learning Techniques.
13	Modeling IT Infrastructure for Construction Industries to Build Velocity, Agility and Intelligence
14	Forecasting computational paradigm on advent of quantum computing and its effect on business processes
15	Blockchain Technology for building Efficiency and Velocity in Indian Judicial System
16	Capacity and Throughput Optimization of MIMO for effective communication network
17	Wireless Body Area Networks : Propagation and Antenna for UWB and MM Waves "
18	Wireless network
19	Configuring Efficient RF Energy Harvesting System For WSN
20	Performance evaluation and modelling of futuristic small antennas in the realm of mobile communications
21	Developing an efficient architecture and procedures for Multipath TCP in wired and wireless domain
22	Blind Tampering Detection and Localization in Digital Images and Videos.
23	Study of Procedures for Parameter Extraction of Maximum Targets using MIMO Radar Based System
24	Re-energizing manufacturing leveraging software engineering techniques
25	Investigating the Opportunities and Challenges in E-Governance Projects by integrating Cloud Computing and Big Data Analytics
26	Content based image retrieval using deep learning
27	Intrusion Detection System using Deep Learning
28	Validation and optimization of Image Compression Algorithm
29	Hashing in digital media
30	Detection and Analysis of Defects in Fabric using Texture Properties
31	Analyzing the efficacy of machine learning techniques on climate prediction in Maharashtra region
32	Event Recognition using Machine Learning Technique
33	Leveraging Machine Learning Technology for efficacy in predicting crop yield of Marathwada Region

The Undergraduate teaching learning has been hugely influenced by the research culture of the college and visibly percolate down to the level of learners and that catapult majority to remain focused for the set target of pursuing research program in and out side the country.

File Description	Document
Upload any additional information	[View Document](#)

3.2.2 Number of workshops/seminars conducted on Research Methodology, Intellectual Property Rights (IPR) and entrepreneurship during the last five years

Response: 65

3.2.2.1 **Total number of workshops/seminars conducted on Research Methodology, Intellectual Property Rights (IPR) and entrepreneurship year-wise during last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
22	19	14	8	2

File Description	Document
Report of the event	[View Document](#)
List of workshops/seminars during last 5 years	[View Document](#)

3.3 Research Publications and Awards

3.3.1 Number of Ph.Ds registered per eligible teacher during the last five years

Response: 5.63

3.3.1.1 **How many Ph.Ds registered per eligible teacher within last five years**

Response: 45

3.3.1.2 **Number of teachers recognized as guides during the last five years**

Response: 8

File Description	Document
List of PhD scholars and their details like name of the guide , title of thesis, year of award etc	[View Document](#)
Any additional information	[View Document](#)
URL to the research page on HEI website	[View Document](#)

3.3.2 Number of research papers per teachers in the Journals notified on UGC website during the last five years

Response: 1.15

3.3.2.1 **Number of research papers in the Journals notified on UGC website during the last five years.**

2020-21	2019-20	2018-19	2017-18	2016-17
24	34	31	19	23

File Description	Document
List of research papers by title, author, department, name and year of publication	[View Document](#)
Any additional information	[View Document](#)

3.3.3 Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five years

Response: 0.98

3.3.3.1 **Total number of books and chapters in edited volumes/books published and papers in national/ international conference proceedings year-wise during last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
6	13	26	36	31

File Description	Document
List books and chapters edited volumes/ books published	[View Document](#)
Any additional information	[View Document](#)

3.4 Extension Activities

3.4.1 Extension activities are carried out in the neighborhood community, sensitizing students to social issues, for their holistic development, and impact thereof during the last five years.

Response:

Thadomal Shahani Engineering College has engineered various extension activities for sensitizing students about different social issues and for their holistic development. TSEC has an impressive list of affiliations like NSS, 'Unnat Bharat Abhiyan' (UBA), Rotaract club, Green Army, Ek Bharat Shreshta Bharat (EBSB) and many more. TSEC is the first engineering college under University of Mumbai (UoM) to be part of the 'National Service Scheme (NSS)' under the Ministry of Youth Affairs and Sports, Government of India (GOI) since the year 1998 and had also won 'Best NSS Unit' award in the year 2000. TSEC is also the first college under the university which got registered in 'Unnat Bharat Abhiyan' initiative sponsored by Ministry of Human Resource Development (MHRD), GOI. In the year 2020, TSEC has been conferred with the 'Perennial Funding Award' (National Award) under UBA. TSEC was among 78 winner institutes selected from over 2600 participating institutes across India, including premium institutes like IITs, NITs and IIMs. NSS-TSEC unit organizes various activities such as Blood Donation Drives, Joy of Giving, International Day of Yoga, Disaster Relief Awareness and Street plays. Localized environmental activities like tree plantation, beach cleaning drive are also undertaken by NSS-TSEC. Heart Marshal Training with iCARE, Holy Family hospital is conducted for students for educating them on how to save the life of a sudden cardiac arrest victim until medical help arrives. Students visit orphanages and old age homes at regular intervals where they spend time and conduct activities.

TSEC's students and teachers are heavily invested in social interventions in selected, remote Adivasi villages of Neral at the foothills of Matheran. A lot of work has been put into watershed management and building check dams to solve the issue of water scarcity in these areas. For the Zilha Parishad (ZP) school children, 'Gyandaan' activity is carried out. Personal hygiene sessions for women and health checkup camp are also conducted. Natural farming and 'Gramotsav' festival including sports competition and cultural programs are some of the major highlights. These activities make students aware about the community issues. Some students take up the task of providing engineering solution to challenges

faced by the villagers. By conducting aforementioned activities students understand importance of resource management.
Under the Green Army project of Govt of India, TSEC students and teachers regularly participate in plantation in nearby area. The students have done many programs under "Ek Bharat Shreshta Bharat (EBSB) Abhiyan".
In TSEC we celebrate many important days observed by Government Agencies and NGOs including "Matrubhasha Diwas" and "Swachata Pakhwada Week".

It is evident to witness enlightened minds and transformed personalities of the students involved in ISR activities better equipped to face real life situations as acknowledged by their parents and recruitment companies.
Lately for last couple of years , we are supporting and facilitating Prime Minister Special Scholarship Scheme (PMSSS) with the complete understanding of mission of PM office in engaging youths of Jammu and Kashmir by giving admission to professional colleges.

File Description	Document
Upload any additional information	[View Document]()

3.4.2 Number of awards and recognitions received for extension activities from government/ government recognised bodies during the last five years

Response: 21

3.4.2.1 **Total number of awards and recognition received for extension activities from Government/ Government recognised bodies year-wise during the last five years.**

2020-21	2019-20	2018-19	2017-18	2016-17
1	7	8	3	2

File Description	Document
Number of awards for extension activities in last 5 year	[View Document]()
e-copy of the award letters	[View Document]()

3.4.3 Number of extension and outreach programs conducted by the institution through NSS/NCC, Government and Government recognised bodies during the last five years

Response: 90

3.4.3.1 **Number of extension and outreached Programmes conducted in collaboration with industry, community and Non- Government Organizations through NSS/ NCC/ Red Cross/ YRC etc., year-wise during the last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
15	27	13	25	10

File Description	Document
Reports of the event organized	[View Document](#)
Number of extension and outreach Programmes conducted with industry, community etc for the last five years	[View Document](#)

3.4.4 Average percentage of students participating in extension activities at 3.4.3. above during last five years

Response: 60.03

3.4.4.1 **Total number of Students participating in extension activities conducted in collaboration with industry, community and Non- Government Organizations such as Swachh Bharat, AIDs awareness, Gender issue etc. year-wise during last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
1398	1685	1024	1356	586

File Description	Document
Report of the event	[View Document](#)
Average percentage of students participating in extension activities with Govt or NGO etc	[View Document](#)

3.5 Collaboration

3.5.1 Number of Collaborative activities for research, Faculty exchange, Student exchange/ internship per year

Response: 744

3.5.1.1 **Number of Collaborative activities for research, Faculty exchange, Student exchange/ internship year-wise during the last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
299	240	128	42	35

File Description	Document
e-copies of related Document	View Document
Details of Collaborative activities with institutions/industries for research, Faculty exchange, Student exchange/ internship	View Document

3.5.2 Number of functional MoUs with institutions, other universities, industries, corporate houses etc. during the last five years

Response: 18

3.5.2.1 **Number of functional MoUs with Institutions of national, international importance, other universities, industries, corporate houses etc. year-wise during the last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
3	3	8	3	1

File Description	Document
e-Copies of the MoUs with institution/ industry/corporate houses	View Document
Details of functional MoUs with institutions of national, international importance, other universities etc during the last five years	View Document

Criterion 4 - Infrastructure and Learning Resources

4.1 Physical Facilities

4.1.1 The Institution has adequate infrastructure and physical facilities for teaching- learning. viz., classrooms, laboratories, computing equipment etc.

Response:

TSEC, established in the year 1983, is one of the most sought-after colleges in Mumbai. The college is situated in the heart of Mumbai city and is affiliated to Mumbai University. TSEC has an effective policy in place for creating and enhancing the infrastructure that facilitates effective teaching and learning. The institute has taken measures to offer air-conditioning and internet bandwidth throughout the buildings. We are equipped with excellent computational facilities.

We are serious about providing an academic ambience with ergonomically designed physical infrastructure to build efficiencies in teaching and learning. Our empirical experience shows that air-conditioned classrooms create an optimal learning ambience. As we are located in the metro city, we hire (need based) stadium, playground and open auditorium located near the campus periodically.
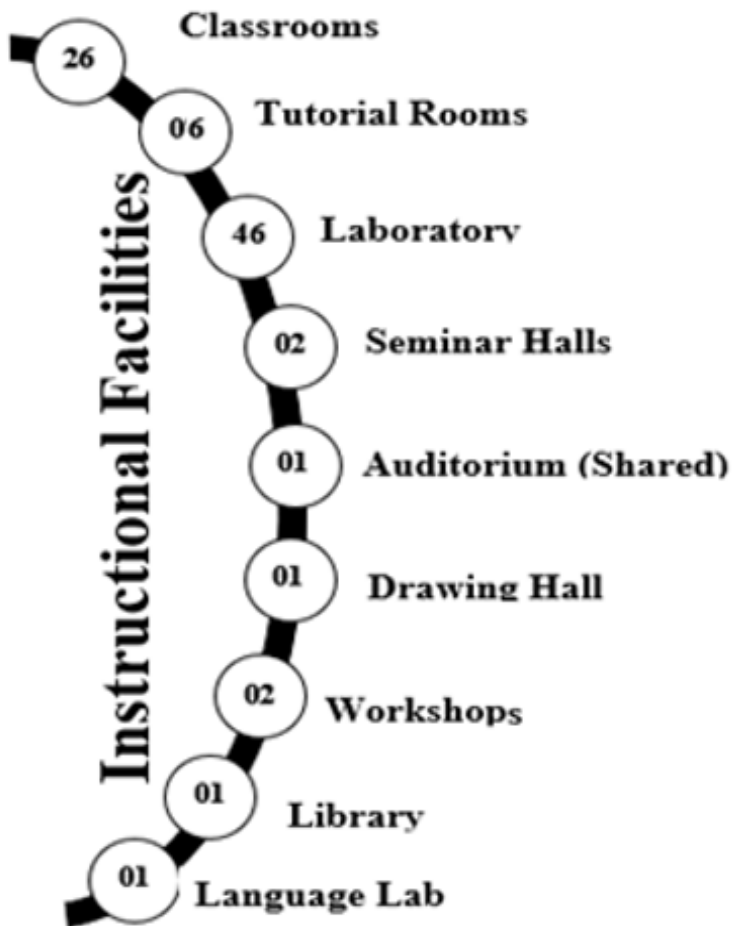
Fig. 4.1: Instructional Facilities

Sr. No	Instructional Facilities	Instructional Area Count
1.	Classroom	26
2.	Tutorial Room	06
3.	Laboratory	46
4.	Seminar Halls	02
5.	Auditorium (Shared)	01
6.	Drawing Hall	01
7.	Workshop	02
8.	Library	01
9.	Language Lab	01

Classrooms at the Institute are air-conditioned, well-furnished, spacious, well-ventilated, and well-illuminated. All lecture rooms are equipped with LCD projectors, whiteboards, raised platforms, and a podium with computer system and internet connectivity. Each room can accommodate seventy students. TSEC has sufficient number of tutorial rooms. Tutorial classes are conducted as per university curriculum. The area and number of classrooms are as per AICTE norms. **Classrooms/ Tutorial Rooms**

Central Computing Facility

To cater to the needs of aspiring graduates, the central computing facility is equipped with robust instrumentation, control panels, intelligent board with high end internet connectivity. Many seminars, workshops, hackathon and technical events have been successfully executed in this lab. There are about 130 client nodes with robust internet connectivity.

