SELF STUDY REPORT

Executive Summary

Introduction:

With the Vision of “Locally Rooted, Globally Competent Education”, Nagesh Karajagi Orchid College of Engineering & Technology started from the academic year 2008-09. The institute has spread over picturesque, sprawling land of 10.6 acres in the vicinity of Hipparga Lake in Tale-Hipparaga, Solapur. NKOCET has emerged as a preferred knowledge destination for aspiring Engineering students.

In recognition of its academic excellence the institute was conferred 36th rank in top 50 private Engineering Colleges in India in 2012 by Bhaskar-Lakshya Magazine. The institute is making its presence throughout India by being in the list of top 250 private colleges of India consistently in 2014 and 2015 by Digital Learning Magazine.

The institute has produced many University Rankers, Competent Engineers and Scholars who are working in top-notch MNCs. The institute is well equipped with the state-of-the-art infrastructure, laboratories, smart classrooms, workshop to meet today’s global needs. NKOCET has highly qualified and experienced faculties who are committed to create a congenial student friendly environment.

NKOCET believes in strong Industry-Institute Interaction and has singed MoU with global giant companies like TATA Technologies, Zensar Technologies etc. The institute encourages the student’s innovation and creativity by arranging technical competitions and national level events like Orchitech every year. Along with Technical skills, the institute provides Soft Skills training to sustain in the challenging and competitive professional world.

Vision:

Locally Rooted, Globally Competent Education

Mission:

- To strive for excellence in our teaching-learning process, encouraging creativity and critical thinking.
- To earn the reputation of institution with world class programme.
- To become the destination for prospective students of Engineering.
- To imbibe universal values of respect, commitment and team spirit.
- To provide globally competent education to fulfill comprehensive needs of students, industry and society.

SWOC

Institutional Strength :

- Highly educated, Professional and Participative Management started the Institute with an intention to give something back to their hometown; Solapur.
- Ranked the best Technical Institutes in the country for three years (2012, 2014, 2015) by Bhaskar Lakshya Magazine and Digital Magazine.

- Dynamic and experienced faculty led by efficient and motivated Leader.
- Nodal Centre of IIT Bombay for conducting various IIT courses.
- Nominated as Sub-centre for DBATU, newly formed State Technological University of Maharashtra.
- Consistently higher academic results in the university with University Rankers from the institute since inception.
- One of the leading Institutes in terms of admissions in Solapur Region.
- Visit of Eminent Personalities like Dr. A.P.J. Kalam, Mr. Anil Kakodkar, Mr. Atul Kahate, Mr. Shiv Khera, Ms. Leela Poonawala.
- High Faculty Retention Ratio is the backbone of the Institute.
- State of Art Infrastructure with full fledged library, classrooms, laboratories and workshop.

- Strong “Industry-connect” through MOUs with major industries.
- Student Projects based on Industry problems.
- Additional Co-curricular courses to make first day productive Engineers.
- Institute is a trend setter in starting best practices.
- International Tie-ups for students and faculty members.
- Effective use of ICT enhancing the Teaching-Learning process.
- Strong Performance Appraisal and Feedback system.
- Cashless campus since 2015.
- Student development through sports, cultural & NSS activities, technical events.

Institutional Weakness :

- Located in Solapur, which is a Tier-II city, lacking industrial advancements.
- Non-availability of Industry resource person for student’s interaction.
- Lack of industrial experience of Faculty members.
- Majority of the students come from Vernacular medium.
- More number of students are local, less numbers from OMS.
- Alumni too young to contribute to Institutional Development as the first batch passed out in 2011-12.

Institutional Opportunity :

- Scope for attracting students from surrounding districts by providing best technical education and placement opportunities
- Strengthening research ecosystem as many faculty members are on the verge of completion of PhD
- Affiliation with DBATU will give opportunity for internship.
- Getting academic autonomy for increasing employability skills to produce “Industry-Ready-Engineers”.
- Possibility of more International Tie ups.
- VSAT facility will create an opportunity to interact with other Institutes.
- Solapur is selected as SMART city which will provide opportunity for student applied projects and opportunity for consultancy.
- Explore alumni involvement in academics and placement activities.

Institutional Challenge :

- To mould rural and semi-urban students into complete professional in ever changing technological world (Lack of Quality Input).
- Diverse socio-economic background of the students results into financial dependency on Government for students’ scholarships which is 60% of total fees.

- Rigidity of academic structure and Curriculum being a affiliated institute.
- Inclination of students to migrate to Pune for admissions.
- Less job opportunities in Core Industry.

Criteria wise Summary

Curricular Aspects :

The institute has well qualified and experienced faculty which plays significant role in designing and development of University curriculum. The institute executes the curriculum within the frame work designed by the University by using available resources to its full potential.

Academic flexibility for enhanicing teaching-learning process is provided within the time-frame of the courses. Teaching plan of respective subject is prepared by faculty member before commencement of each semester & Course file is maintained for each subject by respective faculty member. Along with the curriculum, value add-on courses are included such as Environmental Studies and Professional Ethics & Human Values. Considering the importance of Soft Skill and Aptitude for students' placements, the institute has added these subjects in the regular timetable. Also, additional training sessions are regularly conducted by external training agencies to nurture professionalism in the students.

CBCS syllabus pattern has been implemented and given from academic year 2014-15 which has given constructive results. To keep the pace with the ever changing technologies practiced in the industry, the institute strives for the continuous enrichment in the syllabus of the university. In last five academic years, eighty four courses have been updated and changed.

The feedback from students, parents, alumni and faculty members helps in bringing effectiveness in curriculum. The feedback of all stakeholders is recorded considering the needs of the society, economy, environment which helps in the development. The curriculum and teaching learning feedback is recorded, analysed and corrective measures are taken to enhance the learning.

Teaching-learning and Evaluation :

The institute has strong teaching-learning process, that has produced competent and skilled engineering graduates. Considering varied backgrounds and different learning abilities, a lot of emphasis is given on strengthening theoretical and practical knowledge by providing student-centric teaching-learning pedagogies. Students' basic learning levels of Blooms Taxonomy, viz., Remembering, Understanding and Applying are developed through innovative classroom instructions using videos, animations and industrial visits etc. Students are encouraged to develop higher learning levels viz. Analysing, Evaluating and Creating through experiential and participative learning methodologies. The outcome has been reflected in 75 university ranks, 94 students qualified GATE exams and 25 students got admission in universities abroad in six years.

Active learning methods are practiced in the institute. With the effective use of ICT, the teaching-learning process has been transformed, wherein students are made to learn through NPTEL courses, spoken tutorials, video recorded faculty lectures, animations, simulation software. Along with these classroom practices, Industry visits, focused industrial training, sponsored projects develop their engineering skills leading to Industry-Ready Engineers. While finalizing projects emphasis is given to applied projects based on industry problems. The active learning practices combined with strong industry exposure has resulted in 549 placements in last five years.

Transparent evaluation process is practiced in the institute, as students are made aware about different evaluation procedures during student orientation programs conducted in beginning of every semester.

As a result the institute has emerged as pioneer in implementing excellence in academics, placements and higher studies and as the preferred destination for engineering education.

Research, Innovations and Extension :

As an innovative institute, NKOCET aims at contributing to the society through technical and social activities by framing and implementing research oriented practices. To create an ecosystem for research and innovation the institute took progressive steps and have sponsored 27 faculty members for Ph.D to various institutes of national repute out of which 11 faculty members have completed doctoral degree uptil now. The institute has created the culture of applied research through academic projects. The faculty members and students are involved in the academic projects which are dealing with the industrial problem and few industries are also funding such projects. Few projects have been carried in collaboration with IIT,Bombay. The well planned ecosystem for research and innovation has fetched 165 publications in international journals, 84 sponsored projects. The institute also sensitizes the students to participate in social activities. In last five years 20 extension programs have been conducted in collaboration with various industry, NGO'S etc. and students have participated in various extension activities like Swaccha Bharat Abhiyan, AIDS awareness, Gender issue etc. Being an Engineering institute NKOCET emphasises on aligning the students with the industrial needs. In last five years the institute has developed a good industry connect and has conducted 2633 activities in various domains in which industry representatives, teachers and students are have involved. Institute has signed 20 MOU's with various industries, which gives platform for a very good Industy-Institute interaction.

Infrastructure and Learning Resources :

The institute facilitates all the necessary infrastructural facilities which are over and above the norms of the regulating body. The Institute infrastructure has created a very good ambience for teaching-learning process. All the classrooms, seminar halls and conference rooms are provided with necessary ICT support. All departments have established well equipped laboratories.

Computing infrastructure is the key requirement for any technical institute. The Institute has provided excellent computing facilities. A separate IT team is employed to design, establish and maintain the IT infrastructure in the campus. All the computers are connected with a gigabit network. Dell servers are configured and maintained on which various application servers such as LDAP, Tally, DHCP servers are installed.

The central library is fully equipped with all the necessary requirements. The institute has started a new initiative i.e. Book Bank Scheme for every student. Under this scheme every student gets a full set of books throughout the semester. The facilities of the Library include: OPAC, periodical display, spacious reading hall, round the clock library facility during examination time.

Institute motivates the students to participate in extracurricular and co-curricular activities. Institute has facilitated Cricket ground, Kho-Kho, Kabadi, Volley Ball court, table tennis boards, gymnasium and adequate sports equipments to conduct various sports/games events. Annual sports event SMASH and cultural event RAINBOW are conducted every year. Students have bagged many awards in sports and cultural events.

Student Support and Progression :

The Institute always encourages downtrodden students by providing support through scholarships along with Government's scholarships and freeships to them. The students who are top academic performers have been awarded with the Institute's academic scholarships.

The Institute has implemented various schemes like Guidance for Competitive Examinations, Career Counselling, Soft Skill Development through full time trainers, Remedial Coaching, ETNL software for communication improvement, Bridge Courses, Yoga and Meditation, Personal counselling to enhance capability and professionalism. Competitive examinations and career counselling guidance provided by the Institute has given benefits to the students in their career endeavours.

Focused and well planned industrial Training provided by the Institute has made significant difference in the students.

The transparent mechanism for timely redressal of student grievances including sexual harassment and ragging cases has resulted into a gender equitable and disciplined campus.

The Institute's policies have provided significant end results qualifying in GATE /GRE/TOEFL/MPSC examinations. The institute has given a platform to the students for better placements and higher studies.

The performance of students is highly appreciable in cultural and co-curricular activities. The institute's Students' Council is an active body consists of General Secretary, Cultural Secretary, Sports Secretary, NSS Secretary and all Class Representatives & Ladies Representatives which is formed as per University guidelines.

The Institute has organized numerous sports/cultural activities during last five years. The Alumni association of the Institute conducts Alumni meets every year. The students are benefited by getting carrier mentors, expertise for the projects, opportunities to access professional developments through alumni meet

Governance, Leadership and Management :

The institute management comprises of *Fourteen* highly educated eminent personalities, who are Technocrats, Bureaucrats and Entrepreneurs. The management has set a broad vision to transform the society through education and to serve for welfare of the people and it strongly believes in transparency and decentralization of administration. Levels in hierarchy and various committees are armed with adequate authority to contribute in decision making and governance of the institute.

Varied experience of all trustees in various fields have enabled the institute to prepare and implement its strategic plan i.e. Vision-2020. The institute has adopted implementation of e-governance in various forms and has been exercising cashless transactions since December 2015. A video conferencing unit for conducting meetings gives a glimpse of technological orientation of the institute.

The institute equally pays attention to various employee welfare schemes and extends benefits of those schemes to all its employees. The quality conscious institute has designed a comprehensive faculty performance appraisal system and set minimum performance expectations for different cadres of the faculty members.

The institute follows similar transparency and discipline in financial management. This is clearly evident from the financial reports, weekly audit by external agency and fund mobilization policies of the institute.

Role Holders' Committee and IQAC are instrumental in quality enhancement in the institute. These committees have devised various initiatives like focused industrial training, introduction of soft-skill and aptitude training in the curriculum, free GATE coaching for aspiring students, industry connect, student feedback at regular intervals, study session for academically weaker students etc.

Institutional Values and Best Practices :

The institute has pioneered numerous best practices to equip students to face the emerging challenges in their career. Along with professional skills, lot of emphasis is given on nurturing values and ethics in students by arranging awareness programs as a part of social responsibility. The institute has also conducted many awareness programs to bring gender equality among students. Sexual Harassment Grievance Committee is setup by the institute for safeguarding female students.

As a part of Green Practices, Institute has developed 16 lawns spreading over area of 3229.82 sq. m. 1022 number of trees species are planted along the boundary of the entire campus with the help. Solid waste is reused as manure for campus garden, liquid waste are filtered and used watering for garden. E-waste is given for e-recycle while purchasing new e-materials.

Institute has taken alternative energy initiative by installing 36 KW Grid-connected Solar Power Plant. Video lecture, animations, e-Archive facility, NPTEL video lectures and spoken tutorials are used to enhance students' technical knowledge.

For developing employability skills, Soft Skills and Aptitude classes are added in curriculum. To encourage students for higher studies, Institute organizes GATE coaching classes for final year and Study Abroad Cell actively provides guidance for higher education opportunities aboard.

To establish strong industry-connect, the institute has signed MoUs with industries for training the students on advanced technologies and mentoring final year projects. To enhance technical skills every department organizes two add-on co-curricular courses which have provided ample placement opportunities to students.

Profile

BASIC INFORMATION

Name and Address of the College	
Name	Nagesh Karajagi Orchid College Of Engineering And Technology, Solapur
Address	Post Box No. 154, Gut No. 16, Solapur-Tuljapur Road, Tale Hipparaga, Solapur-413002
City	Solapur
State	Maharashtra
Pin	413002
Website	www.orchidengg.ac.in

Contacts for Communication					
Designation	**Name**	**Telephone with STD Code**	**Mobile**	**Fax**	**Email**
Principal	J B Dafedar	0217-2500020	9552529320	-	basgondasonage@orchidengg.ac.in
Professor	B K Sonage	0217-2500021	9552529228	-	principal@orchidengg.ac.in

Status of the Institution	
Institution Status	Self Financing

Type of Institution	
By Gender	Co-education
By Shift	Regular

Recognized Minority institution	
If it is a recognized minroity institution	No

Establishment Details	
Date of establishment of the college	01-07-2008

University to which the college is affiliated/ or which governs the college (if it is a constituent college)		
State	**University name**	**Document**
Maharashtra	Dr. Babasaheb Ambedkar Technological University	View Document
Maharashtra	Solapur University	View Document

Details of UGC recognition	
Under Section	**Date**
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	10-04-2017	12	

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?	No

Location and Area of Campus

Campus Type	Address	Location *	Campus Area in Acres	Built up Area in sq.mts.
Main campus area	Post Box No. 154, Gut No. 16, Solapur-Tuljapur Road, Tale Hipparaga, Solapur-413002	Rural	10.5	19059

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,Civil Engineering	48	XIIth or Diploma	English	576	553
UG	BE,Computer Science And Engineering	48	XIIth or Diploma	English	474	451
UG	BE,Electronics And Telecommunication Engineering	48	XIIth or Diploma	English	474	261

UG	BE,Electrical Engineering	48	XIIth or Diploma	English	288	216
UG	BE,Mechanical Engineering	48	XIIth or Diploma	English	576	527
PG	ME,Civil Engineering	24	BE or BTech	English	36	6
PG	ME,Computer Science And Engineering	124	BE or BTech	English	36	0
PG	ME,Electronics And Telecommunication Engineering	24	BE or BTech	English	36	3
PG	ME,Mechanical Engineering	24	BE or BTech	English	36	4

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	13				26				79			
Recruited	6	0	0	6	11	1	0	12	62	17	0	79
Yet to Recruit	7				14				0			
Sanctioned by the Management/Society or Other Authorized Bodies	0				0				21			
Recruited	0	0	0	0	0	0	0	0	17	4	0	21
Yet to Recruit	0				0				0			

Non-Teaching Staff

	Male	Female	Others	Total
Sanctioned by the UGC /University State Government				0
Recruited	0	0	0	0
Yet to Recruit				0
Sanctioned by the Management/Society or Other Authorized Bodies				14
Recruited	13	1	0	14
Yet to Recruit				0

Technical Staff

	Male	Female	Others	Total
Sanctioned by the UGC /University State Government				0
Recruited	0	0	0	0

Yet to Recruit				0
Sanctioned by the Management/Society or Other Authorized Bodies				21
Recruited	20	1	0	21
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.	0	0	0	0	0	0	0	0	0	0
Ph.D.	6	0	0	2	0	0	1	0	0	9
M.Phil.	0	0	0	0	0	0	0	1	0	1
PG	0	0	0	11	1	0	65	16	0	93

Temporary Teachers										
Highest Qualification	Professor			Associate Professor			Assistant Professor			
	Male	Female	Others	Male	Female	Others	Male	Female	Others	Total
D.sc/D.Litt.	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

Part Time Teachers										
Highest Qualification	Professor			Associate Professor			Assistant Professor			
	Male	Female	Others	Male	Female	Others	Male	Female	Others	Total
D.sc/D.Litt.	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**
	13	2	0	15

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**

PG	Male	9	0	0	0	9
	Female	4	0	0	0	4
	Others	0	0	0	0	0
UG	Male	1216	3	0	0	1219
	Female	787	2	0	0	789
	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	142	132	123	110
	Female	122	112	96	87
	Others	0	0	0	0
ST	Male	4	0	2	1
	Female	1	1	0	0
	Others	0	0	0	0
OBC	Male	439	429	406	384
	Female	304	277	247	248
	Others	0	0	0	0
General	Male	480	508	505	456
	Female	320	324	330	257
	Others	0	0	0	0
Others	Male	139	134	123	113
	Female	89	80	83	74
	Others	0	0	0	0
Total		2040	1997	1915	1730

QIF

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

Answer:

Planning for Curriculum Delivery

- The college has prepared a wall hanging calendar in which academic activities are indicated. The calendar is provided the students, teachers & parents for their reference.

