



# **SELF STUDY REPORT**

**FOR**

**2<sup>nd</sup> CYCLE OF ACCREDITATION**

**PRADNYA NIKETAN EDUCATION SOCIETY NAGESH  
KARAJAGI ORCHID COLLEGE OF ENGINEERING AND  
TECHNOLOGY, SOLAPUR**

**GUT NO. 16, SOLAPUR TULJAPUR ROAD, TALE HIPPIGARA, SOLAPUR  
413002**

**[www.orchidengg.ac.in](http://www.orchidengg.ac.in)**

**Submitted To**

**NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL**

**BANGALORE**

**October 2023**

# 1. EXECUTIVE SUMMARY

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## 1.1 INTRODUCTION

The trust, Pradnya Niketan Education Society, Pune has been founded by 14 highly educated eminent Technocrats, Bureaucrats and Entrepreneurs who have envisioned transformation of society through education and to serve for welfare of the people. Pradnya Niketan Education society Pune's Nagesh Karajagi Orchid College of Engineering & Technology, Solapur (NKOCET) started from the academic year 2008-09. The NKOCET has spread over picturesque, sprawling land of 10.6 acres in the vicinity of Hipparga Lake in Tale-Hipparaga, Solapur. It has emerged as a preferred knowledge destination for aspiring Engineering students. NKOCET provides excellent engineering education and creates globally competent technocrats. NKOCET has added many feathers in its cap through its journey. 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 the country by being in the list of top 250 colleges of India consistently in 2014 and 2015 by Digital Learning Magazine. NKOCET has been ranked as Platinum band institute in AICTE-CII survey of best industry linked Technical Institution for three consecutive years i.e. 2018-19, 2019-20 and 2020-21 & our Mechanical Engineering Department was shortlisted for the final round of best industry linked Institute for the years 2019-20 and 2020-21.

NKOCET is known for its strong teaching-learning process where lot of precedence is given on practical and real knowledge acquisition. The institute has not only made its mark in the affiliated university through excellent academic results but also left its footprints in the top-notch MNCs by placing competent Engineering graduates. With the effective use of ICT, the teaching learning process has been transformed, wherein students are made to learn through NPTEL, MOOCs courses, spoken tutorials, video recorded faculty lectures, animations, simulation software. Along with these practices, focused industrial training, sponsored projects develop their engineering skills leading towards Industry-Ready Engineers. The institute is striving its level best to produce first day ready Engineer's not only by giving applied knowledge but also enhancing employability quotient of students by improving their technical skills through add-on courses, industrial training, industry oriented project and through a well-structured soft skill development.

### **Vision**

To emerge as a leading Technological Institute ensuring Academic Excellence, fostering industry readiness and developing globally Competent Technocrats

### **Mission**

- To strive for excellence in our teaching-learning process, encouraging creativity and critical thinking
- Strengthening industry-institute interaction
- Providing holistic education for the students' personality development
- To imbibe universal values of respect, commitment and team spirit
- Providing employable education

- Promoting innovation, research and consultancy

## 1.2 Strength, Weakness, Opportunity and Challenges(SWOC)

### Institutional Strength

Our institute has following strengths

- **Visionary Management:** The management is proactive and transparent approach in advocating policies and developing the institute in tune with the changing needs of the stakeholders and the society at large.
- **State Of Art Laboratories And Infrastructure:** Spacious and beautiful campus with well-equipped laboratories, secured hostel facilities for boys and girls with good sports facilities.
- **Student Centric Environment:** Special efforts for student placements, coaching for exams like GATE, GRE, TOFEL and IELTS etc.
- **Excellent Library Facility:** The institute has one of the best library facilities in the region with sufficient books, print journals and access to online databases in relevant fields. Digital library with access to national and international e-journals
- **Support to faculty** for pursuing higher studies leading to Ph.D.
- **Well planned and organized** Student Training Program and Value Addition Programs
- **MoU** with industries for student centric programs
- **Well-guarded and safe environment for students on campus**
- **Co-curricular and extra-curricular activities** for holistic development of students
- **Mentoring system:** Student support systems in the form of mentoring and counseling are provided.

### Institutional Weakness

- **Student Input Quality:** Most of the students come from rural background and have weak language and IT skills.
- **Lack of industry exposure:** The presence of industrial belt with MNCs, big corporate houses is lacking in this area.
- **Restriction on Academic Flexibility:** As institute is affiliated to university, we have limitations for designing curriculum as per needs of industries.

### Institutional Opportunity

- **New Education Policy:** To be a part of the cluster of educational institutions offering inter-disciplinary/multi-disciplinary education, academic bank of credits and multiple entries/exits for the students.
- **Collaborative Research with Corporate World:** The institute imparts high quality learning in all major branches of engineering. The institute can offer advanced programs that facilitate inter-disciplinary and transdisciplinary learning and research at the highest level.
- **Strengthening Alumni Network:** To enhance the academic, placement and entrepreneurship active
- **Centre of Technology Transfer:** To grow as a Research Institute offering PG and PhD programmes

and as a center for technology transfer.

- **NIRF Ranking:** To achieve commendable NIRF Ranking.
- **Academic Autonomy:** To achieve academic autonomy, thereby acquiring freedom to design curricula involving research, software training, project/problem based learning, sandwich pattern courses and extensive industry interaction.
- **Tie Up With International Institutions:** To strengthen tie-ups with International Institutions and Universities so as to gain global exposure for students and faculties through hybrid degree programmes, exchange programmes, research projects, summer schools and internships.

### **Institutional Challenge**

- **Geographical disadvantage:** The Institute is located in Tier-II/ III city, Solapur, limitations to attract the talented- students and diverse faculties with industry experience from national and global regions. There is absence of industrial area in the vicinity.
- **Quality placement and internships in Core Engineering Branches:** There are no big MNCs nearby and it is also difficult to attract core engineering companies for placement with higher package.
- **Fewer admissions in some programs:** Fewer Admissions due to declining interest of students in some of the core branches of engineering.
- **Increase in Autonomous Institutes:** The affiliated Engineering Institutes in the vicinity are getting autonomous status creating challenges for admissions and retaining the faculty in highly demanding branches.
- **Student's interest in Entrepreneurship and Research:** The societal mindset in the region is to get a job post degree completion, resulting in lack of the student's interest in entrepreneurship as a career.
- **Faculty Retention in Soft Engineering Branches:** To get and retain the faculty for Computer Engineering because of the growth in industrial opportunities.
- **To produce quality publications:** Admission to PG programs are decreasing and we don't have our own Ph.D. programs. This has created a hurdle to pursue academic research and publishing articles in good quality journals.

## **1.3 CRITERIA WISE SUMMARY**

### **Curricular Aspects**

Our Institute is affiliated to Dr. Babasaheb Ambedkar Technological University (DBATU). Institute follows the curriculum prepared by the affiliating University. The University regularly updates its curriculum for UG and PG programs to meet the required industrial needs.

DBATU publishes academic calendar before commencement of each semester. In line with University calendar, our Dean Academics prepares institute academic calendar. All HoDs prepares their respective departmental academic calendar in line with Institute academic calendar. Our curriculum comprises of Basic

Science courses, Core Engineering Science courses, Emerging Technology courses, Professional courses which are distributed as core and elective courses with details of learning, along with Open Electives and Project Work. The curriculum includes internship at every year and mini project at second year and third year to make student compatible to industrial needs. Total 1646 students completed internship or project work in last academic year. Courses are mapped with 12 Program Outcomes (POs) and gaps are identified. The curriculum is formulated and reviewed regularly. The teaching learning process is effective. The analysis for the attainment of the PO and Program Specific Outcomes (PSO) is done through the curriculum. In last five years total 165 NPTEL/MOOCs/ add-on courses were conducted to bridge the gap between industry and academia. Total 8000 students completed MOOC/Add-on courses in last five years to update their knowledge in various areas of their field. To inculcate human values in the students, many faculty members completed Universal Human Values course designed and conducted by AICTE. Many students have completed project related to environmental issues and also various activities have been conducted through NSS for Environment and Sustainability. The feedback has been taken on academic performance and facility from various stakeholders such as student, parent, teacher, alumni etc. Student's feedback is conducted twice in a semester to improve teaching learning process. The analysis of all feedback has been carried and action was taken on feedback received from various stakeholders.

### **Teaching-learning and Evaluation**

Pradnya Niketan Education Society Punes' Nagesh Karajagi Orchid College of Engineering and Technology, Solapur is affiliated to the State Technological University of Maharashtra, Dr. Babasaheb Ambedkar Technological University, Lonere (DBATU). In general, our institute is destination for Engineering aspirants of Solapur and Marathwada region of Maharashtra.

To enhance the teaching learning process, institute has taken various measures like promoting faculty to upgrade their qualification (Ph.D) by giving study leaves to complete the course work. It helped faculty to complete their research at reputed institutes like NIT. Around 25% of the faculties possess Ph.D. Degree. To motivate the teaching and non-teaching staff, institute felicitate the best performing faculty member from each department, non-teaching & menial staff.

The learning experiences are enriched through experiential learning, participative learning, problem-solving methodologies and integration of ICT tools. The industry sponsored laboratories like Solar research center of La foundation Dassault system, E-Yantra Lab of IIT Mumbai and add on courses like AutoCAD, CATIA, SQL, SCADA etc. helps our students for hands on experience. The participation of students in various competitions like SAE Baja, Akruiti, KPIT Sprakle and Smart India Hackathon give exposure to current industry problems. The students are motivated to takes industry sponsored projects and at the end of academic year project exhibition is arranged. The best projects from each department are selected and awarded.

The institute follow the guidelines set by affiliating University for the evaluation. Students are evaluated by continuous assessment and end semester examination. Continuous assessment includes 3 tests exams and are conducted at the institute level. The external assessment includes end semester examination, which is

conducted by affiliating University.

Each course is planned and delivered to achieve stated objectives and outcomes. CO-PO attainment is calculated for each course using different assessment tools. Attainment level of all COs is obtained based on the student's performance in the internal and external examinations. Course exit survey is taken from students. Gap analysis is done and corrective measures are implemented. All departments have defined PSO and added many co-curriculum activities. The outcome of all these activities is the continuous improvement in University results and attainment of COs and POs

### **Research, Innovations and Extension**

Research and innovation is one of the emerging strength of NKO CET. The institution has developed a research ecosystem that promotes research and innovation among students and faculty members. Institute R and D policy is in place for giving financial assistance to faculty and students to file IPRs, publish and present research papers in journals and international conferences.

Recently Institute has got approval from our affiliating University to start research Centre for Doctoral program in Civil and Mechanical Engineering. As a result of the research ecosystem, more than 200 research papers were published, more than 15 patents were filed and published (one granted) and we have fetched research grant of more than 2 crores from various government and non-government organizations in last five years. The Institute has established Innovation Cell (IIC) for creating awareness about IPRs, entrepreneurship and research methodology. In last four years IIC, NKO CET has been awarded with 3, 3, 3.5 and 2-star rankings from MIC, Ministry of Education, Govt. of India. The institute also participates in the ARIIA ranking every year and has been categorized as a promising band by ARIIA, India.

The institute conducts extension and outreach activities for the holistic development of our students through our NSS unit on regular basis to sensitize them to the social issues. Industry connects and MoU gives the research and innovation ecosystem an edge. Institute has signed 32 MoUs in last five years and carried collaborative activities with various industries for student training, field projects, research etc. Some of the prominent industries are La Foundation Dassault system, Tata Technologies, Zensar Technologies and Maharashtra Pollution Control Board (MPCB) etc.

### **Infrastructure and Learning Resources**

The infrastructure required for teaching learning is available in all the departments and it is in-line with the norms of AICTE. It includes classrooms, tutorial rooms, laboratories, seminar hall, departmental library and others. Institute has 35 ICT enabled classrooms, 8 tutorial rooms and 6 seminar halls. The language laboratory is set up with state-of-the-art audio-visual equipment to aid in imparting language skills. There are 56 laboratories well equipped with state of the art equipment and facilities with safety measures like fire extinguishers, first aid box etc. Labs have sufficient licensed software and open source tools to cater the requirements of curriculum. Institute has Central workshop with advanced facilities including CNC machine.

Institute has 675 computers, 300mbps internet connectivity Wi-Fi facility and centralized firewall and 24x7 power backups with UPS systems. The built-up area of the library is 805 sq. m. Separate reading facility is

provided for Staff, boys, girls, and research scholars. The library holds collection of 60134 book volumes comprising 6729 book titles in the stacking area. In the reference section, there are 1445 reference books, and 65 national & e-journals are made available for the users. The library has a separate Digital library section, equipped with an adequate number of computers for access to various e-resources.

Corrective actions are initiated to maintain equipment and laboratory setup in working condition. Maintenance of laboratory equipment's is carried on regular basis. Maintenance of buildings, classrooms, seminar halls, and laboratories is carried out periodically. All outdoor and indoor sports facilities are made available to the students. Institute has canteen facility, clean drinking water with an RO system, institute is making use of alternative energy sources (36 kW Solar System is installed in campus).

### **Student Support and Progression**

NKOCET provides necessary support facilities and environment to enable the students to achieve designed outcomes like, Placement/Entrepreneur/Higher studies. As per the norms of the Government, Institute supports all eligible Students to apply for scholarships within stipulated period of time, freeship is also provided by the institute to the needy students. In last five years an average 80% of students have availed scholarships and freeship from the government and non-government organizations.

The training for Soft skills, Language and Communication Skills, Life skills and ICT/Computing skills is given to the students for their overall development. In last five years 63.20 % of students are benefited by this facility. Institute also provides guidance competitive examinations such as GATE, GRE, TOFEL, IELTS and MPSC etc.

Institute has a transparent mechanism for timely Redressal of students' grievances including sexual harassment and ragging. The menace of ragging is viewed very seriously and Anti-Ragging Cell takes all necessary measures to curb the ragging within the campus. The Placement Cell is proactive and has organized several skill development programs, career guidance and campus drives to facilitate the placement of the students. The average placement for last five years is 62.41 %. Since last five years, students got qualified in state/national/international level examinations. The Institute alumni are serving as members of various administrative bodies and academic committees in our institute. The National Social Service scheme activities, College Magazine, Sports & Cultural activities are held both at College and Inter collegiate level annually. Institute has organized total 172 sports and culture events in last five years. Alumni have contributed to their Alma Mater not only financially but also for arranging Guest Lectures, student's placements, student Internships, Projects and industrial Visits. All these initiatives have led for building a productive environment to the students for making them to survive in today's competitive environment.

### **Governance, Leadership and Management**

NKOCET has a transparent governance and management with motto of Locally Rooted Globally Competent Education. The top management, Principal and faculty members work in synergy for implementing vision and mission of the institute. The leadership provides road map for achieving excellence in technical education and the academic and administrative processes are geared towards realizing this vision. 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 such as Role Holders' Committee, IQAC, Departmental Advisory Board (DAB), The Academic Monitoring Committee (AMC), Training and Placement (T&P) Cell etc.

NKOCET has a well-established organizational structure for its governance and smooth functioning. Various bodies such as Governing body (GB), College development committee (CDC), Internal Quality Assurance Cell (IQAC), six departments, Institute level and Department level committees are formed with representation from all stakeholders. Department Advisory Boards (DABs) are established to guide the departments in academic, industry institute interaction, research and career guidance for students. In CDC and GB, strong review is taken on various activities. IQAC has been formed in 2016.

Regular academic and administrative audits are conducted by academic monitoring committee, and affiliating university. Institute has well defined welfare policies for teaching and nonteaching staff members. Institute supports financially all teaching and nonteaching staff members to participate in various seminars/workshops/conferences/trainings.

Institute has well defined Performance Appraisal System (PAS) for the teaching and non-teaching staff. The PAS for faculty members includes performance of faculty members in areas such as Academic Results, Student Feedback, Contribution in R & D, contribution in Co-curricular and Extra-Curricular activities and assessment by higher authorities.

All the internal promotions are as per the norms of AICTE, DTE and affiliating university. Institute has transparent financial policies including budgeting, purchase and audits to ensure appropriate utilization of funds for academic, administrative and development purposes. Income and expenditure statements are reviewed in CDC and GB. The functioning of various bodies are very effective and has resulted in conducive environment for building quality and world class educational institute.