Laboratories

To provide a complete Learning Management System, TSEC has maintained

well-equipped laboratories with up-to-date and cutting-edge instruments and systems to support syllabus-driven experimentation and academic research. Adequate administrative and support facilities are also available to foster an academic requirement. Some of the laboratories are transformed into centres of excellence to facilitate research and studies in emerging areas. Modernization of some of the laboratories have been funded by AICTE. All non-computer departments are equipped with at least one computer room which is equipped with matching software in addition to central computing facility. We are having well equipeped laboratories for different disciplines as enlisted below :

- **Computational Laboratories**

- **Electrical/Electronics & Telecommunication (Digital & Analog) Laboratories**

- **Chemical/Biomed/Biotech/Chemistry Laboratories**

- **Language Lab**

- **Seminar Rooms**

CCTV Cameras

To secure the college building and resources and to monitor the examinations around 115 CCTV cameras are installed.

Workshops and Drawing Hall

TSEC has well equipped workshop and drawing hall that fulfill the needs of the curriculum. We are having central workshop and drawing hall facility to accommodate 60 students at a time, which are also getting used for project and consultancy work.

Library

TSEC Library manages knowledge, both in print and digital formats. The reading room facility attached also offers a platform for cross functional interactions of students of various studies and which in-turn leads to collaborative academic efforts.

There are up to 25 computers in the digital library for students and staff to access the online resources and e-content seamlessly. In addition to learning facilities available in various departmental computer laboratories and limited department libraries.

File Description	Document
Upload any additional information	[View Document](#)

4.1.2 The Institution has adequate facilities for cultural activities, sports, games (indoor, outdoor), gymnasium, yoga centre etc.

Response:

Cultural   activities
Students of TSEC are encouraged to participate in extra-curricular activities throughout their academic tenure. The institute provides adequate facilities for sports, games, cultural and technical events. Cultural activities are held in the auditorium, seminar halls and the open space at the institute. The institute has hosted many stellar events and has encouraged students to participate for the same at national and international level. The student council of the institute organizes various events under the guidance of the principal and faculty coordinator. The inter-collegiate cultural festival "Trifles" is celebrated every year where students all over the city participate with a lot of zeal and enthusiasm.
The students of TSEC have won many awards in street play, dance, singing and fashion show. The student council also organizes Freshers Day, Avalanche, Teacher's Day, Women's Day, Traditional Day, International Matrubhasha   Diwas,   Innovation   Day   and   International   Yoga   Day.**Sports   and   Games:Indoor   games:** The institute offers various indoor games facilities in the gymkhana. It   has   games   like   Table   Tennis,   Chess,   Carom   and   pool.**Outdoor   games:** The institute encourages students to participate in sports by renting grounds   on   timely   basis. Students actively participate in indoor and outdoor games like chess, carrom, table tennis, cricket, football, volleyball, badminton and many more. The institute inculcates the love of sports and caters to the need of sports enthusiasts on campus. For indoor games, students play in the in-house gymkhana and for the outdoor games, grounds are hired from time   to   time.   The   Student   Council   organizes   our   flagship   event   **'TSEC   Marathon'** which is an event held annually, actively participated by all Mumbaikars.**Yoga:**
The institute started adapting practices which improve spiritual quotient of pupils in addition to intellectual and emotional integrity. Historically, we were practicing yoga without any direction and occasionally

. Currently political/educational establishment also nudges institute to undertake yoga practices starting with students getting admitted in the first-year level as part of induction program. We also experienced the positive outcome of yoga practices getting introduced and popularizing among youngsters. We undertake to take these practices to the next level even to influence families and ecosystems around the learners. Yoga sessions are conducted for students and faculty to channelize their focus and expand their energy to train and sharpen the body, mind and spirit in the right direction. All Yoga sessions are conducted by trained   professionals.
There is a system in place to facilitate initiation of students to extra-curricular and co-curricular activities. We find lots of virtues associated with collaborative and group activities and which is the foundation of all sports and cultural activities. The institute incorporates these understandings in their regular discourses and students are prompted to undertake these activities with maximum inclusiveness. Sports and other extra-curricular activities essentially succeed in eliminating barriers preventing synergies of collaborative effort. These activities essentially sensitize all concerned about transcending to sports persons' emotional and physical integrities. Keeping this as an institutional understanding, we create a setting where individuals are facilitated to participate in events of their choice.
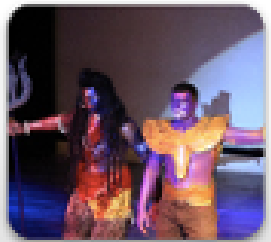
TSEC Drama Team
- 1st Rank - IIM Ahmedabad
- 2nd Rank - ICT, Mumbai
- 1st Rank - SNDT University, Mumbai
- 1st Rank - NMIMS, Mumbai
- 3rd Rank - SPCE, Mumbai
- 2nd Rank - Terna, Mumbai
- 1st Rank - TSEC, Mumbai

TSEC Dance Team
- 1st Rank - IIM Ahmedabad
- 3rd Rank - SNDT University, Mumbai
- 2nd Rank - Terna Engineering College, Mumbai
- 2nd Rank - TSEC, Mumbai

TSEC Fashion Show Team
- 2nd Rank - Sydenham, Mumbai
- 2nd Rank - KJ Somaiya Engineering College, Mumbai
- 1st Rank - National College, Mumbai
- 2nd Rank - TSEC, Mumbai

Fig 4.2: Ways and means of channelizing 'juvenile impatience' to do something spectacular

File Description	Document
Upload any additional information	[View Document](#)

4.1.3 Percentage of classrooms and seminar halls with ICT- enabled facilities such as smart class, LMS, etc. *(Data for the latest completed academic year)*

Response: 100

4.1.3.1 Number of classrooms and seminar halls with ICT facilities

Response: 34

File Description	Document
Upload Number of classrooms and seminar halls with ICT enabled facilities (Data Template)	View Document
Upload any additional information	View Document

4.1.4 Average percentage of expenditure, excluding salary for infrastructure augmentation during last five years(INR in Lakhs)

Response: 32.77

4.1.4.1 **Expenditure for infrastructure augmentation, excluding salary year-wise during last five years (INR in lakhs)**

2020-21	2019-20	2018-19	2017-18	2016-17
198.61	75.33	91.07	342.82	198.72

File Description	Document
Upload Details of budget allocation, excluding salary during the last five years (Data Template)	View Document
Upload audited utilization statements	View Document
Upload any additional information	View Document

4.2 Library as a Learning Resource

4.2.1 Library is automated using Integrated Library Management System (ILMS)

Response:

Response:
In this digital era, library automation is essential in every academic institution. Accelerated disruptions in the science and technology and matching literature on these sectors drives acquisition of the same in the library. The learners who remain focused and have the innate ability of seeking new knowledge have been found hugely satisfied in the quest for new frontiers. TSEC has also taken steps to transform its library functionality into a paperless environment by implementing LibSuite Educational, an automated library management system. The Institution has a spacious Central Library with an area of 465 square metres and has a

sitting capacity for 100 users..
(1) Name of the ILMS software: "LIB SUITE Educational"
(2) Nature of automation (fully or partially): All the Library functions are fully automated.
(3) Version: Library uses version 5.1
(4) Year of Automation: Library is fully automated since 2005

The TSEC Library has The TSEC Library has 42,745 volumes with a total of 10,287 titles. It includes an online subscription to e-journals and e-books along with 40 print periodicals. We have a vast amount of digital content that is accessible through a strong digital library infrastructure.

The institution considers the library to be a vital learning resource. It is regularly updated to include the most recent books and periodicals.

The institute library functions under the Open Access System having a total collection of 39,077 volumes of books with 15 titles covering all the branches of Engineering, Management, Sciences and Humanities and general books.

The library has the subscription of several online Journals, national and international Journals, Periodicals, Newspapers, previous years question papers, books on competitive exams etc. We also have Book Bank facility.

The digital library has an impressive collection of around 1000 CDs, e-resources like e-books, e-journals. In addition to this, the library is also equipped with an internet browsing center with 25 systems with access to various academic resources available on the internet.

Resources like digital scanners, printers, photocopiers and CCTV Camera surveillance system for security etc. are available.

The details of various collection are given as follows:

Title	Quantity	
Technical Books	41992	
Encyclopedia	22	
Handbooks	231	
Dictionaries	31	

Newspaper	08
Magazines	08
CD,DVDs	1000
Non Technical Books	500
E-books	1890

Other   Learning   Resources:
In addition, the library has proceedings of national and international conferences, seminars, symposiums, lecture notes, technical proceedings , technical resources, manuals, guidelines, standard specifications, sp ecial publications, layouts, IS codes which are made available for acce ss to all students, faculty and staff.

File Description	Document
Upload any additional information	[View Document](#)

4.2.2 The institution has subscription for the following e-resources

1. e-journals
2. e-ShodhSindhu
3. Shodhganga Membership
4. e-books
5. Databases
6. Remote access to e-resources

Response: C. Any 2 of the above

File Description	Document
Upload any additional information	[View Document](#)
Details of subscriptions like e-journals, e-ShodhSindhu, Shodhganga Membership , Remote access to library resources, Web interface etc (Data Template)	[View Document](#)

4.2.3 Average annual expenditure for purchase of books/e-books and subscription to journals/e-journals during the last five years (INR in Lakhs)

Response: 9.8

4.2.3.1 Annual expenditure of purchase of books/e-books and subscription to journals/e- journals year wise during last five years (INR in Lakhs)

2020-21	2019-20	2018-19	2017-18	2016-17
8.3	10.72	9.71	11.34	8.91

File Description	Document
Details of annual expenditure for purchase of books/e-books and journals/e- journals during the last five years (Data Template)	[View Document](#)
Audited statements of accounts	[View Document](#)

4.2.4 Percentage per day usage of library by teachers and students (foot falls and login data for online access) during the latest completed academic year

Response: 13

4.2.4.1 Number of teachers and students using library per day over last one year

Response: 281

File Description	Document
Details of library usage by teachers and students	[View Document](#)
Any additional information	[View Document](#)

4.3 IT Infrastructure

4.3.1 Institution frequently updates its IT facilities including Wi-Fi

Response:

TSEC has a policy of updating its IT infrastructure on a regular basis as needed. We have over 600 Microsoft licenses, as well as licenses for MATLAB, SPSS, library software, accounting software, sketching software, a learning management system, and specialised chemical engineering software packages. Windows 8/10 operating system, Microsoft Office 2016, Keil software, MATLAB, Ls-Dyna, LibSuite, Tally, and other programming softwares are among those used. The IT infrastructure at TSEC is updated on a regu

lar basis to keep up with the institute's requirements.