- Subject distribution and overall departmental planning is done in advance before going to vacation.
- All the faculty members prepare teaching plan & course file of their respective subject.
- Two tests are conducted every semester as a part of continuous assessment system. In semester Evaluation (ISE) Marks are given based on the performance of these tests.

- The institute is also following a best practise for the department as a team. Every head of department prepares annual targets for various acitvities & initiatives of the department. The document is shared & discussed with the faculty members. A review of all the targets is taken frequently. Target compliance report is prepared at the end of academic year & improvements are planned based on this report.

Effective Delivery &Assessment of Curriculum Delivery

- Subject archives are available to the students and regularly updated by subject teachers department wise Two Terra Byte (TB) hard drive data of NPTEL video lectures are made available.

- Final year projects are selected through the visit to the industry by faculty members.
- The sponsored projects on industry problem are allotted to students.
- Industry mentors are identified for projects of different area & mentoring is done by them for the project.
- Project diary is maintained for each project group & it is assessed weekly by the project guide.
- Project exhibition is held every year for final year projects. The assessment of completed projects is done by industry persons. Top three project from every department with innovative ideas get the prizes.
- Student feedback about teaching learning is taken by HOD in every semester, generally after completion of one month of teaching.
- Feedback meeting is conducted by principal of each department where in suggestions are given to faculty member whose feedback is not up to the mark.

- Regular faculty meetings are held by the HODs to review the teaching learning process, academic progress of the students, grievances if any, and suitable remedial measures are taken as and when necessary.

- Students are assigned various industries for the completion of their industrial training.

Following documents are maintained related to curriculum delivery

- Teaching plan of respective subject is prepared by faculty member before commencement of each semester & submitted to HOD.
- Course file is maintained for each subject by respective faculty member & it is checked by HOD & dean academics.
- Attendance is recorded through Brigit mobile App & also recorded in roll muster as well. Defaulter students attendance is communicated to the parent after each month in every semester. Parent can also download Birgit App.
- Test record is maintained in the department & communicated to the parents.
- Result analysis is done after declaration of semester result of university.

File Description	Document
additional information	View Document

1.1.2 Number of certificate/diploma program introduced during the last five years

Answer: 6

1.1.2.1 **Number of certificate/diploma programs introduced year wise during the last five years**

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
00	00	02	02	02

File Description	Document
Any additional information	View Document
Details of the certificate/Diploma programs	View Document

1.1.3 Percentage of participation of full time teachers in various bodies of the Universities/ Autonomous Colleges/ Other Colleges, such as BoS and Academic Council during the last five years

Answer: 26.03

1.1.3.1 Number of teachers participating in various bodies of the Institution, such as BoS and Academic Council year wise during last five years

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
74	59	16	10	7

File Description	Document
Any additional information	View Document
Details of participation of teachers in various bodies	View Document

1.2 Academic Flexibility

1.2.1 Percentage of new courses introduced of the total number of courses across all programs offered during the last five years

Answer: 6.03

1.2.1.1 How many new courses are introduced within the last five years

Answer: 84

File Description	Document
Details of the new courses introduced	View Document
Any additional information	View Document

1.2.2 Percentage of programs in which Choice Based Credit System (CBCS)/Elective course system has been implemented

Answer: 100

1.2.2.1 Number of programs in which CBCS/ Elective course system implemented.

Answer: 9

File Description	Document
Name of the programs in which CBCS is implemented	View Document
Minutes of relevant Academic Council/BOS meetings.	View Document

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

Answer: 31.6

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

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
945	827	636	404	215

File Description	Document
Any additional information	View Document
Details of the students enrolled in Subjects related to certificate/Diploma/Add-on programs	View Document

1.3 Curriculum Enrichment

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

Answer:

Preamble:- The Environment (Protection) Act, 1986 passed by the Parliament of India is, an Act to provide for the protection and improvement of environment and for matters connected therewith. It is considered necessary further to implement the decisions aforesaid in so far as they relate to the protection and improvement of environment and the prevention of hazards to human being, other living creatures, plants and property.

List of Courses:-

1. Environmental Studies (At Second Year for All Branches)

2. Professional Ethics and Human Values (At Third Year Part I for All Branches)

Environmental Studies:-

Environmental Studies Core Module has been introduced for Second Year Engineering students in semester III. The core Module Syllabus includes class room teaching and Field Work. Class room teaching enhances knowledge skills and approach towards environment whereas Field activity provides students with firsthand knowledge on various local environmental aspects and forms an irreplaceable synergistic tool in the learning process. In Field activity the teacher merely acts as a catalyst to interpret what the student observes or discovers in his/her own environment.

- **Duration:-** One Semester and Exam at the end of the semester

- **Importance of the Course: -** Continuing problems of pollution, loss of forests, solid waste disposal, degradation of environment, issues like economic productivity and national security. Global warming, the depletion of ozone layer and loss of biodiversity have made everyone aware of environmental issues.

The Institute takes care that the students carry out Environment related final year projects in all the Departments. Some of the projects completed are:-

1. “Solar Street Lightning”
2. “Solar Car”
3. “Grey water Recycling”
4. “Temple Waste Management”
5. “Lake Water Quality Monitoring”
6. “Rain Water Harvesting of NKOCET campus”
7. “Roof Top Solar Design for NKOCET, Solapur”

Professional Ethics & Human Values:-

Ethics are moral principles that govern a person's behavior. Engineering ethics will be defined as the rules and standards governing the conduct of Engineers working as professionals. Our Institute has selected two courses: Professional Ethics & Human Values, which students study in fifth semester; and Value Engineering, a course taken in sixth semester. Ethical problems sound similar to open-ended Engineering design problems, with multiple solutions.

The course is designed to:-

1) To foster awareness of ethical behavior

2) To inculcate the accepted codes of ethics for professional engineering societies

3) To present workplace case studies that illustrates ethical (or unethical) decisions

5) To appreciate the rights of others

6) To understand the core values that shapes the ethical behavior of an Engineer

7) To know their role as a responsible Engineer in Technological development

Add-On Courses:-

Institute has made Memorandum of Understanding (MoU) with Zensar ESD, Barclays Training Programme, soft skill and aptitude training which provides transferable lifeskills for the students.

Gender:-The Institute provides a state of equal ease of access to resources and opportunities regardless of gender, including participation in Institute and Departmental activities and decision-making; also valuing their behaviors, aspirations and needs equally, regardless of gender.

File Description	Document
Any Additional Inormation	View Document

1.3.2 Number of valued added courses imparting transferable and life skills offered during the last five years

Answer: 27

1.3.2.1 Number of value-added courses imparting transferable and life skills offered during last five years

Answer: 27

File Description	Document
Brochure or any other document relating to value added courses.	View Document
Details of the value-added courses imparting transferable and life skills	View Document

1.3.3 Percentage of students undertaking field projects / internships

Answer: 31.84

1.3.3.1 Number of students undertaking field projects or internships

Answer: 618

File Description	Document
Any additional information	View Document
List of students enrolled	View Document
Institutional data in prescribed format	View Document

1.4 Feedback System

1.4.1 Structured feedback on curriculum obtained from

1) Students 2) Teachers 3) Employers 4) Alumni 5) Parents

For design and review of syllabus semester wise/ year wise

Answer: A.Any 4 of the above

File Description	Document
URL for stakeholder feedback report	View Document

1.4.2 Feedback processes of the institution may be classified as follows:

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

File Description	Document
URL for feedback report	View Document

2.Teaching-learning and Evaluation

2.1 Student Enrolment and Profile

2.1.1 Average percentage of students from other States and Countries during the last five years

Answer: 0.5

2.1.1.1 Number of students from other states and countries year wise during last five years

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
8	8	10	6	13

File Description	Document
List of students (other states and countries)	View Document
Institutional data in prescribed format	View Document
Any additional information	View Document

2.1.2 Average Enrolment percentage

(Average of last five years)

Answer: 84.37

2.1.2.1 Number of students admitted year wise during last five years

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
2040	1997	1915	1730	1569

2.1.2.2 Number of sanctioned seats year wise during last five years

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
2526	2400	2280	2031	1769

File Description	Document
Institutional data in prescribed format	View Document

2.1.3 Average percentage of seats filled against seats reserved for various categories as per applicable reservation policy during the last five years

Answer: 100

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

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
1240	1165	1080	1017	866

File Description	Document
Institutional data in prescribed format	View Document

2.2 Catering to Student Diversity

2.2.1 The institution assesses the learning levels of the students, after admission and organises special programs for advanced learners and slow learners

Answer:

The expected cognitive skills up to XIIth standard are different than those expected in Engineering. Upto XIIth standard, learning is focused on three **basic cognitive skills,** viz., Remembering, Understanding and Applying (Blooms Taxonomy). Engineering focuses on higher cognitive skills, viz., Analyzing, Evaluating and Creating. To train the students for these higher order skills , there is need of assessment of students at entry level. This type of assessment is done at the first year level, through the experts. Initially, a test is conducted which helps in identifying the advanced learners and slow learners. Based on the test results, focused need based counseling is done for two different groups. In first year, students are also segregated according to their merit, based on Xth, XIIth, PCM marks and CET score. Direct Second Year admitted students are segregated according to their Diploma final year marks.

Special Programs for Advanced Learners:

- Scholar batches of 15 students are formed in each class to enhance quality of the result.
- Subject wise meetings are arranged with faculty members to discuss critical concepts.
- In addition to two tests, prelim examination is conducted for the Scholar batch.
- NPTEL videos are made available for advanced learners.
- Video recording of difficult subjects are made available.
- These students are also motivated to pursue higher studies by conducting special GATE classes by in-house faculty members and experts during vacations.

During last five years, 94 students have qualified in GATE exam.

- Study Abroad Cell (SAC) is formed at institute level with an objective of providing opportunities to the students for getting higher education abroad.

During last five years, 25 students have got admission in various universities abroad.

- Soft Skills and Aptitude Training

It is observed that student from rural area are good at technical knowledge but they lack in communication and aptitude skills. To enhance soft skills and aptitude skills of the students, institute has appointed four full time specialized trainers. Soft Skills and Aptitude training sessions are included in regular timetable for S.E. onwards. The students are evaluated and categorized as ‘average’ and ‘excellent’ performers based on their performance during Soft Skills activities. Along with the In-house training, experts from external agencies like GTT, Globarena Technologies Pvt. Ltd., Barclays, etc. are invited to conduct additional sessions.

Special Programs for Slow Learners:

Slow learners are identified based on entry level test by the expert and their previous exam results. Subject wise special classes are conducted for such students in the evening for clearing basics and problem solving.

Individual counseling is done by the respective subject teachers for better performance in F.E.

Well planned study sessions are arranged before University Exams for First Year students. These study sessions are useful for the slow learners, wherein a subject teacher personally helps the students to understand the concepts and difficult part of the subject.

Additional training and guidance is provided for the average performers in Soft Skills.

2.2.2 Student - Full time teacher ratio

Answer: 14.49

File Description	Document
Institutional data in prescribed format	View Document

2.2.3 Percentage of differently abled students (Divyangjan) on rolls

Answer: 0.15

2.2.3.1 Number of differently abled students on rolls

Answer: 3

File Description	Document
Institutional data in prescribed format	View Document
List of students(differently abled)	View 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

Answer:

Teaching-learning process and supporting academic processes are designed and directed to achieve different learning levels of Blooms Taxonomy. Three basic levels viz., Remembering, Understanding and Applying are covered through different activities such as showing videos, animations, brainstorming, industrial visits, trial experimentation etc. Advanced learning levels viz., Analyzing, Evaluating and Creating are achieved through different activities such as design problem for a small system, conducting survey, model making, Software design, etc pertaining to the field of engineering.

Following initiatives are taken by the Institute to imbibe student centric methods for enhancing learning experiences:

1) Seeing is Believing

- **Use of Videos and Animations in Teaching**

Before starting the topic, videos/animations are shown wherever possible. For example, before teaching the topic of hydropower plant, video of hydropower plant functioning is shown to the students. This helps them to understand and visualise conceptual part of the subject in a better manner.

- **Industry Visits**

Regular site and industry visits are arranged to make students aware about the Engineering processes and technologies. After visit, faculty delivers a lecture on the same concept. This helps students in understanding the concepts in a better way and also creates interest among the students.

2) Do it yourself

- More emphasis is given on the practicals to enhance understanding by doing. A batch is devided into small groups of 4-5 students while performing practicals. Printed journals are provided to avoid laborious work of writing. The saved time is utilized for additional experimentation and parametric investigations.
- Hands-on workshops such as Making your own Mobile, PCB Design, Mobile Applications, dissembling and reassembling of Automobile engine, Robotics, etc. are effectively organized to increase enthusiasm and participation of the students.

3) Participative Learning

- Group assignments are given to increase the ability to work in groups.
- Knowledge sharing activity is conducted, where senior students share their experiences with junior students.

4) Experiential Learning:

- **Final Year Projects and Mini projects**

Faculty visits industry and finds the problems faced by industry. The part of problem is given to students as final year project or mini project. Some projects are sponsored by industries. Society related problems are identified at departmental level. Numbers of problems related to Solapur Smart City are identified. Efforts are made to solve these problems through different project groups. Projects are assessed by Industry experts during project exhibition.

- **Industrial Training**

A mentor is assigned to each Student group. Faculty mentors visit the industry during the training period. The industrial training report includes completion certificate, brief profile of industry, products and services offered by industry, work done during training and outcome of the training.

Industrial training is also made compulsory for the faculty members.

- **Students' Participation in Different Competitions**

Students are motivated to participate in national and International project competitions such as Go-kart, Quad bike, Solar car, e-Yantra, Hackathon and technical symposium etc organized by reputed institutions.

5) Problem Solving Methodologies

- Elementary level Problems – These include solving the problems by applying basic concepts of engineering and using simulation software.
- System design level problems – This is achieved through subject related assignments, problems. These include design of complete system by interfacing different sub-systems.

Participation of all the students is ensured in these activities.

File Description	Document
Any additional information	View Document

2.3.2 Average percentage of teachers using ICT for effective teaching with Learning Management Systems (LMS), E-learning resources etc.

Answer: 88.06

2.3.2.1 Number of teachers using ICT

Answer: 118

File Description	Document
List of teachers (using ICT for teaching)	View Document
Provide link for webpage describing the " LMS/ Academic management system"	View Document

2.3.3 Ratio of students to mentor for academic and stress related issues

Answer: 16.45

2.3.3.1 Number of mentors

Answer: 118

File Description	Document
Year wise list of number of students, full time teachers and students to mentor ratio	View Document

2.3.4 Innovation and creativity in teaching-learning

Answer:

Faculty members of the institute have inculcated new pedagogies, which have resulted in innovative and effective teaching-learning process. Twenty faculty members have undergone mission 10x (Faculty Empowerment program) and almost all faculty members have completed use of ICT workshops conducted by IIT Bombay. This has helped to bring many innovations in teaching-learning process.

1) Make your Hands Dirty

To create the interest amongst the students of their related branch the concept of make your hands dirty is implemented at institute level for first year students in this academic year. Students perform some basic tasks

like dissemble and assemble of mechanical parts for mechanical branch, simple hardware based circuits are shown to students for electronics and telecommunication branch. This hands on practice create interest among students, leading to a higher level of knowledge acquisition**.**

2) Think – Pair –Share (TPS) Activity

Groups of students are shown Power Point Presentations containing Multiple Choice Questions prepared by the instructor. Students have to read the questions and brainstorm on the given question (Think Phase). This is shared with other peers in the group (Pair Phase). The group comes to a conclusion about the problem statement and answer. Student groups share the answers with other groups. Finally, the class brainstorms and unanimously draws a common conclusion (Share Phase).

