SELF STUDY REPORT

FOR

2nd CYCLE OF ACCREDITATION

NARASARAOPETA ENGINEERING COLLEGE

KOTAPPAKONDA ROAD, YELLAMANDA POST GUNTUR DIST., 522601
www.nrtec.in

Submitted To

NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL

BANGALORE

March 2022

1. EXECUTIVE SUMMARY

1.1 INTRODUCTION

The Narasaraopeta Engineering College [NEC] was established in the year 1998 by Gayatri Educational Development Society, Narasaraopet, the first technical educational Institution in the Palnaduregion. It has been excelling in research and entrepreneurship ever since its inception under the leadership of Sri M.V.Koteswara Rao, who has a vision of developing this college as an autonomous Institution of higher learning & knowledge. The college is approved by AICTE, permanently affiliated to JNTUK Kakinada. Accredited by NAAC with 'A' Grade, Accredited thrice by NBA and ISO 9001: 2015 certified. The college has three recognized R&D centers by JNTUK. NEC is conferred with 'AUTONOMOUS' status from the year 2016.

The Institution is located in a pollution-free lush green environment. It is geographically situated near a popular Pilgrim place namelyKotappakonda- Abode of Lord Shiva and 60km away from the state capital, Amaravathi. NEC offers seven undergraduate programs (with an intake of a total of 960) leading to a B.Tech degree and seven post-graduate programs (with an intake total of 114) leading to M.Tech, MBA with 120 intakes, and MCA with 60 intakes. NEC ranked top 4th Private Engineering college in A.P.as per Times Engineering Institute Ranking survey- 2021. The college is well known for its state-of-art infrastructure consisting of advanced laboratories, a well-stocked library with digital resources, and ICT facilities.

NEC has MOUs with various Foreign Universities like New Mexico State University, Oracle Academy Institution, etc., Microsoft Innovation Centre was established in the college through which more than 200 Mobile Apps, 50 Cloud Apps, and 100 Windows Apps are uploaded every year.

Vision

To emerge as a **Centre of excellence** in technical education with a blend of effective **student-centric teaching-learning** practices as well as **research** for the transformation of **lives and community**

Mission

1. Provide the best class infrastructure to explore the field of Engineering and Research.
2. Build a passionate and determined team of faculty with Student-Centric teaching, imbibing experiential and innovative skills.
3. Imbibe lifelong learning skills, entrepreneurial skills, and ethical values in students for addressing societal problems.

1.2 Strength, Weakness, Opportunity and Challenges(SWOC)

Institutional Strength

- Good Brand value

- Committed Visionary Management
- Autonomous Status
- NEC imparts quality technical education for students hailing from the rural Palnadu region of Guntur District.
- Highly motivated faculty with strong work ethics and commitment to quality teaching.
- Decades of Expertise
- Good Campus & Infrastructure to cater to the needs of imparting quality education.
- Recognized Research Centre from JNTUK.
- Rural location giving very good ambiance for studies Open spaces in campus supplement to elevate the grandeur of the environment and provide a calm, peaceful and conducive atmosphere for academic pursuit
- In-house and external training programs along with regular career guidance from 2nd year onwards help students in getting good placements in industries.

Institutional Weakness

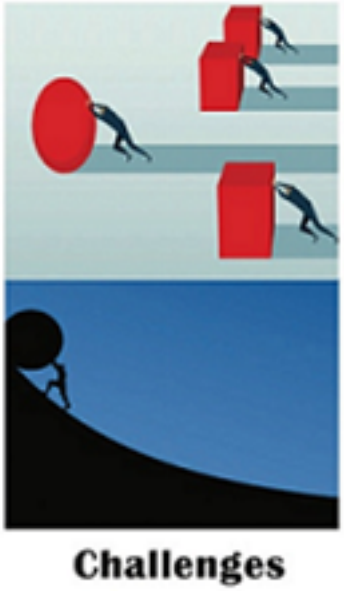
Weaknesses

- The geographical disadvantage to attracting excellent staff and students
- Students intake from a poor socio-economic background with low entry-level scores and poor language competence.
- No control over the selection of students.
- Even though academically autonomous, no full freedom to frame industry/ research-oriented curriculum right from the first year.
- Located far away from industries

Institutional Opportunity

- New courses in Engineering
- Innovative learning and teaching
- Global Initiatives
- Use of latest technology (ICT)
- Developing more centers of excellence.
- Consultancy opportunities

Institutional Challenge



- Faculty retention.
- Too many private Universities getting started
- To get an adequate number of full-time Ph.D. students for enhancing research outcomes. To maintain the higher teachers cadre ratio due to scarcity of competent Ph.D. holders
- Rapid changes in all the disciplines and correspondingly changing expectations from industry and society
- Impediment in generating funds from tuition fees due to government delayed procedures.

1.3 CRITERIA WISE SUMMARY

Curricular Aspects

NEC is committed to focusing on objectives envisaged in the Vision and Mission by way of creating, executing, and disseminating the knowledge in the area of Engineering, Management, and Computer Applications.

The syllabus and Examination pattern is developed and regularly updated by the Board of Studies, College Academic Council, Governing Body, and by involving a fraternity of experts from Industry and corporate. NEC adheres to the guidelines given by the Andhra Pradesh State Council of Higher Education (APSCHE) and JNTUK, Kakinada.