The institute regularly upgrades its IT facilities. The institution has been purchasing high-end computers on a regular basis. Zenith computers with Core i3 CPUs were purchased in 2015-16. Since 2016, the Institute has been upgrading all of its computers to the Core i5 level. All laboratories have the most recent PC hardware, including Core i5 CPU, 4 GB-6GB memory, 500 GB-1TB hard drive, and 19" screen. The majority of the computers are of brands like Dell and HP with preloaded Windows operating systems. In addition, TSEC has three high-end Tower Servers from IBM, Compaq, and Assembled. The server configuration has been upgraded to an Octa Core CPU, 4GB-16GB RAM, and a 1TB HDD with RAID support.

Every lab has network switches that connect internal computers to the main core network of the institute. The switches used for networking between different laboratories are of brand CISCO and DLINK with 16-24 port support. To secure the access, TSEC has replaced some of its unmanageable switches with manageable switches over the last five years.

TSEC is committed to increasing the internet speed year after year. We had an internet speed of 100 MBPS in 2016-17, which was increased to 200 MBPS in 2017-18 and then to 700 MBPS in 2020-21. Many of the departmental laboratories have their own 25 MBPS broadband connection. A centralized firewall system provides and manages internet connections in a secure manner. The entire campus is Wi-Fi enabled and has high-speed internet access, allowing students and faculty to access the internet from anywhere within the college building and its peripherals. Over the years, the Wi-Fi facility has been improved by increasing internet bandwidth as well as upgrading some Wi-Fi routers from 300 MBPS to 1200 MBPS with dual band 2G + 5G support. The institute's digital library has its own high-speed internet connection to allow for quick and efficient access to digital teaching-learning materials such as MOOC platforms, research papers, E-journals, E-Books, Swayam courses, NPTEL videos and so on.

In the last five years, the classrooms have also been upgraded with computer-aided podiums, high-end projectors, some smart boards, air-conditioning, and internet access to create a conducive environment for teaching and learning.

During the unexpected COVID-19 outbreak, the institution purchased online teaching platforms such as Microsoft Teams and Zoom apps to make the teaching-learning process run more smoothly, as well as provide the ab

ility to conduct seminars, workshops, webinars, and engage students pro
ductively.

4.3.2 Student - Computer ratio (Data for the latest completed academic year)

Response: 2:1

File Description	Document
Upload any additional information	View Document
Student – computer ratio	View Document

4.3.3 Bandwidth of internet connection in the Institution

Response: A. ?50 MBPS

File Description	Document
Upload any additional Information	View Document
Details of available bandwidth of internet connection in the Institution	View Document

4.4 Maintenance of Campus Infrastructure

4.4.1 Average percentage of expenditure incurred on maintenance of infrastructure (physical and academic support facilities) excluding salary component during the last five years(INR in Lakhs)

Response: 6.14

4.4.1.1 **Expenditure incurred on maintenance of infrastructure (physical facilities and academic support facilities) excluding salary component year-wise during the last five years (INR in lakhs)**

2020-21	2019-20	2018-19	2017-18	2016-17
20.74	26.47	26.06	37.13	55.82

File Description	Document
Details about assigned budget and expenditure on physical facilities and academic support facilities (Data Templates)	View Document
Audited statements of accounts	View Document

4.4.2 There are established systems and procedures for maintaining and utilizing physical, academic and support facilities - laboratory, library, sports complex, computers, classrooms etc.

Response:

Adequate physical infrastructure and support facilities are available to support the academic activities in the institute. In order to ensure their maintenance and optimum utilization, various systems and procedures are established so as to benefit all the stakeholders.**Maintenance of resourcesa) Equipment and machine maintenance** Some of the critical maintenance works are outsourced as per the outsourcing process. However regular monitoring and control is the responsibility of maintenance section. Records of equipment are maintained in stock registers as specified in Purchase Process i.Equipment / appliances are serviced periodically or as and when requiredii. Servicing is done either by in-house personnel or by external party or through annual maintenance contract (AMC) iii.Records of AMC/servicing are maintained. iv.Equipment that are not in working condition and are not repairable are removed from the stock. **b) General maintenance:** i. Maintenance of ACs and lifts are outsourced on AMC basis to the outside agencies. ii.Cleanliness & daily maintenance of the internal facility and college premises is outsourced by the institute. iii.Cleanliness of toilet blocks and wash room is outsourced by in-house employees of the institute. iv.Fire extinguisher is outsourced and 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 the institute. vi.ICT infrastructure is maintained by technical assistants of the respective departments. 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 filter and coolers are cleaned on regular basis by the housekeeping staff. **Maintenance laboratory, library, computers, classro**

oms1. **Routine** **Maintenance:** The housekeeping team cleans, dusts, sweeps, and mop all areas on a daily basis.**2.** **Preventive** **Maintenance:** The designated staff (Carpenters, Electricians, and Plumbers) are in charge of overseeing the maintenance and small repairs of the institute's buildings, classrooms and laboratories, and library, among other things.**Laboratory** **Instruments** Preventive maintenance work is conducted once every week by lab assistant. Dead Stock is also updated and maintained by lab assistants.**Library** The Librarian and her support personnel are in charge of the library's upkeep. The library conducts internal audits on a regular basis to ensure that the volumes are in good condition.**Computers** **and** **accessories:** The Institution's computers are maintained by individual system administrators. In order to demonstrate proper usage, all computer laboratories keep log-in registers. The institution's computers are all managed by AMC. The Institute's air conditioners are also serviced by AMC.**Campus** **Infrastructure:** The institute is having well established protocols for maintenance of campus infrastructure. All of the blocks have a Reverse Osmosis (RO) system that provides safe drinking water. The fire extinguishers are refilled on a regular basis and kept in good operating condition. **Electrical** **Power** **Backup** – A 125KVA Cummins diesel generator has been installed and maintained on campus to provide the requisite power backup.

File Description	Document
Upload any additional information	[View Document](#)

Criterion 5 - Student Support and Progression

5.1 Student Support

5.1.1 Average percentage of students benefited by scholarships and freeships provided by the Government during last five years

Response: 19.01

5.1.1.1 **Number of students benefited by scholarships and free ships provided by the institution, Government and non-government bodies, industries, individuals, philanthropists during the last five years (other than students receiving scholarships under the government schemes for reserved categories)**

2020-21	2019-20	2018-19	2017-18	2016-17
512	448	382	311	264

File Description	Document
upload self attested letter with the list of students sanctioned scholarship	[View Document](#)
Upload any additional information Average percentage of students benefited by scholarships and freeships provided by the Government during the last five years (Data Template)	[View Document](#)

5.1.2 Average percentage of students benefitted by scholarships, freeships etc. provided by the institution / non- government agencies during the last five years

Response: 1.78

5.1.2.1 **Number of students benefited by scholarships and free ships provided by the institution, Government and non-government bodies, industries, individuals, philanthropists during the last five years (other than students receiving scholarships under the government schemes for reserved categories)**

2020-21	2019-20	2018-19	2017-18	2016-17
42	23	27	50	39

File Description	Document
Upload any additional information	[View Document](#)
Number of students benefited by scholarships and freeships institution / non- government agencies in last 5 years (Date Template)	[View Document](#)

5.1.3 Capacity building and skills enhancement initiatives taken by the institution include the following

1. **Soft skills**
2. **Language and communication skills**
3. **Life skills (Yoga, physical fitness, health and hygiene)**
4. **ICT/computing skills**

Response: A. All of the above

File Description	Document
Details of capability building and skills enhancement initiatives (Data Template)	[View Document](#)
Any additional information	[View Document](#)
Link to Institutional website	[View Document](#)

5.1.4 Average percentage of students benefitted by guidance for competitive examinations and career counselling offered by the Institution during the last five years

Response: 97.87

5.1.4.1 **Number of students benefitted by guidance for competitive examinations and career counselling offered by the institution year wise during last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
2006	1922	1933	2014	2012

File Description	Document
Number of students benefited by guidance for competitive examinations and career counselling during the last five years	[View Document](#)

5.1.5 The Institution has a transparent mechanism for timely redressal of student grievances

including sexual harassment and ragging cases

1. **Implementation of guidelines of statutory/regulatory bodies**
2. **Organisation wide awareness and undertakings on policies with zero tolerance**
3. **Mechanisms for submission of online/offline students' grievances**
4. **Timely redressal of the grievances through appropriate committees**

Response: B. 3 of the above

File Description	Document
Upload any additional information	[View Document](#)
Minutes of the meetings of student redressal committee, prevention of sexual harassment committee and Anti Ragging committee	[View Document](#)
Details of student grievances including sexual harassment and ragging cases	[View Document](#)

5.2 Student Progression

5.2.1 Average percentage of placement of outgoing students during the last five years

Response: 51.08

5.2.1.1 **Number of outgoing students placed year - wise during the last five years.**

2020-21	2019-20	2018-19	2017-18	2016-17
282	205	318	292	225

File Description	Document
Upload any additional information	[View Document](#)
Self attested list of students placed	[View Document](#)
Details of student placement during the last five years (Data Template)	[View Document](#)

5.2.2 Average percentage of students progressing to higher education during the last five years

Response: 59.81

5.2.2.1 **Number of outgoing student progression to higher education during last five years**

Response: 320

File Description	Document
Upload supporting data for student/alumni	[View Document](#)
Details of student progression to higher education (Data Template)	[View Document](#)

5.2.3 Average percentage of students qualifying in state/national/ international level examinations during the last five years (eg: IIT-JAM/CLAT/ NET/SLET/GATE/ GMAT/CAT/GRE/ TOEFL/ Civil Services/State government examinations, etc.)

Response: 97.85

5.2.3.1 **Number of students qualifying in state/ national/ international level examinations (eg: IIT/JAM/ NET/ SLET/ GATE/ GMAT/CAT/GRE/ TOEFL/ Civil Services/ State government examinations,** *etc.***)) year-wise during last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
83	63	62	62	70

5.2.3.2 **Number of students appearing in state/ national/ international level examinations (eg: JAM/CLAT/NET/ SLET/ GATE/ GMAT/CAT,GRE/ TOFEL/ Civil Services/ State government examinations) year-wise during last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
93	63	62	62	70

File Description	Document
Upload supporting data for the same	[View Document](#)
Number of students qualifying in state/ national/ international level examinations during the last five years (Data Template)	[View Document](#)

5.3 Student Participation and Activities

5.3.1 Number of awards/medals won by students for outstanding performance in sports/cultural activities at inter-university/state/national / international level (award for a team event should be counted as one) during the last five years.