TPS activity encourages students for higher level of learning. It helps students to participate actively in learning process.

3) Thinking Challenges/Design Challenges

Students' groups are formed and higher level problem is posed before them. Students are expected to think and discuss within the groups, apply the concept and come up with solutions. These solutions are shared in the class. Active participation of the students is observed in the class leading to a higher level of knowledge acquisition.

4) Subject Archives

Subject archives are prepared and made available to all the students through department computer lab and college server. These archives include subject notes, PPTs, NPTEL videos, question banks etc. The students download e-material from the archives for self-study and for conceptual understanding.

5) Contribution to Societal Development through Technology

Solapur being selected as a Smart City, many projects are completed as a part of societal development. Solapur has abundance of solar energy throughout the year, which is being used in different solar based projects designed and executed indigenously. To make healthier India, innovative prototypes for physiotherapy applications are also undertaken as final year projects. Many Internet of things (IOT) based projects are implemented to provide solutions to Smart City. Projects based on such societal problems create tremendous interest among students in learning.

File Description	Document
Any additional information	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

Answer: 100

File Description	Document
Year wise full time teachers and sanctioned posts for 5 years	View Document
List of the faculty members authenticated by the Head of HEI	View Document

2.4.2 Average percentage of full time teachers with Ph.D. during the last five years

Answer: 4.32

2.4.2.1 Number of full time teachers with Ph.D. year wise during last five years

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
9	7	5	3	3

File Description	Document
List of number of full time teachers with PhD and number of full time teachers for 5 years	View Document
Any additional information	View Document

2.4.3 Average teaching experience of full time teachers in number of years

Answer: 7.31

File Description	Document
List of Teachers including their PAN, designation,dept and experience details	View Document

2.4.4 Average percentage of full time teachers who received awards, recognition, fellowships at State, National, International level from Government, recognised bodies during the last five years

Answer: 2.07

2.4.4.1 Number of full time teachers receiving awards from state /national /international level from Government recognised bodies year wise during last five years

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
4	5	1	2	1

File Description	Document
Institutional data in prescribed format	View Document
e-copies of award letters (scanned or soft copy)	View Document

2.4.5 Average percentage of full time teachers from other States against sanctioned posts during the last five years

Answer: 5.43

2.4.5.1 Number of full time teachers from other states year wise during last five years

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
5	7	7	8	6

File Description	Document
Any additional information	View Document
List of full time teachers from other state and state from which qualifying degree was obtained	View Document

2.5 Evaluation Process and Reforms

2.5.1 Reforms in Continuous Internal Evaluation(CIE) system at the institutional level

Answer:

Reforms in Continuous Internal Evaluation System

- **Reforms in Tests**
  - Question bank is provided to students before tests.
  - Extra assignments are given to the low performing students.
  - In addition to two tests, Prelim Exam is conducted for all FE students and Scholar batches of other classes. Prelim papers are arranged after a gap of three days. Well-planned study sessions are conducted for First Year students during these three days. Respective subject teacher is available in the class. Student prepare for the subject and get the doubts clarified immediately from the teacher. This reform has helped to improve performance of students in internal as well as external evaluation.

- **Reforms in Assignments**
  - Assignments are given to individual students or in a group for some subjects.
  - Some assignments are project based to inculcate Project Based Learning environment.
  - Additional assignments including challenging questions are given to scholar students.
- **Reforms in Journals**
  - Printed Journals are provided.
  - Printed journals also include conceptual questions which are based on the practical.
  - Journals are evaluated and graded every week.
- **Reforms in Project Evaluation**

A Project diary, which includes entire schedule of project stages, is prepared and distributed amongst project groups. Project guide monitors and verifies the project completion status on weekly basis. Every month project diary is checked by HOD.

- **Reforms in Industrial Training Evaluation**

A faculty mentor is assigned for each group. Mentor visits respective industry for a day during the training period. Evaluation of industrial training is done based on the report submission, mentor observations during training and presentation / viva.

- **Reforms in Soft skills and Aptitude Assessment**

For training the students in soft skills and aptitude, four full time trainers are appointed by the institute. Profiling of each student is done at the end of pre-placement workshop which is conducted for third year students in summer vacation. Proper guidance at all stages is provided through trainers for their improvements. Student performance is also assessed by the external agencies like CoCubes, AMCAT, etc.

File Description	Document
Any additional information	View Document
Link for Additional Information	View Document

2.5.2 Mechanism of internal assessment is transparent and robust in terms of frequency and variety

Answer:

Robustness of the system

Criteria for Continuous Internal Evaluation System

- The internal evaluation system at institute level is based on following five parameters
  - Performance in Continuous Assessment-I (CA-I) and Continuous Assessment-II (CA-II).
  - Assignments
  - Internal POE
  - Journal and Assessment of Practicals
  - Class and Practical Attendance
- Head of Department and Class Coordinators (CC) conduct orientation programs at the beginning of every semester, in which entire schedule and system of internal evaluation is conveyed to the students.
- Continuous assessment schedule is included in Academic Calendar at the institute level. Two tests are conducted in a semester. Corrected papers are returned to the students within three days of completion of test. Tests results are displayed on the notice board as well as sent to parents through letters and SMS.
- Assignments are regularly evaluated by the subject teachers.
  - Students are made aware regarding minimum 75% attendance requirement for granting the term. Class coordinator also informs that internal term work evaluation is based on continuous assessments. The internal term work is assessed for twenty-five marks. The twenty-five marks are divided into following criteria. The attendance carries five marks, test carries seven marks, journal and POE has weightage of eight marks and assignments are evaluated for five marks.

Transparency

Transparency in internal assessment is maintained through following mechanism:

- After final internal assessment, marks are shown to students and then submitted to the university.
- The corrected test papers are returned to the students and Students are counselled for better performance.
- Final Year project assessment schedule is prepared and displayed on the notice board in the first week of the semester. Final Year students are informed about project assessment. This assessment is based on stage wise completion of the projects.
- Project diary includes the entire schedule of project stages, which is prepared and distributed to all groups. Project guide checks and verifies the project completion status on weekly basis and accordingly grades are given.
- Industrial training assessment criteria is informed to the students before joining the training by industrial training coordinator. Training assessment is based on mentor’s visit to the industry, report submission and presentation/viva.
- The students are encouraged to discuss queries related to internal evaluation with subject teacher/ Head of the department. The subject teacher clarifies the doubts regarding their internal evaluation and takes corrective majors, if necessary.

- **Information to the Parents**

- Parents are made aware about internal evaluation criteria in Parents' Meetings, which are conducted for every class at least once in a year.
- Test marks are conveyed to parents through SMS.

File Description	Document
Any additional information	View Document

2.5.3 Mechanism to deal with examination related grievances is transparent, time-bound and efficient

Answer:

1) Examinations Related Grievances at University Examination

Students, who fail in any subject in theory examination can apply for photocopy of the respective subject. After receiving the photocopy, if a student want, then he/she can apply for revaluation to the university. University reassesses the paper and the result is conveyed to the student in a stipulated time. In case of change in marks, the revaluation fees (Rs.500/-) is returned to the student by the university.

In theory examination, if the question paper contains any question, which is out of syllabus, or if any data is missing in the question paper, then the students can write to the Controller of Examinations through Senior Supervisor and Principal. At university level, Controller of Examinations takes care of the issue and necessary actions like giving marks to such questions are decided in the meeting of examiners.

2) **Examinations Related Grievances at Institute Level**

To evaluate the students as a part of In-Semester Evaluation (ISE) and End Semester Evaluation (ESE), which carries a weightage of 30 marks and 25 marks respectively, assessment is done by conducting tests, prelim exam, internal POE, etc. at institute level.

Internal Tests and prelim exams are conducted according to the academic calendar and assessed test papers are returned to the students. Doubts about test papers are cleared to the students and corrections, if any, are made accordingly. Students are counselled for better future performance. After completion of the tests result is informed to the parents by post as well as through SMS.

File Description	Document
Any additional information	View Document

2.5.4 The institution adheres to the academic calendar for the conduct of CIE

Answer:

The academic calendar is prepared by Dean-Academics before commencement of the academic year. Academic calendar includes curricular, co-curricular and extra-curricular activities to be conducted by the institute. Curricular activities such as schedule of Test (I and II), internal practical oral exam, prelim exam, project exhibition, commencement of GATE classes, industrial training, etc. are also included. In addition to all these academic activities, cultural, co-curricular activities such as Orchitech, Smash, Rainbow, NSS activities, Foundation Day are also included in the academic calendar.

Unit Tests

As a part of internal evaluation, according to academic calendar, two tests are conducted. Generally, in the first semester test one is conducted in the month of August with a gap of one day for each paper and second test is conducted in the month of September. In second semester, two tests are conducted in the months of February and March.

- **Internal Practical Oral Exam**

The practical oral examinations play a key role in assessing students skills acquired during practical sessions. The internal practical oral exams are conducted as per academic calendar in third week of October in semester one and third week of April in semester two. The marks secured by students are considered for internal evaluation.

- **Orientation Programs for the Students**

In the first week of every semester, orientation programs are extensively conducted in all departments for all classes. This includes the orientation sessions by HOD, class coordinators, Dean training and placement, GATE & Aptitude coordinators, project coordinators and industrial training coordinators.

- **Prelim Exam**

The prelim exams are conducted after completion of syllabus at the end of each semester for FE, SE and scholar batch students. These exams are conducted as per pattern of university exams. Time table is prepared with a gap of three days between two papers. Well-planned study sessions are conducted during this period for FE & SE students.

- **Project Exhibition**

Project exhibition for final year students is arranged at the end of every academic year, generally on second Saturday of April.

- **GATE Classes –** Every year well-planned GATE classes are arranged for final year students in the month of December immediately after first semester exams are over. Online mock tests are also conducted in December and January as practice tests.
- **Industrial Training –** Students need to undergo 15-30 days of industrial training after second year and/or in third year. Industrial training is scheduled in the month of December & June of every year during vacation. The industrial training reports are assessed in their final year.
- **Pre-placement Workshop –** For those students who opt for placement, well-planned pre-placement workshop is conducted by soft skill and aptitude trainers. The workshop comprises of one-week soft skills training and one-week aptitude training. Generally the pre placement workshop is conducted in summer vacation for pre-final year students.

From academic year 2017-18, the institute is affiliated to Dr. Babasaheb Ambedkar Technical University (DBATU). For First Year Engineering, academic calendar is provided by DBATU. All activities are conducted strictly as per the schedule.

All activities mentioned above are executed as per the plan of academic calendar.

File Description	Document

Any additional information	View Document
Link for Additional Information	View Document

2.6 Student Performance and Learning Outcomes

2.6.1 Program outcomes, program specific outcomes and course outcomes for all programs offered by the Institution are stated and displayed on website and communicated to teachers and students

Answer:

Program Outcomes (POs), Program Specific Outcomes (PSOs) and Course Outcomes (COs) are broad statements that describe career and professional accomplishments, that the program is preparing students to achieve.

It is necessary that the students who are undergoing the course should be acquainted with the POs, PSOs, and COs. Institute takes care that they are brought to notice of the students through following means.

- Branch wise POs, POs, and COs are displayed on the Institute's website.
- Departmental Notice Boards are utilized to display them which are easily visible to each and every student.
- POs, PSOs of respective departments and COs of respective subjects are included in student's experiment manual.
- They are available in Solapur University's syllabus copy.

(http://www.orchidengg.ac.in/images/pdf/entc/BE_ETC_Syllabus__2015.pdf)

- During orientation program, HOD and class coordinator introduce POs, and PSOs. Subject In-charge introduces the COs.
- Faculty members include COs while preparing course file. Faculty members prepare additional COs wherever required, in accordance with POs.
- During teaching-learning process, faculty member takes utmost care to achieve all POs, PSOs, and COs.

File Description	Document
COs for all courses (exemplars from Glossary)	View Document
Any additional information	View Document
Link for Additional Information	View Document

2.6.2 Attainment of program outcomes, program specific outcomes and course outcomes are evaluated by the institution

Answer:

- The program outcomes and Course outcomes are specified by Solapur University in its syllabus document.
- The courses whose course outcomes are not specified by the University, course co-ordinator prepares it for respective subjects.
- The subject teacher maps COs to POs.
- The subject teacher carries out the assessment of achievement of COs and POs
- The tools used for assessment of COs are as follows
    - University Results

- Assignments
- Course Exit Survey

- The process for assessment of COs and POs are follows
  - Faculty member maps the university question paper with the COs . The university result for respective subject is considered for attainment evaluation of COs. The COs attainment is measured from individual students marks obtained in respective subject. The attainment level of COs for each student is categorized into three levels depending upon the results. If the result is above 60%, between 40% and 60% and below 40% attainment level is categorized as high, medium and low level respectively.
  - Assignments are mapped with COs. The attainment of the COs is evaluated by the subject teacher considering the completion of assignment.
  - At the end of each semester, subject teacher conducts course exit survey. The subject incharge prepares questionnaire mapping with COs. The response to the questionnaire is categorized into low, medium and high levels. According to response from individual students attainment is evaluated.

2.6.3 Average pass percentage of Students

Answer: 88

2.6.3.1 Total number of final year students who passed the university examination

Answer: 484
2.6.3.2 Total number of final year students who appeared for the examination

Answer: 550

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

2.7 Student Satisfaction Survey
2.7.1 Online student satisfaction survey regarding teaching learning process

Answer:

File Description	Document
Database of all currently enrolled students	View Document

3.Research, Innovations and Extension
3.1 Resource Mobilization for Research
3.1.1 Grants for research projects sponsored by non government sources such as industry ,corporate houses, international bodies, endowment, chairs in the institution during the last five years

Answer: 2.59

3.1.1.1 Total Grants for research projects sponsored by the non-government sources such as industry, corporate houses, international bodies, endowments, Chairs in the institution year wise during last five years(INR in lakhs)

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
0.28550	.31784	1.9875	0	0

File Description	Document
List of project and grant details	View Document
e-copies of the grant award letters for research projects sponsored by non-government	View Document

3.1.2 Percentage of teachers recognised as research guides at present

Answer: 21.64

3.1.2.1 Number of teachers recognised as research guides

Answer: 29

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

3.1.3 Average number of research projects per teacher funded by government and non government agencies during the last five years

Answer: 0.61

3.1.3.1 Number of research projects funded by government and non-government agencies during last five years

Answer: 57

File Description	Document
Supporting document from Funding Agency	View Document
List of research projects and funding details	View Document
Funding agency website URL	View Document

3.2 Innovation Ecosystem

3.2.1 Institution has created an ecosystem for innovations including incubation centre and other initiatives for creation and transfer of knowledge

Answer:

The institute started from the academic year 2008-09. To create ecosystem for research and innovation the institute took progressive steps bysponsoring the faculty members for Ph.D. at various institutes of national repute. Many faculty members were given study leave of one semester to complete the stay requirements at

the research institutes. Till now, 27 faculty members have been sponsored for Ph.D., out of which 11 faculty members have completed Ph.D. Research publications are being done by the faculty members regularly. This initiative has given good impetus to research and innovation eco system.

The institute has formed R&D cell headed by Dean R&D. Each department is having one R&D co-ordinator. Faculty members pursing Ph.D. are also part of R&D cell. Many faculty members have submitted their research grant proposals to various funding agencies such as DST, MoEF, etc. Few research proposals submission are in the pipeline.

The institute has created a culture of applied research through student projects. Faculty members and students visit industries to identify industry problems and formulate projects based on the industry problems. Many such projects have been successfully completed and transferred to the industry in last five years. Few of the innovative industry projects are as follows.

1. A group of Mechanical Engg. Students have completed project on "Design, analysis and Fabrication of Textile Warp Beam Lifter" in the AY 2016-17. The lifting device fabricated by the students is deployed in Laxminarayan Textiles, Solapur. (*Image in additional information file*)
2. Students of CSE department have developed "Android based application for Krishi Vidnyan Kendra, Solapur". Uptil now around 203 farmers have downloaded the App.(*Image in additional information file*)
3. Civil engineering students have done project under the guidance of Dr. V. K. Patkion 'Integrated waste management technique with constructed wetland for house hold applications' which ishelpful to society for waste water management.
4. **Smart City -** Recently Solapur city is selected in the list of smart cities. (*additional data in additional information file*)
5.

Solar projects: Solapur comes under dry and hot region where the average temperature in summer is in the range of 40o C to 43o C. Therefore Solapur is having tremendous potential for the solar energy harvesting. Also, Solapur is selected for the Smart City Project in the lot of first twenty Smart Cities. (*additional data in additional information file*)

1. **Award winning student innovation projects-**

Students are motivated for experiential learning through participation in various international and national events in last six years. (*additional data in additional information file*)

1. To promote the innovative ideas, the institute provides an incentive around Rs.1,50,000.00 per department per year for the project work.
2. Institute provides financial support to the faculty members for attending research conferences, workshops etc.