The design and development of the curriculum is a democratic process with all the faculty contributing to the introduction, innovation, and revision of the syllabi. The syllabus is dynamic and is constantly revamped to keep pace with the rapid developments in various fields of scientific and technological advancements to meet the demands of academia, industry, and society. The Choice Based Credit System, adopted in 2016, provides flexibility by offering intra-departmental and interdepartmental optional courses. To upgrade the skills with recent technology, students are undergoing value-added courses each semester with industry experts and skill Development Corporation. For self-learning, students are encouraged to do the MOOCs courses every Year. NEC has implemented the Swayam/NPTEL courses as mandatory credit courses in their curriculum. As a part of the curriculum, every student has to take internships and field projects to showcase their technical skills.

Institute regularly updates the curriculum based on the feedback from stakeholders like Faculty members, Students, Alumni, and Employer. The outcome of feedback is taken as corrective measures.

Teaching-learning and Evaluation

Admission is done based on guidelines of the Andhra Pradesh State Council for Higher Education. Seats are filled through counseling based on the results of the entrance examination EAMCET for undergraduate courses, ICET for courses of MBA & MCA, and PGECET for M.Tech.

Necessary efforts are made in identifying the learning levels of slow/advanced learners through various assessment methods and additional training is provided at successful intervals of time. The Institution takes necessary efforts to maintain the student-faculty ratio 15:1 as per the guidelines of AICTE.

The teaching-learning process adopts methods such as experiential learning, participative learning, and problem-solving methodologies utilizing ICT tools such as LMS and E-resources. All the academic activities are conducted strictly following the academic calendars. Mentoring system is effectively used in order to address the issues of students, and the student to mentor ratio is maintained as 20:1.

Around 99% of full-time teachers are filled against the sanctioned posts out of which above 15% are doctoral faculty. Various reforms are introduced in the examination processes through automation resulting in the secured, fair, and early declaration of results. The Institution is practicing outcome-based education by defining appropriate POs/PSOs/COs for all programs which are communicated to faculty and students through websites and syllabus books. The student performance is measured through the attainment level of learning outcomes in every program and steps are taken to improve better skills and competencies. As a result, 90.49%

of final-year students passed the examination conducted by Institution for the latest academic year.

Research, Innovations and Extension

NEC focuses on the holistic development of its students and faculty. All faculty on the campus are encouraged to pursue Ph.D. A few of the teachers are recognized as guides by other Universities. Teachers are actively engaged in research and are participating as resource persons and delegates. The college has three recognized research centers approved by JNTUK, Kakinada.

The Institute has a good infrastructure for research activity in the college. One crore worth of funding from AICTE, UGC, and DST. The college has been conducting International conferences to promote research.

Many teachers have authored a good number of textbooks, published patents, and more than 390 research papers, articles in indexed journals. Around 64 lakhs worth of consultancy services is offered by the faculty.

Several teachers have bagged awards for their paper presentations in both National and International conferences. The college encourages faculty research by giving seed money and incentives for the articles published in SCI and Scopus journals.

NCC and NSS students' units of the college carry out extension activities. The Institution has 20 awards and recognition received for extension activities from Government / Government recognized bodies. The Institution organized around 35 extension activities like Blood Donation, Civic sense activities, health check-ups, dental check-ups, eye care for senior citizens, etc. Around 24% of students participate in extension activities during the assessment period.

The college has 42 functional MOUs with Institutions, industries, and training Institutions and organized more than 20 Collaborative activities in every academic year during the assessment period.

Infrastructure and Learning Resources

The augmentation of the infrastructure is keeping in view the need for up-gradation of the system.

Modern tools and infrastructure peripherals have been added to laboratories/blocks as per requirements. Out of 69 classrooms and 4 seminar halls, 55 classrooms and 4 seminar halls are equipped with ICT facilities. Computer Labs, Conference Hall, Library, Canteen, stationery shop, Common rooms for boys and as well as girls, Reprographic Centre, Recreational spaces like gymnasium, sports and game facilities, safe drinking water facilities and ATM are available within the campus.

The Library is divided into Reference Hall, Stack Halls, Digital Library, Discussion rooms. The library services are fully computerized. The routine work of issuing and returning books is being done online with the help of Koha software. Also on average, 12% of students and faculty are accessing the library every day. Internet facilities and other online subscriptions like IEEE, SODHASINDHU, and DELNET & NPTEL can be accessed at any time between 8:00 A.M to 8:00 P.M on weekdays and 9.00A.M to 5.00 P.M on holidays.

Total 1156 computers with internet facility, 45 printers, scanners, software, and 16 TB of the NPTEL database are available. The student computer ratio is 3:1. The campus is Wi-Fi enabled with the dedicated

Leased line of 400 Mbps & 6 Mbps bandwidth of Airtel and 40 Mbps bandwidth of BSNL.

The regular maintenance and upkeep of the infrastructure facilities and equipment are done through our staff and technicians.

Student Support and Progression

The Institution will give continuous support and encourage every student to take part in each activity that is organized by the college. Around 70% of students are benefited from scholarships provided by the Government. In addition to this Institution provides merit scholarships based on academic performance and economic status.

The Institution has dedicated training and placement cells to groom students through various Capacity development and skills enhancement activities in association with text. As a result around 50% of students are placed in reputed companies with good salary packages. In addition to this, more than 70% of students are qualified in various state/national/ international level competitive examinations during the assessment period.

The Institute has developed a structured Grievance mechanism as per the guidelines of AICTE / UGC. Grievances can be reported to concerned authorities online/offline and they are immediately resolved through appropriate committees as per the policies.

The Institute always encourages the students to take part in various co-curricular and extracurricular activities and motivates them to attend various competitions at inter/intra level. As a result, 50 awards/medals were won by students for their outstanding performance.