Response: 5

5.3.1.1 **Number of awards/medals for outstanding performance in sports/cultural activities at university/state/national / international level (award for a team event should be counted as one) year-wise during the last five years.**

2020-21	2019-20	2018-19	2017-18	2016-17
0	2	2	1	0

File Description	Document
Number of awards/medals for outstanding performance in sports/cultural activities at university/state/ national/international level during the last five year	[View Document](#)
e-copies of award letters and certificates	[View Document](#)

5.3.2 Institution facilitates students' representation and engagement in various administrative, co-curricular and extracurricular activities following duly established processes and norms (student council, students representation on various bodies)

Response:

The institute practices democratization of all activities. Student leaders formulate mechanisms for the smooth conduct of day to day co-curricular and extracurricular activities. These mechanisms are vetted by teacher coordinators enabling a collaborative environment. The environment is conducive for our students to acuminate to their regime of interest. The ecosystem prevailing in the institute helps pupils identify their innate abilities and competency and facilitates them to excel in their chosen field in the realm of extracurricular /co-curricular activities. It is observed that the majority of the students getting initiated to extracurricular /co-curricular activities move in the learning curve to evolve as a productive entity in addition to being a graduate of a specific domain with appropriate competency.
The institute designed a procedural template to leverage students' involvement to scale up the organization of events of various kinds including Hackathon with an understanding that these initiation needs to help them develop skills in event management and design to become frugal and efficient. It is also having a telling effect on students & perspectives which are transient.
Participation of students in departmental academic affairs through memb

ership of the department advisory committee and helping the department to make timely corrections in its academic activities. The feedback of these students in the department advisory committee is normalized and vetted by other participants by putting them in perspective. The college placement cell heavily relies on senior students to organize and facilitate campus placement by leveraging their nimble footedness and proficiency in digital technologies. It is observed that the "Student Envoys" selected by placement cell work in unison selflessly to maximize the cause of fellow students. The college establishment productively leverages feedback from students in formalized fashion or feedback getting extracted from various random events and uses it to design evolving academic and managerial procedures. The institute also collects feedback from alumni formally or informally to be abreast with the changing market aspirations.A fair representation of co-curricular activities is by various student chapters of professional bodies like IICHE, ISTE, CSI, and IEEE. Under these professional bodies, students conduct several technical events such as paper presentations, seminars, guest lectures, workshops, project competitions, internship initiatives, and industrial visits. These activities build institute-institute, industry-institute relationships in addition to the overall development of our students. The student technical committees organize events like Chem Triathlon – a series of online competitions, Robowar, Rob racing, Hackathon, technical seminars, and talks on current and emerging technologies. The events are planned and envisioned by the student committees under the mentorship of teacher coordinators. We constitute the Student Council in alignment with the university norms and empower them to decide on various aspects of their specialized responsibilities. The student council members are counseled and guided to maximize the possibilities of helping their colleagues to unleash their dormant competencies and proficiencies. There are well engineered procedures to make the process of organizing events ethical and in sync with the institute's responsibility to parents / stakeholders involved.

File Description	Document
Upload any additional information	[View Document](#)
Paste link for additional information	[View Document](#)

5.3.3 Average number of sports and cultural events/competitions in which students of the Institution participated during last five years (organised by the institution/other institutions)

Response: 13.8

5.3.3.1 Number of sports and cultural events/competitions in which students of the Institution participated year-wise during last five years

2020-21	2019-20	2018-19	2017-18	2016-17
1	18	26	15	9

File Description	Document
Upload any additional information	[View Document](#)
Report of the event	[View Document](#)
Number of sports and cultural events/competitions in which students of the Institution participated during last five years (organised by the institution/other institutions (Data Template)	[View Document](#)

5.4 Alumni Engagement

5.4.1 There is a registered Alumni Association that contributes significantly to the development of the institution through financial and/or other support services

Response:

More than 35 years of existence of the institute is fortunate enough to have thousands of alumni spread all over the global marketplace, businesses, various sectors, industries and decision-making bodies and last but not the least also as parents to new breed of youngsters. Alumni at the helm of the enterprises extended their influence in catapulting the institute to different orbits of performance. By and large these are our goodwill ambassadors and envoys also contributing to our organizational culture and ethos and helping in building ever evolving collective consciousness in the professional educational market place. We could boast of a corpus of around 25 lakhs which can be used for contingencies and for student welfare. The contribution of alumni is disproportionately high in influencing our eco system to act in tandem with institute's aspirations. Moreover, we are proud of receiving reinforced feedback periodically for facilitating self-organization of the institute to be in sync with avant-garde practices getting implemented in fortune 500 companies. Quality systems and procedures reflective of contemporary requirement in creating new knowledge essentially getting energized from interaction with our alumni spread over various geographies. We as an institute find immeasurable value in engaging alumni to grow and sustain in the highly competitive professional educational space and are commit

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ted to design a process in place for continual engagement of alumni and
 offering special privileges for getting any service from the institute
.
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File Description	Document
Upload any additional information	<u>View Document</u>

5.4.2 Alumni contribution during the last five years (INR in lakhs)

Response: A. ? 5 Lakhs

File Description	Document
Upload any additional information	<u>View Document</u>
Link for any additional information	<u>View Document</u>

Criterion 6 - Governance, Leadership and Management

6.1 Institutional Vision and Leadership

6.1.1 The governance of the institution is reflective of and in tune with the vision and mission of the institution

Response:

The Governing Body (GB) of Thadomal Shahani Engineering College is the Institute's highest decision-making body, and it is constituted as per AICTE guidelines. The governing body of the college constituted of authorities from various statutory bodies and professional organizations in addition to the members of the trust. This GB is acting as a policy maker keeping the doctrine of aligning with various norms and guide lines promulgated by various entities of the country. It is essentially eliminating all activities and practices which is going beyond the brief of higher education and amounting to ombudsman of its kind. It ensures proper direction of the institutional activities to be fair and in alignment with all the existing rules and regulations of various statutory bodies.

TSEC ORGANOGRAM

We as an institute arrived at vision statement based upon our empirical and evidence based understanding of societal dynamics and aspiration and our responsibility in contributing to this expectation of various stakeholders. The institutional vision greatly influences the selection of non-permanent members who can imbibe and reflect the same. Over a period of time the collective understanding of the governing body becomes in alignment with our mission and vision statements. Our mission statements are essentially designed and engineered to attain our focused vision of the institute. The mission statement is spelling out the market aspiration and our way and means of satisfying the same and in the process we are trying to emerge as a professional institute solely responsible for facilitating supply chain of human capital for the industry.The GB remains open and willing to subject itself to iterative processes emanating from time invariant vision statement and its ideals and ever-changing mission statements in tune with transient market place and society at large.

Vision Statement of the institute (time invariant)

Perpetuating and transcending the processes of:

- Contributing to evolving supply chain of human capital for National Economy

- Creating entrepreneurs and 'game changers' to support heightened level of economic activities underpinning ever increasing human asp

iration

- Helping the Nation evolve as a total solution provider

- Value and wealth creation for the mankind

Mission Statement of the institute (ways and means of attaining the stated vision) Focusing and practicing:

- Product and processes innovation

- Leveraging human cognitive and behavioral science for creating instructional content

- Pervasive and ubiquitous Information Communication Technologies for customized content for learning

- Acknowledge and facilitate various learning styles and learning abilities

- Migrating from teaching paradigm to learning paradigm

- Every day discourse shall inculcate research culture and further the cause of societal advancement

- Understand various markets and cultures

- Collaborative learning and emotional integrity

- Sensitizing about opportunities in Energy, Education, Environment and Health care sectors

- Extensively promoting computer aided design, analysis and manufacturing procedures

- Theoretical rigor to develop conceptual clarity

- Modelling and design of experiments to inculcate culture of investigation

- Helping foot print on Project management and collaborative human endeavor

- Interdisciplinary studies and exposure to functional areas

File Description	Document
Upload any additional information	[View Document](#)

6.1.2 The effective leadership is visible in various institutional practices such as decentralization and participative management

Response:

The democratization of higher education assigns responsibilities of various kinds to various actors related with educational institutes which are celebrating growth and value creation. It is observed that leadership with missionary zeal can go a long way in reenergizing and reorienting otherwise stagnant and complacent ecosystem around higher education establishment. Decentralized authorities and responsibilities fetch us disproportionate value proposition to all concerned. The institutional practices are driven by longing for excellence and sustainability concerns and therefore heavily relying on democratic and decentralized leadership empowered to act as an autonomous entity. These organizational culture and procedures gets strengthened by practicing closed loop adaptive

practices which thrives on feedback and measurement practices.

The institute encourages a culture of participative management under the decentralized governance system by integrating staff and students.

To maintain good governance, the Institute has decentralized its operations and delegated responsibility at multiple levels. Various active committees at the college level have been entrusted with all academic and operational decision-making authority based on the Quality Policy which works constantly to ensure the all-round development of the students. Academic Quality activities such as the academic audit process and faculty performance reviews are monitored and streamlined by the Internal Quality Assurance Cell (IQAC). The heads of departments have sufficient autonomy to oversee the operations of their respective departments. Feedback from all stakeholders is considered when making crucial decisions. The Registrar and the ministerial staff are in charge of the College's office administration.

The NBA accreditation in various cycles is a reflection of decentralize

d authority and responsibility. The department Heads, subject teachers, technical staff as well as the students, and other stakeholders jointl y collaborate to create an ecosystem to achieve various goals of outcom e-based teaching-learning. Each one is responsible and has ownership ov er its role and responsibility. The faculties are entrusted with the structured transfer of authority a nd responsibilities through regular staff meetings to sensitize, develo p academic leadership among faculty as well to develop and accentuate t he existing quality systems and procedures. Faculty members are encoura ged to join committees to demonstrate their administration skills, incl uding professional responsibility and accountability, as well as to men tor student committee members in their leadership development. This ens ures their ability to make sound decisions when it comes to planning ac ademic, administrative, co-curricular, and extra-curricular activities during the academic year. They have been entrusted with the task of org anising seminars, workshops, conferences, FDPs, and guest lectures, as well as industrial visits and collaboration with industry for the acade mic benefit of students. As a result, all levels of employees are invo lved in this process of learning.

File Description	Document
Upload any additional information	[View Document](#)

6.2 Strategy Development and Deployment

6.2.1 The institutional Strategic / Perspective plan is effectively deployed

Response:

TSEC, which is affiliated with Mumbai University, has a well-planned st rategy for institutional growth. The institutional plan is prepared fol lowing the guidelines issued from time to time by the University and go vernment bodies for the successful conduct of academic programs and to promote and develop effective Teaching Learning and Research Methodolog ies. The institute has planned a series of programs over a period of fi ve years to reach this goal. The Governing Body adopts the strategic plan developed by the College A cademic Committee and IQAC, in which the goals and action plans are ali gned with the Institute's Vision and Mission. The College Academic Comm ittee deliberates and implements developmental issues and best practice s that positively impact the teaching-learning process, as well as act as corrective measur es for performance improvement. Faculty members collaborate in areas such as student support and the sh aring of expertise gained through various training programmes. During d

epartmental tutorial sessions, faculty members encourage interdisciplinary classes. Similarly, IQAC takes the initiative in organising programmes that allow faculty members to share their training-related experiences.The faculty are self-motivated and undertake research in trans disciplinary, interdisciplinary, and multidisciplinary areas and publish their findings. Many faculty members have enrolled in doctoral programs, and some have completed their degrees with the help of the institute. The institute encourages faculty to attend various activities pertaining to research.
The institute encourages the faculty to remain updated on the latest trends and developments in Research, Technology, and Teaching methodologies by interacting and deputing them to other premier institutions for research and conducting as well as attending AICTE-ISTE sponsored FDPs at the institution and other institutes. Through online knowledge transfer, faculty and students are exposed to appropriate technology in emerging fields.
The laboratories are designed and developed to encourage students to facilitate "experiential learning" to relate academic studies with real time applications. The necessary infrastructure is availed to encourage participation in sports and games.
Institutes Academic calendar is tailor-made according to the institute's strategic plan to build efficiencies in learner engagement. The proposed features of the strategic plan developed for a cycle of 5 years are as under:

- To align with accreditation standards and norms.