The well planned ecosystem for research and innovation has fetched following outcomes

- 165–Publications in various international journals and conferences in last 5 years.
- 85- Sponsored projects in last five years.
- 04–Books published.

File Description	Document
Any additional information	View Document

3.2.2 Number of workshops/seminars conducted on Intellectual Property Rights (IPR) and Industry-Academia Innovative practices during the last five years

Answer: 22

3.2.2.1 Total number of workshops/seminars conducted on Intellectual Property Rights (IPR) and Industry-Academia Innovative practices year wise during last five years

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
8	8	4	2	0

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 The institution has a stated Code of Ethics to check malpractices and plagiarism in Research

Answer: Yes

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

3.3.2 The institution provides incentives to teachers who receive state, national and international recognition/awards

Answer: Yes

File Description	Document
e- copies of the letters of awards	View Document
List of Awardees and Award details	View Document

3.3.3 Number of Ph.D.s awarded per teacher during the last five years

Answer: 0

3.3.3.1 How many Ph.Ds awarded within last five years

Answer: 0

File Description	Document
List of PhD scholars and their details like name of the guide , title of thesis, year of award etc	View Document

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

Answer: 0.24

3.3.4.1 Number of research papers in the Journals notified on UGC website during the last five years

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
49	45	51	11	2

File Description	Document
List of research papers by title, author, department, name and year of publication	View Document

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

Answer: 0.04

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

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
05	12	03	03	00

File Description	Document
List books and chapters in edited volumes / books published	View Document
Any additional information	View Document

3.4 Extension Activities

3.4.1 Extension activities in the neighbourhood community in terms of impact and sensitising students to social issues and holistic development during the last five years

Answer:

The Institute sensitizes students to participate in social activities and cultivates ethical values. These activities make students aware of their contribution in Nation development and becoming responsible citizens.

- **Environment Awareness Activities:**

Students spread awareness about Environment conservation through National Service Scheme. In A.Y. 2016-17, N.S.S. students built a weir to stop the flow of runoff and spillway discharge from Hipparga Dam for water conservation. NSS Unit built two bunkers and bridge road to stop the flow of runoff at Kasegaon village. Tree Plantation in the campus is done on various events.

- **Social Activities:**

Students participate in drives like Blood Donation, awareness on Save Girl Child, Voting Awareness, Save Water and ‘AIDS’ Awareness. Students’ associations organize meetings on Human Rights.

In 2016-17, a group of First Year students donated a R.O. Water Purifier Plant (Rs. 36,000/-) to Salam Balak Trust Orphanage at Nannaj.

On 20th Sept 2016, Solapur University organized Digital India Workshop for students.

On Foundation Day, the Institute arranges Art Exhibition on social themes like “Voting Awareness”, “Save Girl Child”, “Save Water” and “Save Petrol” is arranged.

- **Social Awareness Programs:**

On International ‘Yoga Day’ sessions are arranged for all Teaching Faculty and Staff. Social Values are inculcated through Oath Taking Program on “Communal Harmony”.

For Road Safety awareness on 22nd March 2012 NSS students stuck “Road safety” stickers on buses and vehicles of students and staff.

Electoral roll program with District Election Commission Office was organized, where 450 new voters were enrolled.

Students interact with students from Ashram Schools and ZP Schools on Engineers Day and donate books, notebooks and stationary.

Student’s contributed in “Nirmalya Sankalan Mohim” of Sakal Papers Pvt. Ltd. on 5th Sep. 2017.

Institute’s Social Responsibility Activities:

In year 2015, Fodder was distributed to the drought prone villages in Beed district which helped the farmers to overcome drought and feed their cattle. Institute coordinates with Tata Technologies Ltd. to provide e-resources to needy students from the villages. Foundation Day is celebrated by awarding people for their contribution in the betterment of the society. Personalities like Mr. Gundu Shabde Chairman and Managing Director of “Rely on Solar” for their valuable work in Solar Energy. Vijay Sharma, the genius behind Paytm and Mr. Popatrao Pawar a Sarpanch (Hivare Bazar Village Dist. Nagar) who implemented and propounded the concept of model village.

Techno Societal Activities:-

Different projects carried out in this aspect are:-

1. K.V.K application developed by Computer Science students helps the farmers to get information about crop cultivation and food processing.
2. Mechanical students did a sponsored project “Design and Analysis of Rapier Loom” that reduces the energy and labour consumed by Power looms
3. N.S.S students carried out a survey on Street Lightning and Waste Water Management in Tale Hipparga village and came up with the estimated cost required for the same.

The Institute makes the students realize their role in the development of nation through these activities.

File Description	Document

Any additional information	View Document

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

Answer: 7

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

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
2	1	1	2	1

File Description	Document
e-copy of the award letters	View Document
Number of awards for extension activities in last 5 years	View Document

3.4.3 Number of extension and outreach programs conducted in collaboration with industry, community and Non-Government Organisations through NSS/NCC/Red cross/YRC etc., during the last five years

Answer: 20

3.4.3.1 Number of extension and outreach programs conducted in collaboration with industry,community and Non-Government Organisations through NSS/NCC/Red cross/YRC etc.,year wise during last five years

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
05	04	04	04	03

File Description	Document
Number of extension and outreach programs conducted with industry,community etc for the last five years	View Document
Reports of the event organized	View Document

3.4.4 Average percentage of students participating in extension activities with Government Organisations, Non-Government Organisations and programs such as Swachh Bharat, Aids Awareness, Gender Issue, etc. during the last five years

Answer: 34.95

3.4.4.1 Total number of students participating in extension activities with Government Organisations, Non-Government Organisations and programs such as Swachh Bharat, Aids Awareness, Gender Issue, etc. year wise during last five years

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
858	440	488	814	598

File Description	Document
Any additional information	View Document
Average percentage of students participating in extension activities with Govt. or NGO etc.	View Document
Report of the event	View Document

3.5 Collaboration

3.5.1 Number of linkages for faculty exchange, student exchange, internship, field trip, on-the-job training, research, etc during the last five years

Answer: 2633

3.5.1.1 Number of linkages for faculty exchange, student exchange, internship, field trip, on-the-job training, research, etc year-wise during last five years

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
703	699	458	392	381

File Description	Document
Number of Collaborative activities for research, faculty etc.	View Document
Copies of collaboration	View Document

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

(only functional MoUs with ongoing activities to be considered)

Answer: 20

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

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
07	03	10	00	00

File Description	Document
Details of functional MoUs with institutions of national, international importance,other universities etc. during the last five years	View Document

e-copies of the MoUs with institution/ industry/ corporate house	View Document

4.Infrastructure and Learning Resources

4.1 Physical Facilities

4.1.1 The institution has adequate facilities for teaching- learning. viz., classrooms, laboratories, computing equipment, etc.

Answer:

To facilitate effective teaching-learning, the institute has created and enhanced the infrastructural facilities regularly.

A. Facilities for Teaching and Learning

Sr. No.	Details of the Facilities	Required Number as per AICTE Norms	Available Number
1	Classrooms	26	30
2	Tutorial Rooms	7	16
3	Laboratory	44	50
4	Work Shop	1	2
5	Computer Centre	1	1
6	Drawing Hall	1	7
7	Library & Reading Room	1	1
8	Seminar Halls	3	5
9	Training and Placement Office	1	1
10	No. of Computers	376	633

B. Additional Labs and Facilities Developed for Enhancing Teaching-Learning

In addition to regular facilities mentioned above additional advanced facilities are made available to enhance the quality of teaching-learning.

- Texas Instuments Lab (Partially Sponsored by EdGate Technologies Pvt. Ltd. Banglore in 2014)

- eYantra Lab (Partially Sponsored by Nex Robotics Pvt. Ltd. New Mumbai in 2016)
- Aakash Lab (Sponsored by IIT Bombay Aakash Project in 2014)
- Lecture Capturing Facility
- VSAT facility with Studio for broadcasting lectures to connected institutes.
- Video Conferencing Facility Connected to IITB as remote center under NMEICT Project.

C. Other Facilities Available

- Spacious, well ventilated and furnished classrooms. Every classroom is well equipped with LCD projectors to facilitate use of ICT resources such as videos, animation, etc.
- Central library with facilities like separate reading rooms for boys and girls, digital library etc.
- Central computing facility with 50 Mbps leased line.
- Ladies room.
- Staff cabins.
- State of the art laboratories.
- Workshops.
- Separate hostels for boys and girls.
- Canteen.
- RO plant with a capacity of 1200 liters /hr.
- A fleet of buses to pick & drop the students from Solapur City.
- Playground.
- For the uninterrupted academic activity, one 45 KVA & two 35 KVA generators are provided.
- 36 kW Solar System is installed.
- Well-equipped gym is available in boys hostel.
- Sprawling green campus.

File Description	Document
additional information	View Document
Link for Additional Information	View Document

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

Answer:

Sports :

Dedicated sports facilities with guidance of a sports coordinator are made available to students. Various sports facilities are described below:

- Cricket
- Kho Kho
- Vollyball
- Kabbadi
- Football

Games (indoor, outdoor, gymnasium, Yoga centre etc.) :

- Table Tennis

- Carrom
- Chess
- Gym 85 Sq.M. (In Boys Hostel)
- Yoga training is arranged frequently.

Participation of Students in Various Sports and Games :

- Our institute regularly participates in The Solapur University Zonal Tournaments which includes Cricket, Football, Volleyball, Kho-Kho, Swimming, Boxing, Handball, Softball, Badminton, Basket Ball, Chess, Judo, Taekwondo, Cross-Country, Swimming, Tennis and Fencing. The details of participation for Academic Year 2016-17 are presented in the table on the institute website and the link is provided in additional information.

Cultural Activities:

- Hall for cultural activities: 450 Sq. M.
- Lawns covering area of 970 Sq. M. for conducting cultural activities.
- Additional stage for cultural activities near Civil and Mech buildings.
- Audio visual and stage arrangements are made available for cultural activities
- Every year Cultural Committee conducts events like Opening Ceremony, Annual Cultural activity i.e. Rainbow, Traditional Day, Art Exhibition, Face Painting, Rangoli Competition, etc.
- The students also participate in University level Youth Festival, International Vasundhara Mahotsva having various events like Street Play, Film Making Competition, Quiz, Singing, Dance and Drama.
- Every year cultural committee organizes yoga sessions for students, teaching and non-teaching staff.

NSS:

- NSS team actively participates in NSS camp organized every year and serves the society.
- NSS conducts two Blood Donation Camps first on Engineers' Day and the other in the month of March. Nearly 400 bottles of blood are donated every year.
- NSS team conducts various activities like Swachata Abhiyan, Youth for water Management, Water Conservation, Voting Awareness in the society, Survey of Villages for literacy, health, natural resources etc. The survey reports are submitted to The Gram Panchayat Office of concerned village.
- Tree plantation activity is conducted in the campus as well as in the city.

The details of area, year of establishment and user rate is given in table below:

Sr. No	Facility	Name of Activity	Area (in Sq. M.)	Year of Establishment	User Rate
1	Sports	Cricket	55 sq mtr (Pitch)	2008	Daily
		Kho Kho	464	2008	One Month in each Semester
		Volleyball	464	2008	Daily
		Kabbadi	125	2008	One Month in each Semester
		Football	-	2008	One Month in each Semester
		Badminton	-	2008	One Month in each Sem

2	Games	Indoor: Carrrom, Chess & Table Tennis (BCR)	160	2008	One Month in each Semester
		Gym	85	2009	Daily
3	Cultural Activities	Hall for cultural activities	450	2010	Occasionally
		Open Air Auditorium	970	2010	Occasionally
		Stage (Civil Mech Building)	13	2016	Occasionally

File Description	Document
additional information	View Document
Link for Additional Information	View Document

4.1.3 Percentage of classrooms and seminar halls with ICT - enabled facilities such as smart class, LMS, etc

Answer: 97.14

4.1.3.1 Number of classrooms and seminar halls with ICT facilities

Answer: 34

File Description	Document
Number of classrooms and seminar halls with ICT enabled facilities	View Document
any additional information	View Document
Link for additional information which is optional	View Document

4.1.4 Average percentage of budget allocation, excluding salary for infrastructure augmentation during the last five years.

Answer: 26.6

4.1.4.1 Budget allocation for infrastructure augmentation, excluding salary year wise during last five years (INR in lakhs)

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
91.09	92.61	125.88	148.99	129.58

File Description	Document

Details of budget allocation, excluding salary during the last five years	View Document
Audited utilization statements	View Document

4.2 Library as a Learning Resource

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

Answer:

The Institute Library is fully integrated with the Library Management Software which leads to effective management of the Library. Barcode System is implemented in the Library for smooth functioning of issuing and returning the books. Library has the facility of DELNET and National Digital Library (NDL), its importance and use is communicated to the Faculty members and students by the Library Staff.

Students can avail the multimedia content from the 10 PCs that are available in the Library. There is a Book Bank Scheme facility for all students, wherein the students get a set of Books at the beginning of each semester and have to submit it at the end of the semester. Apart from books on Technical Subjects there are additional books on Aptitude, GATE Exam, Soft Skills and Literature etc. The Library provides a serene ambience for the Students which they utilize to the fullest, during their examination.

Sr. No	Year	Name of ILMS	Nature of Automation	Version
1	2016-17	**DELPLUS**	**Partially**	**2.0**
2	2015-16	**DELPLUS**	**Partially**	**2.0**
3	2014-15	**DELPLUS**	**Partially**	**2.0**
4	2013-14	**DELPLUS**	**Partially**	**2.0**
5	2012-13	**DELPLUS**	**Partially**	**2.0**

File Description	Document
Any additional information	View Document

4.2.2 Collection of rare books, manuscripts, special reports or any other knowledge resources for library enrichment

Answer:

Our library is enriched with the PhD thesis of the faculty members and PG dissertations of PG students. These reports are very much useful to the students for continuation of research. A list of PhD thesis is given below and list of PG dissertations is uploaded in the additional information.

Sr. No.	Name of Thesis	Author Name	Year of Publication
1	Thermo-Mechanical Buckling of Laminated Composite & Sandwich Beams & Plates with Mixed, Higher Order Theories.	Dr. J. B. Dafedar	May-05
2	Reengineering of Legacy Applications for Enterprise Application integration(EAI)	Dr. S. D. Raut	May-07
3	Studies on (Cd, Mn) Se Thin Films for Photo Sensor Applications	Dr. V. S. Karande	Oct-06

4	Assessment of water Quality in Municipal Distribution System using Artificial Intelligence	Dr. V. K. Patki	Sep-14
5	Augmentation of forced convective heat transfer through tube by using nanofluid	Dr. B. K. Sonage	Mar-15
6	Reuse of Textile Mill Sludge	Dr. S. S. Jahagirdar	Oct-15
7	Synthesis of Co1-xZnxS Thin Films by a chemical Route & Their characteristics	Dr. S. S. Kamble	Jan-16
8	A Study in Almost distributive lattices	Dr. I. A. Shaikh	2016
9	Medimechatronics	Dr. S.S. Metan	Aug, 2016
10	Design & Development of Context based stock recommendation System.	Dr. V. V. Bag	May, 2017
11	Productivity Pattern of DESIDOC Journal of Library and Information Technology: A Study of Bi-Monthly Journal DESIDOC. DRDO. Delhi 1981-2015	Dr. V. S. Birangal	May, 2017

File Description	Document
Any additional information	View Document

4.2.3 Does the institution have the following:

1. ***e-journals***
2. ***e-ShodhSindhu***
3. ***Shodhganga Membership***
4. ***e-books***
5. ***Databases***

Answer: B. Any 3 of the above

File Description	Document
Any additional information	View Document
Details of subscriptions like e-journals,e-ShodhSindhu,Shodhganga Membership etc.	View Document

4.2.4 Average annual expenditure for purchase of books and journals during the last five years (INR in lakhs)

Answer: 20.69

4.2.4.1 Annual expenditure for purchase of books and journals year wise during last five years (INR in lakhs)

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
7.72	20.34	32.86	7.29	35.25

File Description	Document
Details of annual expenditure for purchase of books and journals during the last five years	View Document
Audited statements of accounts	View Document

4.2.5 Availability of remote access to e-resources of the library

Answer: Yes

File Description	Document
Details of remote access to e-resources of the library	View Document

4.2.6 Percentage per day usage of library by teachers and students

Answer: 6.65

4.2.6.1 Average number of teachers and students using library per day over last one year

Answer: 138

File Description	Document
Any additional information	View Document
Details of library usage by teachers and students	View Document

4.3 IT Infrastructure

4.3.1 Institution frequently updates its IT facilities including Wi-Fi

Answer:

The Central Computing Facility and all other Computer labs in the campus are equipped with branded Dell OptiPlex 360, 380, 390, Dell OptiPlex 3010 & HP Compaq of latest configuration and they are upgraded whenever required. All computer labs are connected through a 100/1000 Gigabyte LAN. It has centralized server room with SonicWALL4500 Firewall, which shares & monitor internet facility.