### **Institutional Values and Best Practices**

NKOCET has evolved as an Institute that not only caters to the Academic needs of its stakeholders but also fosters a spirit of competence in them through its varied best practices and initiatives that have become a part of its academic fiber. An Institute that was established with a primary purpose of imparting technical education to the youth, has now overgrown with its purpose. The Institute practices have become its values and strengths leading towards the attainment of its mission and vision serving towards the accomplishment of the attributes that an engineering graduate should encompass.

The path leading towards this destination involves various practices like maintaining a coherent balance through gender equity, imbining and propagating feeling of oneness through celebration of days of national importance that symbolize values and wisdom. The Institute is conscious towards environment through different green campus initiatives carried out within the Institute as well in the society. This leads towards fostering a noble message of green environment that is the need of the hour. To maintain harmony and peace in the campus the Institute proliferates activities that develop a sense of mutual understanding, respect and patriotism. Also making the students aware about their roles and responsibilities as future citizens.



Through trial and error, the Institute devised its best practices like inculcating a structure under the umbrella of Training and Placement Cell that encompasses training on Soft Skills, Aptitude and Core Skills. To top above this there is a Study Abroad Cell and GATE Module which have resulted into students pursuing higher education in India and Abroad. These initiatives have helped the students to dream big and soar high, making them locally rooted and globally competent.

The Distinctiveness of the Institute lies in adhering with the National Education Policy that rests on skill development. The Institute has built strong Industry -Institute connect that has resulted in providing skilled engineers to the society.

## 2. PROFILE

### 2.1 BASIC INFORMATION

Name and Address of the College	
Name	PRADNYA NIKETAN EDUCATION SOCIETY NAGESH KARAJAGI ORCHID COLLEGE OF ENGINEERING AND TECHNOLOGY, SOLAPUR
Address	Gut No. 16, Solapur Tuljapur Road, Tale Hippagara, Solapur
City	Solapur
State	Maharashtra
Pin	413002
Website	<a href="http://www.orchidengg.ac.in">www.orchidengg.ac.in</a>

Contacts for Communication					
Designation	Name	Telephone with STD Code	Mobile	Fax	Email
Principal(in-charge)	B. K. Sonage	0217-9423084363	9552529320	-	basgondasonage@orchidengg.ac.in
IQAC / CIQA coordinator	V. K. Patki	-9552529325	9552529325	-	vinayakpatki@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 minority institution	No

Establishment Details	
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State	University name	Document
Maharashtra	Dr. Babasaheb Ambedkar Technological University	<a href="#">View Document</a>

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

Details of recognition/approval by stationary/regulatory bodies like AICTE,NCTE,MCI,DCI,PCI,RCI etc(other than UGC)				
Statutory Regulatory Authority	Recognition/Approval details Institution/Department programme	Day,Month and year(dd-mm-yyyy)	Validity in months	Remarks
AICTE	<a href="#">View Document</a>	10-04-2017	12	Yearly Approval
AICTE	<a href="#">View Document</a>	10-04-2017	12	Yearly Approval
AICTE	<a href="#">View Document</a>	10-04-2017	12	Yearly Approval
AICTE	<a href="#">View Document</a>	10-04-2017	12	Yearly Approval
AICTE	<a href="#">View Document</a>	10-04-2017	12	Yearly Approval
AICTE	<a href="#">View Document</a>	10-04-2017	12	Yearly Approval

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

<b>Location and Area of Campus</b>				
<b>Campus Type</b>	<b>Address</b>	<b>Location*</b>	<b>Campus Area in Acres</b>	<b>Built up Area in sq.mts.</b>
Main campus area	Gut No. 16, Solapur Tuljapur Road, Tale Hippagara, Solapur	Rural	10.6	21840

## 2.2 ACADEMIC INFORMATION

<b>Details of Programmes Offered by the College (Give Data for Current Academic year)</b>						
<b>Programme Level</b>	<b>Name of Programme/Course</b>	<b>Duration in Months</b>	<b>Entry Qualification</b>	<b>Medium of Instruction</b>	<b>Sanctioned Strength</b>	<b>No.of Students Admitted</b>
UG	BTech,Civil Engineering	48	HSC	English	120	34
UG	BTech,Computer Science And Engineering	48	HSC	English	120	120
UG	BTech,Electronics And Telecommunication Engineering	48	HSC	English	60	60
UG	BTech,Electrical Engineering	48	HSC	English	60	60
UG	BTech,Mechanical Engineering	48	HSC	English	120	113
UG	BTech,Artificial Intelligence And Data Science	48	HSC	English	60	60
PG	Mtech,Computer Aided Structural Analysis Design	24	BE and B.Tech	English	12	10
PG	Mtech,Thermal Engineering	24	BE and B.Tech	English	6	1

### **Position Details of Faculty & Staff in the College**

<b>Teaching Faculty</b>												
	<b>Professor</b>				<b>Associate Professor</b>				<b>Assistant Professor</b>			
	Male	Female	Others	Total	Male	Female	Others	Total	Male	Female	Others	Total
Sanctioned by the UGC /University State Government	6				10				90			
Recruited	6	0	0	6	8	2	0	10	67	23	0	90
Yet to Recruit	0				0				0			
Sanctioned by the Management/Society or Other Authorized Bodies	0				0				0			
Recruited	0	0	0	0	0	0	0	0	0	0	0	0
Yet to Recruit	0				0				0			

<b>Non-Teaching Staff</b>				
	<b>Male</b>	<b>Female</b>	<b>Others</b>	<b>Total</b>
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				10
Recruited	9	1	0	10
Yet to Recruit				0

<b>Technical Staff</b>				
	<b>Male</b>	<b>Female</b>	<b>Others</b>	<b>Total</b>
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				20
Recruited	19	1	0	20
Yet to Recruit				0

### Qualification Details of the Teaching Staff

<b>Permanent Teachers</b>										
<b>Highest Qualification</b>	<b>Professor</b>			<b>Associate Professor</b>			<b>Assistant Professor</b>			<b>Total</b>
	Male	Female	Others	Male	Female	Others	Male	Female	Others	
D.sc/D.Litt/LLD/DM/MCH	0	0	0	0	0	0	0	0	0	0
Ph.D.	6	0	0	6	2	0	0	0	0	14
M.Phil.	0	0	0	0	0	0	0	0	0	0
PG	0	0	0	2	0	0	67	23	0	92
UG	0	0	0	0	0	0	0	0	0	0

<b>Temporary Teachers</b>										
<b>Highest Qualification</b>	<b>Professor</b>			<b>Associate Professor</b>			<b>Assistant Professor</b>			<b>Total</b>
	Male	Female	Others	Male	Female	Others	Male	Female	Others	
D.sc/D.Litt/ LLD/DM/M CH	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
UG	0	0	0	0	0	0	0	0	0	0

<b>Part Time Teachers</b>										
<b>Highest Qualification</b>	<b>Professor</b>			<b>Associate Professor</b>			<b>Assistant Professor</b>			<b>Total</b>
	Male	Female	Others	Male	Female	Others	Male	Female	Others	
D.sc/D.Litt/ LLD/DM/M CH	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
UG	0	0	0	0	0	0	0	0	0	0

<b>Details of Visting/Guest Faculties</b>					
<b>Number of Visiting/Guest Faculty engaged with the college?</b>	<b>Male</b>		<b>Female</b>		<b>Total</b>
	0	0	0	0	0

**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
UG	Male	327	0	0	0	327
	Female	156	0	0	0	156
	Others	0	0	0	0	0
PG	Male	8	0	0	0	8
	Female	3	0	0	0	3
	Others	0	0	0	0	0

**Provide the Following Details of Students admitted to the College During the last four Academic Years**

Category		Year 1	Year 2	Year 3	Year 4
SC	Male	13	20	14	16
	Female	11	10	10	9
	Others	0	0	0	0
ST	Male	0	0	0	0
	Female	0	0	0	0
	Others	0	0	0	0
OBC	Male	48	42	55	32
	Female	30	21	14	19
	Others	0	0	0	0
General	Male	130	116	111	99
	Female	79	38	46	43
	Others	0	0	0	0
Others	Male	23	18	17	13
	Female	11	7	8	13
	Others	0	0	0	0
Total		345	272	275	244

**Institutional preparedness for NEP**

<p>1. Multidisciplinary/interdisciplinary:</p>	<p>The Institute is affiliated to the state Technological University of the Maharashtra, Dr. Babasaheb Ambedkar Technological University (DBATU), Lonere. The University has started making its curriculum multidisciplinary and interdisciplinary by incorporating AICTEs model curriculum having 18% weightage to open electives from other technical and/or emerging subjects.</p>
<p>2. Academic bank of credits (ABC):</p>	<p>a) The Institute is an affiliated Institute. The curriculum and mechanism for Academic Bank of Credits (ABC) is being decided by the University. b) The Institute has registered under the Academic Bank of Credits (ABC) and its registration number is NAD-022293 &amp; till now our 1500 students have completed the registration process.</p>
<p>3. Skill development:</p>	<p>a) The Institute is located in Tier-II/ III city, Solapur. Many students come from vernacular medium. Grooming the students in core skills and soft skills are essential to enhance the employability of the students. The Institute has identified this need since inception and introduced soft skill as a subject over and above the affiliating University curriculum for its SY &amp; TY classes. b) The Institute has introduced following add-on courses to strengthen the vocational education and its integration into main stream of engineering education. Civil Engg.- AUTO CAD, STAAD, REVIT, MS-PROJECT. CSE- Problem Solving through C, Data Structure, AI &amp;ML. Mech.- CATIA, Solar Ready Engineer, JAVA, Problem Solving through C, CNC Programming. Electrical- MATLAB and Advanced MATLAB, PLC and SCADA, AutoCAD. E&amp;TC- MATLAB &amp; Advanced MATLAB, Problem Solving through C, Java. c) The Institute is affiliated to the state technological university of Maharashtra, Dr. Babasaheb Ambedkar Technological University (DBATU), Lonere. The curriculum is decided by the University. The University has started incorporating value based education through subjects like professional ethics, constitution of India, Basic Human Rights etc. Session involving Universal human values of truth (Sathya); righteous conduct (Dharma), Peace (Shanti), Love (Prem), Non-violence (Ahimsa), citizenship values and also life-skills etc. are organized. d) Industry Institute interaction and skill development are the focused areas in which Institute</p>

	<p>is striving to work in following ways. 1) University curriculum has few vocational courses either through theory or through practicals. 2) Institute has signed MoU with many renowned industries and conducting following Vocational skill training programmes through them.</p>
<p>4. Appropriate integration of Indian Knowledge system (teaching in Indian Language, culture, using online course):</p>	<p>The curriculum prescribed by the affiliating university has the subject on Indian knowledge system as an audit subject as recommended in the AICTE model curriculum.</p>
<p>5. Focus on Outcome based education (OBE):</p>	<p>The Institute is taking well planned steps to transform its curriculum towards outcome based education (OBE). 1) All the faculty members successfully completed two online NPTEL courses on outcome based education (OBE) system in teaching &amp; learning process. All the newly joined faculty members are also informed to complete these two courses within two years of their joining. 2) The students are made aware of Program Outcomes (POS) during their course orientation in the beginning of every semester. Relevant Course Outcomes (COS) are explained to the students by the course co-ordinators while teaching. 3) While implementing outcome based education at departmental level the question papers of test and midsem examination questions are mapped with relevant course outcome (COS) and blooms taxonomy levels. Institute is trying to incorporate project based learning wherever possible. 4) Faculty members are encouraged to design their own pedagogical approaches. Assignments and assessments are designed to map with Course Outcomes (CO's) and Blooms taxonomy levels.</p>
<p>6. Distance education/online education:</p>	<p>The institute has NPTEL local chapter at Institute levels and NPTEL coordinators are appointed in each department to take benefit of available education on online platform. At the beginning of every semester NPTEL coordinators of respective departments make the students aware about the relevant NPTEL courses available to them for credit transfer for getting minor and honors degree. a) Institute has made a policy that the students seeking placement assistance from the institute need to complete minimum two vocational courses to develop their programming skills like problem solving through 'C', Data Structure, JAVA, Python programming etc. These initiatives help the students to prepare themselves for software jobs in</p>

companies like TCS, Wipro and Infosys etc. b) Technological tools such as virtual labs are introduced to the students by the subject teachers. Available YouTube video and animations are shown to the students wherever required. In view of NEP 2020 the institute is taking efforts pertaining to online education in following ways. 1) Final year students take the benefit of credit transfer for their 8th semester subjects. 2) The affiliating University has floated Minor and Honours degrees. A well-defined online curriculum for these two degrees has been published by Dr. Babasaheb Ambedkar Technological University, Lonere (DBATU) on its website. Students can pursue either Minor or Honour degree in their third and final years by earning 20 credits i.e. by learning 5 subjects in online mode. Students are sensitized about these two degrees by the HOD and class coordinators. Recently NPTEL has developed good course material for GATE examination. A session on third year and final year classes was conducted in each department by the career counselling coordinators of each department.

### Institutional Initiatives for Electoral Literacy

<p>1. Whether Electoral Literacy Club (ELC) has been set up in the College?</p>	<p>1. Electoral Literacy Club is set up in Nagesh Karajagi Orchid College of Engineering and Technology, Solapur, Maharashtra, with an aim of sensitizing the students about the importance of voting in democracy.</p>
<p>2. Whether students' co-ordinator and co-ordinating faculty members are appointed by the College and whether the ELCs are functional? Whether the ELCs are representative in character?</p>	<p>2. It was established in the year 2015. Electoral Literacy Club has been constituted as per the directions of Election Commission of India under SVEEP to spread electoral literacy among the students. Objectives: 1. To educate the students about voter registration, electoral process and related matters through hands on experience. 2. To sensitize the students about value of a vote in democracy. 3. To train the students about "Voter Helpline" App</p>
<p>3. What innovative programmes and initiatives undertaken by the ELCs? These may include voluntary contribution by the students in electoral processes-participation in voter registration of students and communities where they come from,</p>	<p>3. Nagesh Karajagi Orchid College of Engineering and Technology, Solapur, Maharashtra, took following initiatives under ELC club. • Participation in voter registration of students. • Voluntary contribution by the students in electoral processes. •</p>

<p>assisting district election administration in conduct of poll, voter awareness campaigns, promotion of ethical voting, enhancing participation of the under privileged sections of society especially transgender, commercial sex workers, disabled persons, senior citizens, etc.</p>	<p>Voter awareness campaigns • To participate in SVEEP programs with other government and non-government agencies.</p>
<p>4. Any socially relevant projects/initiatives taken by College in electoral related issues especially research projects, surveys, awareness drives, creating content, publications highlighting their contribution to advancing democratic values and participation in electoral processes, etc.</p>	<p>4. The ELC undertook the initiatives with other NGOs which help the society to aware of electoral related issues, awareness campaigning, online registration for Voters ID for new voter etc. ELC also sensitize the students to spread the awareness of democratic right to nearby community.</p>
<p>5. Extent of students above 18 years who are yet to be enrolled as voters in the electoral roll and efforts by ELCs as well as efforts by the College to institutionalize mechanisms to register eligible students as voters.</p>	<p>5. Every year during admission process of first year new voter registration drive is conducted at Institute for above 18 years of age students. Also one more special drive is organized for remaining students those who are above 18 years of other classes in the institute.</p>

## Extended Profile

### 1 Students

#### 1.1

Number of students year wise during the last five years

2022-23	2021-22	2020-21	2019-20	2018-19
2255	2057	2020	1976	1958

File Description	Document
Upload Supporting Document	<a href="#">View Document</a>
Institutional data in prescribed format	<a href="#">View Document</a>

### 2 Teachers

#### 2.1

Number of teaching staff / full time teachers during the last five years (Without repeat count):

Response: 106

File Description	Document
Upload Supporting Document	<a href="#">View Document</a>
Institutional data in prescribed format	<a href="#">View Document</a>

#### 2.2

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

2022-23	2021-22	2020-21	2019-20	2018-19
106	103	103	114	114

### 3 Institution

#### 3.1

Expenditure excluding salary component year wise during the last five years (INR in lakhs)

2022-23	2021-22	2020-21	2019-20	2018-19
578.82	624.49	552.88	587.83	574.32

File Description	Document
Upload Supporting Document	<a href="#">View Document</a>

## 4. Quality Indicator Framework(QIF)

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### Criterion 1 - Curricular Aspects

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#### 1.1 Curricular Planning and Implementation

##### 1.1.1

**The Institution ensures effective curriculum planning and delivery through a well-planned and documented process including Academic calendar and conduct of continuous internal Assessment**

**Response:**

**Response**

##### **Academic Calendar**

- The Institute is affiliated to Dr. Babasaheb Ambedkar Technological University (DBATU), Lonere and follows the curriculum prepared by the University. The University regularly updates its curriculum for UG and PG programs to meet the required industrial needs.
- DBATU publishes academic calendar before commencement of each semester. In line with University, our Dean Academics prepares institute academic calendar.
- All HODs prepare their respective departmental academic calendar in line with Institute academic calendar. The departmental academic calendar reflects the activities planned during the semester such as commencement of semester, students' orientation program, internal assessments, parent meet, student association activities, university practical exams, in-semester and end-semester examinations etc.
- A wall hanging calendar is prepared by the institute, which includes all the academic activities and it is provided to all the students, teachers and parents.