- To build culture of offering digital solutions to NGO's. municipal and government agencies through programs of hackathons and project competitions

- To extend the process of initiating the leaners to real time/ real life problems and solutions through industry visits.

- To align with the evolving culture of the internship to develop the students' knowledge and make them ready for industry.

- To strengthen Institute - Industry relationship to align with the market trends/ requirements during placement activities.

- To organize training programs to improve technical/ soft skills.

- To develop Entrepreneurial skills by EDC cell.

File Description	Document
strategic Plan and deployment documents on the website	View Document

6.2.2 The functioning of the institutional bodies is effective and efficient as visible from policies, administrative setup, appointment, service rules and procedures, etc.

Response:

The involvement of effective leadership is achieved through a well-defined system and organizational structure.
The Principal is the academic and administrative head who monitors the overall operation and contributing to building the authorities and responsibilities over academic, administrative, financial, and institutional growth. Day-to-day administration is aided by Deans, Academic Department Heads, Registrar, Training and Placement Officer and Exam Controller for building efficiencies.
The Deans and Department Heads have been delegated and authorized to make decisions at the Institute/ Department level to ensure that all departments function uniformly throughout the session. Each department has a designated Head (HOD) who is responsible for the smooth functioning of the department and also expected to be responsible for the growth and development of various departmental activities.Class teachers, mentors, and non-teaching staff in each department coordinate academic and administrative activities. Each functional unit of the institute is headed by personnel with proportionate authority and responsibility.
Service rules, Recruitment, Policies & Procedures:
The institute adheres to the rules and guidelines established by the AICTE, University of Mumbai and the Government of Maharashtra agencies. The appointment of teaching faculties is governed by University rules and regulations and the University by and large aligns with AICTE norms for teacher selection and appointment.
Teacher selection process involves constitution of the selection committee after getting permission for advertisement in newspapers. The closure of selection process happens on getting approval from the affiliating University. We are bound to advertise vacant posts throughout the country essentially to attract the best of the faculties and to eliminate problems due to inbreeding.

File Description	Document
Upload any additional information	[View Document](#)
Link to Organogram of the Institution webpage	[View Document](#)

6.2.3 Implementation of e-governance in areas of operation

1. Administration
2. Finance and Accounts
3. Student Admission and Support
4. Examination

Response: A. All of the above

File Description	Document
Screen shots of user interfaces	[View Document](#)
ERP (Enterprise Resource Planning) Document	[View Document](#)
Details of implementation of e-governance in areas of operation, Administration etc	[View Document](#)
Any additional information	[View Document](#)

6.3 Faculty Empowerment Strategies

6.3.1 The institution has effective welfare measures for teaching and non-teaching staff

Response:

The institute gives utmost importance to well-being of its employees. There are several welfare measures implemented for the teaching and non-teaching staff to keep them in good stead and financial well-being. The college trusts its employee with their role in overall development and progress of the institution. The institute puts forth all endeavors to support the professional development of its teaching and non-teaching staff which in turn impacts the Teaching-Learning system of college. The predominant welfare measures are as follows **Applicable to teaching and nonteaching staff:**
1.All the employees are covered under medical insurance facility up to a sum of Rs.1 lakh towards health insurance and Rs. 5 lakhs accidental insurance per annum.
2.The institution also provides Employee Provident Fund (EPF @ 12%) for

its   employees   w
ith   matching   contribution   by   emp
loyer.
3.The institute pays gratuity for teaching and nonteaching staff member
s   after   their   superannuation.
4.Summer and winter vacation, medical leave, maternity leave of six mon
ths and earn leaves are sanctioned to employees as per rules of Univers
ity   of   Mumbai   and   State   Gover
nment   norms.
5
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eave

                                                            Travel
Allowance   to   the
      hometown   is   offered   to   all   empl
oyees.
6.The Institute organizes health awareness and body fitness programs to
          all   through   Yoga   and   medita
tion   sessions.
7.Institute   has   a   subsid
ized   canteen   facility.
Applicable   to   teaching   staff:
8.Financial assistance for patenting, conference registration and confe
rence   travel.
9.Monetary incentives (increments) and certificate of appreciation are
provided   to   staff   me
mbers   who   complete   their   Ph.D.
10.Book   allowance   is   o
ffered   to   faculty   members.
Applicable   to   nonteaching   staff:
11.Nonteaching staff are offered festival loan which shall be repaid in
                easy   installment.
12.Wards of the employees are facilitated in getting admission in siste
r   institution   through   managemen
t   quota.
13.Employme
nt   to   next   of   kin   in   c
ase   of   deceased   employees.   14.The   Institute   encourages   non-
teaching staff to undertake soft skills training.

File Description	Document
Upload any additional information	[View Document](#)

6.3.2 Average percentage of teachers provided with financial support to attend conferences/workshops and towards membership fee of professional bodies during the last five years

Response: 11.01

6.3.2.1 **Number of teachers provided with financial support to attend conferences/workshops and towards membership fee of professional bodies year wise during the last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
8	12	22	12	9

File Description	Document
Upload any additional information	View Document
Details of teachers provided with financial support to attend conference, workshops etc during the last five years	View Document

6.3.3 Average number of professional development /administrative training programs organized by the institution for teaching and non teaching staff during the last five years

Response: 2.4

6.3.3.1 **Total number of professional development /administrative training Programmes organized by the institution for teaching and non teaching staff year-wise during the last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
2	2	5	2	1

File Description	Document
Upload any additional information	View Document
Reports of the Human Resource Development Centres (UGC ASC or other relevant centres)	View Document
Reports of Academic Staff College or similar centers	View Document
Details of professional development / administrative training Programmes organized by the University for teaching and non teaching staff	View Document

6.3.4 Average percentage of teachers undergoing online/ face-to-face Faculty Development

Programmes (FDP)during the last five years (Professional Development Programmes, Orientation / Induction Programmes, Refresher Course, Short Term Course).

Response: 29.75

6.3.4.1 **Total number of teachers attending professional development Programmes viz., Orientation / Induction Programme, Refresher Course, Short Term Course year-wise during the last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
6	39	34	40	50

File Description	Document
Upload any additional information	[View Document](#)
IQAC report summary	[View Document](#)
Details of teachers attending professional development programmes during the last five years	[View Document](#)

6.3.5 Institutions Performance Appraisal System for teaching and non-teaching staff

Response:

The college believes that an efficacious performance appraisal system is vital for optimizing the contribution of individual faculty and also its alignment with the institutional vision & mission. It aims towards self-growth in terms of both personal and professional aspects of the employee, which in turn directly impacts the success of students. The appraisal system is based on stipulated criteria and parameters that are mandatory for the faculty to fulfil for availing the benefits associated with it. Performance Appraisal System includes self-appraisal for both teaching and non-teaching staff. Performance of the teaching faculty in professional development activities is evaluated through their performance against important academic aspects such as

- Academic workload for each semester

- Technical guidance in students projects, initiation and participation in various activities like seminars, workshops, FDPs. faculty paper and journal publications, conferences attended, pursuing higher studies, consultancy projects, ongoing and completed sponsored research projects, Honours/awards/medals received, professional body memberships, value added courses, textbooks authored and journ

als edited and reviewed.

- Resource person, coordinators at college and department level, role in university as a panel member, service to the institution and any other achievements.

- Contribution towards Learning Resources Development at Institute, innovation in teaching, and efforts for Lab Work/Tutorials and University related work is also taken into account for faculty appraisal.

- Institutional governance responsibilities, Faculty interaction with outside world, Involvement of faculty in non-academic activities such as NSS & Co-curricular & Extracurricular activities are also considered for appraisal of faculty.

- For effective evaluation of the faculty at the institute, the other parameters considered are students' feedback for self-correction, mentoring, punctuality, preparation, presentation skills, productive engagement of students in the class, proficiency in subject matter and approachability.

It also involves the reviews and comments of the HOD, team work display and contribution to the department, instruction compliance, commitment to the department and institution, mentoring ability and organizational skills in conducting events.Analysis of performance of non-teaching staff is also based on factors such as higher studies, certification programs, workshops attended and training programs participated. Staffs are annually evaluated for their performance. All areas of improvement are effectively communicated to the concerned staff through HODs . The institute assesses faculty through a well-structured appraisal system: At the end of semester, faculty are evaluated for their performance. Faculty submit duly filled in form with pertinent documents and verifications to their HOD. Self-appraisal outcome is further verified and finalized by the HOD. Performance appraisal system is executed as per the guidelines from UGC. The appraisal form of the faculty is submitted to the principal via the respective HOD's. The faculty appraisal taken periodically assists in recognising crucial details of the academic growth of the faculty. The process is explicitly designed to foster individual development and identify opportunities for additional support wherever required.

File Description	Document
Upload any additional information	[View Document](#)

6.4 Financial Management and Resource Mobilization

6.4.1 Institution conducts internal and external financial audits regularly

Response:

Institute carries out internal as well as external financial audits consistently. Accounts department of Trust (umbrella body) superintend internal audit while external auditors representing an independent audit firm conduct external audits. Audited accounts and balance sheet get uploaded on our website (www.tsec.edu) During the course of internal audit, accounts are verified and confirmations for the credit balances are obtained. Unit wise balances are reconciled with the control accounts and bank records. They also ensure that all accounting norms prescribed by statutory authorities are implemented. External audit is done by statutory auditors after the financial year. The observations given by the auditors are duly complied with. Based on the consolidated reports, our Institution files the annual returns every year for Income tax and GST.

File Description	Document
Upload any additional information	[View Document](#)

6.4.2 Funds / Grants received from non-government bodies, individuals, philanthropers during the last five years (not covered in Criterion III)

Response: 50.92

6.4.2.1 Total Grants received from non-government bodies, individuals, Philanthropers year wise during the last five years (INR in Lakhs)

2020-21	2019-20	2018-19	2017-18	2016-17
13.54	9.13	9.82	10.71	7.72

File Description	Document
Details of Funds / Grants received from of the non-government bodies, individuals, Philanthropers during the last five years	View Document
Any additional information	View Document
Annual statements of accounts	View Document

6.4.3 Institutional strategies for mobilisation of funds and the optimal utilisation of resources

Response:

Institutional strategies for mobilisation of funds:

- Admissions are made as per Maharashtra Government Higher Education norms.

- Fee is collected from each student as per the norms laid by the Fees Regulatory Authority of State Government.

- More than 85% of the collected fees is utilised to pay teaching and Nonteaching staff salaries. The balance fees is utilised for purchasing laboratory equipment, capital expenditure and procuring devices. On an average 70-80 lakhs is spent every year on purchase of equipment and modernisation of Laboratory facilities.

- Institute applies for grants from AICTE under MODROBS, University Minor Project to purchase the latest laboratory equipment, updated version of the software and others.

- The Institute also gets sponsorships from industries, private firms, and individuals for various technical and nontechnical events.