The internet facility of 50 Mbps through lease line is provided to the Computer Labs of all departments, HOD cabins, faculty cabins, Library, Hostel, TPO Office, Deans and Administrative block. Internet with e-mail and browser facility has been provided to the students, which is freely available to them 24 hours & unlimited download through SonicWALL firewall Monitoring. Computers are attached with printer and many of the machines are connected by branded Online UPS system.

The LAN also provides FTP and NPTEL servers through which the instructional material like notes, slides and videos are provided to the students.

Wi-Fi facility : - The campus is well equipped with Wi-Fi facility through the seven access points which covers all the departments, campus and Boys Hostel area.

The IT infrastructure is regularly provided to the agencies like TCS, MKCL etc. for conducting various online examinations on holidays. For last three years ONLINE GATE examination is also successfully conducted in the institute.

Our institute is one of the Remote Center of IITs under NMEICT Project of MHRD through which FDPs are organized in the insrtitute.

To record and broadcast the lectures of our faculty members to connected colleges, the institute has established a studio for broadcasting the lectures using VSAT facility from current academic year..

File Description	Document
Any additional information	View Document

4.3.2 Student - Computer ratio

Answer: 3.07

File Description	Document
Student - Computer ratio	View Document

4.3.3 Available bandwidth of internet connection in the Institution (Lease line)

Answer: >=50 MBPS

File Description	Document
Additional information	View Document
Details of available bandwidth of internet connection in the Institution	View Document

4.3.4 Facilities for e-content development such as Media Centre, Recording facility, Lecture Capturing System (LCS)

Answer: Yes

File Description	Document
Facilities for e-content development such as Media Centre, Recording facility,LCS	View Document
Link to photographs	View Document

4.4 Maintenance of Campus Infrastructure

4.4.1 Average Expenditure incurred on maintenance of physical facilities and academic support facilities excluding salary component, as a percentage during the last five years

Answer: 13.36

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

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
57.03	67.26	69.90	50.05	53.24

File Description	Document
Any additional information	View Document
Details about assigned budget and expenditure on physical facilities and academic facilities	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.

Answer:

PROCEDURE FOR IT MAINTAINCE

- A teaching faculty from CSE department is given charge of IT Coordinator. Under his guidance System administrator and technical assistants are working in IT department.
- The task of IT department is to establish and maintain IT infrastructure in the campus.
- If the IT related equipment is not working properly then concerned person should report the query/complaint on the helpdesk portal URL: http://10.0.9.211/help_desk/home.html . The complaint will be resolved on urgent basis.

PROCEDURES FOR MAINTAINING AND UTILIZING LABORATORY:

- A teaching faculty is assigned duty of lab in-charge who maintains dead stock entries, get those entries verified from head of department.
- Every lab is maintained by a lab assistant and monitored by lab in charge. Lab assistant check equipment in lab at regular time interval and generate reports about condition of the equipment in lab. The same report is submitted to lab in-charge of lab.
- For temporary transfer of any equipment, application need to be provided to the lab in-charge, who record transfer note in transfer register. When equipment is returned, remark will be made by lab in-charge and lab assistant.
- If any equipment fails, lab in-charge add requirement in new requirements list, requirement list which is validated by concerned HOD, Store Keeper and system admin in case of computers and peripherals.
- New requirements are collected by HOD from lab in-charges and after approval from the Principal, quotations are called from the vendors and comparative statement is prepared. The vendor who has quoted lowest price along with quality is preferred for procurement of the material.

PROCEDURES FOR MAINTAINING LIBRARY:

- Each department has one faculty working as a library coordinator.
- Library coordinator circulates sheet to all faculty members regarding new book requirements.
- This requirement is collected two months before start of new semester.

- For each subject, list of textbooks, reference books, required copies for current strength of students and remark is specified in sheet.
- Departmental coordinator forwards all book requirements to librarian.
- Librarian verifies existing stock of books and new requirement and adjusts required copies accordingly.
- After all requirements are finalized, quotations are invited from publishers.
- Librarian sends purchase order to the vendor after approval from Principal.

PROCEDURE FOR CIVIL INFRASTRUCTURE MAINTAINANCE :

Housekeeping and Gardening

- Cleanliness is unique characteristic of our the institute and it is maintained with the help of separately recruited housekeeping staff.
- Each housekeeping staff cleans his assigned area thrice a day.
- Three gardeners are recruited to take care of the garden/lawn in the campus.

Other Maintenance:

- Estate Manager is appointed to take care of routine maintenance of infrastructure and furniture in lab.
- In case of any maintenance related issue Lab Incharge/HOD forward application to estate manager. After verifying complaint and identifying necessary action for repair/replacement, he gets the task completed.

Classroom furniture

- Each classroom is equipped with projector and one desktop machine to facilitate use of modern teaching aids for faculty members.
- For any additional requirement in furniture (benches, table, chair), feedback is collected once in semester by HOD from students.
- As per feedback, requirements about extra furniture, hardware components are proposed by HOD.

File Description	Document
Any additional information	View Document

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 the last five years

Answer: 74.09

5.1.1.1 Number of students benefited by scholarships and freeships provided by the Government year wise during last five years

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
1625	1492	1331	1266	1152

File Description	Document

Any additional information	View Document
Average percentage of students benefited by scholarships and freeships provided by the Government during the last five years	View Document
upload self attested letter with the list of students sanctioned scholarships	View Document

5.1.2 Average percentage of students benefitted by scholarships, freeships, etc. provided by the institution besides government schemes during the last five years

Answer: 10.96

5.1.2.1 Total number of students benefited by scholarships, freeships, etc provided by the institution besides government schemes year wise during last five years

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
241	228	195	180	172

File Description	Document
Number of students benefited by scholarships and freeships besides government schemes in last 5 years	View Document
Any additional information	View Document

5.1.3 Number of capability enhancement and development schemes –

1. ***For competitive examinations***
2. ***Career counselling***
3. ***Soft skill development***
4. ***Remedial coaching***
5. ***Language lab***
6. ***Bridge courses***
7. ***Yoga and meditation***
8. ***Personal Counselling***

Answer: A. 7 or more of the above

File Description	Document
Details of capability enhancement and development schemes	View Document
Any additional information	View Document
Link to Institutional website	View Document

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

Answer: 19.7

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

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
450	365	391	302	318

File Description	Document
Number of students benefited by guidance for competitive examinations and career counselling during the last five years	View Document
Any additional information	View Document

5.1.5 Average percentage of students benefitted by Vocational Education and Training (VET) during the last five years

Answer: 21.47

5.1.5.1 Number of students attending VET year wise during last five years

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
528	475	403	331	275

File Description	Document
Details of the students benifitted by VET	View Document
Any additional information	View Document

5.1.6 The institution has a transparent mechanism for timely redressal of student grievances including sexual harassment and ragging cases

Answer: Yes

File Description	Document
Any additional information	View Document
Details of student grievances including sexual harassment and ragging cases	View Document
Minutes of the meetings of student redressal committee, prevention of sexual harassment committee and Anti Ragging committee	View Document

5.2 Student Progression

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

Answer: 24.14

5.2.1.1 Number of outgoing students placed year wise during last five years

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
202	128	93	71	55

File Description	Document
Details of student placement during the last five years	View Document
Self attested list of students placed	View Document

5.2.2 Percentage of student progression to higher education (previous graduating batch)

Answer: 2.69

5.2.2.1 Number of outgoing students progressing to higher education

Answer: 14

File Description	Document
Any additional information	View Document
Upload supporting data for student/alumni	View Document
Details of student progression to higher education	View Document

5.2.3 Average percentage of students qualifying in state/national/ international level examinations during the last five years

(eg: NET/SLET/GATE/ GMAT/CAT, GRE/ TOFEL/ Civil Services/State government examinations)

Answer: 19.19

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

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
27	26	18	27	28

5.2.3.2 Number of students who have appeared for the exams year wise during last five years

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
136	139	127	140	117

File Description	Document
Any additional information	View Document
Upload supporting data for the same	View Document
Number of students qualifying in state/ national/ international level examinations during the last five years	View Document

5.3 Student Participation and Activities

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

Answer: 51

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

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
19	11	12	04	05

File Description	Document
Any additional information	View Document
Number of awards/medals for outstanding performance in sports/cultural activities at national/international level during the last five years	View Document
e-copies of award letters and certificates	View Document

5.3.2 Presence of an active Student Council & representation of students on academic & administrative bodies/committees of the institution

Answer:

Student council is the apex body of students which is formed under the guidelines of the university. Amongst the nominated student council members', one of them is selected as General Secretary. The students' council also comprises of Cultural Secretary, Sports Secretary and NSS Secretary, all Class Representatives and two ladies representatives. Students can put their problems and suggestions in front of administration through the student council meetings. Minimum three meetings are conducted in a year. Principal is the chairman of the Student Council. Student council is representative body of the students. It helps to improve communication between the Student Body, Faculty, Administration and Parents.Goal of the student council is to provide a common objective to make students participate in the development of institute as well as to provide a platform to students for co-curricular and extra-curricular activities. It is responsible for all the major technical, cultural, NSS and Sports, activities organized in the institute.

In addition to the active student council individual departmental student association such as Mechanical Engineering students association (MESA), Civil Engineering Students Association (CESA), Association of Electronics & Telecommunication Engineering Students (AXES), Ambitious canal of Electrical Eggs.

(ACEE), Computer Science and Engineering Students' Association (CSESA) are also formed for co-curricular and extracurricular development of students. All departmental activities of the students and annual festivals like Teachers' day & Engineers' Day, social activities, motivational lectures, sports activities, Project and Technical Quiz competition etc arranged by these associations.

Activities of association are supported by team of faculty members. Students association plays a vital role in developing leadership skills and responsibility in the students. Student associations organize a wide variety of social, career-related guidance sessions, Expert sessions by industry resource persons, industrial visits, etc. throughout the year to benefit the engineering graduate student community.

File Description	Document
Link for Additional Information	View Document

5.3.3 Average number of sports and cultural activities/ competitions organised at the institution level per year

Answer: 15.2

5.3.3.1 Number of sports and cultural activities / competitions organised at the institution level year wise during last five years

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
18	19	14	12	13

File Description	Document
Any additional information	View Document
Number of sports and cultural activities / competitions organised per year	View Document
Report of the event	View Document

5.4 Alumni Engagement

5.4.1 The Alumni Association/Chapters (registered and functional) contributes significantly to the development of the institution through financial and non financial means during the last five years

Answer:

Introduction

The contribution from the alumni association by financial and non financial means, play a key role in the development of an institute. Voluntary contributions from alumni association enhances and builds a strong relationship between the students, staff, institute and association. The below mentioned are the crucial contributions practiced by the alumni to their alma mater.

1. **Role Model:**

The Institute conducts an annual alumni meets during which the alumni interact with faculty and explore their ideas and experiences in different areas. The experiences shared by the alumni related to maintenance of discipline in college and its benefits while working, benefits of attending soft skill lectures, benefits of co-

curricular courses like CATIA, STADD-Pro etc. underlines the importance of the best practices of the Institute. Apart from this alumni also share their failure stories in their academics, interviews and competitive exams and how to overcome the failures. Such feedback from the alumniact as an input in enhancing and strengthening self-confidence, technical skills, communication skill and social skill of the students.

1. **Career Mentor:**

The Institute is in regular contact with the alumni and invites them for guiding and supporting the students for different career opportunities available in the various fields of engineering. Apart from this alumni also act as a resource meeting the different needs of students. The mentorship of alumni helps the students for getting industrial training opportunities, Sponsored projects, Placement assistance, etc.

1. **Providing Expertise:**

Alumni contribute by providing their expertise in developing new study programs in the Institute. Alumni contribute as a guest lecturer, advisor in committees, industry experts and cooperative partners in projects with the institute.

The alumni working in industries at different positions visit the institute and guide the students about how to prepare for interviews and expectations of the industry.

Study Abroad Cell (SAC) have arranged Expert lectures by alumni who got admission for post graduation abroad in different universities.Alumni who are pursuing their M.S. guide and support the graduate students about how to get admission in foreign universities, scholarship, etc.

1. **Opportunity to Access Professional Development**

The senior alumni who are successful are most effective medium not just for the Institute graduates but also for the younger alumni. To access the professional developmental help from the alumni association, each department of the institute has its own mentor and mentee system. Through WhatsApp groups, studentsare able to interact with alumni and seek guidance for their academic projects, industrial training, etc. The institute is benefited with signing of MOU with different industries through Alumni. e.g.Sourabh Flexi Pack Pvt. Ltd., Pune, etc.

1. **Alumni Funding**

Alumni who have achieved financial stability are able to reduce the financial burden of underprivileged students in institute, by providing the technical books, Career guidance book, journals etc. to department library.

File Description	Document
Any additional information	View Document
Link for Additional Information	View Document

5.4.2 Alumni contribution during the last five years

Answer: <1 Lakh

File Description	Document
Alumni association audited statements	View Document

Any additional information	View Document

5.4.3 Number of Alumni Association / Chapters meetings held during last five years

Answer: 4

5.4.3.1 Number of Alumni Association /Chapters meetings held year wise during last five years

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
1	1	1	1	0

File Description	Document
Number of Alumni Association / Chapters meetings conducted during the last five years.	View Document
Any additional information	View Document
Report of the event	View Document

6.Governance, Leadership and Management

6.1 Institutional Vision and Leadership

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

Answer:

Nature of Governance

The top management, Principal and faculty work in synergy for implementing its vision, mission and quality policy. The leadership provides road map for achieving excellence in technical education and the academic and administrative processes are geared towards realizing this vision. The role of top management, Principal and faculty in design and implementation of quality policy and plans is detailed below:

Top Management:

- Sets objectives in consonance with the quality policies and shares its vision through periodic Governing Body (GB) and Management Executive Committee (MEC) meetings.
- Creates an organizational culture that is fair, transparent, motivating and conducive to faculty and staff to realize their potential.
- Makes financial provision to provide infrastructure and facilities suitable for effective services and to cater to further requirements as per growing needs.

Principal:

- Shares vision of the management and decisions taken by the management in weekly meetings conducted with Role Holders.
- Motivates and monitors team of faculty and staff to realize the institute’s vision and mission.
- Sets targets for academic performances, placements, technical and soft skill development, co-curricular and extra-curricular activities.
- Motivates and participates with faculty members for research, consultancy and strong industry-institute interaction.
- Sets up rules & regulations of the institution for effective governance, transparent administration and participatory decision making for collective responsibility.

- Identifies and appoints competent, qualified faculty and ensures technical competency by creating opportunities for faculty to grow professionally.
- Creates an atmosphere that is challenging, satisfying and ensures faculty retention.
- Encourages team building.
- Ensures availability of infrastructure and other facilities to satisfy academic and administrative requirements.

Faculty participation in Decision making:

The top management of the institute strongly believes in participative management. The day-to-day management and administration, deciding academic standards, student development initiatives and industry connect initiatives are planned and implemented by various committees of the faculty members as follows:

- **Role Holders' Committee:** This committee consists of all the Heads of departments, Deans and three coordinators viz. Coordinator (NAAC and NBA), Coordinator (IT), Coordinator (e-Learning and e-Resources). The committee meetings are arranged invariably every Monday at 03:30 pm. Being most important committee in the ladder of decentralization, it plans, implements and reviews all the activities and decisions related with budget, academic, co-curricular and extra-curricular initiatives. Implementation of around **Twenty five** best practices in the institute is the culmination of deliberations in this committee. In short, for last six years, this committee played the role of Internal Quality Assurance Cell of the institute.
- **Internal Quality Assurance Cell (IQAC):** As per new NAAC framework & guidelines-2017, the institute has formulated IQAC, which gives participation to all stakeholders. IQAC takes decisions related with academic, co-curricular and extra-curricular initiatives.
- **Local Management Committee (LMC):** As per University Act, every institute needs to formulate LMC having members from Management, local members representing different fields of the area, Faculty and staff. The institute has formed LMC since its inception. At least two meetings per annum are conducted. The powers and duties of LMC are budget, creation of teaching and other posts, intake capacities, institute progress.