##### **Teaching Learning process**

- The teaching work load distribution is done by HODs of respective departments based on the area of specialization of the faculty members. The teaching work load distribution is done one month before commencement of each semester.
- Based on assigned teaching load all the faculty members prepare course file for their respective subjects which includes teaching plan, practical plan, syllabus, notes and record of OBE based assessments.
- Timetables and laboratory manual are prepared before commencement of each semester
- Dean academics and academic monitoring committee members take feedback from all students about academic performance and other facilities to ensure effective curriculum delivery and providing facilities for holistic development of the students.
- Institution motivates faculty members to adopt new teaching-learning methodologies and use of ICT tools such as Virtual Lab, Google classroom etc.
  - Institution motivates faculty members to adopt new teaching-learning methodologies and use of ICT tools such as Virtual Lab, Google classroom etc.
  - Many NPTEL/MOOC and add-on courses have been completed by students every year. In



last five years more than 175 courses were conducted which involves various industries for conducting these courses like ZENSAR, Tata technologies etc.

- During COVID -19, all these activities are conducted through online platforms such as Coursera, Udemy etc.

### Continuous Internal Assessment

- Practical examinations, seminar and project presentations are conducted and various assessments tools are used like Internal tests, assignments, tutorials and presentations etc. These assessment tools are used for all courses for internal assessment.
  - Lab performance and assignments are evaluated by concerned faculty members. Technical skills are monitored through laboratory performance, presentations and practical oral examination.
  - The seminar guide evaluates seminar progress from time to time. The seminar reports are submitted by the students as a part of their seminar work.
- Every year students undergo various Internship trainings/field visits/field projects. In last academic year 1640 students completed internship/mini project/final year project based on industrial/societal applications.
- Dean Academics conducts internal academic audit twice in each semester. During this audit, course file, status of syllabus completion for theory and practical's and OBE requirements are assessed.

File Description	Document
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

## 1.2 Academic Flexibility

### 1.2.1

**Number of Certificate/Value added courses offered and online courses of MOOCs, SWAYAM, NPTEL etc. (where the students of the institution have enrolled and successfully completed during the last five years)**

**Response:** 143

File Description	Document
List of students and the attendance sheet for the above mentioned programs	<a href="#">View Document</a>
Institutional programme brochure/notice for Certificate/Value added programs with course modules and outcomes	<a href="#">View Document</a>
Institutional data in the prescribed format	<a href="#">View Document</a>
Evidence of course completion, like course completion certificate etc. Apart from the above:	<a href="#">View Document</a>

### 1.2.2

*Percentage of students enrolled in Certificate/ Value added courses and also completed online courses of MOOCs, SWAYAM, NPTEL etc. as against the total number of students during the last five years*

**Response:** 74.58

1.2.2.1 Number of students enrolled in Certificate/ Value added courses and also completed online courses of MOOCs, SWAYAM, NPTEL etc. as against the total number of students during the last five years

2022-23	2021-22	2020-21	2019-20	2018-19
2255	1219	1201	1976	1005

File Description	Document
Upload supporting document	<a href="#">View Document</a>
Institutional data in the prescribed format	<a href="#">View Document</a>

## 1.3 Curriculum Enrichment

### 1.3.1

*Institution integrates crosscutting issues relevant to Professional Ethics, Gender, Human Values, Environment and Sustainability in transacting the Curriculum*

**Response:**

Institute follows the curriculum prepared by the Dr.Babasaheb Ambedkar Technological University, Lonere. Integration of cross cutting issues is being carried out through regular courses, core electives courses, projects activities, seminars, co-curricular, extra-curricular activities.

### Professional Ethics

Institute integrates professional ethics issues through Basic Human Rights course which is taught to the students across all the programs as part of curriculum in their second year to enable them to understand the basic concepts of human rights. In addition to this, professional ethics are inculcated through soft skills which covers interpersonal skills, professional communication, verbal ability, team skill, leadership skills etc.

### Gender Equity

Gender equity is inculcated amongst the students through basic human rights course. All the theory, practical and project sessions of the curriculum are conducted without any gender discrimination. An equal opportunity is given to all the students to participate in events such as student council, NSS, magazine committee, class representatives, student associations, co-curricular activities and extra-curricular activities etc. Student associations arrange elocution competitions and poster presentations to eliminate gender discrimination. Many programs are arranged by our NSS on gender issues.

### Human Values

As per University Curriculum all first-year students have to undergo 20 days induction program. This induction program is being conducted to imbibe the concepts of Universal Human Values. The Institution has participated in Unnat Bharat Abhiyan for technological interventions in the area of water resource management, sustainable agriculture, etc. Our first-year students (150 students) have completed a course on Energy Literacy and 70% faculty members and staff have completed Universal Human Values course conducted by AICTE. Efforts are taken for making students sensitive towards societal issues by organizing activities such as Blood donation Camps, tree plantation, donating essential things to rural children, chapati day, visits to old age homes etc.

### Environment and sustainability

Institute integrates the environment and sustainability through regular/ audit course / honors curriculum courses such as Energy and Environment Engineering, Waste water treatment, Industrial Waste Treatment, air pollution and control, solid waste management etc.

Our faculty members and students have done remarkable research in the area of solar energy and environmental issues. Institute has Solar Research Lab and Air Pollution Lab, which are fully funded by Dassault systems, Pune and Maharashtra Pollution Control Board (MPCB) respectively. These two laboratories are used by our students and faculty members to solve environmental issues through their projects. Institute has taken initiative for sustainable campus development through reuse and recycle of wastewater generated in our campus through well-designed sewage treatment plant, solar energy electricity generation system.

Cross Cutting Issue	Year	Course with course code
Professional Ethics	Third Year	Business communication(BTHM505)
		Consumer Behaviour(BTHM605)

	Second Year	Basic Human Rights( <b>all programs</b> )
Gender Equity	Second Year	Basic Human Rights( <b>all programs</b> )
Human Values	Third Year	Value Education, Human Rights and Legislative Procedures(BTHM504)
Environment and sustainability	Second Year	Environmental Engineering(BTCVC402)
		Water Resources Engineering(BTCVC404)
	Third Year	Environmental Impact Assessment(BTCVOE605)
		Advanced Water Resources(BTCVPE506)
		Advanced Environmental Engineering(BTMOE605D)
	Third Year	Wind Energy(BTMOE605D)
Energy Conservation and Management(BTMOE605C)		
Renewable Energy Sources(BTMOE505B)		
First Year	Solar Energy(BTMOE505A)	
	First Year	Energy and Environment Engineering( <b>All programs</b> ) (BTES105)

File Description	Document
Upload Additional information	<a href="#">View Document</a>

### 1.3.2

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

**Response:** 69.84

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

Response: 1575

File Description	Document
Upload supporting document	<a href="#">View Document</a>
Institutional data in the prescribed format	<a href="#">View Document</a>

## 1.4 Feedback System

### 1.4.1

*Institution obtains feedback on the academic performance and ambience of the institution from various stakeholders, such as Students, Teachers, Employers, Alumni etc. and action taken report on the feedback is made available on institutional website*

**Response:** A. Feedback collected, analysed, action taken& communicated to the relevant bodies and feedback hosted on the institutional website

File Description	Document
Feedback analysis report submitted to appropriate bodies	<a href="#">View Document</a>
At least 4 filled-in feedback form from different stake holders like Students, Teachers, Employers, Alumni etc.	<a href="#">View Document</a>
Action taken report on the feedback analysis	<a href="#">View Document</a>
Link of institution's website where comprehensive feedback, its analytics and action taken report are hosted	<a href="#">View Document</a>

## Criterion 2 - Teaching-learning and Evaluation

### 2.1 Student Enrollment and Profile

#### 2.1.1

##### Enrolment percentage

**Response:** 52.16

##### 2.1.1.1 Number of seats filled year wise during last five years (Only first year admissions to be considered)

2022-23	2021-22	2020-21	2019-20	2018-19
438	309	235	248	216

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

2022-23	2021-22	2020-21	2019-20	2018-19
558	570	570	582	492

#### File Description

#### Document

Institutional data in the prescribed format

[View Document](#)

Final admission list as published by the HEI and endorsed by the competent authority

[View Document](#)

Document related to sanction of intake from affiliating University/ Government/statutory body for first year's students only.

[View Document](#)

Provide Links for any other relevant document to support the claim (if any)

[View Document](#)

#### 2.1.2

*Percentage of seats filled against reserved categories (SC, ST, OBC etc.) as per applicable reservation policy for the first year admission during the last five years*

**Response:** 57.58

##### 2.1.2.1 Number of actual students admitted from the reserved categories year wise during last five years (Exclusive of supernumerary seats)

2022-23	2021-22	2020-21	2019-20	2018-19
216	158	149	149	126

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

2022-23	2021-22	2020-21	2019-20	2018-19
279	285	285	291	246

File Description	Document
Institutional data in the prescribed format	<a href="#">View Document</a>
Final admission list indicating the category as published by the HEI and endorsed by the competent authority.	<a href="#">View Document</a>
Copy of communication issued by state govt. or Central Government indicating the reserved categories(SC,ST,OBC,Divyangjan,etc.) to be considered as per the state rule ( Translated copy in English to be provided as applicable)	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>

## 2.2 Student Teacher Ratio

### 2.2.1

**Student – Full time Teacher Ratio  
(Data for the latest completed academic year)**

**Response:** 21.27

## 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 and teachers use ICT- enabled tools including online resources for effective teaching and learning process**

**Response:**

**Response:**

Student learning experiences are enriched through various student-centric methods such as experiential learning, participative learning, problem-solving methodologies and integration of ICT tools. It is achieved through animations, simulations, video clippings, web sources to fulfill requirements of Outcome Based Education (OBE).

**a) Experiential Learning:**

- To impart OBE, students are exposed to hands-on experience through industry sponsored mini and major projects. Laboratories such as Solar Research Centre, Air Pollution Monitoring Lab, Structural Testing Lab and E-Yantra Lab. Also programs like Ready Engineer program and ESD program are used for student internships.
- Students have developed solar operated products such as solar cooker, flour mill, milk pasturing etc. and developed the water purifying process.
- Group discussion, industrial training and visits are arranged to provide exposure to industry practices and real-world applications.
- In Major and Mini projects students are using software's like Autocad, Revit, STAADPRO, CATIA, PLC and SCADA, Matlab, SQL and Java etc. to learn the effects of influencing parameters.

<b>Add On Courses</b>	<b>Sponsored Lab</b>
Auto CAD and CATIA	Solar Research Centre by Dassault
Revit, STADPRO, PLC and SCADA	Ready Engineer program by TTL
Matlab, SQL and Java	E-Yantra Lab by IITB

**b) Participative Learning:**

- Students are encouraged and guided to participate in national and international competitions like SAE Baja, SUPRA, Formula Bharat, Akruiti, KPIT Sparkle, Smart India Hackathon, Avishkar competition etc.
- Flip class room, assignments and question answer during lecture sessions make students to take part in the discussion and make them attentive
- Institute magazine activity is completely student driven. Editing of each magazine section, layout, cover page design and magazine printing is coordinated by student committees.
- Student groups are asked to prepare and give presentation on emerging areas of their respective domains. They collect the information through various research papers and articles for their seminar.
- Social responsibility is an important dimension of student personality.

**c) Problem-Solving Methodologies:**

- Students are exposed to real world problems through their mini and major projects to enhance higher-level cognitive skills such as analysis, evaluation, and creativity.
- Students apply software or programming skills to find solution to the problems by attending the



various platforms such as technical competitions, Hackathons etc.

**Some of the ICT tools are given below;**

- Classrooms (equipped with LCD projector, standard teaching aids, audio/video components etc.)
- Virtual labs
- Google classroom, google meet, google form, YouTube channels, blogs, video lectures on websites.
- Simulation softwares, NPTEL/Coursera courses
- Online material like E-books, E-Journals etc.
- Extensive use of virtual labs, google classroom, google meet, zoom platform etc. was observed during the pandemic and it has been continued in the post-pandemic period in hybrid mode.

A summary of various students-centric methods is given below.

Experiential Learning	Participative Learning	Problem-Solving Methodologies
Mini/Major project through industry sponsored Labs.	Flip classroom, QandA and Group discussion	Mini/Major project through industry sponsored Labs.
Industrial Training, internship	National and International Competitions	Projects based on societal problem.
Industrial Visits		Projects based on industrial problem statement.
Add on Courses		Tutorial
Product and Process development		
Use of different software	NSS and Magazine activities	
Assignments		

File Description	Document
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

## 2.4 Teacher Profile and Quality

### 2.4.1

**Percentage of full-time teachers against sanctioned posts during the last five years**

**Response:** 96.43

#### 2.4.1.1 Number of sanctioned posts year wise during the last five years

2022-23	2021-22	2020-21	2019-20	2018-19
106	109	113	117	115

File Description	Document
Sanction letters indicating number of posts sanctioned by the competent authority (including Management sanctioned posts)	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>

## 2.4.2

*Percentage of full time teachers with NET/SET/SLET/ Ph. D./D.Sc. / D.Litt./L.L.D. during the last five years (consider only highest degree for count)*

**Response:** 17.96

### 2.4.2.1 Number of full time teachers with NET/SET/SLET/Ph. D./ D.Sc. / D.Litt./L.L.D year wise during the last five years

2022-23	2021-22	2020-21	2019-20	2018-19
23	24	17	17	16

File Description	Document
List of faculties having Ph. D. / D.Sc. / D.Litt./ L.L.D along with particulars of degree awarding university, subject and the year of award per academic year.	<a href="#">View Document</a>
Institution data in the prescribed format	<a href="#">View Document</a>
Copies of Ph.D./D.Sc / D.Litt./ L.L.D awarded by UGC recognized universities	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>

## 2.5 Evaluation Process and Reforms

### 2.5.1

**Mechanism of internal/ external assessment is transparent and the grievance redressal system is time- bound and efficient**

**Response:**

**Response:**

The internal assessment consists of Continuous Assessment (CA) and Mid Semester Exam (MSE). The internal assessment is carried out by course coordinators for respective courses. The External Assessment consists of End-Semester Examination (ESE), project oral and practical and oral exam.