- An annual budget is prepared to ensure optimal utilization of financial resources, based on the projected expenditure for respective financial year.

Institute spend in advance to get increased fee for the succeeding year.

File Description	Document
Upload any additional information	View Document

6.5 Internal Quality Assurance System

6.5.1 Internal Quality Assurance Cell (IQAC) has contributed significantly for institutionalizing the quality assurance strategies and processes

Response:

Internal Quality Assurance Cell (IQAC) of the institution was established in 2017. We profitably and judiciously employ IQAC platform to develop and implement quality assurance strategies and processes to continuously improve the performance of the institute. IQAC is also ensuring the academic quality by benchmarking with other centres of excellence in the realm of professional education. IQAC framework defined identification and dissemination of the quality measurement parameters. IQAC also succeeded in encouraging faculty and students to participate in various programs and activities to achieve quality improvement. On advent of IQAC the quality measurement parameters are enlisted as students' performance, academic audits, research publications, other publishe

Faculty members and students are initiated to multiple processes and avenues to help them develop competency in nascent technologies and technology driven practices which are facilitated by IQAC. A system in place predominantly influenced by IQAC is responsible for facilitating faculties to organize refresher courses, FDP approved by AICTE/ ISTE/ATAL and participation as a resource person in conferences, seminars and workshops. The accelerated emergence of new knowledge provoked us to transcend the way we undertake learning by adapting MOOCs as an effective platform. Last few years the digital content offered by different players of MOOCs encompasses all the emerging technologies, embodying the principle and practices of cognitive load theories and neuroscience, delivered cost effectively. In the current pandemic situation, faculty and students were encouraged to enrol and complete online courses offered by Coursera, NPTEL, NITTTR etc. IQAC is also a proponent of flipped class room practices and blended teaching-learning process essentially to improve productivity involved in learning and also to reduce expenditure involved in higher education. Faculties are also motivated to submit research proposals to UGC, DST, AICTE, ISTE and file patents. To cover content beyond syllabi, faculties are suggested to organize workshops, hands on training, seminars/guest lectures/talks for students. In addition, implementation of Project based learning is recommended by IQAC. Students are motivated to participate in Hackathons and various technical competitions. The internship program was promoted among students to equip them with industrial

practices.
Augmentation of library resources was also taken up by IQAC and initiat ed the process of updating recent books and periodicals, online subscri ption to e-journals. Apart from curriculum related books, committee rec ommended to keep books related to higher studies GATE/GRE/TOEFL and CAT .
Two significant initiatives for quality improvement taken up by IQAC ar e:

1. Strengthening of multiple mental faculties of pupils to evolve as a productive human capital to contribute the cause of industry and nation building at large.

2. Making MOOCs pervasive and ubiquitous among all the actors in the academic setting prevailing in the institute.

File Description	Document
Upload any additional information	[View Document](#)

6.5.2 The institution reviews its teaching learning process, structures & methodologies of operations and learning outcomes at periodic intervals through IQAC set up as per norms and recorded the incremental improvement in various activities (For first cycle - Incremental improvements made for the preceding five years with regard to quality For second and subsequent cycles - Incremental improvements made for the preceding five years with regard to quality and post accreditation quality initiatives   )

Response:

The Internal Quality Assurance Cell (IQAC) hugely appreciates outcome o f teaching-learning process. The cell facilitates the measurement of th e performance enhancement and competency building by relating academic knowledge into real time problem setting. IQAC monitors and reviews tea ching-learning processes and adopts methodologies to engineer desired o utcomes and is described as under: The institution is affiliated to University of Mumbai. The faculty part icipate in designing the curriculum to be in alignment with the market requirement. Senior faculties and Head of the departments are in perpet ual dialogue to impress upon members of Board of Studies and Academic C ouncil to undertake periodic revision of course content and adapting ne w pedagog ies energized by a pplication of digital technologies. The IQAC monitors the attainment levels of the learning outcomes at the end of every semester by carrying out subject-specific and teacher-spe

```
cific result analysis. Attainment of the student learning outcome is ga
uged by computing the Course outcome, Program Outcome and Program Speci
fic         Outcome         for         every         subject.
Evaluation process undergoes metamorphosis on periodic basis energized
from newer understanding of human behaviour and their cerebral systems.
 Bloom's Taxonomy was appreciated to design examination questions to in
itiate pupils to understand subject matter with varying degree of appli
cations. Evaluation process is not the single most objective of academi
c process but it is reflective of degree of involvement of students in
a specific subject matter and their level of internalization. IQAC rema
ins focused to absorb changes happening in the engagement of students a
t various levels and underlying processes and procedures which brings p
roductive outcomes.
```

6.5.3 Quality assurance initiatives of the institution include:

1. **Regular meeting of Internal Quality Assurance Cell (IQAC); Feedback collected, analysed and used for improvements**
2. **Collaborative quality intitiatives with other institution(s)**
3. **Participation in NIRF**
4. **any other quality audit recognized by state, national or international agencies (ISO Certification, NBA)**

Response: A. All of the above

File Description	Document
Upload e-copies of the accreditations and certifications	[View Document](#)
Upload details of Quality assurance initiatives of the institution	[View Document](#)
Upload any additional information	[View Document](#)
Paste web link of Annual reports of Institution	[View Document](#)

Criterion 7 - Institutional Values and Best Practices

7.1 Institutional Values and Social Responsibilities

7.1.1 Measures initiated by the Institution for the promotion of gender equity during the last five years.

Response:

We engineered to create an organizational culture which is thriving on equitable distribution of resources to create conducive academic ambience which is the prerequisite for progress and sustained growth. Institutional learning encompasses acquisition of proficiencies in emerging technologies and also devising ways and means of avoiding/ mitigating "System traps" characterized by "Bounded Rationality" , "Tragedy of Commons", "success to successful", "policy resistance" etc. Being in the metropolitan city, by default people gets molded to be more professional in approach and compels to create human capitals contributing to the existing business driven socio-economic system. Processes getting designed for sustenance of these industrial/business orders to prevail over any other individualistic preferences and practices. The ethos of the city and its neighborhood help educational institutes to build practices which are in tandem with enlightened understanding of rules governing engagement of learners and their interactions with peer groups. We celebrate geometry governing the dodecahedron resulting from merging of multiple perspectives, practices and cultures.At micro-level, the institute seeks to avoid any unconscious biases against women and has taken care to address the same through committees like Women's' Development Cell, Grievance Cell and the Internal Complaints Committee. International Women's' Day is celebrated every year, inviting all the female staff and student members of the college. Expert-talks on social and medical issues concerning women, awareness campaign through street-plays highlighting cultural biases and fun games are part of the celebrations.The entire building superstructures, laboratories and immediate surroundings are under surveillance via CCTV cameras which is acting as a deterrent and the institute failed to experience any untoward incidents due to these safety precautions and procedures. Male and female security personnel verify the identity of individuals gaining entry into the college. The complete infrastructure is wired for fire safety. Fire safety mock drills are organized periodically on campus, demonstrating measures and methods to minimize losses during the eventuality of fire.While there is no demarcation of accessible areas between boys and girls for facilities like Library, Students' Lounge, Gymkhana, provision has been made for two adequately furnished Ladies' Common Room for girls. Equally distributed Ladies and Gents washroom facilities are provided throughout the campus. The Institute has a well-placed mentoring system in place and faculty members are available to sensitize and counsel the students on professional, social and moral issues, on a regular basis. Additionally,

a professional Counsellor visits the campus every week to address the a
ggravated case of individuals requiring further help. Both staff and st
udents, of either gender, are free to be themselves rather than adapt t
o cultural norms that are irrelevant to them.

File Description	Document
Link for specific facilities provided for women in terms of: a. Safety and security b. Counselling c. Common Rooms d. Day care center for young children e. Any other relevant information	View Document
Link for annual gender sensitization action plan	View Document

7.1.2 The Institution has facilities for alternate sources of energy and energy conservation measures

1. **Solar energy**
2. **Biogas plant**
3. **Wheeling to the Grid**
4. **Sensor-based energy conservation**
5. **Use of LED bulbs/ power efficient equipment**

Response: C. 2 of the above

File Description	Document
Geotagged Photographs	View Document
Any other relevant information	View Document

7.1.3 Describe the facilities in the Institution for the management of the following types of degradable and non-degradable waste (within 500 words)

- **Solid waste management**
- **Liquid waste management**
- **Biomedical waste management**
- **E-waste management**
- **Waste recycling system**
- **Hazardous chemicals and radioactive waste management**

Response:

Aligning with the national mission on 'Clean and Green Environment' and
'Swatch Bharat Abhiyan,' the institute has taken steps to support the
global cause of waste-management by initiating a few steps:

Solid waste management:

Solid waste generated in college is segregated into dry waste and biodegradable/wet waste, in blue and green coloured dustbins respectively. The job of collecting and disposing this waste has been undertaken by municipal agencies.

Liquid Waste Management

All sewage and liquid waste are directly disposed of to the municipal sewer drain and it is a paid service. The liquid waste emanating from laboratories are being treated before collecting to municipal drains.

Biomedical waste management

Institute laboratories do not produce Biomedical waste

E-Waste Management:

E-waste is getting collected by NGOs and they installed a large bin to collect E-waste periodically and they issue the certificate of appreciation. We extend

File Description	Document
Any other relevant information	[View Document](#)
Link for Geotagged photographs of the facilities	[View Document](#)
Link for Relevant documents like agreements/MoUs with Government and other approved agencies	[View Document](#)

7.1.4 Water conservation facilities available in the Institution:

1. Rain water harvesting
2. Borewell /Open well recharge
3. Construction of tanks and bunds
4. Waste water recycling
5. Maintenance of water bodies and distribution system in the campus

Response: D.1 of the above

File Description	Document
Geotagged photographs / videos of the facilities	[View Document](#)

7.1.5 Green campus initiatives include:

1. **Restricted entry of automobiles**
2. **Use of Bicycles/ Battery powered vehicles**
3. **Pedestrian Friendly pathways**
4. **Ban on use of Plastic**
5. **landscaping with trees and plants**

Response: B. 3 of the above

File Description	Document
Various policy documents / decisions circulated for implementation	View Document
Geotagged photos / videos of the facilities	View Document
Any other relevant documents	View Document

7.1.6 Quality audits on environment and energy are regularly undertaken by the Institution and any awards received for such green campus initiatives:

1. **Green audit**
2. **Energy audit**
3. **Environment audit**
4. **Clean and green campus recognitions / awards**
5. **Beyond the campus environmental promotion activities**

Response: A. Any 4 or all of the above

File Description	Document
Reports on environment and energy audits submitted by the auditing agency	View Document
Certification by the auditing agency	View Document
Any other relevant information	View Document

7.1.7 The Institution has disabled-friendly, barrier free environment

1. **Built environment with ramps/lifts for easy access to classrooms.**
2. **Divyangjan friendly washrooms**
3. **Signage including tactile path, lights, display boards and signposts**
4. **Assistive technology and facilities for Divyangjan accessible website, screen-reading software, mechanized equipment**
5. **Provision for enquiry and information : Human assistance, reader, scribe, soft copies of reading material, screen reading**

Response: A. Any 4 or all of the above

File Description	Document
Policy documents and information brochures on the support to be provided	[View Document](#)
Geotagged photographs / videos of the facilities	[View Document](#)
Any other relevant information	[View Document](#)
Link for any other relevant information	[View Document](#)

7.1.8 Describe the Institutional efforts/initiatives in providing an inclusive environment i.e., tolerance and harmony towards cultural, regional, linguistic, communal socioeconomic and other diversities (within 500 words).