The Institute involves student representatives in various decision making, academic and administrative committees.

There is a registered alumni association on the name of NAA in the college for the development of a strong association among alumni and present students. The alumni support the students consistently providing guidance and placement.

Governance, Leadership and Management

The quality and future of the Institution depend on governance, leadership, and management. Goals stated through the Vision and Mission of the Institute are attained through transparent involvement, decentralized administration, audit, and accountability through feedback from stakeholders. The Institution has an effective Strategic plan which will serve as a guideline for the period 2018-2023. The Institution is implementing e-governance with the support from Bees and Camu ERP in all areas like Administration, Accounts, etc.,

The Institution has effective welfare measures for teaching and non-teaching staff like General Insurance, ESI, EPF, etc., And also around 39% of teachers were provided with financial support to attend various professional development activities. The Institute organized 87 professional development Programmes for teaching and non-teaching staff during the assessment period. Around 491 teachers attended Faculty Development Programmes (FDP) during the assessment period.

Estimated budgets for each department/section are gathered, and a budget is prepared. The same is presented to the Finance committee, which will deliberate and make any necessary changes. The same will be submitted for approval to the Governing Body.

Internal quality assurance cell (IQAC) initiates and reviews periodically all the activities and the Action Taken Report over the feedback collected from stakeholders. The Institution has colorations with other eight peer Institutions to share knowledge among faculty. The Institution undergoes audits periodically and maintains ISO Certification and also participates in NIRF Ranking. As a measure of the quality of National repute, NEC has been achieving accreditation by NBA and NAAC.

Institutional Values and Best Practices

The college is sensitive to gender equity and promotion. Appropriate programs are organized regularly. Counseling facilities and common rooms are provided to female students with adequate safety and security. The campus is monitored through CCTV surveillance. The Institution has a strong commitment to differently able students and provides facilities such as ramps, special washrooms, etc for them. The college right from its inception has been very conscious about environmental and green initiatives. The rainwater is diverted into harvesting percolation pits constructed at various locations in the contour plan of the campus. The campus is well covered with plants and greenery. Solar rooftop power generating plant with a total capacity of 200KW caters to **50%** of the power requirement of the Institute.

The Institute also has automated street light controllers and Water motor controller systems, helpful for energy conservation. The majority of the students of the college make use of public transportation which helps towards achieving carbon neutrality. A separate code of conduct is followed for students, faculty, and administrators. The college celebrates all-important national festivals and organizes a number of activities to promote universal human values. The college has adopted many best practices out of which two best practices which stand out are **Bodana-Sadhana-Nipuna-Programme**(BSNP**)**for faculty and **EkalavyaProgramme (**Encouraging students for self-learning) for students. The Institute has a distinctiveness of setting up a considerable number of industry collaborative labs and CoEs under the APSSDC interaction initiative for training, skill up-gradation, and placement of students in thrust areas.

2. PROFILE

2.1 BASIC INFORMATION

Name and Address of the College	
Name	NARASARAOPETA ENGINEERING COLLEGE
Address	Kotappakonda Road, Yellamanda Post Guntur Dist.,
City	Narasaraopet
State	Andhra Pradesh
Pin	522601
Website	www.nrtec.in

Contacts for Communication					
Designation	**Name**	**Telephone with STD Code**	**Mobile**	**Fax**	**Email**
Principal	M.sreenivasa Kumar	08647-239903	9440757039	08647-239902	principal@nrtec.in
IQAC / CIQA coordinator	B.venkata Siva	08647-239923	9692464540	08647-239902	iqac@nrtec.in

Status of the Institution	
Institution Status	Private and Self Financing

Type of Institution	
By Gender	Co-education
By Shift	Regular

Recognized Minority institution	
If it is a recognized minroity institution	No

Establishment Details	
Date of Establishment, Prior to the Grant of 'Autonomy'	01-01-1998

Date of grant of 'Autonomy' to the College by UGC	19-04-2016

University to which the college is affiliated		
State	**University name**	**Document**
Andhra Pradesh	Jawaharlal Nehru Technological University,Kakinada	View Document

Details of UGC recognition		
Under Section	**Date**	**View Document**
2f of UGC	19-07-2012	View Document
12B of UGC	19-07-2012	View Document

Details of recognition/approval by stationary/regulatory bodies like AICTE,NCTE,MCI,DCI,PCI,RCI etc(other than UGC)				
Statutory Regulatory Authority	**Recognition/Approval details Institution/Department programme**	**Day,Month and year(dd-mm-yyyy)**	**Validity in months**	**Remarks**
AICTE	View Document	02-07-2021	12	

Recognitions	
Is the College recognized by UGC as a College with Potential for Excellence(CPE)?	No
Is the College recognized for its performance by any other governmental agency?	No

Location and Area of Campus				
Campus Type	**Address**	**Location***	**Campus Area in Acres**	**Built up Area in sq.mts.**
Main campus area	Kotappakonda Road, Yellamanda Post Guntur Dist.,	Rural	12.1	31362