Internal Assessment	Marks	External Assessment	Marks
CA 1	10	End Sem Exam	60
Mid-Sem	20	Practical Oral Exam	40
CA 2	10	Project Oral	100

**Internal Assessment**

- **The internal assessment is transparent and grievances redressal mechanism is clearly stated in the institute examination policy document (Exam Policy - <https://www.orchidengg.ac.in/naac-3/>).**
- The internal assessment mechanism is made transparent in following ways.
  - Continuous assessment (CA) schedule is clearly stated in the institute and departmental Academic Calendar.
  - The Syllabus, Notice and Time table for CA and Midsem are prepared well in advance and communicated to the students.
  - As per the exam policy, The grievances, if any, are resolved by the exam grievance committee stated in the exam policy on the same day of receipt of grievance

**External Assessment**

- External Assessment is done by affiliating University (DBATU). The university prepares the end semester examination timetable and displays it on the website and communicates it to affiliated institutes.
- Institute follows all the guidelines provided by DBATU and conducts the End Semester Examination (ESE). University appoints an External exam supervisor and internal chief exam coordinator for smooth conduction of ESE.
- Assessment of answer papers is carried out by University in online mode. The assessment is done by various examiners from other institutes appointed by the University.
- **The grievance redressal mechanism is specified in the University Ordinance referred as “First Ordinance”. The First Ordinance is uploaded on the college website (Ordinance - <https://www.orchidengg.ac.in/naac-3/>)**
- Some of the provisions of grievance redressal mechanism as per Ordinance are
  1. After the declaration of the results of an examination, the candidates shall be permitted to make applications for the Verification of Marks
  2. The candidates must apply for Verification of Marks within seven days from the date of issuance of mark-list. No such application shall be entertained after the due date. The result of verification will be intimated to the candidates within 07 days from the last date of submission of the forms for verification.

3.The candidates can also apply for Revaluation. The result of re-evaluation will be intimated to the candidates within 15 days from the last date of submission of the forms for re-evaluation.

**The grievance if any are raised by students through the university portal using student login (Portal -<https://dbatu.ac.in/>)**

File Description	Document
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

## 2.6 Student Performance and Learning Outcomes

### 2.6.1

*Programme Outcomes (POs) and Course Outcomes (COs) for all Programmes offered by the institution are stated and displayed on website*

**Response:**

**Response:**

During the departmental orientation program all HoD's creates awareness about OBE, POs, PSOs and COs. The CO's are also discussed by faculty in charge during commencement of the course.

**Sample Programme Outcomes (PO)'s** are broad statements that describe the professional accomplishments which the program aims at, and these are to be attained by the students by the time they complete the program. POs incorporate many areas of inter-related knowledge, skills and personality traits that are to be acquired by the students during their graduation.

- PO1 : **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- P12 : **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

**Program Specific Outcomes (PSO)'s** are the specific skill requirements and accomplishments to be fulfilled by the students at micro level and by the end of the program. PSO of mechanical engineering is stated below .

**PSOs (Mechanical Engg.): Student will be able to**

1. Identify and evaluate the mechanical engineering problems and provide solutions by applying knowledge of allied engineering domains.
2. Make the nation prosperous by imparting technological and managerial skills to become

technocrats, entrepreneur and pursuing higher education.

**Course Outcomes (COs)** are the detailed description of what a student is be able to do after completion of a particular course. COs are specified by our affiliating University in its curricula. The courses who's COs are not specified in the curriculum, are prepared by the respective course instructor. COs of Theory of Machine-I is listed below

**COs (Course: TOM-I):** At the end of this course, the students will be able to

1. Define, classify and calculate degree of freedom of planar mechanisms
2. Perform kinematic analysis of given mechanism by ICR and RV method.
3. Perform kinematic analysis of a given mechanism analytically using vector or complex algebra method
4. Determine the frictional force and identify its applications.
5. Classify clutch, brake and dynamometer
6. Draw cam profile for different followers and their motions.
7. Perform analysis of primary and secondary balancing

### The dissemination of POs, PSOs and COs

It is necessary that the students who are undergoing any engineering program have to be acquainted with the POs, PSO's and CO's. The Institute takes care that the PO's, PSO's and CO's are stated and brought to the notice of each student through various means listed below

#### Dissemination

- Website
- Department Notice Boards
- Laboratories
- Journals
- Student Induction Programs

File Description	Document
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

### 2.6.2

*Attainment of POs and COs are evaluated.*

**Explain with evidence in a maximum of 500 words**

**Response:**

**Response:**

The assessment of CO's and PO's are done using following tools.

Assessment weightage	Tools and weightage	Mode
Internal Assessment (40%)	Direct Assessment (80%)	Continuous Assessment 1 (CA1) Question and Answer Type
		Continuous Assessment 2 (CA2) Assignments/Orals
		Mid Semester (Mid Sem) Exam Question and Answer Type
	Indirect Assessment (20%)	Course Exit Survey Survey through Questions
External Assessment (60%)	Direct Assessment (60%)	End Sem Exam Question and Answer Type

- COs are mapped with internal and external assessment tools for its attainment calculations.
- The attainment of each CO is computed by setting the target marks obtained by student in internal and external exam. For internal exam, questions are mapped with CO whereas for external exam, all the questions are mapped with all the CO's. The 3 level weightage is defined on the basis of marks obtained

CO target	
Range of marks	Weight
Between 40-49%	1
Between 50-59 %	2
Above 60 %	3

- The CO's of each course are mapped to PO's with weightages of 3 (Strong), 2 (Medium) and 1 (Weak). The sum of CO mapped with PO is considered for calculating the attainment

CO-PO Mapping	
Mapping	Weight
Low	1
Medium	2
High	3

- As per the target and level specified above, the attainment of CO's through direct tools is calculated. For example

Attainment calculation through CA1			
Target	Weight (1) (Col.1)	No. students (2) (Col.2)	(Col.1*Col.2)/Total no. of students appeared for exam
Between 40-49%	1	X	(1*X)/(Total no of students appeared for exam)
Between 50-59 %	2	Y	(2*Y)/(Total no of students appeared for exam)
Above 60 %	3	Z	(3*Z)/(Total no of students appeared for exam)

		students appeared for exam)
Attainment		= ? of above
<ul style="list-style-type: none"> <li>The Final attainment of CO is calculated by taking sum of 40% of attainment by Internal Assessment and 60% of External Assessment.</li> <li>CO attainment formula = <math>\{0.8*[(0.6*\text{attainment through ESE})+(0.4*\text{attainment through internal direct assessment})] + 0.2*\text{attainment through course exit survey}\}</math></li> <li>PO attainment formula = <math>[\text{? (Final attainment of corresponding COs * Level of corresponding CO mapped with PO)}]/\text{Sum of CO PO Mapping levels.}</math></li> <li>The excel sheet for attainment calculation is maintained by the Course Coordinator</li> </ul>		
<b>File Description</b>	<b>Document</b>	
Upload Additional information	<a href="#">View Document</a>	
Provide Link for Additional information	<a href="#">View Document</a>	

### 2.6.3

#### Pass percentage of Students during last five years (excluding backlog students)

**Response:** 91.41

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

2022-23	2021-22	2020-21	2019-20	2018-19
418	506	662	580	517

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

2022-23	2021-22	2020-21	2019-20	2018-19
564	521	690	601	559

<b>File Description</b>	<b>Document</b>
Institutional data in the prescribed format	<a href="#">View Document</a>
Certified report from Controller Examination of the affiliating university indicating pass percentage of students of the final year (final semester) eligible for the degree programwise / year-wise.	<a href="#">View Document</a>
Annual report of controller of Examinations(COE) highlighting the pass percentage of final year students	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>

## 2.7 Student Satisfaction Survey

### 2.7.1

#### Online student satisfaction survey regarding teaching learning process

**Response:** 3.75

<b>File Description</b>	<b>Document</b>
Upload database of all students on roll as per data template	<a href="#">View Document</a>



## Criterion 3 - Research, Innovations and Extension

### 3.1 Resource Mobilization for Research

#### 3.1.1

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

**Response:** 172.83

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

2022-23	2021-22	2020-21	2019-20	2018-19
6.5	18	102.83	44	1.5

#### File Description

#### Document

Upload supporting document

[View Document](#)

Institutional data in the prescribed format

[View Document](#)

### 3.2 Innovation Ecosystem

#### 3.2.1

**Institution has created an ecosystem for innovations, Indian Knowledge System (IKS), including awareness about IPR, establishment of IPR cell, Incubation centre and other initiatives for the creation and transfer of knowledge/technology and the outcomes of the same are evident**

**Response:**

**Response**

**Patent Published/ Granted:**

Institute has a Research and Development cell which motivates and encourages faculty members and students to carry out research associated with real life industrial, agricultural and techno-societal problems as well as promotes patent filling through proper planning.

**Impact Observed**

- **Total Patent: 18**
- **Published : 16**

- *Granted: 02*

### **Participation of Students and Faculty Members in Hackathon, Toykathon, Avishkar, Akurti, CIIA, KPIT Competitions etc.:**

NKOCET adopted and implemented **R & D National innovation and start up policy for extending financial** support to the student and faculty projects for various Hackathons, Toycothons, Ideathons, Avishkar, KPIT Sparkle competition etc. As per R&D policy financial support is given to faculty members for attending conferences and publishing research papers. In addition, each department gets separate budget for procurement of various instruments, calibration, and software that is required for R&D activities from institute.

### **Research Ecosystem through Up-gradation of Knowledge:**

Institute has sponsored faculty members for pursuing their doctoral program at NITs and various universities of national repute. The Institute have sent 10 faculty members on study leave with full salary to complete the course work for one full semester at various NIT's. Total 14 members have completed their Ph.D. after joining our Institute. At present 24 faculty members have completed their Ph.D. and 20 faculty members are pursuing Ph.D. from various institutes of national repute.

### **Research Projects for Creating Innovation Ecosystem**

Institute motivates faculty members to write research proposals to various funding agencies for getting grants for research and consultancy projects. NKOCET is continuously striving to increase its stake in funding from government and non-governmental agencies. The institute received research funding of 1.7 Crores in last five years for the projects from scheme, AICTE through **NEAT** internship platform, Dr. Babasaheb Ambedkar Technological University, Lonere (**DBATU**), Maharashtra Pollution Control board (**MPCB**), IIT Bombay (**IITB**), Dassault Systems La Foundation, Tata Technology Ltd (**TTL**), etc. Funds received under **MODROB** scheme have been utilized to develop Workshop facilities in Mechanical department.

### **Institute Innovation Council (IIC):**

NKOCET has established **Institute Innovation Council (IIC)** in 2018-19. Since establishment, performance of IIC is remarkable. Various Research, Innovation and IPR related programmes have been conducted by IIC to inculcate innovation culture in faculty members and students. Performance of IIC in recent academic years is as follows:

#### ***Impact Observed***

***Year 2018-19    3 stars***

***2019-20    3 stars***

***2020-21    3.5 stars***

Four faculty members are nominated and selected as Innovation Ambassadors through National IIC.NKOCET participates in **NIRF and ARIIA rankings** every year. In the year 2019-20 Institute is rated in promising band under ARIIA.

#### **Funding for Student Projects:**

Total budget of @ 2 lakhs is allocated to each department for their student projects. Through this funding our students have participated in various project competitions like Hackathons, Toycathons, Ideathons , Avishkar, KPIT Sparkle , SUPRA, Formula Bharat, Akruiti competition etc.

#### ***Impact observed***

- *Received first prize for Toycathon competition at National level*
- *First prize in Aakruti 2021 competition and Aakruti 2022*
- *Second prize in Avishkar compititon*

<b>File Description</b>	<b>Document</b>
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

### **3.2.2**

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

**Response:** 69

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

2022-23	2021-22	2020-21	2019-20	2018-19
14	09	18	25	03

<b>File Description</b>	<b>Document</b>
Upload supporting document	<a href="#">View Document</a>
Institutional data in the prescribed format	<a href="#">View Document</a>

### **3.3 Research Publications and Awards**

### 3.3.1

**Number of research papers published per teacher in the Journals notified on UGC care list during the last five years**

**Response:** 1.19

**3.3.1.1 Number of research papers in the Journals notified on UGC CARE list year wise during the last five years**

2022-23	2021-22	2020-21	2019-20	2018-19
29	39	19	21	18

File Description	Document
Link to the uploaded papers, the first page/full paper(with author and affiliation details)on the institutional website	<a href="#">View Document</a>
Link to re-directing to journal source-cite website in case of digital journals	<a href="#">View Document</a>
Links to the papers published in journals listed in UGC CARE list or	<a href="#">View Document</a>
Institutional data in the prescribed format	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>

### 3.3.2

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

**Response:** 0.24

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

2022-23	2021-22	2020-21	2019-20	2018-19
9	1	5	6	4

File Description	Document
List of chapter/book along with the links redirecting to the source website	<a href="#">View Document</a>
Institutional data in the prescribed format	<a href="#">View Document</a>
Copy of the Cover page, content page and first page of the publication indicating ISBN number and year of publication for books/chapters	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>

### 3.4 Extension Activities

#### 3.4.1

**Outcomes of Extension activities in the neighborhood community in terms of impact and sensitizing the students to social issues for their holistic development during the last five years.**

**Response:**

**Response**

- NKOCET emphasize on extension activities which are in the form of community engagement that involves students and faculty members in projects and initiatives aimed at addressing social issues and community needs. These activities are an essential part of the holistic development of students as they provide opportunities for students to engage with the community, develop empathy, and gain real-world experience.
- NSS unit conducted number of rallies, presentations and road shows with themes like Swach Bharat Abhiyan, Green Environment and Tree Plantation, Gender Sensitization, Traffic Rule Awareness, Blood Donation Camp, Voter Registration and Role of Voter in democracy and empowerment of girls and women. Sensitizing the students by celebrating birth day of renowned personalities, Independence Day, Constitution Day etc.
- Programs and activities like solar energy awareness for nearby school students, Jalsavardhan, Solid waste management, workshops on structural audit, Pune Metro rail, earthquake resisting structures, supports to schools and Polytechnic by conducting programs like A World in Motion, virtual labs during COVID Pandemic, experts sessions like e-vehicle, role of youth in attaining Bharat in energy, impact of COVID-19 on engineering students, and various IIC activities.
- **National Service Scheme:** NSS Unit of NKOCET organised number blood donation camps, conducted Swachata Abhiyan at Tale Hipparga, Lake Cleaning, Tree plantation, Road Safety Awareness, Food Donation(Chapati Day), COVID Awareness, Donation to Kerala Flood victims in Chief Minister Distress Relief Fund, Kerala, Child Labour Awareness Rally, Awareness towards helping the Orphanage etc.
- **Prominent Days Celebration:** Gandhi Jayanti, APJ Abdul Kalam-Vachan Prerana Diwas, Constitution Day, Teachers Day, Engineers Day, Republic Day, Independence Day, Yoga Day, Rastriya Ekta Diwas etc. celebrated to sensitize the students for their Holistic development.

- **Students Association Activities, AWIM of SAE India:** SAE collegiate club of NKOCET conducts school education initiatives called ‘A World in Motion’ which includes exploration of physics, mathematics and scientific concepts and skills enhancement to the secondary school students.

File Description	Document
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

### 3.4.2

#### Awards and recognitions received for extension activities from government / government recognised bodies

##### Response:

##### Response

- Institute has received many awards and recognition for extension activities from various government and non-government bodies. Institute has fetched many awards by contributing in social, academic, research and innovation related activities. Institute is constantly working with industries and government organization to serve neighborhood.
- **National Service Scheme (NSS):** NSS unit of the institute is actively involved in various social and community service activities. Through these blood donation camps, milestone of more than 3000 blood bottles is achieved. This contribution was appreciated by Damani, Ashwini Hospital, Civil Hospital Blood Banks. The Swachata Abhiyan, clean lake campaign and Shramdan Shibir at Tale Hipparga are major initiatives that help to maintain clean and healthy environment, also conducted rally on gender equality, road safety, Vyasamukti etc.
- **Students’ Organization:** Students’ organisations have donated food to needy people in collaboration with Jay hind Food Society by collecting chapatis daily. The chapati collection day was named ‘Chapati Day’. Students have done survey of Sambhaji Lake, participated in Smart City campaign and played active participation in Solar Ambassador workshop conducted by IITB. CESA organised Road Safety Awareness programme jointly with NHAI, Solapur.
- **AICTE- CII, ISRO and IIC:** Institute believes in maintaining strong industry connect. NKOCET participated in AICTE-CII survey and secured a place in prestigious ‘Platinum Band’ consecutively for three years. IIC of Institute got ‘three star’ ranking continuously for three years for IPR, Entrepreneurship and Innovation based activities. Workshops on remote sensing and GIS were conducted in collaboration with ISRO.
- **Awards from non-governmental agency:** Institute has been awarded as Outstanding Education institute in west zone of India by ABP News.
- **Awards from Affiliating University:** “Orchid Aura” an annual magazine of NKOCET has been awarded as second-best Magazine of professional institutes for year 2018-19 by Affiliating

University.