File Description	Document
Any additional information	View Document
Link for Additional Information	View Document

6.1.2 The institution practices decentralization and participative management

Answer:

The management recognizes need for decentralization for growth of the institute and accords autonomy commensurate with the level of management. Deans and heads are given autonomy for efficient governance as below:

- **Dean Academics** is responsible for academic development of the institute and monitors implementation and progress of various teaching-learning processes. Academic Monitoring Committee (AMC), having one senior faculty member from each department is formed for academic reviews. Dean Academics also works as the center coordinator for the ICT remote center of IIT Bombay.
- **Dean R & D** monitors Research and Development activities in the institute, guides the senior level faculty members to send proposals to various funding agencies for research grants.
- **Coordinator (NAAC & NBA)** is responsible for getting the institute accredited by NAAC and NBA. It is planned that NAAC accreditation to be completed in the AY 2017-18 and NBA in the AY 2018-19.

- **Coordinator (e-Learning & e-Resources)** is responsible for providing opportunities of e-Learning like NPTEL, maintenance and effective utilization of ERP at the institute.
- **Coordinator (IT)** is responsible for effective implementation and utilization of IT infrastructure at the institute.
- **Dean Administration** is responsible for supervision and management of all administrative and operational functions. Annual performance appraisal of faculty and staff members is being done by the Dean (Admin). The institute is assigned sub-centre of Maharashtra State Technological University DBATU. Dean (Admin) is acting as Coordinator of the sub-centre.
- **Dean (T & P)** is responsible for industry connect and student placements.
- **Head of the departments** are responsible for the academic and administrative functions of the department.

In addition, Registrar, Accounts Officer, Librarian, Workshop Superintendent respectively takes care of office related activities, finance related issues, library resources and workshop related activities. Other supporting activities are handled by the Admission-in-charge, College Examination coordinator, NSS coordinator, cultural coordinator, sports coordinator, EDP cell coordinator, Magazine coordinator etc.

Decentralization at Department level:

- Each class has a class coordinator, who is responsible for academic activities, student attendance, parent connect etc.
- Each department has various functional coordinators.

Case Study of Practicing Decentralization and Participative Management:

The "Role Holder Committee" is taken for presenting the case study of practicing decentralization and participative management in the institution. Constitution of the committee is as described above in ***6.1.1***. For last six years, this committee played the role of Internal Quality Assurance Cell (IQAC) of the institute. The decisions taken by Role Holders' Committee and its impact on quality are described in the *pdf* file uploaded in **additional information section**.

File Description	Document
Any additional information	View Document

6.2 Strategy Development and Deployment

6.2.1 Perspective/Strategic plan and Deployment documents are available in the institution

Answer:

Activity of course-wise development plan and introduction of postgraduate courses in each department is implemented as planned:

1. The institute started in AY 2008-09 with four undergraduate course namely Bachelor of Civil Engineering, Bachelor of Mechanical Engineering, Bachelor of Computer Science and Engineering and Bachelor of Electronics & Telecommunication Engineering with an intake of 60 each. Total intake for AY 2008-09 of the institute was 240.

2. In AY 2009-10, intake of Mechanical Engineering increased from 60 to 90, thus increasing total intake of the institute to 270.

3. In AY 2010-11, intake of Mechanical Engineering increased from 90 to 120 and that of Civil Engineering from 60 to 120. Thus total intake of UG courses for AY 2010-11 is 360.

4. In AY 2011-12, a new course in Bachelor of Electrical Engineering is introduced with an intake of 60. Total intake of the institute now changed to 420.

5. Postgraduate courses introduced in Civil and Computer Science & Engineering departments in AY 2012-13. The postgraduate course in Civil Engineering is “Structural Engineering” and has an intake of 18. Postgraduate course in Computer Science & Engineering has an intake of 18.

6. Postgraduate courses introduced in Mechanical and Electronics & Telecommunication Engineering departments in AY 2013-14. The postgraduate course in Mechanical Engineering is “Thermal Engineering” and has an intake of 18. Postgraduate course in Electronics & Telecommunication Engineering has an intake of 18.

7. In AY 2014-15, Direct Second Year Divisions are introduced in Computer Science & Engineering and Electronics & Telecommunication Engineering departments with an intake of 60 each.

Thus the total intake of the institute gradually increased from 240 to 420 for Undergraduate courses for First Year of Engineering, to 120 for Direct Second Year of Engineering and to 72 for Postgraduate Courses in Engineering.

File Description	Document
Any additional information	View Document
Strategic Plan and deployment documents on the website	View Document

6.2.2 Organizational structure of the institution including governing body, administrative setup, and functions of various bodies, service rules, procedures, recruitment, promotional policies as well as grievance redressal mechanism

Answer:

The administration of NKOCET is managed by following bodies.

Governing Body: The apex body is the Governing Body that formulates policies and directs the affairs of the institution in consultation with the management. It has representation of the management, faculty, government representatives and industry.

Local Management Committee: At college level, the Local Managing Committee is constituted according to the Maharashtra Universities Act. It has representatives of the management, faculty and nonteaching staff.

Role Holders’ Committee: At the college level, this committee plans, implements and reviews all the activities and decisions related with budget, academic, co-curricular and extra-curricular initiatives. It has Heads of the departments, Deans and various Coordinators.

Internal Quality Assurance Cell (IQAC): This committee takes decisions related with academic, co-curricular and extra-curricular initiatives and has participation of representatives from faculty, staff, parents and industry.

In addition, Registrar, Accounts Officer, Librarian, Workshop Superintendent respectively takes care of office related activities, finance related issues, library resources and workshop related activities. Other supporting activities are handled by the Admission-in-charge, College Examination coordinator, NSS coordinator, cultural coordinator, sports coordinator, EDP cell coordinator, Magazine coordinator etc. These units help in monitoring and facilitating several administrative functions and make administration open and transparent.

Recruitments and promotions:

The appointments and promotions of all cadres of faculty are made as per the norms of AICTE (Refer No. F. No. 37-3/Legal/2010-dated 05th March, 2010)

1. **Temporary appointments:** When a vacancy of a Faculty is to be filled in temporary for a period of 1 year, the appointments is made through Local Selection Committee.
2. **Appointment on Regular basis:** The appointments of Faculty members on regular basis is made through University Selection Committee. The selected candidates is appointed on probation for the period of two years and after completion of satisfactory probation period their services are confirmed.

All internal transfers/ shift in position/timing/profile are officially communicated and necessary salary /allowance implication is worked out as per salary/appointment guidelines.

Annual salary Increment:

There is a uniform date of annual increment, viz. 1st July of every year. If an employee has joined after 31st Dec., his or her increment is in next cycle and not immediate in July.

Annual Increment of an employee shall freeze in case of poor performance / failure to achieve academic qualification in stipulated time period / disciplinary cause.

Grievances Redressal Cell is formed in order to keep the healthy working atmosphere among the staff, students & parents. This cell helps staff, students & parents to record their complaints and solve their problems related to academics, resources and personal grievances.

The other committees are as follows:

a. Anti-Ragging Committee: Ragging complaints will be handled as per government guidelines.

b. Sexual harassment prevention Committee: Woman harassment complaints will be handled as per government guidelines by respective section.

File Description	Document
Any additional information	View Document
Link for Additional Information	View Document

6.2.3 Implementation of e-governance in areas of operation:

1.Planning and Development

2. Administration

3. Finance and Accounts

4. Student Admission and Support

5.Examination

Answer: A. All 5 of the above

File Description	Document
Any additional information	View Document
Details of implementation of e-governance in areas of operation Planning and Development,Administration etc	View Document
ERP Document	View Document
Screen shots of user interfaces	View Document

6.2.4 Effectiveness of various bodies/cells/committees is evident through minutes of meetings and implementation of their resolutions

Answer:

The resolutions made by the Role Holders' Committee and IQAC in last few meetings have a major impact on quality of academic, extra-curricular and co-curricular activities in the institute. The committee in its meeting dated 18th July 2017 has devised some academic initiatives for improving academic quality of students. Few major quality initiatives are suggested by the committee like **participation in College-to-Corporate** program of **IIT Bombay** and to **Conduct NPTEL Courses for students**. Also the committee decided to participate in the webinar series from **3DS**. The webcasting of webinar is organized every Thursday at 3.30 pm and based on the topic of webinar, students and faculty members of concerned branch participate in the webinar.

College to Corporate is an initiative by IIT Bombay for Pre-final and final year student. It aims at preparing students for the corporate world and perform better in the recruitment process. Through the series of four short courses under College to Corporate program, Experts from IIT Bombay train students to meet the expectation of the corporate world. The short courses are Soft Skills, Workplace Communication, Technical Skills and Financial Literacy. The program is conducted by using the hybrid/blended MOOCs pedagogy in the Institute's IIT Remote Center. 270 students have enrolled for the program from NKOCET. The participants learn online, as also through face-to- face interaction sessions on the Hybrid MOOCs platform (http://iitbombayx.in). Face-to- face interaction is conducted fortnightly during the weekends. In additions, students complete weekly activities in the Institute Remote Center.

NPTEL has started a large number of online courses on audit as well as credit basis. The courses are conducted over eight or twelve weeks' period and during the course, assignments are given to the students. Participants have to solve these assignments and submit them online. Credits are awarded to participants on the basis of his/ her performance in final exam and assignments submitted online. The online courses of NPTEL give more insight to the subject and hence improve academic quality of the student. Though the course is not mandatory, institute's IQAC decided to conduct NPTEL courses for students to raise their academic standards. For doing this, IQAC suggested following measures.

- Identify courses for students which are relevant to the academic curriculum of Solapur University for current semester. Assign one faculty mentor to each course to monitor performance of students for the course and submission of assignments by students.
- These Faculty coordinators are also asked to register for the course.

- Course coordinators are asked to download video lectures of the related course and keep the material on departmental archive for reference to the students. Some important lectures can be shown in class and discussion on assignments to be carried out in the class.

As a result of this decision, all HODs sensitized the students of SE, TE and BE for NPTEL courses and appealed them to register for an appropriate course. As a result of this 1204 students and 63 faculty members registered for 29 different courses of NPTEL.

File Description	Document
Any additional information	View Document
Link for Additional Information	View Document

6.3 Faculty Empowerment Strategies

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

Answer:

Welfare schemes available for teaching and non-teaching staff are as follows:

- **Fee waiver scheme for the wards of employees:** 50% fee waiver is given to children of faculty & staff members who take admission in our institute. In last Five years, following faculty and staff members availed this scheme:

Name of the staff	Name of the Student	Class	Amount
AY 2016-17			
Mr. Shinde Abhiman Rajaram	Shinde Pooja Abhiman	TE (E&TC)	45360
Mr. Shelke Suhas Shivajirao	Shelke Adityka Suhas	BE (Civil)	43200
Prof.Khuba Siddheshwar Appasaheb	Khuba Piyush Siddheshwar	BE (Mech)	43200
AY 2015-16			
Prof.Khuba Siddheshwar Appasaheb	Khuba Piyush Siddheshwar	TE (Mech)	43200
Mr. Shelke Suhas Shivajirao	Shelke Adityka Suhas	TE (Civil)	43200
Mr. Hiremath Mahesh Baslingayya	Hiremath Ajay Mahesh	SE (Elect)	38880
Mr. Shinde Abhiman Rajaram	Shinde Pooja Abhiman	SE (E&TC)	45360
AY 2014-15			
Prof.Khuba Siddheshwar Appasaheb	Khuba Piyush Siddheshwar	SE (Mech)	43200
Mr. Shelke Suhas Shivajirao	Shelke Adityka Suhas	SE (Civil)	43200
AY 2013-14			
Prof.Khuba Siddheshwar Appasaheb	Khuba Piyush Siddheshwar	FE (Mech)	37037
Dr. Dafedar Jameel Ahmed Bakhtiyar Ahmad	Dafedar Abdul Azeem Jameel Ahmad	BE (Mech)	33705
Mr. Phakade Govind Tatoba	Phakade Prasad Govind	BE (CSE))	33705
Mr. Phakade Govind Tatoba	Phakade Priyanka Govind	ME (CSE)-II	38880
Prof. Gavali Shrikant N.	Gavali Tanvi Shrikant	BE (E&TC)	33705
AY 2012 – 13			
Dr. Dafedar Jameel Ahmed Bakhtiyar Ahmad	Dafedar Abdul Azeem Jameel Ahmad	TE (Mech)	35910
Prof. Gavali Shrikant N.	Gavali Tanvi Shrikant	TE (E&TC)	35910
Prof. Hiremath Mahesh Baslingayya	Hiremath Ajay Mahesh	F E (Elect)	36000

Mr. Phakade Govind Tatoba	Phakade Prasad Govind	TE (CSE)	35910
Mr. Phakade Govind Tatoba	Phakade Priyanka Govind	ME (CSE)-I	27560

- Special Allowance is given to role holders for recognizing their additional efforts. For Deans Rs. 5,000/- per month, For HODs Rs. 5,000/- per month and for departmental T & P Coordinators Rs. 1,500/- per month is given as special allowance.
- **Financial assistance** is provided to faculty members to pursue higher studies.
- **Incentive for Research Publications:** Institute offers research incentives for publications of research articles in national & international journals and conferences. This scheme is introduced in the institute to promote quality research and motivate faculty members to write research articles. Incentive for paper publication in National and international peer reviewed Journals is Rs. 2,500/-
- **Personal Accident Insurance (Group Insurance Scheme)**

- **Uniform to Class – IV Staff:** Institute provides *Two* sets of uniform with supporting accessories every year to all Class-IV employees i.e. peons, housekeeping staff, security staff, gardening staff.

- **Provision for EPF** is made for regular employees.182 faculty and staff are availing this scheme. The EPF scheme is extended to those who fall under the purview of the scheme as well as for those who are not eligible as per the criterion declared by the EPFO.

Cadre	**Number of employee covered under EPF**
Faculty	84
Staff Class – III	36
Staff Class – IV	62
Total	**182**

- **Gratuity Scheme** is available as per Government norms. Following faculty and staff members have availed it:

1. Prof. Nadagouda C. B.
2. Mr. Pakhare Shashikant S.
3. Ms. Kshirsagar Suvarna H.

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

Answer: 20.63

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 last five years

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
27	38	20	23	19

File Description	Document
Details of teachers provided with financial support to attend conferences,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

Answer: 8

6.3.3.1 Total number of professional development / administrative training programs organized by the Institution for teaching and non teaching staff year wise during last five years

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
4	6	16	7	7

File Description	Document
Details of professional development / administrative training programs organized by the Institution for teaching and non teaching staff	View Document
Reports of the Human Resource Development Centres (UGC ASC or other relevant centres).	View Document

6.3.4 Average percentage of teachers attending professional development programmes viz., Orientation Programme, Refresher Course, Short Term Course, Faculty Development Programme during the last five years

Answer: 47.92

6.3.4.1 Total number of teachers attending professional development programs, viz., Orientation Program, Refresher Course, Short Term Course, Faculty Development Programs year wise during last five years

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
29	40	50	62	99

File Description	Document
Details of of teachers attending professional development programs during the last five years	View Document
Any additional information	View Document

6.3.5 Institution has Performance Appraisal System for teaching and non-teaching staff

Answer:

Performance appraisal system (PAS) is designed for faculty and staff members. The PAS for faculty members includes performance of faculty members in areas such as Results, Student Feedback, Contribution in R & D, Co-curricular and Extra-Curricular activities and assessment by higher authorities. Minimum expectation levels are defined for each cadre addressing contributions appropriate to the cadre. Every faculty member submits a performance appraisal, designed to capture the performance in all spheres. As per minimum performance expectation guidelines defined in the Role Holders' meeting, the incumbent assistant professor should focus more on academics and teaching pedagogies. For Assistant professor having moderate experience between 2 – 5 years, apart from having better performance in academic content delivery and quality of results, one should try to establish good connect with industry, contribute in department level and institute level co-curricular and extra-curricular activities. Senior faculty members should focus on Research and Development activities and try to publish papers in reputed national and international journals. Also they should try to get sponsored projects from industries. Faculty members working at the level of Professor should try to get research grants by writing proposals to various agencies. The college administration addresses all the issues related to appraisal system of the staff and evaluates it. The faculty submits Self-Appraisal Report which is assessed by the Head of Department and Dean (Admin) and reported to the Principal. Low performing faculty members are counseled by Head of the department and Dean (Admin). Suggestions are given to overcome shortcomings and efforts are taken to motivate the faculty to perform better. In extreme cases letters of non-performance are given. Policy is defined for dealing with the cases of consistent non-performers.

Performance appraisal forms are separately designed for each cadre of nonteaching staff (Technical assistant, Clerk, peon, Housekeeping staff, security staff) addressing contributions appropriate for the cadre. Each staff submits his/her performance appraisal, which is assessed by head of the respective unit and reviewed every year.