Response:

We as an institute hugely appreciate the celebrations of diversity and uphold the doctrine of "Unity in Diversity". We appreciate the concept/ construct of harmony and tolerance for cultural, linguistic, religious / socio economic class and inclusive of all kind of human being. Professors and Ministerial staff belong to different region, religion, language and economic class constitute the soft core of the institute and we are seriously overcoming inbreeding and succeeding in getting various diverse perspectives.TSEC engineered an inclusive environment where human differences are appreciated and succeed in creating an atmosphere that promotes a sense of belonging. In an inclusive environment, each person is respected, valued for his /her uniqueness, encouraged to develop the skills and their skills are routinely utilized for betterment of the college.The institute maintains complete transparency in admissions process. Admissions are done on merit basis, following the guidelines given by Government of Maharashtra. TSEC believes in equality of all cultures and traditions, students belonging to different caste, religion and regions are studying in the college without any discrimination. There is no segregation of students on the basis of their socio-economic, regional, linguistic or communal background. Equal opportunities are provided to the students to participate in various activities conducted irrespective of their socio-economic background. The institution has a NSS unit to inculcate a sense of unity, discipline and harmony. The activities undertaken by NSS unit in TSEC contribute to the welfare of socio-economic diversities and their progress towards leading a tolerant and harmonious living.Not even a single incidence of ragging has been reported since inception. Grievance Redressal Committee is also constituted to address the grievances among students to maintain harmony in the college. No serious grievance has been reported till date.Girls are encouraged to take up leadership roles and participate actively in all student activities. Events to promote gender equity are also conducted. Indu

strial visits expose students to the practical challenges and also make the students from different backgrounds adapt to one another to create a tolerance and harmony in the organization.Various activities and invited lectures, educates the students and makes them aware of their social responsibilities and understand the implications of their actions. The institute promotes cultural fests like "Trifles" which encourage harmony in human diversities. Students are encouraged to participate in various co-curricular and extracurricular activities to make them mingle with one another and share their opinions and disagreements in a harmonious manner.Most of the staff undertake to complete the course on "Universal Human Values" designed to help participants develop high order emotional and spiritual integrity. The said program is getting organised by AICTE. Commemorative days like Women's Day, Teachers' Day, Yoga Day, and national festivals are also celebrated in the college. Conduction of such events helps in promoting regional, linguistic, communal, socio economic and other diversities.

File Description	Document
Link for supporting documents on the information provided (as reflected in the administrative and academic activities of the Institution)	[View Document](#)

7.1.9 Sensitization of students and employees of the Institution to the constitutional obligations: values, rights, duties and responsibilities of citizens (within 500 words).

Response:

The institution inherently upholds constitutional values to create order in the society and incorporations. We are also nudged by regulatory bodies and Government agencies to celebrate and spread ideas of the state and the constitution governing our country. We exhort all concerned to undertake responsibilities which can contribute to the larger goods of the society. Professional education is expected to contribute to the cause of nation building by channelizing human ingenuity and modern day entrepreneurial activities. To be successful in the competitive market place, corporations are expected to treat their employees as human capital that can thrive in an equitable society which enjoys a structural stability. Institutes are expected to help learners develop footprints of nation building and emotional indices like empathy and respect for diversity. Institutions are bound to exercise multiple activities which initiate students to realize about the various rights as a citizen and the responsibility associated with sustaining these democratic process and procedures. We attained various set goals by remaining focussed to carry out year-round activities of NSS, Unnat Bharat Abhiyaan and Ek Bharat Shreshtha Bharat help serve this cause better. Every year the col

lege organises NSS Camps at various villages, apart from the additional District Level and University Level camps organised by University of Mumbai. Through these camps students are further enabled to inculcate human values and understand rights and duties of the citizens.

File Description	Document
Link for details of activities that inculcate values necessary to render students in to responsible citizens	<u>View Document</u>

7.1.10 The Institution has a prescribed code of conduct for students, teachers, administrators and other staff and conducts periodic programmes in this regard.

1. **The Code of Conduct is displayed on the website**
2. **There is a committee to monitor adherence to the Code of Conduct**
3. **Institution organizes professional ethics programmes for students, teachers, administrators and other staff**
4. **Annual awareness programmes on Code of Conduct are organized**

Response: C. 2 of the above

File Description	Document
Details of the monitoring committee composition and minutes of the committee meeting number of programmes organized reports on the various programs etc in support of the claims	<u>View Document</u>
Code of ethics policy document	<u>View Document</u>
Any other relevant information	<u>View Document</u>

7.1.11 Institution celebrates / organizes national and international commemorative days, events and festivals (within 500 words).

Response:

TSEC celebrates national and international commemorative days to inculcate constitutional responsibilities, to instill patriotic spirit and to foster unity among fellow citizens

- Independence Day and Republic Day are celebrated in the college by hoisting the Indian flag and patriotic presentations, events are organized.

- Matribhasha Divas is observed on 21st February to promote the pres

ervation and protection of our mother language.

- International Women's Day is celebrated on 8th March.

- International Yoga Day is celebrated every year on 21st June to mark the practice of self-discipline and tradition of well-being continuing for thousands of years in India.

- Innovation Day

- Constitutional Day

File Description	Document
Link for Annual report of the celebrations and commemorative events for the last five years	[View Document](#)
Link for Geotagged photographs of some of the events	[View Document](#)

7.2 Best Practices

7.2.1 Describe two best practices successfully implemented by the Institution as per NAAC format provided in the Manual.

Response:

The two best practices implemented by the institution are:

1. *Social outreach for contributing to immediate neighbourhood by exposing students to collaborative efforts, ground level reality & understanding opportunities in the bottom of pyramid*

2. *Creating "Coding" as institutional core competency*

A.Social outreach for contributing to immediate neighbourhood by exposing students to collaborative efforts, ground level reality & understanding opportunities in the bottom of pyramidObjectives of the Practice
The Practice aims to foster the spirit of social responsibilities in our students and sensitize them towards the world of deprivation, social disparities and marginalization. At TSEC, we engage students in meaningful community service instilling a sense of social obligations and responsibilities.

It is our constant endeavour to impress up on the young mind at our dis posal the requirement of an equitable society for structural stability of the same, which is a prerequisite for the materialistic progress in terms of wealth creation and value creation. We as a collective also a spires to inculcate the universal values of compassion, tolerance, equa lity, and collaboration amongst students. We are convinced of the fact that Education without social commitment is incomplete and TSEC is comm itted to work for the betterment of underprivileged section of the soci ety   and   to   hel p   them   through   various   outre ach   programmes.**The   Context** Social inequities and lack of opportunities characterise the lives of p eople from low socio- economic background. The absence of sustainable l ivelihood, lack of educational opportunities and poor access to healthc are and hygiene are a few of the marked disparities for which, Educatio n is the only leveller. The key ingredient, for a successful interventi on to reduce these disparities, is creating awareness among the youth o f   the   nation. The institution has an NSS wing to inculcate a sense of social sensibil ities among students. NSS, the social outreach arm of the college, deve lops a comprehensive action-plan to strategize programs which shall be carried out during the social outreach project time. The students at TS EC participate in community services enthusiastically and develop a sen se   of   empathy   and   compassio n   towards   others.**The   Practice** The college creates a synergy between its community work and outreach t hrough National Service Scheme (NSS), thereby creating a multi-valued a nd mutually rewarding forum for meaningful dialogues, actions, and inte ractions. NSS wing of TSEC organises programmes to sensitise students t owards the needs of the under-privileged. We are one of the first colle ges in Mumbai University to start an NSS program for Engineering Studen ts. Projects carried out by NSS like Blood Donation Drive, Residential camp in Rural Area, Child Care Project etc., engage students in a meani ngful service to the society. The successful organization of events, li ke Watershed Management in association with MHRD, AICTE, GyaanDan, Tech novation, involving transformational changes in rural development equip the students with skills, attitudes and knowledge to resolve barriers causing   backwardness   of   the   people. **Evidence   of   Success** Students' participation in programs like Gyandaan & Health Camp, Gramot sav   (Sports   &   cultural   event   f ollowed by *Snehabhojan*), Street Plays, Watershed Management, Eco-touris m, Employment generation activity, etc. held under the umbrella of the Social Outreach Program has resulted in significant enhancement of thei r social intelligence and sensibilities. Our endeavour, in exposing the students to ground level reality and collaborative efforts, has eventu ated behavioural competence in them. Moreover people involved in this o utreach program also perform well in campus placement especially becaus

e they reflect understanding of the bottom of the pyramid marketplace. We received funding from "UNNAT BHARAT ABHIYAN" based on our original proposals and evidence of the success of the program. **Problems Encountered and Resources required** Limitation of funding from the University/ College /Other Umbrella bodies is significantly affecting our envisioned activities and programs. Other major constraint is identified as the time available between grueling /highly rigorous academic sessions and project activities.B. *Creating "Coding" (Programming digital systems for engineered outcome/ "Conversion of problem to logic")* *as institutional core competency*Objectives of the Practice

- **Coding Promotes Logical and Analytical Abilities**

Coding demands that young learners use strategy to decide which formulas they need to apply to find the appropriate solution. It motivates algorithmic thinking. It improves their coding skills with time. Consequently, students can show better results in other tests as well.

- **Coding Enhances Problem-Solving Skills**

Detecting problems and breaking them into different aspects for the best solution is one of the aspects of coding. Young learners need to discover appropriate approach problems. They have to test various codes before providing the best solution.

- **Coding Enhances Entrepreneurial Skill**

Coding helps young learners in developing the idea, which leads to the creative and analytical thinking process. It helps in preparing young learners to become future entrepreneurs.**The Context** There are massive opportunities for knowledge workers in the global marketplace as Robotic Process Automation is the norm in designing and perpetuating systems. India as a nation is blessed with highly rigorous school education system which makes majority of the students coming out of schools (10+2) equipped with high level of mathematical and analytical integrities. Process designed to help pupils develop proficiencies in programming digital systems makes them sought after in marketplace whi

ch is searching for talents who can create new age solutions, leveraging converging computational communication technologies. We are witnessing massive project funding in western economies in search of breakthrough technologies and technology driven practices. These advanced economies are limited by availability of techno savvy human capitals and are promoting international agreements for easy transfer of men and material across the borders. India as an Information Technology behemoth exports IT product and services whose value can be compared with revenue earned by Saudi Arabia in exporting their petroleum products. So, we are determined to tap this above ever growing demand for digital technology savvy manpower to contribute to our wealth creation process. **The Practice** We, as an institute are an early mover in initiating students to processes to help build competency in coding. We expose them to coding through class room engagement, practice sessions and nudge them to develop an interest in coding through online portals meant for training and evaluating students on their ability to remain focused for long time for a set goal, problem solving ability, competency in codifying problem definitions, developing computer codes with minimal time complexity, respect for extreme boundary conditions of problem definitions.
We are also in perpetual communication with university to introduce nascent and productive programming languages in the regular curriculum even

for non-computer/ IT/ Artificial Intelligence-Data Science students.
To motivate and inculcate coding proficiency in students of TSEC, "TSEC Codecell" & "TSEC Code Storm" societies are formed. These societies are student bodies that aim to nurture a keen interest in programming within the students of TSEC and enhance their coding skills. Essentially a community of coders who wish to learn industry-relevant skills beyond academics, the societies were started in 2017. These young and passionate societies intend to bring a positive influence to the technical knowledge of the students. They conduct several national level Hackathons throughout the year.
Besides, students are encouraged to participate in various coding competitions conducted at state and national level by government agencies and IT/consulting companies like JPMC, Myntra, Ernst and Young, TCS, WIPRO.**Evidence of Success** Campus placement drastically improved as our graduating students are performing well in "Coding Test", which is single most important criteria for selection processes. Our effort to make "coding" as our core competency is bringing laurels and rewards in Hackathons getting organised b

y AICTE and other private entities. We are committed to take this process in the next orbit of performance in building competencies in newer coding techniques for autonomous vehicles and devices. Being the national level winner of AICTE conducted Smart India Hackathons (SIH), Ernst and Young (E & Y), JP Morgan Chase, Myntra (27 lakhs pay package Pre-placement offers given to the participating students) are clear evidences of our successful practices in this regard.