- **Appreciation of Team Members:** Institute encourages faculty members to contribute for extension activities at individual levels. Faculty members received Best Faculty Awards for their significant contributions from various organisations. Faculty members also empanelled on various government bodies for carrying out extension activities. SWAYAM portal has appreciated the contribution of institute by appreciating work of SPOC of the institute.

Name of the Activity	Name of the Government/non- government recognised bodies
Blood Donation Certificates and Thanking Letters	Damani Blood Bank, Ashwini Hospital Blood Bank, Hedgewar Blood Bank
Thanking Letters from Gram Panchayat, Tale Hippiarga, Solapur for Swachata Abhiyan, Paani Adva Paani Jirva, Survey on health and education.	Gram Panchayat, Tale Hippiarga, Solapur
Food Distribution to needy people.	Jay Hind Food Bank Society, Solapur
AICTE-CII Survey	AICTE
IIC Activities	IIC
National Education Awards	ABP News
Shruzanrang of Solapur University 2018-19, College Magazine.	Solapur University
NPTEL Local Chapter	NPTEL
Virtual Lab	Khadimani Urdu Forum Solapur
ISRO Activities	ISRO
SAE India Collegiate Club	SAE India
Azadi ka Amrit Mahotsav	Ministry of Culture
Youth Parliament	Divisional Police Office, Solapur
ARII	Ministry of Education, Government of India.

File Description	Document
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

### 3.4.3

*Number of extension and outreach programs conducted by the institution through organized forums including NSS/NCC with involvement of community during the last five years.*

**Response:** 62

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

2022-23	2021-22	2020-21	2019-20	2018-19
16	09	06	20	11

File Description	Document
Photographs and any other supporting document of relevance should have proper captions and dates.	<a href="#">View Document</a>
Institutional data in the prescribed format	<a href="#">View Document</a>
Detailed report for each extension and outreach program to be made available, with specific mention of number of students participated and the details of the collaborating agency	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>

### 3.5 Collaboration

#### 3.5.1

*Number of functional MoUs/linkages with institutions/ industries in India and abroad for internship, on-the-job training, project work, student / faculty exchange and collaborative research during the last five years.*

**Response:** 319

File Description	Document
Summary of the functional MoUs/linkage/collaboration indicating start date, end date, nature of collaboration etc.	<a href="#">View Document</a>
List of year wise activities and exchange should be provided	<a href="#">View Document</a>
List and Copies of documents indicating the functional MoUs/linkage/collaborations activity-wise and year-wise	<a href="#">View Document</a>
Institutional data in the prescribed format	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>



## Criterion 4 - Infrastructure and Learning Resources

### 4.1 Physical Facilities

#### 4.1.1

The Institution has adequate infrastructure and other facilities for,

- teaching – learning, viz., classrooms, laboratories, computing equipment etc
- ICT – enabled facilities such as smart class, LMS etc.

Facilities for Cultural and sports activities, yoga centre, games (indoor and outdoor), Gymnasium, auditorium etc (Describe the adequacy of facilities in maximum of 500 words.)

Response:

Response

#### A. Facilities for Teaching and Learning

The Institute has well maintained sprawling green campus spread over 10.6 acres of land ensuring adequate availability and optimal utilization of physical infrastructure for teaching learning activities. As per the norms of statutory bodies like UGC and AICTE, Institute has infrastructural facilities for effective teaching learning which includes classrooms, laboratories, computing equipment's, seminar halls, central library, Meeting rooms, Training and Placement office. The security of the campus is ensured with installation of CCTV cameras at strategic locations. As per the fire safety norms of government, entire campus is equipped with fire safety facilities.

- **Classrooms Facilities:**

- There are 35 **ICT enabled** classrooms for UG and PG programs.
- All classrooms are spacious and well ventilated and equipped with LCD, CCTV, Board, Dais, Desks, Fans and Tube Lights.

- **Tutorial rooms:**

- Separate tutorial rooms for all the departments.

- **Laboratories:**

- 56 laboratories are well equipped with state of the art equipment and facilities.
- These labs are utilized for conducting practical classes as per the requirements of the curriculum. These are also used for imparting education beyond curriculum.
- Labs have sufficient licensed software and open source tools to cater the requirements of curriculum and industry enabled teaching.
- Some laboratory setups are sponsored by Industries.
- Central workshop with advanced facilities including CNC machine.

- **Computing Facilities:**
- Total **657 computers** (Intel Pentium Core i3 and Core i5 with minimum 4GB RAM) to fulfill various academic needs.
- Server, UPS of different capacity, Printers and Scanners.
- CCF with 300 Mbps leased line.
- The MOOCs, Virtual Lab, Spoken Tutorial, NPTEL Videos, Webinars etc. are also used to enrich teaching-learning process
- **The Language Laboratory**
- The language laboratory is set up with state-of-the-art audio-visual equipment to aid in imparting language skills.
- **Seminar Hall:**
- The College has well equipped multiple seminar halls. These halls are regularly used for conducting various functions and for organizing workshops.

## B. Other Facilities Available

- **Cultural facility:** Cultural activities are carried on regular basis. Audio visual and stage arrangements are made available for cultural activities. Lawns covering area of 970 Sq. M available for conducting cultural activities.
- **Gymnasium:** Well-equipped gym is available in boys' hostel.
- **Yoga Centre:** Considering the importance of physical and mental fitness and the ever-increasing worldwide acceptance of Yoga, the facility center is made available in a spacious and well ventilated hall.
- **Central library** with separate reading rooms for boys and girls, digital library etc.
- Environmental Pollution assessment centre.
- Zensar Employability Skill Development Centre.
- Ladies room.
- Staff cabins.
- Separate hostels for boys and girls.
- Canteen.
- RO plant with a capacity of 1200 liters /hr.
- A fleet of buses to pick and drop the students from Solapur City.
- Playground.
- For the uninterrupted academic activity, one 45 KVA and two 35 KVA generators are provided.
- 36 kW Solar System is installed as a part of Green Initiative.

File Description	Document
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

#### 4.1.2

*Percentage of expenditure for infrastructure development and augmentation excluding salary during the last five years*

**Response:** 39.66

##### 4.1.2.1 Expenditure for infrastructure development and augmentation, excluding salary year wise during last five years (INR in lakhs)

2022-23	2021-22	2020-21	2019-20	2018-19
425.57	211.85	161.75	193.53	164.65

File Description	Document
Institutional data in the prescribed format	<a href="#">View Document</a>
Audited income and expenditure statement of the institution to be signed by CA for and counter signed by the competent authority (relevant expenditure claimed for infrastructure augmentation should be clearly highlighted)	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>

## 4.2 Library as a Learning Resource

#### 4.2.1

*Library is automated with digital facilities using Integrated Library Management System (ILMS), adequate subscriptions to e-resources and journals are made. The library is optimally used by the faculty and students*

**Response:**

**Response:**

The library is the heart of all academic activities of the Institute. Students are motivated to make the best use of library facilities to promote affinity towards reading and learning which are vital for the holistic development of the students.

- The built-up area of the library is 805 sq. mt. Separate reading facility are provided for Staff, boys, girls, and Research scholars.
- The library has different sections like a new arrival section, stacking area, circulation section, reference section, Periodical and Journal section, Digital library section and reading rooms.

- The library holds a rich collection of 60134 book volumes comprising 6729 book titles in the stacking area. In the reference section, there are 1445 reference books, and 65 national and e-journals are made available for the users.
- The library provides a book-bank facility to all First Year to Final Year students. In addition to this, the library has very good book collections for competitive examination, personality development, entrepreneurship, communication, and managerial skill books.
- NKOCET library is also proactive in reaching to students for online education during Covid pandemic. Remote access J Gate for research papers and Delnet for eBooks is also made available to the students.

#### Automation Using ILMS:

- The library is partially automated using e-Granthalaya LMS software. The library provides a single-window search and Web-OPAC service which can help the user to search the required books. The barcode system is also implemented for the books in the library.

Sr. No.	Parameter	Details
01	Library Management System	e-Granthalaya
02	Name of ILMS software	e-Granthalaya
03	Nature of automation	Partially
04	Version	3.0
05	Year of automation	2017-18

#### Subscription to e-resources

The library has a separate Digital library section, equipped with an adequate number of computers for access various e-resources, like.

Sr. No.	Source Available	(Yes/No)
1	DELNET	Yes
2	e-ShodhSindhu	Yes
3	e-Shodhganga	Yes
4	e-Pathshala	Yes
5	J Gate e-journals	Yes
6	NDL Membership	Yes
7	Turnitin Plagiarism Checker Software	Yes
8	Open Access	Yes

Remote access to the Library facility is also available to students through the I P based.

#### Amount Spent on the Purchase of Books and Journals, Yearwise During the Last Five Years

Particulars	Expenditure (2018-19 to 2022-23)				
	2018-19	2019-20	2020-21	2021-22	2022-23
Books	1131535	486396	3508	81483	302080
Journals, journals and Database	1316517	381608	101767	545009	269299
Total	1448052	868004	105275	626492	571379

### Per day Usage of Library

Library Users Issue and Return Entry are maintained through e-Granthalaya Software. In addition to this, the offline in and out Library entry register is also maintained in the library.

File Description	Document
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

## 4.3 IT Infrastructure

### 4.3.1

**Institution frequently updates its IT facilities and provides sufficient bandwidth for internet connection**

*Describe IT facilities including Wi-Fi with date and nature of updation, available internet bandwidth within a maximum of 500 words*

**Response:**

**Response:**

- **IT Facilities:**

- Institute has 35 ICT-enabled classrooms with LCD Projectors, six Seminar Hall with LCD projectors, LAN, Wi-Fi, and well-equipped 56 laboratories to ensure effective interactive learning, Tutorial Rooms, well equipped library with kindle devices
- The institute has highly configured 02 Servers (Powerful Intel Xeon processors), 3 Laptops, and a total of 657 computers for students.
- Institute has a dedicated 300 Mbps Leased Line Connectivity
- NPTEL Local Chapter facility is available for all the students of the institute where study material, video lectures of NPTEL are stored on server for a blended mode of learning.
- Campus is under full CCTV Surveillance with a HD Cameras
- Biometric attendance system is deployed for staff members.
- Institute has Special Recording Room facility with smart Board, HD Camera, Television to record the high quality videos for lectures

- **Network Management Softwares**

- Sonic Wall Firewall has been installed to protect all servers from outside attacks.
- For confidentiality and security issues, access to the Internet is availed through a separate login ID to each individual who wants to use the internet facility, separate IT policy is also implemented for the usage of the Internet through wired and Wi-Fi connection

- Institute uses many open source software and also has most frequently used Supporting Software in the laboratories for various processes and activities.

- **System and Application Softwares**

- Institute has various systems and application software as follows
- Available System software is Windows 10, Ubuntu 16.4, and Microsoft volume license copies of windows 10.
- Application Software's are available to at departments as per the application required from academic and research point of view. The application software mainly available are AUTOCAD, CATIA Ansys, MatLab, Staadpro, Tally ERP etc.
- Apart from the above software, required open-source software is being used effectively and students are encouraged to explore them for their learning and development
- In the Library turnitin software is available for checking the plagiarism

- **Open Source Softwares**

- Institute has various open source application software's available such as SciLab, Turbo C++, Open office, Anaconda, Jupiter notebook, Python IDE, Open CV, Hadoop, JDK, Xampp, MySQL, PhpMyAdmin, VMware-workstation, Virtual Box, NetBeans, Eclipse, Raspberry pi

- **IT Facilities Upgradation**

- The institute has 24x7 Wi-Fi facility on campus for the student and faculty members to avail of internet connection at any place in the college and hostel. The Internet Bandwidth of 300 Mbps 1:1 is available on the Campus. NAAS and TataTele business Services are the Internet Service Providers for the campus.
- The Internet bandwidth is upgraded from time to time as per requirement. The hardware routers and servers are upgraded regularly to match higher data speed demand. Periodic maintenance of IT infrastructure is done.

File Description	Document
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

#### 4.3.2

**Student – Computer ratio (Data for the latest completed academic year)**

**Response:** 3.43

**4.3.2.1 Number of computers available for students usage during the latest completed academic year:**

Response: 657	
File Description	Document
Purchased Bills/Copies highlighting the number of computers purchased	<a href="#">View Document</a>
Extracts stock register/ highlighting the computers issued to respective departments for student's usage.	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>

#### 4.4 Maintenance of Campus Infrastructure

<p><b>4.4.1</b></p> <p><i>Percentage expenditure incurred on maintenance of physical facilities and academic support facilities excluding salary component, during the last five years (INR in Lakhs)</i></p> <p><b>Response: 41.71</b></p>														
<p><b>4.4.1.1 Expenditure incurred on maintenance of infrastructure (physical facilities and academic support facilities) excluding salary component year wise during the last five years (INR in lakhs)</b></p> <table border="1"> <thead> <tr> <th>2022-23</th> <th>2021-22</th> <th>2020-21</th> <th>2019-20</th> <th>2018-19</th> </tr> </thead> <tbody> <tr> <td>320.84</td> <td>341.04</td> <td>162.22</td> <td>225.68</td> <td>167.38</td> </tr> </tbody> </table>					2022-23	2021-22	2020-21	2019-20	2018-19	320.84	341.04	162.22	225.68	167.38
2022-23	2021-22	2020-21	2019-20	2018-19										
320.84	341.04	162.22	225.68	167.38										
File Description	Document													
Institutional data in the prescribed format	<a href="#">View Document</a>													
Audited income and expenditure statement of the institution to be signed by CA for and counter signed by the competent authority (relevant expenditure claimed for maintenance of infrastructure should be clearly highlighted)	<a href="#">View Document</a>													
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>													

## Criterion 5 - Student Support and Progression

### 5.1 Student Support

#### 5.1.1

*Percentage of students benefited by scholarships and freeships provided by the institution, government and non-government bodies, industries, individuals, philanthropists during the last five years*

**Response:** 88

**5.1.1.1 Number of students benefited by scholarships and freeships provided by the institution, Government and non-government bodies, industries, individuals, philanthropists during the last five years**

2022-23	2021-22	2020-21	2019-20	2018-19
2021	1824	1776	1743	1670

#### File Description

#### Document

Year-wise list of beneficiary students in each scheme duly signed by the competent authority.

[View Document](#)

Upload Sanction letter of scholarship and free ships (along with English translated version if it is in regional language).

[View Document](#)

Upload policy document of the HEI for award of scholarship and freeships.