2.2 ACADEMIC INFORMATION

Details of Programmes Offered by the College (Give Data for Current Academic year)						
Programme Level	**Name of Programme/Course**	**Duration in Months**	**Entry Qualification**	**Medium of Instruction**	**Sanctioned Strength**	**No.of Students Admitted**
UG	BTech,Civil Engineering	48	Intermediate and EAMCET EAPCET	English	120	100
UG	BTech,Electrical Electronics Engineering	48	Intermediate and EAMCET EAPCET	English	120	62
UG	BTech,Electronics Communication Engineering	48	Intermediate and EAMCET EAPCET	English	240	225
UG	BTech,Mechanical Engineering	48	Intermediate and EAMCET EAPCET	English	120	87
UG	BTech,Computer Science Engineering	48	Intermediate and EAMCET EAPCET	English	240	240
UG	BTech,Information Technology	48	Intermediate and EAMCET EAPCET	English	60	60
UG	BTech,Computer Science Engineering Artificial Intelligence	48	Intermediate and EAMCET EAPCET	English	60	60
PG	Mtech,Civil Engineering	24	B.Tech and PGCET	English	24	12
PG	Mtech,Electrical Electronics Engineering	24	B.Tech and PGCET	English	9	0
PG	Mtech,Electr	24	B.Tech and	English	18	0

	onics Communication Engineering		PGCET			
PG	Mtech,Electronics Communication Engineering	24	B.Tech and PGCET	English	9	0
PG	Mtech,Mechanical Engineering	24	B.Tech and PGCET	English	18	2
PG	Mtech,Mechanical Engineering	24	B.Tech and PGCET	English	18	0
PG	Mtech,Computer Science Engineering	24	B.Tech and PGCET	English	18	7
PG	MBA,Mba	24	Degree and ICET	English	120	83
PG	MCA,Mca	24	Degree and ICET	English	60	60

Position Details of Faculty & Staff in the College

Teaching Faculty												
	Professor				**Associate Professor**				**Assistant Professor**			
	Male	Female	Others	Total	Male	Female	Others	Total	Male	Female	Others	Total
Sanctioned by the UGC /University State Government				0				0				0
Recruited	0	0	0	0	0	0	0	0	0	0	0	0
Yet to Recruit				0				0				0
Sanctioned by the Management/Society or Other Authorized Bodies				49				43				185
Recruited	41	8	0	49	37	6	0	43	127	58	0	185
Yet to Recruit				0				0				0

Non-Teaching Staff				
	Male	**Female**	**Others**	**Total**
Sanctioned by the UGC /University State Government				0
Recruited	0	0	0	0
Yet to Recruit				0
Sanctioned by the Management/Society or Other Authorized Bodies				44
Recruited	37	7	0	44
Yet to Recruit				0

Technical Staff				
	Male	**Female**	**Others**	**Total**
Sanctioned by the UGC /University State Government				0
Recruited	0	0	0	0
Yet to Recruit				0
Sanctioned by the Management/Society or Other Authorized Bodies				42
Recruited	34	8	0	42
Yet to Recruit				0

Qualification Details of the Teaching Staff

Permanent Teachers										
Highest Qualification	**Professor**			**Associate Professor**			**Assistant Professor**			
	Male	Female	Others	Male	Female	Others	Male	Female	Others	Total
D.sc/D.Litt/LLD/DM/MCH	0	0	0	0	0	0	0	0	0	0
Ph.D.	39	7	0	13	2	0	4	3	0	68
M.Phil.	0	0	0	2	0	0	0	0	0	2
PG	2	1	0	22	4	0	123	55	0	207

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

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

Details of Visting/Guest Faculties				
Number of Visiting/Guest Faculty engaged with the college?	**Male**	**Female**	**Others**	**Total**
	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	616	1	0	0	617
	Female	252	0	0	0	252
	Others	0	0	0	0	0
PG	Male	101	0	0	0	101
	Female	61	0	0	0	61
	Others	0	0	0	0	0

Provide the Following Details of Students admitted to the College During the last four Academic Years					
Programme		**Year 1**	**Year 2**	**Year 3**	**Year 4**
SC	Male	104	119	97	115
	Female	44	51	38	12
	Others	0	0	0	0
ST	Male	12	16	12	8
	Female	2	3	10	6
	Others	0	0	0	0
OBC	Male	300	306	253	281
	Female	110	72	56	78
	Others	0	0	0	0
General	Male	301	300	295	327
	Female	158	121	111	153
	Others	0	0	0	0
Others	Male	0	0	0	0
	Female	0	0	0	0
	Others	0	0	0	0
Total		1031	988	872	980

2.3 EVALUATIVE REPORT OF THE DEPARTMENTS

Department Name	Upload Report
Civil Engineering	View Document
Computer Science Engineering	View Document
Computer Science Engineering Artificial Intelligence	View Document
Electrical Electronics Engineering	View Document
Electronics Communication Engineering	View Document
Information Technology	View Document
Mba	View Document
Mca	View Document
Mechanical Engineering	View Document

Institutional preparedness for NEP

1. Multidisciplinary/interdisciplinary:	The Vision of National Education Policy, to provide high quality education to develop human resources in our nation as global citizens, is well taken by Narasaraopeta Engineering College (NEC). A discussion among the faculty members were initiated on the key principles of NEP such as diversity for all curriculum and pedagogy with technological innovations in teaching and learning, encouraging logical decision making and innovation, critical thinking and creativity. In view of the NEP, NEC has initiated new interdisciplinary centres integrating different departments in addition to the existing inter/multidisciplinary research and academics. Academic programmes are redesigned to include Multidisciplinary /Interdisciplinary courses as electives. All programmes are designed in such a way that students get maximum flexibility to choose elective courses offered by other Departments. It can be said that the NEC is proactively working towards implementation of the suggestions given in the NEP. The fundamental aim of the National Educational Policy (NEP-2020) for higher education is to stop higher education fragmentation by transforming these institutions into massive interdisciplinary universities, colleges, and higher education institutions as Knowledge Hubs. The purpose of NEC, according to NEP standards, is to be accredited