Problems Encountered and Resources Required

It is observed that the curriculum in practice prescribed by the university is not envisaging real time practices which can be discussed and understood by the students. Lack of case studies/ success stories which can initiate them to real time problems and ways and means of addressing the same. Lack of industrial training/internship of higher duration is also affecting expected rate of penetration of these new age competency amongst the students.

File Description	Document
Link for any other relevant information	[View Document](#)
Link for Best practices in the Institutional web site	[View Document](#)

7.3 Institutional Distinctiveness

7.3.1 Portray the performance of the Institution in one area distinctive to its priority and thrust within 1000 words

Response:

The institute was established in 1983, by the Hyderabad (Sind) National Collegiate Board and is recognized by Government of Maharashtra, approved by All India Council for Technical Education (AICTE) and Affiliated to University of Mumbai. Right from its inception, the institute has ceaselessly metamorphosed to meet to the industry demands. The institute has the following core competencies:

1. **Leveraging visual learning to maximize the efficacy of learning process:**
   Instructional content based on cognitive load theories and epistem

ological consistencies in creating learning content in published work of students & teachers. Our empirical study results in devising new ways in engaging students inside classroom & it is observed that visual learning in addition to synchronised audio having a high level of effectiveness.

2. **Student centred institutional structure and process layout:**
   As an education institute we created an organizational structure which is flat & devoid of extreme centralization and effectively keeping learners at the centre of all process happening at the institute.

3. **System in place for continuous value addition:**
   Our professionalism perpetually provoke us to devise new strategies & procedures to effect strengthening of productive mental faculties through various initiations/outreach programs, MOOC's, facilitating inter collegiate competitions in addition to classroom engagement.

4. **Processes which help students unleash their potential:**
   We focus on issues and events happening in the world around the learners and incorporate those trends into their learning experiences. The mentors continuously keep an eye on feedback, performance and areas of growth of students and notify them which make them feel confident and self-assertive.

5. **Strengthening experiential learning and developing research culture:**
   We created Centres of Excellence to develop competencies in the emerging areas and organized appropriate laboratory facilities. All students and instructors treat experiential learning as a non-negotiable part of their academic activities and at times create new experiment setup from the scratch based on the nascent literature on emerging technologies.

6.

The institute thinks aloud about effective instructional delivery underpinning various learners and their rate of learning ability. We are extensively using digital technologies like initiating lear

ners to MOOC's and mobile application in addition to projector enabled classroom teaching.

7. **Evolving competency in addressing different learning abilities and styles:**

    The institute is aware of pupils with different learning abilities and learning styles and is in the process of developing instructional content leveraging pervasive / ubiquitous digital technologies and aspiring to create customised learning content for every individual. We thrive on problem based teaching and also promote experiential learning and project based learning. The institute kingpins on learning experiences based on outcomes which help learners master knowledge and skills.

8. **Customized learning content for heterogeneous learners:**
    The institute succeeded in filling patents for designing a framework for customized learning. We strongly believe customized learning content catering to different pupil with different learning ability and learning style is the way forward. We envisage taking initiative in creating customized digital content leveraging ubiquitous Information Communication Digital Technology product and process (virtual reality & augmented reality techniques).

Other Competencies & Value Propositions

1. Wi-Fi Broadband of approximately 700 Mbps Internet enabled campus ensures seamless connectivity rendered to the students unleashing them to get the most from the web, hassle free.

2. The institute has Canteen facility for hygienic and cost-effective food to ensure healthy and blooming environment. All safety standards are given utmost priority as per Government norms.

3. The institute has spacious student lounge and library (both online and offline) for the students to cater to their collaborative activities.

4. As the institute is located in the metro city, it gives a clear and coherent access to plenty of medical facilities.

5. The institute is located 5km away from the International airport and 1km away from railway/bus station, and is surrounded by multiple roadways making commuting fast and easy.

6. High degree of parental facilitation, continual information about

wards performance, sensitization of their performance index are few more key insights defining the way of facilitating professional education in the campus.

The Key Differentiators

1. The institute treats students as evolving human capital. A major chunk of the institute's alumni students are contributing to the global market places in addition to nation building process since its inception.

2. There is a process in place to help the learners unleash their innate abilities to be more productive in marketplace. The democratic process prevailing in the institute also helps in celebrating diversity which brings long term structural stability of the institute to thrive in the professional educational marketplace.

3. The institute aims at facilitating and modifying varied learning styles and learning disabilities.

4. The institute perpetuates the effort to create and augment customized course content to help unleash the potential of different learners.

5. Our everyday discourse also focuses on creating and facilitating Game changers.

6. We are productively researching on the ways and means of transcending technology education to help the nation evolve as Total Solution Provider to thrive in a carbon efficient world order.

7. The institute sensitize students about the value of emotional intelligence and developed spiritual quotients and inter-personal and intra-personal intelligence.

Nurturing learners as human capital for reducing the lead time for transition from academia to industry/business

1. Well laid out schema and curricula for developing academic integrity in pursuit of new knowledge and all round personality development focusing on emotional integrity rooted on sound ethical practices.

2. Promotion of extracurricular activities to appreciate collaborative effort and group dynamics. Sensitizing learners about the importance of Nation Building and value/wealth creation for the mankind

at large.

3. Initiating them to product and process innovation leveraging conve
   rging technologies to remain competitive in the global marketplace
   .

File Description	Document
Link for any other relevant information	[View Document](#)
Link for appropriate web in the Institutional website	[View Document](#)
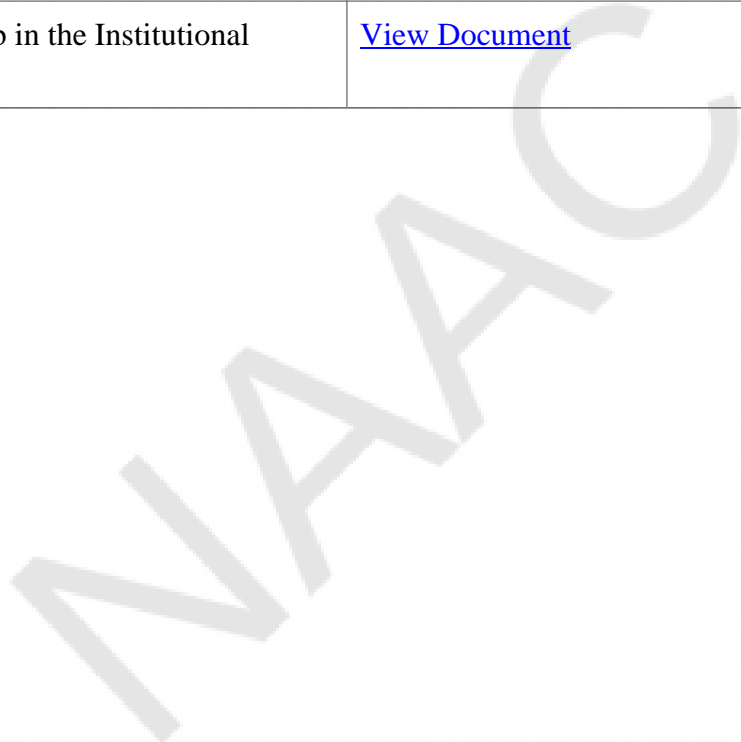
5. CONCLUSION

Additional Information :

We are seizing the opportunity to be accredited by NAAC as the NAAC procedure evolved as the best of class practices to build value proposition to all the stakeholders. We are in awe of the vision & criteria designed to capture the intrinsic value of educational institutes in the realm of higher & professional education.

Geographically we are situated in metropolitan city that itself build professionalism by default condition by the life rhythm existing in the cities essentially by leveraging lean & agile practices by majority of inhabitants. We are one of the few professional college which never practised capitation fee/donations from public. 85% of tuition fee is spend on salaries. We are proud to say we completely align with ideals of charitable organizations under which we got permission to start the college to serve the national economy.

Our institute is essentially founded by sindhi minority community which successfully established multiple sought after educational institutes in the city of Mumbai. All these establishment started with Principal. K. M. Kundnani an erstwhile educationalist of Sindh province in undivided India.

We are keeping track of evolution of quality movements starting from Total Quality Management (TQM), Qualify Function Deployment, Kaizen, Just-In-Time, robust design Business Process Re-engineering (BPR) and Six Sigma starting from early 1990s. We also understand various ISO standards getting implemented in enterprises and the quality assurance and multiple level of CMM kind of procedures in software industries. These quality movements and literature massively helped in elimination of non-value adding process and procedures and reenergize the enterprises otherwise languishing in complacencies / inefficiencies.

This newly developing quality model shall be embodying all the technology developments including massive developments in artificial intelligence related technologies starting from the time the last of quality movement (Six Sigma) got released. The assumption here is massive savings can be derived from new age quality practices which in turn can also contribute to carbon neutral protocol.

We seek an opportunity to collaborate with you for developing AI driven accreditation process which can capture the innate attributes of the institute for the current procedural template.

Concluding Remarks :

This earnest and humble endeavours of ours has been submitted to a body of massive scholastic wisdom for their seal of approval to reiterate our commitment and focused efforts to offer quality professional educational procedures / processes to serve the youngsters who are getting enrolled in our institute with a dream to transcend themselves to be productive in the market place.

We thrive on our core competency in Digital Technologies and allied branches. Coding and Hackathons are the norm and central theme of the campus. We seek your endorsement for accreditation with highest possible grade based upon the facts enlisted below:

- Enlightened leadership and management with missionary zeal

- Collective understanding of technology (product and process) marketplace

- System in place for integrating nascent technologies and technologies driven practices in the Teaching - Learning

- Consistent NIRF ranking

- Continuous NBA accreditation for all the branches (last two cycles)

- Permanent Affiliation by University of Mumbai

- 80% Placement with an average remuneration of 8.5 Lacs

- Sizeable number of students pursue higher education in India and abroad

- Faculty with an average experience 15+ years

- More than 30% teachers with Ph.D. degree; another 25 % are currently pursuing

- 85% of the Tuition fee is spent on salaries

- No capitation fee since its inception

- Fee as approved by Fee Regulatory Authority

- Focus on nascent technologies & Hackathons

- PhD program with an enrolment capacity of 40 research scholars - 26 already received their degree from University of Mumbai

- Most sought after private college in Mumbai since its inception in

1983, considered as a centre of excellence in engineering designed to excel the democratization of professional education

Remain obliged for all your efforts and time