[View Document](#)

Institutional data in the prescribed format

[View Document](#)

Provide Links for any other relevant document to support the claim (if any)

[View Document](#)

#### 5.1.2

*Following capacity development and skills enhancement activities are organised for improving students' capability*

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

**Response:** A. All of the above



File Description	Document
Report with photographs on Programmes /activities conducted to enhance soft skills, Language and communication skills, and Life skills (Yoga, physical fitness, health and hygiene, self-employment and entrepreneurial skills)	<a href="#">View Document</a>
Report with photographs on ICT/computing skills enhancement programs	<a href="#">View Document</a>
Institutional data in the prescribed format	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>

### 5.1.3

**Percentage of students benefitted by guidance for competitive examinations and career counseling offered by the Institution during the last five years**

**Response:** 72.06

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

2022-23	2021-22	2020-21	2019-20	2018-19
1956	1589	1749	843	1261

File Description	Document
Upload supporting document	<a href="#">View Document</a>
Institutional data in the prescribed format	<a href="#">View Document</a>

### 5.1.4

*The institution adopts the following for redressal of student grievances including sexual harassment and ragging cases*

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

**Response:** A. All of the above

<b>File Description</b>	<b>Document</b>
Proof w.r.t Organisation wide awareness and undertakings on policies with zero tolerance	<a href="#">View Document</a>
Proof related to Mechanisms for submission of online/offline students' grievances	<a href="#">View Document</a>
Proof for Implementation of guidelines of statutory/regulatory bodies	<a href="#">View Document</a>
Details of statutory/regulatory Committees (to be notified in institutional website also)	<a href="#">View Document</a>
Annual report of the committee motioning the activities and number of grievances redressed to prove timely redressal of the grievances	<a href="#">View Document</a>

## 5.2 Student Progression

### 5.2.1

**Percentage of placement of outgoing students and students progressing to higher education during the last five years**

**Response:** 68.15

**5.2.1.1 Number of outgoing students placed and / or progressed to higher education year wise during the last five years**

2022-23	2021-22	2020-21	2019-20	2018-19
317	344	477	394	289

**5.2.1.2 Number of outgoing students year wise during the last five years**

2022-23	2021-22	2020-21	2019-20	2018-19
418	506	661	576	511

File Description	Document
Number and List of students placed along with placement details such as name of the company, compensation, etc and links to Placement order(the above list should be available on institutional website)	<a href="#">View Document</a>
List of students progressing for Higher Education, with details of program and institution that they are/have enrolled along with links to proof of continuation in higher education.(the above list should be available on institutional website)	<a href="#">View Document</a>
Institutional data in the prescribed format	<a href="#">View Document</a>

### 5.2.2

*Percentage of students qualifying in state/national/ international level examinations during the last five years*

**Response:** 12.46

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

2022-23	2021-22	2020-21	2019-20	2018-19
08	15	26	30	27

File Description	Document
List of students qualified year wise under each category and links to Qualifying Certificates of the students taking the examination	<a href="#">View Document</a>
Institutional data in the prescribed format	<a href="#">View Document</a>

## 5.3 Student Participation and Activities

### 5.3.1

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

**Response: 66**

**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 the last five years**

2022-23	2021-22	2020-21	2019-20	2018-19
9	4	0	15	38

File Description	Document
Upload supporting document	<a href="#">View Document</a>
list and links to e-copies of award letters and certificates	<a href="#">View Document</a>
Institutional data in the prescribed format	<a href="#">View Document</a>

### 5.3.2

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

**Response: 34.4**

**5.3.2.1 Number of sports and cultural programs in which students of the Institution participated year wise during last five years**

2022-23	2021-22	2020-21	2019-20	2018-19
44	22	8	44	54

File Description	Document
Upload supporting document	<a href="#">View Document</a>
Institutional data in the prescribed format	<a href="#">View Document</a>

## 5.4 Alumni Engagement

### 5.4.1

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

**Response:**

**Response:**

**The Nagesh Karajagi Orchid College of Engineering and Technology, Solapur** has a registered **Alumni Association (Registration number: Solapur /0000159/2018 dated 5th April 2018)**. The association interfaces between the eminent alumni and the institute for creating a strong network. Some of the students, who intend to become entrepreneurs, are placed with our Alumni who have already established themselves as a successful entrepreneurs.

**The Functions of the Association are:**

1. To bring the Alumni together to keep them in contact with the Alma-mater.
2. To foster the relationship between Alumni and the present students.
3. To get participation of Alumni in the developmental activities of the Institute.
4. To develop Industry-Institute interaction through Alumni members by conducting Alumni meet.
5. To improve placement opportunities for fellow alumni fresh graduates.

**The Activities of the Alumni Association:**

It is entrusted and vested in accordance by the Governing Body. The Governing Body includes President, Secretary, Joint secretary, Treasurer and seven other members. The governing body shall meet at least twice in a year. The General Body meeting of the Alumni Association of the Institute is held at least once in a year. So far Alumni Association of the Institute has successfully conducted Alumni meets every year at Solapur and Pune. Institute have nominated one alumni as a member of Internal Quality Assurance Cell (IQAC). Alumni is involved in the development and application of quality benchmarks for various academic and administrative activities of the institution.

**Alumni on Departmental Advisory Board:** Few prominent Alumni are member of our departmental advisory board. They have active participation in the development activities of the department. They suggest changes in the course content and new courses to be introduced in various programs as per the need of Industry.

**Alumni as an Industry Experts:** Some of the alumni work as an industry expert. Alumni who are working in different organizations share their professional experience with the students enhancing teaching learning process. This helps students for a transition from campus to corporate.

**Internship and Entrepreneurship Opportunities from Alumni:** Alumni from different domains help students to get internship at various industries. The Entrepreneurship Development Cell (EDC) of the institute organizes lectures of prominent alumni's to inculcate entrepreneurship skills in the students. Alumni are invited as judges for various technical competitions organized at the institute.

**Student's Placements and Employability Enhancement**

Alumni significantly contribute in the student placement activity. Some alumni act as linkages between the student and company to check that the requirements of the industry are satisfied before they are finally selected. Apart from this most of our alumni conduct Mock interviews as per the requirements of the students.

**Alumni Feedback:** IQAC takes regular feedback from alumni on various issues which helps in overall development of the students. They share their professional experience and make students aware of recent technologies and tools used in the industry.

File Description	Document
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

## Criterion 6 - Governance, Leadership and Management

### 6.1 Institutional Vision and Leadership

#### 6.1.1

*The institutional governance and leadership are in accordance with the vision and mission of the Institution and it is visible in various institutional practices such as NEP implementation, sustained institutional growth, decentralization, participation in the institutional governance and in their short term and long term Institutional Perspective Plan.*

#### Response:

The Vision and Mission of the institute have been developed with the active participation of all internal members and stakeholders.

#### Vision

To emerge as a leading Technological Institute ensuring Academic Excellence, fostering industry readiness and developing globally Competent Technocrats

#### Mission

- To strive for excellence in our teaching-learning process, encouraging creativity and critical thinking
- Strengthening industry-institute interaction
- Providing holistic education for the students' personality development
- To imbibe universal values of respect, commitment and team spirit
- Providing employable education
- Promoting innovation, research and consultancy

The important components of the Vision and Mission are:

- **Academic excellence**

The institute is well recognized for excellent teaching-learning process. Faculties are motivating students to enroll for co-curricular courses like NPTEL, Coursera, Udemy etc. Students are motivated to participate in different National level competitions such as Akruiti, e-Yantra, different Hackathons, Avishkar etc. This practice has ensured excellent results, University rankers and placements in reputed industries.

- **Industry readiness**

NKOCET co-ordinates the conduction of online training programs by Indian Institute of Remote Sensing (IIRS) for the Institute students. Soft branches students are trained on different technologies under Zensar Employability Skill Development (ESD) program MOUs are signed with industries like Dassault Foundation System, Tata Technologies Ltd, Zensar etc., This helped to bridge the gap between industry and academia and ensured excellent placements in all branches.

• **Innovation and Research**

The Institute has successfully instilled a culture of research in its faculty members and students. To promote research activities, the management has introduced policy for teachers and students. The growing number of publications, MOUs signed and the research grant of **Rs.1.75Cr** in last five years from renowned organizations, serve as a clear testament to the Institute's dedication to nurturing and encouraging research.

**Governance and Leadership**

- The governance and leadership in the institute is functioning in accordance with vision and mission of the institution.
- The **Governing body(GB), Local Management /College Development committee** take policy decisions regarding the functioning of the institute.
- Principal is implementing the decisions at institute level though decentralized approach.
- 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 like **Role Holders’ Committee, Academic Monitoring Committee, Anti-ragging committee, Student council, different student associations and clubs.**
- As per NAAC framework & guidelines the institute has formulated **IQAC**. It ensures periodical conduct of Academic and Administrative Audits for overall development and growth of the institute.

**NEP implementation**

- Skill development through add-on courses, value based education through elective subjects from DBATU university curriculum, six-month internship for final year students/Project based learning.
- Outcome based education and continuous assessment through institute level exams.
- Distance / Online Education through different platforms to seek minor degree along with honours as per DBATU policy.

**Decentralization and Participation**

- The Institute firmly believes and adheres to the maxim of decentralization and participative management.
- Decentralization in the Institute has been properly designed and implemented through the document “Policy Manual”
- The “perspective plan” demonstrates Short term and long term goals along with sustained institutional growth.

File Description	Document
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>



## 6.2 Strategy Development and Deployment

### 6.2.1

*The institutional perspective plan is effectively deployed and functioning of the institutional bodies is effective and efficient as visible from policies, administrative setup, appointment, service rules, and procedures, etc*

#### Response:

#### Response

The functioning of the various institutional bodies and administration of NKOCET is well defined and visible from the **Institute Policy Manual and the Organogram**. The trust 'Pradnya Niketan Education Society, Pune' was established by 14 technocrats and bureaucrats, in the year 2004 with the motto of Locally Rooted Globally Competent Education.

The **administrative setup** is visible in the organogram of the institute which contains various hierarchies to operate.

Governing Body and Local Management Committee/College Development Committee are well structured and are instrumental in decision making process. Role Holders committee comprising Deans, HODs and Coordinators is formed at institute level to plan, implement and review the activities and decisions with academics and administration for smooth functioning of institutional bodies. The statutory committees such as GB/CDC, Internal Quality Assurance Cell (IQAC), Student Council, Anti-Ragging Committee, Grievance Redressal Cell, Parent Teacher Association are in place and playing their roles effectively. Department Advisory Board, Academic Monitoring Committee, Research and Development Committee, Training and Placement Cell, Career Counselling Cell, Study Abroad Cell are making policies and strategies to enhance effectiveness of teaching learning process.

**The policies related to appointment, service rules and procedures** are well defined in policy manual and are transparent. The appointments and promotions of all cadres of faculty are made as per the norms of Maharashtra University Act, 2016, and AICTE norms.

**Institutional Strategic/ Perspective Plan** is deployed to achieve short term and long-term goals which in turn help to attain the vision and mission of the institute. A regular review of short term/long term goals is taken by management. The achievement status of short term and long term goals is shown in below table:

Short Term Goals	Current Status	Long Term Goals	Current Status
Placement more than 65%	Achieved	Number of PhDs: 30% of total faculties	25% Achieved
Number of PhDs: 02 / Department	Achieved	100% Placement	65% Achieved
SCOPUS indexed/ Peer reviewed paper: 01 per faculty members	50% Achieved	10% Entrepreneurs & 20% higher studies	5% Entrepreneur & 15% higher studies

			Achieved
At least 05 patents to be filled in every year	Achieved	Establishing research centers in all departments.	In Civil and Mech. departments research centers established.
Getting Research funds from various agencies	Achieved	Getting accredited by NAAC/NBA	NAAC Cycle1 is completed in A.Y. 2017-18 & NAAC Cycle2 is in progress.
Organizing student competitions department wise every year	Achieved	Collaborations with international institutes	Polytech Nancy, France
Centre of Excellence in each department	Achieved		
At least one FDP in every department per year.	Achieved	Autonomous status	Expected from A.Y. 2024-25.
Every faculty must complete one NPTEL course in a year.	Achieved		

The institute has achieved several milestones in last fifteen years. Every year students bag several ranks in university examinations, last three year placements are at its peak, students and faculty members are involved in innovation and societal research, Students are pursuing higher studies from premier institutes and abroad Universities. Our Institute is consistently ranked in platinum band by AICTE and CII for best industry linked institutes in India.

File Description	Document
Upload Additional information	<a href="#">View Document</a>
Institutional perspective Plan and deployment documents on the website	<a href="#">View Document</a>

## 6.2.2

*Institution implements e-governance in its operations*

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

**Response:** A. All of the above

File Description	Document
Screen shots of user interfaces of each module reflecting the name of the HEI	<a href="#">View Document</a>
Institutional expenditure statements for the budget heads of e-governance implementation ERP Document	<a href="#">View Document</a>
Annual e-governance report approved by the Governing Council/ Board of Management/ Syndicate Policy document on e-governance	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>

## 6.3 Faculty Empowerment Strategies

### 6.3.1

**The institution has performance appraisal system, effective welfare measures for teaching and non-teaching staff and avenues for career development/progression**

**Response:**

**Response**

#### **Performance Appraisal System (PAS)**

- PAS system is implemented for faculty and staff members. The PAS for faculty includes performance in **Academic Results, Student Feedback, Contribution in R&D, contribution in Co-curricular and Extra-Curricular activities and assessment by higher authorities.** Minimum expectation levels are defined for each cadre addressing contributions appropriate to each cadre.
- The incumbent **assistant professor** should focus more on academics and teaching pedagogies.
- For **Assistant Professor** having experience between 2 to 5 years should try to establish connect with industry, contribute in department level and institute level co-curricular and extra-curricular activities. For Assistant Professor minimum expected marks in appraisal should be 68/100.
- Faculty members working at the level of **Associate Professor** 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. For associate professor minimum expected marks should be 75/100.
- Faculty members working at the level of **Professor** should try to get research grants by writing proposals to various agencies. For Professor minimum expected marks in appraisal should be 80/100.
- The faculty submits Self-Appraisal Report which is assessed by the Head of Department and Dean (Admin) submits consolidated report of each department to the Principal. Based on the performance best performing faculty members from each department are felicitated with

memento and certificate for ‘**Best Faculty award**’. Low performing faculty members are counselled by HOD and Dean (Admin). Suggestions are given to overcome shortcomings. 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 such as Technical Assistant, Clerk, Peon, Housekeeping staff, Security Staff addressing contributions appropriate for each cadre. The ‘**Best Employee**’ is awarded from each cadre of non-teaching and supporting staff having excellent performance in that cadre.

### Effective Welfare Measures

Welfare measures for teaching and non-teaching staff are as follows:

- Provision of EPF is made for all faculty members who completes one year of their service in our institute.
- The Institute provides gratuity to all eligible teaching and nonteaching staff members.
- The Institute provides Group Medical Insurance facility for all faculty and staff members
- Fee waiver scheme for the wards of employees: 50% fee waiver is given in tuition fees to children of faculty and staff members who take admission in our institute.
- Special Allowance is given to role holders for recognizing their additional efforts. For Deans and HoDs Rs. 5,000/- per month and for departmental T and P Coordinators Rs. 1,500/- per month is given as special allowance.
- Incentive for Research Publications: Incentives for research publication are given as per R&D policy.
- Institute provides reimbursement of 50% of the registration fees paid by faculty members for attending STTP, FDP and NPTEL examination fees and full travelling allowance.
- 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, etc.

File Description	Document
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

### 6.3.2

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

**Response:** 65.74

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

2022-23	2021-22	2020-21	2019-20	2018-19
75	72	62	98	48

File Description	Document
Policy document on providing financial support to teachers	<a href="#">View Document</a>
Policy document on providing financial support to teachers	<a href="#">View Document</a>
Institutional data in the prescribed format	<a href="#">View Document</a>
Copy of letter/s indicating financial assistance to teachers and list of teachers receiving financial support year-wise under each head.	<a href="#">View Document</a>
Audited statement of account highlighting the financial support to teachers to attend conferences / workshop s and towards membership fee for professional bodies	<a href="#">View Document</a>

### 6.3.3

*Percentage of teaching and non-teaching staff participating in Faculty development Programmes (FDP), Management Development Programmes (MDPs) professional development /administrative training programs during the last five years*

**Response:** 53.12

**6.3.3.1 Total number of teaching and non-teaching staff participating in Faculty development Programmes (FDP), Management Development Programmes (MDPs) professional development /administrative training programs during the last five years**

2022-23	2021-22	2020-21	2019-20	2018-19
87	58	59	96	75

**6.3.3.2 Number of non-teaching staff year wise during the last five years**

2022-23	2021-22	2020-21	2019-20	2018-19
30	30	34	36	36

File Description	Document
Refresher course/Faculty Orientation or other programmes as per UGC/AICTE stipulated periods, as participated by teachers year-wise.	<a href="#">View Document</a>
Institutional data in the prescribed format	<a href="#">View Document</a>
Copy of the certificates of the program attended by teachers.	<a href="#">View Document</a>
Annual reports highlighting the programmes undertaken by the teachers	<a href="#">View Document</a>

## 6.4 Financial Management and Resource Mobilization

### 6.4.1

**Institution has strategies for mobilization and optimal utilization of resources and funds from various sources (government/ nongovernment organizations) and it conducts financial audits regularly (internal and external)**

**Response:**

**Response**

#### **Resource Mobilization and Optimal Utilization Strategies**

- The institute has an effective system in place to track how well the financial resources are being used for academic, administrative and development purposes, which ensures to achieve the Institute's Mission and Vision.
- The budget for the academic year is prepared by considering all the possible income and expenditures. Being a self-financed college, the primary source of income is the fees paid by the students. College fees is approved by Fee Regulating Authority, by considering various expenditures in audit reports.
- The important heads of expenditures are salary of employees, administrative expenditure, educational expenses and capital expenses. Various funding schemes of affiliating University DBATU are utilized for organizing FDPs, STTPs, conferences, and workshops, etc.
- Research funds are also received by faculty members from government and non-government organizations such as AICTE MODROBS, MPCB, and Dassault Systems etc. The Institute applies for various schemes of NSS and the Student Welfare Department of DBATU and accordingly utilizes the sanctioned funds for organizing various activities as per the norms of DBATU.
- At the beginning of every academic year, all the departments prepare a budget based on the requirements. The financial requirements of each department are compiled and forwarded to the Principal's office. The Principal's office reviews the budget and presents it to the Local Management Committee (LMC)/ College Development Committee (CDC) for approval.
- The LMC/CDC critically reviews the budget and it is approved after necessary corrections. Once

the budget is approved, the Heads of Departments can proceed with the planned activities

- **Salaries of the Employees**

The salaries of employees are paid as per the statutes and norms of the Govt. of Maharashtra. The remuneration/honorarium is given to resource persons for various academic and administrative events. The Institute supports the faculty and staff for seminars/workshops/conferences/FDP/ NPTEL courses etc.