	by the National Assessment Accreditation Board (NAAC) with a satisfactory grade and to strive for autonomy. In addition, the college's curriculum can contain multidisciplinary programmes. Our Institution, as part of its commitment to holistic and multidisciplinary education, has launched a value-based course on Ethics for B.Tech, MBA, and MCA students, as well as life-skills and yoga sessions for all students on campus. Additionally, our students participate in community outreach initiatives such as organising health clinics, blood donation camp, and counselling, among other things. Leadership and effective governance and Leadershipfor Higher Education Institution: A) NEC is a self-finance private HEI affiliated to JNTUK, Kakinadaand it aims to become independent self-governingInstitution pursuing innovation and excellencethrough accreditation and autonomy. B) NEC has astrategic Institutional development plan which is inalignment with the vision of NEP.
2. Academic bank of credits (ABC):	Academic bank credits are a key component of the NEP-2020 that academic institutions must implement. Integrating Higher Educational Institutions in a globalised space is critical and urgent as we move forward. We have already implemented for our students to take online courses through National schemes like SWAYAM, NPTEL, Coursera, Udemyetc, and is considering for credits earned against elective courses.
3. Skill development:	In comparison to other nations, the outcome of the 12th five-year plan predicted that just 5% of Indian workers in the 19-24 age bracket got formal vocational education. The extension of vocational education in India is critical for hastening skill development. The NEP 2020 foreshadows a possibly explosive increase in skill development in the country through vocational education. All Higher Educational / Educational Institutions were expected to provide vocational education as part of their curriculum. Over the next few years, vocational education will be gradually integrated into schools and universities. NEC would walk on with an aim to ensure young studentsempowerment and cater to the engineering demands,NEC has a specific plan to follow : 1. In R20 regulation five skill courses are introduced in all branches of engineering,with focus on social inclusion andinclusive education 2. In R19 regulation

	also skill course is introduced in all branches of engineering 3. To develop workplace-relatedskills and attitudes through internship and on-the jobtraining 4. To focus on inclusion of good practicesand innovations in teaching-learning 5. Facilitatinghorizontal mobility of vocational students 6. Tocollaborate with industries for imparting practicalskills and hands-on experience and design industry-relevant courses 7. To introduce new learningmethods and digital tools, like Massive Open OnlineCourses (MOOC) and flipped classroom for trainingand empowering teachers 8. Developing andimplementing a holistic assessment and evaluationsystem. 9. To measure the achievements of learningoutcomesthrough various tools and methods asdefined byoutcome-based education system for360-degree assessment and evaluation of students. NEC believes in giving equal dignity of people pursuingvocational courses and contribute indeveloping the workforce of a country.
4. Appropriate integration of Indian Knowledge system (teaching in Indian Language, culture, using online course):	The promotion of Indian arts and culture is beneficial not only to the country but also to individuals. Because engineering is a professional course, using English as a medium of communication and conducting course work in all engineering programmes is required. The institution, on the other hand, commemorates significant dates and hosts activities in regional languages to instil a sense of regional pride. Republic Day and Independence Day are two examples of celebrations where students are addressed in their native languages. Engineers' Day and Teacher's Day are two of the most important days of the year. Women's Day is prominent day that are commemorated with cultural events. SankranthiSambaralu -Rangoli competition, VinayakaChavithi - Vinayaka idols preparation are the festivals that promote awareness of Indian National and Regional languages, as well as the culture associated with them. National commemorative days, such as Constitution Day and Yoga Day are also observed.
5. Focus on Outcome based education (OBE):	Narasaraopeta Engineering College has adopted outcome-based education in accordance with the standards of the National Board of Accreditation with clearly stated Programme Outcomes (POs), Programme Specific Outcomes (PSOs) and Course Outcomes(COs). All courses are designed with

	outcomes centred on cognitive abilities namely Remembering, Understanding, Applying, Analysing, Evaluating and Creating. Apart from the domain-specific skills, learning outcomes at all levels ensure social responsiveness and ethics, as well as entrepreneurial skills so that student contribute proactively to economic, environmental and social well-being of the nation. The Course Outcomes (COs) are also aligned to the PO-PSO philosophy. All course syllabus have been designed with due consideration to macro-economic and social needs at large so as to apply the spirit of NEP. B.Tech. programmes of NEC was accredited by NBA in the year 2009, 2013, 2017, 2022 and is implementing OBE(URL: 1.https://www.nrtec.in/outcome-based-education-obe/ 2. https://www.nrtec.in/department-of-ece-co-po-attainment/).Students are assessed as per OBE attainment model. Community participation and service, environmental education, and value-based education are all part of an innovative curriculum that includes credit-based courses and projects. Lab exercises and mini projects with a focus on community engagement are included in the curriculum. Professional Ethics & Human Values is a value-based education course that is introduced at the I B.Tech I Semester level. Environmental Sciences is a course that looks at all areas of environmental sustainability. Thus,NEC has various community outreach initiativessuch as Student Club, National Service Scheme (NSS)which caters extension activity to community.
6. Distance education/online education:	Due to Covid -19 pandemic, educational institutions in the country has increasingly involved in using the digital platforms for engaging classes, conducting conferences and meetings. Keeping aside the negative impact of lack of face to face learning, online education has broken the geographical barriers creating interaction of experts and students from distant geographies. Opening up of the economy including that of educational institutions has paved the way of adopting hybrid mode of education combining online and offline resources. This can be considered as the new normal, which is envisaged in New Education Policy as well. Due to the experience gained during the closure period of Covid-19, access to online resources by educators and students will not be a constraintanymore. Students are encouraged to

	do MOOC courses at NEC which promotes online education. NEC has successfully imparted all its course content delivery in online mode during the Covid-19 pandemic with tools such as Zoom, MS Teams and Google class room etc.