Based on the performance in teaching, research contribution, institute and University level contribution etc. best performing faculty members from each department are felicitated with 'Best Faculty award' and 'Letter of Appreciation'. The 'Best Employee' is awarded from each cadre of non-teaching and supporting staff having excellent performance in that cadre. The institute has also started 'Best T & P Coordinator Award' from the year 2015.

File Description	Document
Any additional information	View Document

6.4 Financial Management and Resource Mobilization

6.4.1 Institution conducts internal and external financial audits regularly

Answer:

The institute has a well-established mechanism for conducting internal and external audits. Weekly audit is conducted every Wednesday by an external agency Mr. S. G. Ingale and Associates, Solapur. Also internal and external audit is conducted in every financial year to ensure financial compliance. Normally statutory financial audit is conducted in the month of April / May. Finalization of accounts is completed in May and audited statements are prepared in June duly signed by the Principal, Secretary and chartered accountant. Reports of auditing agencies are submitted to the Principal and the Managing committee of the institute.

As per the annual audit reports from the external auditing agency:

- The financial statements are prepared under historical cost convention on accrual basis
- Fixed assets are stated at cost of acquisition or construction less depreciation. Cost comprises of the purchase price and other attributable costs including expenses and financial cost during the construction period. Depreciation is provided as per the Written down Value method and as per rates and procedures laid down under the Income Tax Act 1961.
- Fees from students are recognized as income. Interest on fixed deposit is recognized as income at the end of year. Interest on savings accounts is recognized as income as soon as the same is credited by bank to savings account.
- Investments are stated at cost plus accumulated interest till the date of Balance Sheet.
- The college follows generally accepted accounting principles.

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

Answer: 42

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

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
3	5	29	4	1

File Description	Document
Any additional information	View Document
Details of Funds / Grants received from non-government bodies during the last five years	View Document

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

Answer:

The main source of funds for institute is the fees received from students. Directorate of Technical Education (DTE) governs all admissions in the institute. Policies for reservations and scholarships of Maharashtra Government are applicable to students admitted through centralized admission process. As per these policies, 100% fees of students from SC, ST, SBC, NT and VJ categories and 50% fees of students from OBC category is paid by Government in the form of scholarships. 50% fees of Economically Backward Open category students comes from Government. Approximately 65% of the total fees comes from Government without any predefined disbursement schedule.

Institute also uses its pool of expert faculty members and available infrastructure for generation of funds. The institute provides variety of testing and consultancy services to industries and institutions. Institute has a well defined policy for distribution of funds generated through such testing and consultancy activities. If material testing is done at the institute laboratories, 50% of the fees received goes to institute account and balance is distributed among faculty members and staff involved in the activity. For professional consultancy done by faculty members, 30% of the consultancy fees received goes to institute account and balance 70% amount is distributed among faculty members and staff involved in execution of the consulting activity.

Institute conducts paid co-curricular and extra-curricular courses, skill development activities of Central and State government for fund generation and utilization of its resources. 50% of the funds generated through such activities goes to institute account while balance 50% amount is distributed among resource person, faculty members and staff involved.

Institute also provides its IT infrastructure and set up for conducting online examinations like GATE. The infrastructure is provided for such examinations on holidays only and institute gets infrastructure utilization charges.

Every year, budget is prepared well in advance after taking into consideration requirements of every department. Each department prepares its budget based on the requirements such as equipment, computers and consumables required for the next academic year. The budget reviewed by role holders' committee, management and approved after necessary changes. As and when required, the institute makes a provision for advance/ additional funds. The Role Holders' committee discuss requirements and decide the priorities while allotting financial resources for various purposes also ensuring optimum use of available financial resources. The Governing Body studies annual expenditure, scrutinizes the budget and provides feedback for efficient use of financial resources. Department heads ensure procurement of suitable equipment with the right specifications at competitive, optimal prices. Budget utilization is periodically reviewed by the management and corrective measures are taken, if required. Financial audits are conducted by a chartered accountant every financial year to verify compliance with established processes.

Fixed Deposits, current and savings accounts are kept reserved for variety of expenditure. Daily cash flow statement, funds utilization records are prepared and submitted to management. The college has a well formulated financial policy which ensures effective and optimal utilization of finances for academic, administrative and development purposes which help ultimately in realizing the institute's vision.

File Description	Document
Any additional information	View Document
Link for 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

Answer:

Internal Quality Assurance Cell (IQAC) has devised and implemented various best practices in the institute such as:

- **Improving quality of Final Year student projects:** To improve quality of projects, committee has implemented following decisions.

1. HODs and faculty members are informed to visit the industries and identify project topics based on problems faced by industry.
2. Each project group should have an expert from industry as mentor to make the project industry-applied.
3. Each project group should maintain project diary and fill it weekly to ensure work consistency throughout the year.
4. The committee has decided to arrange project exhibition of all final year projects at the end of every academic year. These projects are assessed by industry experts and possibility of commercialization are

explored. Prizes are given to Three best projects per department. Students from First to Third year are made to visit the exhibition to make them aware of ongoing project works and giving them opportunity to continue some of the projects further.

5. As a part of knowledge transfer, end users are invited sometimes to see the projects. Solapur Municipal Commissioner Dr. Avinash Dhakane visited the institute on 15th May 2017. Projects from different departments related to Problems of Solapur and SMART CITY were presented before him.

As a result of this initiative, quality of final year projects improved a lot. Projects are becoming more industry oriented and applied. Some of the projects are deployed in the industry.

- **Improving student placements:** Following decisions are taken by the committee for improving student placements.

1. Soft-skill is introduced as a subject in the curriculum from SE onwards. Two hours of soft-skill training per week is given to every class. *Three* soft-skill trainers are recruited by the institute.
2. Two hours of Aptitude Training per week given to every class from SE. For this *One* Aptitude trainer is recruited by the institute.
3. Fifteen days of pre-placement workshop arranged every year in the month of June for the students entering into Final Year and for those who are interested in placements.
4. Company Specific Training arranged for eligible students before a company visits for campus recruitment.

This initiative has resulted into better placements.

- **Motivating students for Higher Education:** Following decisions are taken by the committee for motivating students for higher studies.

1. **Conducting GATE classes:** Extra classes conducted by institute faculty for the Final Year students appearing for GATE examination. GATE software as a practice for online examination is made available to the students. As a result, *Ninety Four* students qualified GATE examination till now in last six years.

1. **Formation of Study Abroad Cell:** The institute has formed Study Abroad Cell (SAC) for guiding the students to take admission in universities abroad. The cell guides the students for GRE, TOEFL and IELTS examinations. Interaction sessions with the alumni who are pursuing higher education abroad are arranged regularly. Till now *Twenty Five* students got admissions in various American and European universities.

File Description	Document
Any additional information	View Document
Link for 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

Answer:

For review of teaching-learning processes, the institute conducts **student feedback**. First feedback is after completion of approximately 30% of the syllabus. The second round of feedback happens at the end of semester. After first round, individual reports for faculty members are generated. A meeting of all faculty members in the department, Head of concerned Department and Principal is arranged to discuss issues raised

by students in the feedback. Instructions for improvements are given to faculty members and remedial methods for improvements are suggested. Newly joined faculty members are advised to attend lectures of senior faculty members, go through video lectures of faculty from IITs and NITs. Faculty members having problems with communication skills are asked to discuss with soft skill trainers of the institute.

Apart from student feedback, **leadership retreats** are arranged at regular intervals. This training-cum-meeting workshop ensures participation of management and all role holders to review teaching learning processes, structures and methodologies of operations. Leadership retreat aims at reviewing policies of the institute and setting targets for long term and short term goals. *Three* leadership retreats are conducted in last five years and discussions on quality concerned issues like academic processes, financial planning, reforms in teaching-learning activities, roadmap for accreditations are carried out during these meetings. Management representatives and role holders actively participate in the process of decision making and goal setting.

The institute has adopted many reforms in the teaching-learning process through deliberations in the role holders' meetings, such as

- **Extensive use of ICT tools for improved concept clarity to the students**

Covering at least 15-20% of the syllabus through video animations ensures in depth understanding of the subject to the students due to Audio-Visual presentations.

The two hard disks procured from NPTEL having video lectures of experts from IITs and NITs are available to all students and faculty members. This ensures imparting additional knowledge to the students.

Subject archives created by each department on the institute's server ensure availability of all study material to all the students. Faculty members deposit study material, notes, presentations, question banks, assignments of their respective subject on the archive.

- **Conducting study sessions for students of FE.**

Study sessions are conducted for weaker students. The department prepares time-table for study sessions and as per the schedule, students are made to seat in the class rooms, study a particular subject for three days. During these three days, respective subject teacher is present in the class room for solving problems faced by students. After these three days, a test is conducted to review performance of students. This method resulted into improvement in the results of FE students in final examinations.

- **Target reviews:**

Role holders' committee sets performance targets for each department at the beginning of every academic year through a meeting. This ensures fare and transparent policy of setting targets for the departments. Targets are reviewed at regular intervals. Final review meeting is conducted at the end of academic year and management representative and all role holders check compliance of targets.

File Description	Document
Any additional information	View Document
Link for Additional Information	View Document

6.5.3 Average number of quality initiatives by IQAC for promoting quality culture per year

Answer: 16.8

6.5.3.1 Number of quality initiatives by IQAC for promoting quality year-wise for the last five years

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
16	17	17	18	16

File Description	Document
Number of quality initiatives by IQAC per year for promoting quality culture	View Document
IQAC link	View Document

6.5.4 Quality assurance initiatives of the institution include:

1. ***Regular meeting of Internal Quality Assurance Cell (IQAC); timely submission of Annual Quality Assurance Report (AQAR) to NAAC; Feedback collected, analysed and used for improvements***
2. ***Academic Administrative Audit (AAA) and initiation of follow up action***
3. ***Participation in NIRF***
4. ***ISO Certification***
5. ***NBA or any other quality audit***

Answer: B. Any 3 of the above

File Description	Document
Any additional information	View Document
Details of Quality assurance initiatives of the institution	View Document
e-copies of the accreditations and certifications	View Document
Annual reports of institution	View Document

6.5.5 Incremental improvements made for the preceding five years with regard to quality (in case of first cycle)

and post accreditation quality initiatives (second and subsequent cycles)

Answer:

The institute always strives for achieving excellence in its academic and administrative practices. Many best practices are introduced during last five years. These best practices are regularly reviewed and refined based on the outcomes of a particular activity. At administrative level quality enhancement initiatives like **faculty performance appraisal system** is implemented since 2011-12.

- In initial format of faculty performance assessment, more credit was to student feedback and focus on quality of academic results was missing. Considering this, the performance appraisal forms redesigned in year 2013-14 after deliberations in the role holders' meeting.
- The new forms considered contribution of a faculty member for improvement in quality of academic results. To assess performance of faculty member for improving quality of academic results, a specially

designed metric is used. As per the metric, average of three years' result of same subject of same class was calculated. In the assessment year, number of students scoring above this benchmark average was a measure of improvement in the quality of academic results. This method had some drawbacks like variation in complexity level of question papers from one academic year to the other, variations in the method of paper assessment. As these parameters are not under control of the institute, the metric needed redesign.

- In academic year 2014-15, the performance metric redesigned such that average marks scored by students of top five engineering institutes in Solapur University in that assessment year in same subject are considered. This eliminated many drawbacks stated above.
- Simultaneously modifications and improvements done for the marks assigned to contribution of faculty member in co-curricular and extra-curricular activities. Based on involvement of a faculty member for execution of the activity, weightage of the activity defined and from this assigned weight, marks for that activity are calculated. This ensured justice to the faculty members who are putting more efforts and giving more time for execution of activities compared to those, who pays less time and attention for some of the activities.
- Separate performance assessment forms designed for faculty members from Science and Humanities department as their role in Engineering education is limited.
- Minimum expectation guidelines for performance of faculty members are set for each cadre.

As a part of making students more employable, institute has introduced and regularly reviewed quality initiatives like focused industrial training, projects based on industry problems, inviting industry experts as mentors to guide the student project groups.

The **focused industrial training** is taking good shape and giving outcomes like sponsored projects to the students, placements for students. A student from B.E. (CSE) of 2016-17 batch, *Mr. Nikhil Anvekar,* got a job offer from Emmersive Technologies Pvt. Ltd. before he completed his final year. The job offered to Nikhil by the industry is because of his performance during industrial training. The model of industrial training adopted by NKOCET is developed through efforts for a period of 3-4 years.

The institute has developed its **HR policy,** which is evolved from time-to-time through discussions in common faculty meetings.

File Description	Document
Any additional information	View Document

7.Institutional Values and Best Practices

7.1 Institutional Values and Social Responsibilities

7.1.1 Number of gender equity promotion programs organized by the institution during the last five years

Answer: 7

7.1.1.1 Number of gender equity promotion programs organized by the institution year wise during last five years

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
2	2	2	0	1

File Description	Document
Report of the event	View Document
List of gender equity promotion programs organized by the institution	View Document

7.1.2

1. Institution shows gender sensitivity in providing facilities such as:

1. Safety and Security

2. Counselling

3. Common Room

Answer:

Report of Gender Sensitivity

1. **Safety and security**

The Institute takes many measures regarding safety and security of the students specially girl students.

- It is compulsory for the students to wear Identity card.
- There is a strong security system in the campus, which consists of a team of well-trained security guards.
- Attendance is monitored strictly; if a student doesn't report to the class, his/her parents are informed.
- If any student misbehaves, parents are informed and strict action is taken.
- To add to this there is an Anti-Ragging cell to avoid ragging practices in the college.
- Institute provide vehicle in medical emergency situation.

2. Counseling

Counseling facility is provided to the students since their First Year of Engineering. A Psychological Counselor is appointed by the Institute for the same. Students share their personal and academic problems and are guided by the counselor.

3. Girls Common Room

There are in all 3 well maintained Girls Common Room facilities provided for students, to rest when they are not feeling well.

File Description	Document
Any additional information	View Document

7.1.3 Alternate Energy initiatives such as:

1. Percentage of annual power requirement of the Institution met by the renewable energy sources

Answer: 45

7.1.3.1 Annual power requirement met by the renewable energy sources (In Kilowatt)

Answer: 36
7.1.3.2 Total annual power requirement (In Kilowatt)

Answer: 80

File Description	Document
Any additional information	View Document
Details of power requirement of the Institution met by renewable energy sources	View Document

7.1.4 Percentage of annual lighting power requirements met through LED bulbs

Answer: 14.81

7.1.4.1 Annual lighting power requirement met through LED bulbs (In Kilowatt)

Answer: 4
7.1.4.2 Annual lighting power requirement (In Kilowatt)

Answer: 27

File Description	Document
Any additional information	View Document
Details of of lighting power requirements met through LED bulbs	View Document

7.1.5 Waste Management steps including:

- ***Solid waste management***
- ***Liquid waste management***
- ***E-waste management***

Answer:

Waste Management Steps including:

a) **Solid Waste Management**:

Bio degradable solid waste is collected from college campus on daily basis then dumped in pits, which are then covered with locally available soil in alternate layers, till pit is completely filled. When one pit is filled completely then second pit is used for dumping. After 45 to 60 days good quality compost is obtained which is used as manure for the trees in the campus.

Apart from this old newspaper, waste papers and cartons are sold to the local vendor.

b) Liquid Waste Management:

i. A constructed wetland is provided to treat the liquid effluent of the campus. A trench of about 100 m length, 1 m width and 1 m depth is provided for liquid waste treatment. Alternate layers of gravel and sand are provided and liquid is made to pass through these layers using vertical baffling system. This filtered liquid is used for watering plants in the campus.

ii. The waste water from RO Water Filtering plant collected in two underground tanks of each 10000 liters capacity is used for watering trees & plants in the campus.

c**) E-waste management:**

E-waste is not dumped in the Institute campus for example Old batteries of UPS are disposed by buyback while purchasing new batteries.

7.1.6 Rain water harvesting structures and utilization in the campus

Answer:

Rain Water Harvesting:

The Institute is environmental conscious and works towards the sustainability of environmental resources. Solapur city and its surrounding regions come under low rainfall zone. As there is an acute shortage of water in summer season it is important to utilize water in the most efficient way. Taking into consideration this problem of water shortage, Institute has designed a rain water harvesting system for one of the building. The rain water collected on the roof top of C' building is carried through a down take pipe which is collected in the collection tank. This tank is constructed underground by using Reinforced cement concrete to avoid leakages. Collected water is then utilized for watering the trees and lawns in the campus. This initiative not only helps in conserving rain water and utilizing it for basic purposes but also fulfils a social responsibility.

The students of Civil Engineering Department have completed a project on Rain Water Harvesting.These students have prepared a detailed report and related drawings for implementing this concept for the remaining buildings in the Institute namely A, B, D, E, Workshop, Canteen and Hostel building in the campus. The Institute is located in a area where very hard basalt stone strata is available at shallow depth. Due to this ground water recharge by rain water is practically not feasible.