- **Augmentation of Infrastructure**

The infrastructure is augmented and repairs and maintenance in terms of classrooms, laboratories, instruments, equipment, software, hardware, furniture and library.

- **Internal and External Financial Audits**

The institute conducts transparent **internal and external financial audits** periodically. The **internal financial audit** of the Institute is entrusted to CA along with the institute's accounts department. The copies of invoices, vouchers and supporting documents related to the expenditure are maintained in the accounts department of the institute. All the documents are verified by the accounting officer and discrepancies if any, are brought to the attention of the head of the Institute for immediate rectification. The accounts department consolidates all the expenditures made in the financial year. The internal audit is done monthly during the financial year. The records are verified during the internal audit. Further, an internal audit is also carried out for all the grants received. Every financial year, the **external financial statutory audit** is conducted by a chartered accountant Mr. K. K. Bhagvat. A comprehensive examination and verification of all the financial transactions are carried out. All observations and objections of the auditor are communicated through their report to the institute.

File Description	Document
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

## 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. It reviews teaching learning process, structures & methodologies of operations and learning outcomes at periodic intervals and records the incremental improvement in various activities**

**Response:**

## Response

Institute has developed **Internal Quality Assurance Cell (IQAC)** in 2017 as per NAAC guidelines. IQAC Meetings are conducted regularly to develop quality benchmarks for various academic and administrative activities of our institute. It ensures learner-centric environment to adopt the required knowledge and technology for participatory teaching and learning process. IQAC takes feedback from all the stakeholders regarding quality enhancement and chalks out a plan of action on the basis of inputs received from time to time. The outcomes are observed periodically and corrective measures are taken. IQAC ensures organizing inter and intra institutional workshops, seminars, programmes /activities leading to quality improvement. It acts as a nodal center for institutionalizing quality-related activities and best practices. IQAC ensures periodical conduct of Academic and Administrative Audits. AQAR is presented and documented in IQAC meeting before it is submitted to NAAC. Institute has benefited in a number of ways such as more Participation in NPTEL by our students and faculty members, Participation in AICTE-CII Survey and, IIC Ranking, IQAC has contributed significantly in the following activities:

### 1. Comprehensive plan for placement

**Action Plan:** a) In-house aptitude and soft skill classes to be conducted. b) Students to be motivated to register for online programming courses to enhance their programming skill. c) Pre-Placement workshop (PPW) to be conducted in three parts. i) PPW-1- After TY sem.-I, ii) PPW-2- After TY Sem.-II, iii) PPW-3- Company specific training (CST) d) Technical as well as project mock interviews to be conducted for shortlisted students.

**Outcome:** IQAC observed significant improvement in our placements in last five years. The details are presented in the following table.

Sr. No.	Year	Placement
1	2017-18	266
2	2018-19	346
3	2019-20	449
4	2020-21	470
5	2021-22	474

### 1. Participation in NPTEL

**Action Plan:** It was decided to increase participation of students and faculty members in NPTEL courses

**Outcome:** To take this initiative forward and to encourage more students across colleges to participate in this initiative, we have set up NPTEL chapter in our college. In last five years our 1600 students and 150 faculty members have completed NPTEL certification courses.

### 3) Participation in AICTE-CII Best Industry Linked Institute Survey.

**Action Plan:** It is decided to participate in this survey every year.

**Outcome-**NKOCET has been rated amongst the Platinum Institute by AICTE-CII Survey of Industry Linked Tech. Institutes for consecutive last three years. Only 145 institutes out of 10,000 in the country are in the platinum band. Our Mechanical Engineering Department was selected consecutively for two



years amongst the top seven contenders in AICTE- CII Best Industry linked department.

#### 4) Implementation of best practices

**IQAC** has decided to implement two best practices namely **Employability Skills, Enhancement Program and Enriching Academia through Industry Collaboration.**

##### **1: Integrated Approach for Holistic Development Inclusive of Employability Skills**

The Institute makes students to excel in Placements by developing their Soft Skills, Aptitude and Core skills.

##### **2: Development of Research and Work Culture with Industry Collaboration**

The institute has made meritorious efforts to enrich research and work culture through industrial collaboration.

File Description	Document
Upload Additional information	<a href="#">View Document</a>

#### 6.5.2

**Quality assurance initiatives of the institution include:**

- 1.Regular meeting of Internal Quality Assurance Cell (IQAC); quality improvement initiatives identified and implemented**
- 2.Academic and Administrative Audit (AAA) and follow-up action taken**
- 3.Collaborative quality initiatives with other institution(s)**
- 4.Participation in NIRF and other recognized rankings**
- 5.Any other quality audit/accreditation recognized by state, national or international agencies such as NAAC, NBA etc.**

**Response:** A. Any 4 or more of the above

<b>File Description</b>	<b>Document</b>
Quality audit reports/certificate as applicable and valid for the assessment period.	<a href="#">View Document</a>
NIRF report, AAA report and details on follow up actions	<a href="#">View Document</a>
List of Collaborative quality initiatives with other institution(s) along with brochures and geo-tagged photos with caption and date.	<a href="#">View Document</a>
Link to Minute of IQAC meetings, hosted on HEI website	<a href="#">View Document</a>

## Criterion 7 - Institutional Values and Best Practices

### 7.1 Institutional Values and Social Responsibilities

#### 7.1.1

**Institution has initiated the Gender Audit and measures for the promotion of gender equity during the last five years.**

*Describe the gender equity & sensitization in curricular and co-curricular activities, facilities for women on campus etc., within 500 words*

**Response:**

**Response**

***Gender Equity:***

The Institute takes efforts in maintaining Gender Equity in the campus which is visible through the training opportunities given, activities conducted, facilities provided and appointing girl students in different committees. The Institute prides at a good number of girl students in the Institute and Female faculty members in the campus.

- Girls are representatives in different committees like Departmental Student Committees, Cultural Committee, NSS, Student Association and Magazine Committee. By allowing girls to be part of these committees, they gain valuable experience in leadership, teamwork, and decision-making. This empowerment can boost their confidence and skills, which can benefit them both in their academic and future professional lives. A mix of male and female representatives fosters an inclusive and equitable atmosphere, which is conducive to learning and personal growth. It sends a message that the institution values and respects the perspectives and voices of all its students.
- Anti-Ragging and Internal Complaint Committees are formed to prevent and resolve cases relevant to ragging and harassment of Girl students. The Internal Complaint Committee is focused on preventing and addressing cases of sexual harassment within the institution. It ensures that the campus is a safe and respectful place for all, with specific attention to the well-being of female students.
- Women's Day is celebrated on 8th March and activities like awareness about laws for women, health awareness, yoga sessions etc. are organized. It also serves as a day to raise awareness about gender equality, women's rights, and the ongoing challenges that women face.
- Awareness about the safety of the girls is created through NSS activities and Cultural Events. NSS involves students in various community service activities. These activities often include initiatives related to women's safety and empowerment. Students can organize self-defense workshops, awareness campaigns, and engage with local communities to address safety concerns.
- Nirbhaya Pathak-a unit of the police department visits the institute on regular basis to create awareness and control any form of harassment or ragging in the institute.
- Psychological Counselling is provided by a professional counsellor to the girl students. Providing psychological counseling to girl students by a professional counselor is a valuable and supportive service that can have a significant impact on their well-being and personal development.
- To ensure security of the girl students CCTVs are installed in the campus.

- Girl Students participate in Cultural and Sports Events organized by the Institute.
- Various facilities are provided like- Book bank facility, library reading room, hostel, rest room, washroom, sanitary napkin wending and destroying machine, complaint box and bus service.
- Students feel connected to their CCs and proctors, who make themselves available for any counseling need of the students.
- Girl students are provided training and placement opportunities by the Institute. In the year 2018-19= 61, 2019-20=175, 2020-21=143, 2021-22=118 & 2022-23= 140 girl students were placed.

File Description	Document
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

### 7.1.2

**The Institution has facilities and initiatives for**

1. Alternate sources of energy and energy conservation measures
2. Management of the various types of degradable and nondegradable waste
3. Water conservation
4. Green campus initiatives
5. Disabled-friendly, barrier free environment

**Response:** A. 4 or All of the above

File Description	Document
Policy document on the green campus/plastic free campus.	<a href="#">View Document</a>
Geo-tagged photographs/videos of the facilities.	<a href="#">View Document</a>
Circulars and report of activities for the implementation of the initiatives document	<a href="#">View Document</a>
Bills for the purchase of equipment's for the facilities created under this metric	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>

### 7.1.3

**Quality audits on environment and energy regularly undertaken by the Institution. The institutional environment and energy initiatives are confirmed through the following**

1. Green audit / Environment audit
2. Energy audit
3. Clean and green campus initiatives
4. Beyond the campus environmental promotion activities

**Response:** B. Any 3 of the above

File Description	Document
Report on Environmental Promotional activities conducted beyond the campus with geo tagged photographs with caption and date	<a href="#">View Document</a>
Policy document on environment and energy usage Certificate from the auditing agency	<a href="#">View Document</a>
Green audit/environmental audit report from recognized bodies	<a href="#">View Document</a>
Provide Links for any other relevant document to support the claim (if any)	<a href="#">View Document</a>

#### 7.1.4

**Describe the Institutional efforts/initiatives in providing an inclusive environment i.e., tolerance and harmony towards cultural, regional, linguistic, communal socioeconomic and Sensitization of students and employees to the constitutional obligations: values, rights, duties and responsibilities of citizens (Within 500 words)**

**Response:**

**Response**

- The Institute has taken innumerable efforts to maintain an aura of inclusion and situatedness. Human values and professional ethics are inculcated through various measures that are implemented by the institute.
- The Institute has formed Cultural Committee inclusive of teaching faculty and students. The Committee plans various events like celebration of days of commemorative importance like Yoga Day, Netaji Subhash Chandra Bose Jayanti, Mahatma Gandhi Jayanti, Republic Day, Independence Day and so on. Students play a vital role in organizing these events which inculcates a sense of responsibility, mutual understanding, tolerance and harmony towards cultural, regional and linguistic aspects.
- The Institute celebrates Annual Cultural event which encompasses varied events that cherish the unity amongst the students. Students display varied colours and ethnicity on the same platform. Students showcase their hidden talents and overcome their fear of expression. Their performances are valued and appreciated in the form of awards. Cultural coordinators are selected, who lead the event bearing a sense of responsibility and trying to retain a sense of unity amongst their peers.
- Even during the pandemic when everything went down, classes were online, the cultural committee took a new step and went for an online cultural event, where students recorded their

videos of dance and singing. These were then presented before the audience through online mode i.e. Microsoft Teams.

- The College magazine Orchid Aura comprises of a variety of language sections like English, Hindi, Marathi, Sanskrit, Urdu and Telugu along with the Technical Section. It is a canvass that showcases their talent bringing them together and creating a bond of understanding, compassion and empathy. Ultimately Moulding future citizens who show respect and consideration to different ideologies and cultures. During the pandemic the Institute came up with the concept of E-Magazine. The magazine is made available in pdf and audio format.

### Online link of the Gathering

<https://www.youtube.com/watch?v=SM-pCfwSPeA>

- The Institute comes up with a compilation of the articles, poems and art of the students through it's magazine "Orchid Aura". This a platform again led by the students who pen down their thoughts, feelings, ideas and creativity. The magazine mirrors the minds of the young future of the country.

### Online Magazine Link

1. <https://www.orchidengg.ac.in/about-us/orchid-aura-2020/>
2. <https://www.orchidengg.ac.in/orchid-aura-2021/>
3. <https://online.fliphtml5.com/soqdj/vsne/#p=1>

- Alongwith all these practices the Institute has a NSS team of students led by a Teaching Faculty. This team of coordinators organize events like Blood donation camp, Awareness sessions on Safety rules, Voting Rights, Cleanliness Campaigns, Plantation of trees, Celebrating days of national importance and so on. These activities lead towards the holistic development of the students.
- Departmental Student associations are formed that perform social work like chapati donation, collecting funds during natural crises, cleaning the campus, donating clothes and food to the orphanages and the poor and celebrating birthdays in the orphanages. Students become aware about the social environment and are sensitive towards their roles and responsibilities as the citizen of the nation.
- The Institute leaves no stone unturned to shape the young minds with compassion and value based learning that is possible beyond the classroom teaching.

File Description	Document
Upload Additional information	<a href="#">View Document</a>
Provide Link for Additional information	<a href="#">View Document</a>

## 7.2 Best Practices

### 7.2.1

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

**Response:**

**Response**

### ***BEST PRACTICE -I***

**Title of the Practice -** Integrated approach for Holistic development inclusive of Employability Skills

**Objectives of the Practice -**

- Developing SOFT SKILLS of the students
- Developing APTITUDE SKILLS of the students
- Developing Domain CORE SKILLS of the students

**Context -**

- NEP 2020 focuses on Importance of skill development of students including soft skills
- Industry Prefers students with excellent aptitude skills, programming skills and excellent communication skills
- Producing Industry-Ready-Engineers is one of the objectives of the institute
- The institute has designed well planned Soft Skills Module, Aptitude Module, Pre-Placement workshop module and Company Specific Module

**The Practice -**

- **SOFT SKILLS MODULE**
  - Inhouse Structured Soft Skills Training
  - Developing Interpersonal Skills and Verbal Ability of the Students
  - Students are profiled based on their performance
- **APTITUDE MODULE**
  - Inhouse Aptitude Training
  - Systematic and Outcome Based Curriculum Delivery
  - 2 hours per week sessions included in the regular timetable in Second and Third Year
- **PRE-PLACEMENT WORKSHOP MODULE**
  - Workshop on Aptitude (Quantitative, Logical aptitude and reasoning)
  - Workshop on programming
  - Workshop on Verbal Ability, Writing Skills, Group Discussion, Interview Skills, Resume Writing and Extempore.
- **COMPANY SPECIFIC TRAINING MODULE**
  - Campus Specific Training is conducted before placement drives on Verbal Ability, Aptitude, Mock Technical and HR interviews, Group Discussions, Extempore Speech practice sessions and Resume building

### Evidence of Success -

Year	Placements
2018-19	346
2019-20	449
2020-21	470
2021-22	474
2022-23	414

*Since 2018-19 placements have been incredibly good like in TIAA Industry 49 students have been placed with an average package of 10.48 LPA*

### Problems Encountered and Resources Required -

- There was lack of awareness among the students about the importance of Soft Skills.
- Consistent efforts and good placements resulted in a positive response from the students
- Students from Mechanical and Electrical Engineering department showed lack of interest in learning C & C++. However, after proper counselling on the importance of programming languages in their career, the students were interested to learn programming.
- In Soft Skills sessions students were hesitant to perform during mock Group Discussion and Personal Interview practices. However, through counselling, interaction and the use of modern Teaching pedagogies and teaching aids like mobile applications, online platforms and Video mirroring students were motivated and proactive participation increased.