NAAC

Extended Profile

1 Program

1.1

Number of programs offered year-wise for last five years

2020-21	2019-20	2018-19	2017-18	2016-17
16	15	14	15	15

File Description	Document
Institutional data in prescribed format	View Document

1.2

Number of departments offering academic programmes

Response: 08

2 Students

2.1

Number of students year-wise during last five years

2020-21	2019-20	2018-19	2017-18	2016-17
3654	3219	3234	3085	2982

File Description	Document
Institutional data in prescribed format	View Document
Institutional data in prescribed format	View Document

2.2

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

2020-21	2019-20	2018-19	2017-18	2016-17
866	721	826	570	754

File Description	Document
Institutional data in prescribed format	View Document

2.3

Number of students appeared in the examination conducted by the Institution, year-wise during the last five years

2020-21	2019-20	2018-19	2017-18	2016-17
3624	3214	3224	3056	2977

File Description	Document
Institutional data in prescribed format	View Document

2.4

Number of revaluation applications year-wise during last five years

2020-21	2019-20	2018-19	2017-18	2016-17
22	28	13	15	00

3 Teachers

3.1

Number of courses in all programs year-wise during last five years

2020-21	2019-20	2018-19	2017-18	2016-17
671	774	705	672	668

File Description	Document
Institutional data in prescribed format	View Document

3.2

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

2020-21	2019-20	2018-19	2017-18	2016-17
250	312	325	307	323

File Description	Document
Institutional data in prescribed format	View Document

3.3

Number of sanctioned posts year-wise during last five years

2020-21	2019-20	2018-19	2017-18	2016-17
250	315	325	310	325

File Description	Document
Institutional data in prescribed format	View Document

4 Institution

4.1

Number of eligible applications received for admissions to all the programs year-wise during last five years

2020-21	2019-20	2018-19	2017-18	2016-17
1510	1287	1316	1479	1324

File Description	Document
Institutional data in prescribed format	View Document

4.2

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

2020-21	2019-20	2018-19	2017-18	2016-17
709	729	696	745	745

File Description	Document
Institutional data in prescribed format	View Document

4.3

Total number of classrooms and seminar halls

Response: 73

4.4

Total number of computers in the campus for academic purpose

Response: 998

4.5

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

2020-21	2019-20	2018-19	2017-18	2016-17
882.09	998.28	783.02	1193.59	758.83

NAAC

4. Quality Indicator Framework(QIF)

Criterion 1 - Curricular Aspects

1.1 Curriculum Design and Development

1.1.1 Curricula developed and implemented have relevance to the local, national, regional and global developmental needs which is reflected in Programme outcomes (POs), Programme Specific Outcomes(PSOs) and Course Outcomes(COs) of the Programmes offered by the Institution.

Response:

The Institute has a systematic procedure for the development, revision, and implementation of the curriculum of all the departments. The curriculum has been carefully crafted to address the most recent technology and opportunities available at the regional and global levels, as well as all basic fundamentals.

Factors for Curriculum Design:

Factors Considered in Curriculum Design: (i) Syllabi of various reputed Universities (ii) Model curriculum prescribed by AICTE and APSCHE (iii) In tune with POs and PEOs as a base the PSOs of the concerned departments (iv) Suggestions from industry experts and alumni, (v) Syllabi of various competitive exams such as GATE, IES, and so on

Implementation of Outcome-Based Education (OBE) in the Curriculum:

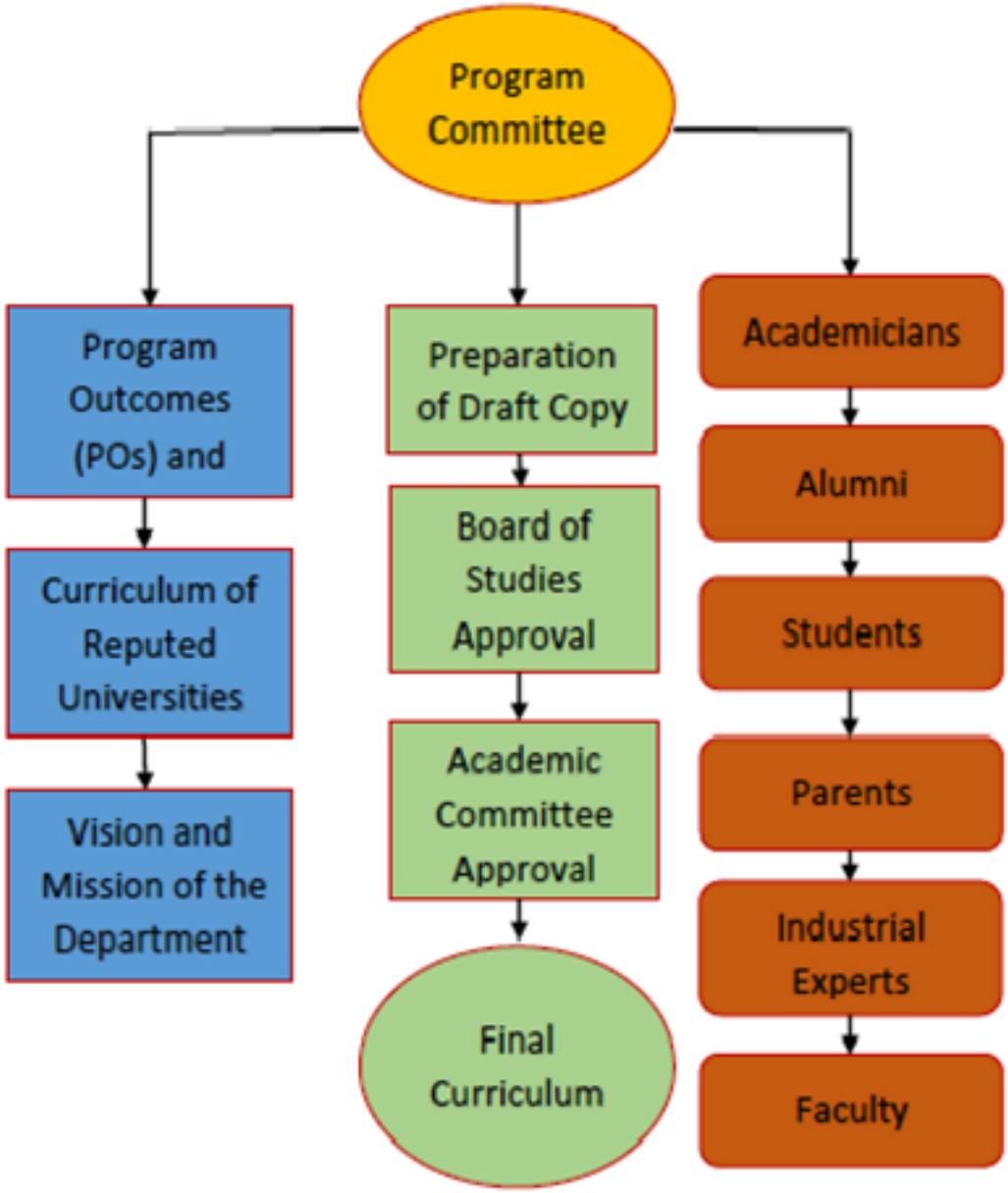
The design of the curriculum, in particular the types of courses, the number of electives, and the curricular structure, with complete details of the course title and contents as per the requirements, is the first step in assuring academic quality.

- In the next phase, the Course Outcomes (COs) are rewritten as per Bloom’s Taxonomy for each course and mapped against Program Outcomes (POs) and Program Specific Outcomes (PSOs).
- Effective implementation of this Outcome-Based Education (OBE) assures that our graduating engineers possess all of the 12 POs, allowing them to compete on a worldwide scale and possess the expected global qualities. We have Program Educational Objectives (PEOs) for each programme, which are evaluated based on alumni performance.

The Institute pays close attention to the attainment of PEOs, POs, and PSOs for their respective programmes, which are intertwined with the institution's and department's vision and mission.

Process for Curriculum Design:

The suggested curriculum is then considered in the DAC (Department Advisory Committee) and presented to the BOS (Board of Studies), which includes experts from industry, academia, alumni, and senior faculty members. The curriculum is subsequently presented to the Academic Council for approval.



The Institution's academic autonomy allows it to update the curriculum on a regular basis in response to requirements and ideas from diverse stakeholders. In the recent five years, the UG syllabus was revised in 2016, 2019, and 2020. The PG syllabus was revised in 2016 and 2019. The curriculum reforms focus primarily on the introduction of new courses with numerous facets for enhancing soft skills, general aptitude, and technical aptitude. Regulation R20 introduced Major, Minor, and Honors programmes to allow students to become masters in their respective branches as well as those who want to pursue their specific interests outside of their chosen profession.

The institute introduced CBCS and self-learning courses using MOOC's platform through SWAYAM NPTEL, Coursera, etc. Furthermore, all students are participating in an internship, which allows them to broaden their expertise in a variety of sectors. In addition to the curriculum, students' abilities are enhanced through the completion of several value-added courses, preparing them industry ready for employment.

To involve the students in social service, the course named community services has been included in the curriculum as a mandatory course. This is organized by National Service Scheme (NSS).

File Description	Document
Any additional information	View Document

1.1.2 Percentage of Programmes where syllabus revision was carried out during the last five years.

Response: 93.75

1.1.2.1 **Number of all Programmes offered by the institution during the last five years.**

Response: 16

1.1.2.2 **How many Programmes were revised out of total number of Programmes offered during the last five years**

Response: 15

File Description	Document
Details of program syllabus revision in last 5 years(Data Template)	View Document
Link for Additional Information	View Document

1.1.3 Average percentage of courses having focus on employability/ entrepreneurship/ skill development offered by the institution during the last five years

Response: 92.4

1.1.3.1 **Number of courses having focus on employability/ entrepreneurship/ skill development year-wise during the last five years..**

2020-21	2019-20	2018-19	2017-18	2016-17
656	663	655	624	620

File Description	Document
Average percentage of courses having focus on employability/ entrepreneurship(Data Template)	View Document
Link for Additional Information	View Document

1.2 Academic Flexibility

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

Response: 13.67

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

Response: 477

1.2.1.2 **Number of courses offered by the institution across all programmes during the last five years.**

Response: 3490

File Description	Document
Institutional data in prescribed format	View Document

1.2.2 Percentage of Programmes in which Choice Based Credit System (CBCS) / elective course system has been implemented (Data for the latest completed academic year).

Response: 100

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

Response: 16

File Description	Document
Institutional data in prescribed format	View Document

1.3 Curriculum Enrichment

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

Response:

A professional with a strong sense of ethics and value education can distinguish between right and wrong, making better decisions and making the decision-making process easier. Values are positive teachings offered to help professionals walk down the correct path in life. The curriculum is established, developed, and enhanced with the aim of integrating ardent issues with national and global implications for the long-term sustainability of future generations. The courses on Gender, Environment and Sustainability, Human Values, and Professional Ethics will supplement the engineering graduates' knowledge and abilities, allowing them to practice their profession/discharge their duties with societal responsibility.