File Description	Document
Any additional information	View Document

7.1.7 Green Practices

- ***Students, staff using***

a) Bicycles
b) Public Transport
c) Pedestrian friendly roads

- ***Plastic-free campus***
- ***Paperless office***
- ***Green landscaping with trees and plants***

Answer:

Green Practices

I) Students, staff using

a) Bicycles: College is about 5 km away from main city.Less than 5% of students use bicycle for coming to college.

b) Public Transport: The Institute has outsourced bus facility. About 50% of the students use bus facility.

II) Green landscaping with trees and plants:

Institute has developed 16 lawns spreading over area of 3229.82 sq. m. Different tree species are planted along the boundary of the entire campus. There are 1022 total no. of trees in the college campus. Students overwhelmingly participate in the clean and green campus activities. Tree plantation activities are conducted. This year various activities and competitions such as cleanest hostel room for boys and girls hostels, essay competition on innovative ways for spreading the message of hygiene are conducted to create awareness amongst the students.

III) Less Paper Campus:

The Institute is trying its level best to minimize use of paper in the campus. Information and Notices are passed on to the students and faculty members through E-mail and Whats app groups.

File Description	Document
Any additional information	View Document

7.1.8 Average percentage expenditure on green initiatives and waste management excluding salary component during the last five years

Answer: 0.27

7.1.8.1 Total expenditure on green initiatives and waste management excluding salary component year wise during last five years(INR in lakhs)

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
1.50	1.50	1	1	1

File Description	Document
Details of expenditure on green initiatives and waste management during the last five years	View Document

7.1.9 Resources available in the institution:

1. ***Physical facilities***
2. ***Provision for lift***
3. ***Ramp / Rails***
4. ***Braille Software/facilities***
5. ***Rest Rooms***
6. ***Scribes for examination***
7. ***Special skill development for differently abled students***
8. ***Any other similar facility (Specify)***

Answer: C. At least 4 of the above

File Description	Document
Resources available in the institution for Divyangjan	View Document
link to photos and videos of facilities for divyangjan	View Document

7.1.10 Number of Specific initiatives to address locational advantages and disadvantages during the last five years

Answer: 10

7.1.10.1 Number of specific initiatives to address locational advantages and disadvantages year wise during last five years

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
4	2	2	1	1

File Description	Document
Any additional information	View Document
Number of Specific initiatives to address locational advantages and disadvantages	View Document

7.1.11 Number of initiatives taken to engage with and contribute to local community during the last five years (Not addressed elsewhere)

Answer: 2

7.1.11.1 Number of initiatives taken to engage with and contribute to local community during year wise during last five years

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
1	1	0	0	0

File Description	Document
Report of the event	View Document
Details of initiatives taken to engage with local community during the last five years	View Document

7.1.12

Code of conduct handbook exists for students, teachers, governing body, administration including Vice Chancellor / Director / Principal /Officials and support staff

Answer: Yes

File Description	Document
URL to Handbook on code of conduct for students and teachers , manuals and brochures on human values and professional ethics	View Document

7.1.13 Display of core values in the institution and on its website

Answer: Yes

File Description	Document
Provide URL of website that displays core values	View Document

7.1.14 The institution plans and organizes appropriate activities to increase consciousness about national identities and symbols; Fundamental Duties and Rights of Indian citizens and other constitutional obligations

Answer: Yes

File Description	Document
Details of activities organized to increase consciousness about national identities and symbols	View Document
Any additional information	View Document

7.1.15 The institution offers a course on Human Values and professional ethics

Answer: Yes

File Description	Document
Provide link to Courses on Human Values and professional ethics on Institutional website	View Document

7.1.16 The institution functioning is as per professional code of prescribed / suggested by statutory bodies / regulatory authorities for different professions

Answer: Yes

File Description	Document

Any additional information	View Document
Provide URL of supporting documents to prove institution functions as per professional code	View Document

7.1.17 Number of activities conducted for promotion of universal values (Truth, Righteous conduct, Love, Non-Violence and peace); national values, human values, national integration, communal harmony and social cohesion as well as for observance of fundamental duties during the last five years

Answer: 7

File Description	Document
List of activities conducted for promotion of universal values	View Document
Any additional information	View Document

7.1.18 Institution organizes national festivals and birth / death anniversaries of the great Indian personalities

Answer:

Every year institute organizes national festivals such as Independence Day, Republic Day, Maharashtra Day and birth / death anniversaries of the great Indian personalities. Following is the sample list of birth / death anniversaries organized for which photographs are available.

DATE	GREAT INDIAN PERSONALITY NAME
11/04/2016	Mahatama Joytiba Phule
01/07/2016	Vasantrao Naik
03/08/2016	Kranti Sinh Nana Patil
15/10/2016	Valmiki Jayanti
22/01/2015	Netaji Subhchndra Bose
12/03/2015	Yeshwantrao Chavan
01/08/2015	Bal Gangadhar Tilak and Annabhau Sathe
30/10/2015	Vallbhail Patel

File Description	Document
Any additional information	View Document

7.1.19 The institution maintains complete transparency in its financial, academic, administrative and auxiliary functions

Answer:

The management of the institute strongly believes in participative management and transparency in administration. The institute is run by the faculty members and it is evident from its policy framing procedure. Policies that are framed at NKOCET are not any one individual's creation. Lot of discussions and brainstorming goes into Policy formation. The Policies are made by team of employee representatives to govern for a collective, smooth functioning of the institution. Transparency in decision making and involvement of all stake holders in the process of planning and execution forms strong basis for the development of the institute and a reason for strong faith of society for the institute.

Transparency in Administration:

The institute has a role holders' committee which meets every week to frame and review policies for academic administration. The role holders' committee also interacts about administrative issues and policy

decisions on regular basis with the management representatives through Video Conferencing setup as well as through meetings on occasions like Leadership Retreats. Employees are regularly updated about decisions of Role Holders' committee through circulation of the minutes of meetings. Social media platforms like WhatsApp are used to circulate important decisions and guidelines among the employee groups. The institute shares its achievements, proud moments with all stake holders through social media platforms like WhatsApp, Facebook and keep them updated about the activities happening in the campus. The Governing Body and Local Managing Committee of the institute meets at regular intervals and discuss various financial and administrative issues.

Transparency in Financial functions:

Role holders' committee of the institute is equally instrumental in financial planning and budgeting of the institute. Heads of department are keenly involved in the process of annual budget preparation. The process of procuring material and equipment is carried out by respective department as per the standard operating procedure defined. The process involves generating requirement of material and/or equipment by respective department, three quotations from market, preparing comparative statement and recommending vendor quoting lowest rates and on the basis of quality. On recommendation from the department, purchase order is prepared by central store. Upon receipt of material and/or equipment, it is sent for inspection to the respective department. Payment for purchased item is released only after receiving satisfactory inspection report from the department.

Institute is exercising cashless system at its account section since 2015. Students pay their fees and other charges to account section using card payment through the POS machine installed at the cash counter.

Transparency in recruitment:

All recruitments are done by the institute as per AICTE and Solapur University norms. The institute publishes advertisement in leading newspapers for recruitments for the vacant posts. After receiving applications, they are scrutinized by the scrutiny committee of the respective department and eligible candidates are called for interview. A panel comprising of senior faculty members from the department and management representative is formed for the recruitment process. Recruitments are done as per the recommendations of the panel.

Transparency in student activities:

Student council plays an important role in planning and execution of the activities with the help of departmental student associations. The student council is formed as per guidelines of the university.

7.2 Best Practices

7.2.1 State at least two institutional best practices (as per NAAC template)

Answer:

Summary of Two Best Practices

The Institute has made its mark by always being a step ahead of other Technical Institutes. It has its set of Twenty Five best practices which have helped the Institute to come up with glorious achievements in the form of GATE results, Placements and Students pursuing Higher Education in India and Abroad. Two prominent best practices are presented here as example.

Best Practice 1: Soft Skills Enhancement Program

Soft Skills is incorporated in curriculum as a supplementary course, which focuses on enhancing communication skills, employability skills and corporate etiquettes. The Soft Skills Program is well structured which prepares the students for Campus Placement drives through regular practice of Group Discussions, Extempore Speech practice sessions, Resume building, Mock interview practice sessions, etc. The Institute has employed Three full time Soft Skill Trainers for this initiative. "Course Material on Professional Communication" has been prepared by the In-house Soft Skills Training team. Pre-Placement Workshop is conducted during vacations and Company Specific Training is provided before the Placement Drives. This Best Practice has resulted in consistent Placements in last five years.

Best Practice 2: Efforts for Higher Education

a) GATE Classes

Special GATE classes are conducted by the Institute Faculty for Final Year Students in the month of December on daily basis and Mock tests are also conducted. NPTEL videos of GATE subjects are provided to the students for self study and books are made available through book loan facility. Previous year solved GATE papers and notes are uploaded on archives so that students can access them easily. These efforts have resulted into excellent GATE results every year.

b) Study Abroad Cell (SAC)

SAC is established to guide the students to prepare for exams like GRE, TOEFL and IELTS and help them for getting admissions for higher education abroad. Institute guides them through Application Process, helps in selecting the university, guides for the Visa process, also in framing the Letter of Recommendation and Statement of Purpose and how to apply for Scholarship and get educational loan. Students are taken on Study Abroad Education Tours (e.g. EDWISE Pune, LinkedIn tour Mumbai) where they get a chance to connect with the representatives of different Foreign Universities. Till date 25 students got admissions for higher studies in Universities Abroad.

Overall these practices have helped the Institute to achieve important milestones and paved a successful path in student development.

The detailed write-up of two best practices successfully implemented by the institution as per NAAC format is uploaded separately as additional information.

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File Description	Document
Any additional information	View Document
Link for Additional Information	View Document

7.3 Institutional Distinctiveness

7.3.1 Describe/Explain the performance of the institution in one area distinctive to its vision, priority and thrust

Answer:

The Institute's Vision is "Locally Rooted, Globally Competent Education"

Commensurate to its vision statement, Institute has prepared its mission and quality policies. As per NASSCOM survey, only 10% engineering graduates are employable in MNCs. The Institute has accepted this as a challenge and devised the system of Globally Competent education, with four dimensions:

Dimension – 1.Acquiring Knowledge

To impart real knowledge to students:-

- To strive for excellence in our teaching – learning process, encouraging creativity and critical thinking. Following initiatives are implemented:--
  - For concept clarity Videos and animations are used as effective tools while teaching.
  - Subject wise archives containing Video lectures, Animations, previous Exam Question Papers, MCQs with answer keys and Notes are made available.
  - To enhance learning ability of students NPTEL video lectures, Spoken Tutorial are provided.
  - Institute has achieved excellent academic results in Solapur University since its inception. Every year, University declares ten ranks per department for final year. There are fifteen Engineering Colleges in University. Its pride to mention here that, maximum ranks in university are bagged by our students. Following table depicts achievement of the students.

Year	No. of University Rankers				
	CIVIL	MECH	ENTC	CSE	ELECT
2016-17	2	5	1	2	5
2015-16	8	5	3	-	5
2014-15	3	4	2	3	2
2013-14	2	2	1	2	Course started in AY 2010-11
2012-13	5	2	-	1	
2011-12	4	1	2	3	

  - The students showed best performance in GATE exam. Till date, **94** students qualified GATE. **25** students got admissions in Universities abroad by qualifying GRE/IELTS/TOFEL exams. More than **240** students are pursuing/completed PG.

Dimension – 2.Soft Skill Development

The mission statement is "Providing holistic education for the student's personality development"

  - A novel concept of soft skill training is introduced for engineering students which comprises of 4 modules meant for personal and professional advancement of future engineers.(Details are provided in Best Practice No.1)
  - Aptitude Training:-To impart training on aptitude, weekly two hours have been included in time table.

Dimension – 3.Strong Industry Connect

The mission statement is "Pursuing Industry –Institute interaction"

- Third year engineering students from all branches undergo two weeks Industry training at various industries across the state. It is ensured that students undergo focused industrial training under faculty guidance
- Students are motivated to do their final year projects on the problems from industries or a project useful to society and having local relevance.
- A students' project group is allocated to an Industry Expert who is their co-mentor.
- It is mandatory for Faculties to undergo one month industrial training within two years of joining.
- To provide better industrial training to the students and get project sponsorship, MoUs are signed with different Industries by each department.

Dimension – 4.Co curricular Courses

- To enhance additional technical skills required by industries, every department conducts two co-curricular courses for students.

The end result of this globally competent education can be clearly seen through the placements of last few years.

Year	No. of Students Placed
2016-17	202
2015-16	128
2014-15	93
2013-14	71

File Description	Document
Any additional information	View Document
Link for Additional Information	View Document

Extended Profile

Programme

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

Answer: 1394

Number of self-financed Programmes offered by college

Answer: 09

Number of new programmes introduced in the college during last five years

Answer: 04
Student

Number of students year wise during last five years

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
2040	1997	1915	1730	1569

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

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
1240	1165	1080	1017	866

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

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
521	532	473	368	291

Total number of outgoing / final year students

Answer: 530
Academic

Number of teachers year wise during last five years

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
128	131	134	117	103

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

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
128	131	134	117	103

Number of sanctioned posts year wise during last five years

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
128	131	134	117	103

Total experience of full-time teachers

Answer: 980.07

Number of teachers recognized as guides during last five years

Answer: 29

Number of full time teachers worked in the institution during the last 5 years

Answer: 94
Institution

Total number of classrooms and seminar halls

Answer: 35

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

Answer:

2016-17	2015-16	2014-15	2013-14	2012-13
438.23	494.27	468.47	531.62	336.08

Number of computers

Answer: 633

Unit cost of education including the salary component(INR in Lakhs)

Answer: 0.86

Unit cost of education excluding the salary component(INR in Lakhs)

Answer: 0.29

Conclusion

Additional Information :

It's really a pride to share the innovative practices evolved through participative efforts.

Group A: Enhancing Students' Academic Performance –

1. Book Bank Scheme for Every Student.
2. Additional Lectures for Difficult Subjects.
3. Study Session for FE & DSE Students.
4. Archival of study material.
5. Teach 20% of syllabus using video / animation.
6. Fabulous academic prizes to University Rank holder students.
7. Well planned counseling for all new entrants.
8. Student Orientation.
9. Sufficient Preparatory Leave.

Group B: Enhancing Students' Employability –

1. Soft Skill as a subject in curriculum.
2. Weekly Two hours of aptitude training from SE onwards.
3. Industry oriented co-curricular courses.
4. Focused industrial Training.
5. Final year projects on industry problems.

6. Industry mentor for projects.
7. Final year project exhibition.
8. One month industrial training for faculty members.
9. Small group of mentor & mentees where alumni work as mentor.

Group C: Enhancing Student's Ability to Pursue Higher Education –

1. Extra classes for GATE Examination.
2. Guidance for GRE and TOEFL examinations.
3. Tie-up with Foreign Institutes.

Group D: Institute's Social Responsibility –

1. Hand holding for Polytechnics & Junior Colleges.
2. Felicitation of innovators on Institute Foundation Day.

Group E: Faculty Motivation & Welfare

1. Faculties are given incentives for research publication.
2. Faculties are sponsored to pursue Ph.D. in NIT(s)/IIT(s) & institutes of excellence.
3. 50% Tuition Fee waiver for wards of employees.
4. Faculty to faculty knowledge & experience sharing activity.
5. Faculty induction program.
6. Participative management system.

Concluding Remarks:

NKOCET is known for its strong teaching-learning process where lot of precedence is given on practical and real knowledge acquisition. Every year almost 50 percent university ranks are bagged by NKOCET students. The institute has also left its footprints in the top-notch MNCs by placing Competent Engineers.

Focused industrial training and sponsored projects develop technical skills leading towards Industry-Ready Engineers. Emphasis is given to applied projects based on industry problems.

The highly qualified and experienced faculty members are committed to create a congenial student friendly environment.

The Institute encourages students for higher education through GATE, GRE, TOEFL and IELTS. It's been a remarkable achievement for the institute from Tier II city like Solapur as *twenty five* students have got admitted in renowned Universities of the world and *Ninety Four* students qualified GATE examination uptil now.

NKOCET has been a major source for renowned industries through which quality Engineers are recruited. The Institute has a strong Industry-Institute connect.

Along with Technical skills, the institute provides Soft Skills and aptitude training to sustain in the challenging and competitive professional world. The institute also encourages student's innovation and creativity.

The institute also takes efforts for social development under "Institute Social Responsibility" (ISR).

All these efforts have culminated into best university results, enhanced placements, conducive research environment evident through many research publications and many faculty getting Ph.D, increased competitive examination results, high faculty retention ratio. The participative management and dedicated efforts from faculty, staff and students has set new benchmark in Engineering Education.