*This best practice of our institute has led into boosting the confidence of the students during the campus drives leading into exceptional placements.*

## ***BEST PRACTICE II***

**Title of the Practice-** Development of Research and Work Culture with Industry Collaboration

### Objectives of the Practice -

- Preparing Industry Ready Engineers
- Receiving grants from industry
- Creating opportunities for testing and consultancy

### Context -

- NEP 2020 Focuses on Skill enhancement of the Engineering Graduates
- Industry prefers engineers with updated technical skills in line with current technological trends
- To produce Industry-Ready-Engineers is one of the objectives of the institute

### The Practice -



- **MOU's with Industry**

- MoU with Tata Technologies has resulted in Distance Ready Engineers Program, where in students are imparted training by the industry experts.
- MoU with Thermax Ltd. Pune has led into training and placements
- MoU with Dassault Systems Limited has resulted in receiving grant of 70 lakhs
- MoU of Civil department with (MPCB) Maharashtra Pollution Control Board for Ambient Air Monitoring System for Solapur, Barshi, Pandharpur and Osmanabad
- MoU with Zensar Technologies Ltd., has resulted in making students placement ready

- **Industry Sponsored Labs**

- **Air Quality Monitoring Lab**

- **Resource Sharing, Consultancy & Testing**

- **Funded by: - MPCB Mumbai (Solapur) (8747538/-)**

- Training to the teaching faculty
- Infrastructure to the institute
- Consultancy in places like (Solapur, Barshi, Pandharpur and Osmanabad)

- **Solar Lab**

- **SOLAR INNOVATION & SKILL DEVELOPMENT CENTER**

- **Funded by: - Dassault systems La Fondation**

- **Solar Ready Engineers Phase I - 24.8 Lakhs Rs**

- **9 Solar domain Industry Ready Products Phase II - 37.4 Lakhs Rs**

- To produce 60 Solar Ready Engineers every year
- To create awareness about solar energy in the society and enhance solar utilization in the city
- Arrange workshops for Diploma, Engineering and ITI students
- To develop solar research projects

- **Texas Instruments Embedded System Lab**

- **Funded by:- Skill Development Center, M/s EdGate Technologies Pvt. Limited (75,960/-Rs)**

- To produce Embedded System Ready Engineers every year
- Arrange workshops for Diploma, Engineering and PG students
- To develop Embedded System research projects through this program

- **E-Yantra Lab**

- **Funded by: - IIT Bombay & MHRD (1,80,473/- Rs)**

- To develop Robotic Skills of the students
- To enhance the knowledge in Embedded Systems

- **Digital Signal Processing Lab**

- **Funded by: - Cypress Semiconductor Corporation (6.799/- Rs)**

- To develop Signal Processing Skills of the students using Embedded Systems
- To develop projects based on Digital Signal Processing

- **Funding from Various Industries to solve Industrial Problems**

We have received funding from renowned industries like, Tata Technologies Ltd, La Foundation Dassault Systemes, Pune, Maharashtra Pollution Control Board (MPCB), Sion, Mumbai, Ministry of Housing and Urban Affairs and AICTE, DBATU, Lonere etc. of about 1.7 crores.

**• Industry Support for Training**

Industry collaboration brings numerous benefits to both the engineering institutes and the industries involved, ultimately contributing to the growth and development of skilled professionals and the overall technological landscape. This collaboration prepares students for the professional world, enhances their employability, and fosters a thriving ecosystem of innovation and research

**Evidence of Success -**

MOU’s with renowned industries resulted in internship, project sponsorship and skill upgradation. Industry sponsored labs proved a platform to the students to exhibit their experiential learning.

**Problems Encountered and Resources Required -**

- To receive funding, institute has to fulfill many criteria’s and if it fails in doing so, the funding is cancelled
- It is an exhaustive process to bring an industry delegate to the institute to initiate the MOU process
- Multiple interactions with the industry are required to initiate the MOU process, which is a herculean task

**Notes -**

The institute has enriched its culture by incorporating industry feedback and training in its academics. The students are not only imparted knowledge from the curriculum, but they are also made familiar with the industry practices, that leads into making them industry ready engineers.

File Description	Document
Best practices as hosted on the Institutional website	<a href="#">View Document</a>
Any other relevant information	<a href="#">View Document</a>

**7.3 Institutional Distinctiveness**

**7.3.1**

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

**Response:**

**Response**

**Developing Competent Technocrats by Inculcating Holistic Approach through Techno-Societal Projects**

**Objectives: -**

- To develop Techno- Societal Approach by inculcating Human and professional values, and Environment & sustainability.
- To develop an insight towards resolving societal problems

National Education Policy directs towards imparting students with knowledge and skills that makes them an important element in the nation's development and enables them to face the global competencies. This technology driven era, requires students to be shielded with human values and professional ethics so that they use technology towards the betterment of the society through their quest for excellence. The Institute has followed these ideologies towards framing its Vision and Mission that focuses on holistic development, inculcating values and making students globally competent ultimately leading towards the attainment of Graduate attributes.

The distinctiveness of the Institute is based on the above-mentioned outcomes in inculcating social responsibility through Projects that have techno-societal approach. Focusing on the attainment of the overall development of the students, the institute has worked on several fronts and implemented diverse initiatives, apart from curriculum.

One such initiative that leads towards the attainment of majority of the graduate attributes are projects. Projects, that play a pivotal role in shaping the career of the students by developing an inquisitive approach, a thirst for learning, acquiring new knowledge, experimenting, creativity and the skill to apply the knowledge acquired.

The Institute focuses on developing a techno-societal approach in the students through projects that are carried out with a holistic approach of devising a solution to a societal or environmental problem. The students have evolved with wonderful projects that are an example of how young minds can be molded towards the problem-solving attitude. This skill will help them not only in their academic sphere but also during their professional career, where the industry demands a creative and out of box thinking ideology.

There are projects where solar energy is utilized resulting in saving electrical energy. Projects are based on utilization of waste material for manufacturing bricks. Students participate in various technical competitions where these projects are displayed and also win accolades for these projects. The Institute organizes project exhibition, where the students of all the departments put their projects on display. Experts from Industry are invited for the exhibition, and evaluate the projects. Projects are ideated and get shaped in the full-fledged and well-equipped laboratories and workshops in the campus due to which the students can carry out their projects successfully in the Institute. The best projects are selected and are awarded. Inputs given by the experts contribute towards the progress of the projects.

In the current context utilizing Solar Energy has become the need of the hour, considering this aspect students have come up with wonderful projects like "Solar Panel Laminating Machine", "Solar Portable

Refrigeration system”, “Solar Tree for Sustainable Cities” and so on.

Some of the projects are relevant in the field of agriculture like, “NPK Evaluation Project” where a device is designed so as to test the PH of the soil, NPK value of the soil, humidity and temperature using Artificial Intelligence.

“Solar Operated Water Sprinkle” serves as a solution to save water and utilization of Solar Energy in the farms.

Projects like “Utilization of Industrial waste in partial replacement of cement and sand towards sustainable rigid pavement” have come up as a solution against the Industrial waste which is a major source of pollution.

The “Smart Chair” project comes up as a boon to the specially challenged individuals, resolving their difficulty of movement from one place to another.

### Students Project for Environmental Promotion and Sustainability

Sr. No.	Title of the Project
1	Forensic Assessment of Soil Contamination Due to Spillage of Spent Wash
2	Forensic Assessment of Ground Water Pollution Due to Spillage of Spent Wash
3	Utilization of Waste from Various Industries in Brick Manufacturing
4	Effect of Partial Replacement of Soil by Industrial Waste on Characteristics of Brick
5	Design and Development of Composter for Kitchen Waste
6	NPK Evaluation Project
7	Partial Replacement of Coarse Aggregate by Marble and Granite Waste in Concrete
8	Manufacturing of Bricks by using Road Dust
9	Stabilization of Brick Cotton Soil using Stone Dust and Plastic Granules as a Subgrade Material
10	Utilization of Industrial waste in partial replacement of cement and sand towards sustainable rigid pavement
11	Solar Operated Self Balancing Vehicle Product
12	Biogas Generation from Agrowaste
13	Development of Solar Tree for Sustainable Cities
14	Shoulder CPM Machine
15	Solar water purifier for rural masses with zero water reject
16	Solar Operated Milk Pasteurizing system
17	Solar Dehydration System
18	Solar Panel Laminating Machine
19	Solar Thermoelectric Refrigerator

20

Solar Portable Refrigeration system

The Institute has tie-ups with notable industries that has resulted in projects that are innovative and students are coming up with varied approaches towards resolving the problems existing in the society as well as the industry.

Today the Institute prides at the attainment of the required outcome, that is an Engineering Graduate should not only acquire theoretical knowledge but also be equipped with problem solving skills. Through projects the students achieve the highest level of Bloom's Taxonomy that of Creativity and engage in lifelong learning.

File Description	Document
Appropriate web in the Institutional website	<a href="#">View Document</a>
Any other relevant information	<a href="#">View Document</a>

## 5. CONCLUSION

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### Additional Information :

Institute identified four pillars of institutional development and various academic activities are grouped together under four pillars and are presented as follows.

#### 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 Students' 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: 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 has been a major source of technically competent Engineers for renowned industries. Training & Placement Cell of the Institute focuses on developing Employability Skills of students. In line with NEP and the need of industries, the Institute has taken initiatives to inculcate excellent aptitude skills, programming skills and soft skills among the students. The Institute has designed well planned Soft Skills Enhancement Program and Aptitude Skills Development program of 120 hours duration, Programming Skills Workshop for students, apart from their university curriculum. It has brought significant change in students' attitude and resulted into increased placement of students. Campus Specific Training is also provided to the students that include practicing mock tests, aptitude sessions, verbal ability, mock technical interviews, mock HR interviews, group discussions, extempore speech practice sessions and resume building, Add-on courses etc. Because of the aforementioned efforts by the Institute, the number of yearly placement offers received by the students is consistently more than 400. Since 2018-19 placements have been incredibly good like placement of 63 students in TIAA with an average package of 10.48 LPA.

The Institute encourages students not only for placements in MNCs but also for higher education abroad and in renowned educational Institutes through GATE. The focused and systematic training has brought exceptional results as 132 students have qualified in GATE exam till date. Also, to encourage students to pursue higher education abroad the Institute's Study Abroad Cell (SAC) guides and arranges trainings. It's been a remarkable achievement for the Institute from Tier II city like Solapur as 63 students have cleared exams like GRE, TOFEL and IELTS and got admitted in renowned Universities of the world. NKOCET has become a destination through which students can get admitted to the best of the Universities in India and abroad. To establish strong industry-connect, the Institute has signed MoUs with industries for training the students on advanced technologies and mentoring for final year projects. Overall, the Institute is implementing a well-structured mechanism to bring about overall development of the students and shape their future.





## 6.ANNEXURE

### 1.Metrics Level Deviations

Metric ID	Sub Questions and Answers before and after DVV Verification																																								
1.2.1	<p><b>Number of Certificate/Value added courses offered and online courses of MOOCs, SWAYAM, NPTEL etc. (where the students of the institution have enrolled and successfully completed during the last five years)</b></p> <p>Answer before DVV Verification :</p> <p>Answer After DVV Verification :143</p> <p>Remark : Repetition of add on/Certificate/Value added programs in every year during assessment period to be counted one only. Hence input edited accordingly.</p>																																								
1.3.2	<p><b>Percentage of students undertaking project work/field work/ internships (Data for the latest completed academic year)</b></p> <p>1.3.2.1. <b>Number of students undertaking project work/field work / internships</b></p> <p>Answer before DVV Verification : 1643</p> <p>Answer after DVV Verification: 1575</p> <p>Remark : Input edited from supporting documents.</p>																																								
2.1.2	<p><b><i>Percentage of seats filled against reserved categories (SC, ST, OBC etc.) as per applicable reservation policy for the first year admission during the last five years</i></b></p> <p>2.1.2.1. <b>Number of actual students admitted from the reserved categories year wise during last five years (Exclusive of supernumerary seats)</b></p> <p>Answer before DVV Verification:</p> <table border="1"> <thead> <tr> <th>2022-23</th> <th>2021-22</th> <th>2020-21</th> <th>2019-20</th> <th>2018-19</th> </tr> </thead> <tbody> <tr> <td>279</td> <td>241</td> <td>178</td> <td>183</td> <td>158</td> </tr> </tbody> </table> <p>Answer After DVV Verification :</p> <table border="1"> <thead> <tr> <th>2022-23</th> <th>2021-22</th> <th>2020-21</th> <th>2019-20</th> <th>2018-19</th> </tr> </thead> <tbody> <tr> <td>216</td> <td>158</td> <td>149</td> <td>149</td> <td>126</td> </tr> </tbody> </table> <p>2.1.2.2. <b>Number of seats earmarked for reserved category as per GOI/ State Govt rule year wise during the last five years</b></p> <p>Answer before DVV Verification:</p> <table border="1"> <thead> <tr> <th>2022-23</th> <th>2021-22</th> <th>2020-21</th> <th>2019-20</th> <th>2018-19</th> </tr> </thead> <tbody> <tr> <td>279</td> <td>285</td> <td>285</td> <td>291</td> <td>246</td> </tr> </tbody> </table> <p>Answer After DVV Verification :</p> <table border="1"> <thead> <tr> <th>2022-23</th> <th>2021-22</th> <th>2020-21</th> <th>2019-20</th> <th>2018-19</th> </tr> </thead> <tbody> <tr> <td>279</td> <td>285</td> <td>285</td> <td>291</td> <td>246</td> </tr> </tbody> </table>	2022-23	2021-22	2020-21	2019-20	2018-19	279	241	178	183	158	2022-23	2021-22	2020-21	2019-20	2018-19	216	158	149	149	126	2022-23	2021-22	2020-21	2019-20	2018-19	279	285	285	291	246	2022-23	2021-22	2020-21	2019-20	2018-19	279	285	285	291	246
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	Remark : Input edited from supporting documents.
7.1.3	<p><b>Quality audits on environment and energy regularly undertaken by the Institution. The institutional environment and energy initiatives are confirmed through the following</b></p> <ol style="list-style-type: none"> <li>1. <b>Green audit / Environment audit</b></li> <li>2. <b>Energy audit</b></li> <li>3. <b>Clean and green campus initiatives</b></li> <li>4. <b>Beyond the campus environmental promotion activities</b></li> </ol> <p>Answer before DVV Verification : A. All of the above Answer After DVV Verification: B. Any 3 of the above Remark : Input edited from supporting documents.</p>

## 2.Extended Profile Deviations

ID	Extended Questions																				
1.1	<p><b>Number of teaching staff / full time teachers during the last five years (Without repeat count):</b> Answer before DVV Verification : 197 Answer after DVV Verification : 106</p>																				
1.2	<p><b>Number of teaching staff / full time teachers year wise during the last five years</b></p> <p>Answer before DVV Verification:</p> <table border="1"> <thead> <tr> <th>2022-23</th> <th>2021-22</th> <th>2020-21</th> <th>2019-20</th> <th>2018-19</th> </tr> </thead> <tbody> <tr> <td>106</td> <td>109</td> <td>113</td> <td>117</td> <td>115</td> </tr> </tbody> </table> <p>Answer After DVV Verification:</p> <table border="1"> <thead> <tr> <th>2022-23</th> <th>2021-22</th> <th>2020-21</th> <th>2019-20</th> <th>2018-19</th> </tr> </thead> <tbody> <tr> <td>106</td> <td>103</td> <td>103</td> <td>114</td> <td>114</td> </tr> </tbody> </table>	2022-23	2021-22	2020-21	2019-20	2018-19	106	109	113	117	115	2022-23	2021-22	2020-21	2019-20	2018-19	106	103	103	114	114
2022-23	2021-22	2020-21	2019-20	2018-19																	
106	109	113	117	115																	
2022-23	2021-22	2020-21	2019-20	2018-19																	
106	103	103	114	114																	