Gender Sensitization:

This is a course on gender sensitization. Gender Sensitization is recommended as a prerequisite for personal and professional growth. The course's objective is to help students comprehend the needs of one gender as well as the needs of the other, to emphasize gender equality and women's contributions to society, and to overcome any discrimination or harassment. Gender sensitization acquaints men and

women with each other's lives and with accountability in the workplace and at home, resulting in favorable societal outcomes. It also contributes to generating respect for an individual irrespective of gender.

Environmental and sustainability:

Environmental and sustainability courses are incorporated in the curriculum with the goal of helping students comprehend human life and the natural system. It focuses on researching and comprehending environmental issues and their implications as a result of man-made influences on the environment, as well as developing solutions to conserve the ecosystem by removing pollution from the air, water, and land.

Human Values and Professional Ethics:

For a better society, engineering graduates should have strong Human Values and strong Professional Ethics. Values serve as individual supervisory notions and are an important component of self-concept. Human values are the characteristics that lead people to consider the human component when communicating with another human being. Professional engineers and consulting engineering firms control the quality of life of all people in society, as well as the quality of all sectors of the economy. In the course of their study Students must take an obligatory course called "Human Values and Professional Ethics" in order to become altruistic and conscientious professionals. Tree planting, blood donation camps, and disaster recovery programmes are organized as a part of the National Service Scheme (NSS).

Constitution of India:

The constitution of India is incorporated in the curriculum with the goal of teaching students that the constitution embodies the ideals that India celebrates every day. Liberty, equality, fraternity, and secularism are among the principles that are embraced around the world, and the Indian Union is a testament to these values.

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

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

Response: 39

1.3.2.1 **How many new value-added courses are added within the last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
20	08	09	01	01

File Description	Document
List of value added courses (Data Template)	View Document
Any additional information	View Document

1.3.3 Average Percentage of students enrolled in the courses under 1.3.2 above.

Response: 16.48

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

2020-21	2019-20	2018-19	2017-18	2016-17
1814	650	252	64	80

File Description	Document
List of students enrolled	View Document
Any additional information	View Document

1.3.4 Percentage of students undertaking field projects/ internships / student projects (Data for the latest completed academic year)

Response: 43.3
1.3.4.1 **Number of students undertaking field projects / internships / student projects** Response: 1582

File Description	Document
List of programs and number of students undertaking field projects / internships / student projects (Data Template)	View Document

1.4 Feedback System

1.4.1 Structured feedback for design and review of syllabus – semester-wise / year-wise is received from 1) Students, 2) Teachers, 3) Employers, 4) Alumni **Response:** A. All 4 of the above

File Description	Document
Action taken report of the Institution on feedback report as minuted by the Governing Council, Syndicate, Board of Management	View Document
URL for stakeholder feedback report	View Document

1.4.2 The feedback system of the Institution comprises of the following : **Response:** A. Feedback collected, analysed and action taken and report made available on website

File Description	Document
Any additional information	View Document
URL for stakeholder feedback report	View Document

Criterion 2 - Teaching-learning and Evaluation

2.1 Student Enrollment and Profile

2.1.1 Average Enrolment percentage (Average of last five years)

Response: 65.23

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

2020-21	2019-20	2018-19	2017-18	2016-17
1005	864	712	715	884

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

2020-21	2019-20	2018-19	2017-18	2016-17
1254	1290	1230	1320	1320

File Description	Document
Institutional data in prescribed format (Data Template)	View Document
Any additional information	View Document

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

Response: 71.05

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

2020-21	2019-20	2018-19	2017-18	2016-17
572	567	468	501	464

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

2.2 Catering to Student Diversity

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

Response:

Narasaraopeta Engineering College (NEC) provides quality education with a structured curriculum, as well as a solid foundation for the students' nourishment and overall development by strengthening their physical and intellectual abilities. To address the issues of diversity in students' learning levels, the institution has well-planned multi-level strategies that are implemented on a regular basis.

Induction/Orientation programme:

The institute arranges an induction programme for the newly joined 1st-year students. The Principal of the campus will address the gathering which includes the stakeholders like students, parents, guardians, faculty, and the supporting staff. Detailed orientation in Mathematics, Physics, and Chemistry is provided to students during the induction programme to bridge the gap between intermediate education and the foundation required for professional education.

Counselling system:

As the fresher's (1st year students) are new to the campus, they must be guided properly in advance once they take admission. The dos and don'ts are also instructed by the mentors. The mentor-mentee association is much needed for the growth of the personalities of the students. The teaching faculty will act as the mentor and he/she shall be allotted 20 students.

Slow Learners

The students are classified into two groups i.e., slow learners and advanced learners. students are classified as Advanced or Slow learners based on their Intermediate marks, and EAMCET rankings. Students' learning abilities are assessed in subsequent semesters through midterm exams, assignments, classroom interactions, and mentoring. Before the first mid-exam, special classes are conducted for lateral entry students who seek admission late in the second year. Department develops strategies for bridging the gap between advanced and slow learners.

STRATEGIES FOR SLOW LEARNERS

1. Remedial classes are held after regular class schedules on specific days for each course for slow learners, and individual attention is paid to improve the students' level of learning, problem-solving, and presentation.
2. Mentors provide special attention/counseling to slow learners.
3. Slip tests are being carried out in order to improve students' performance.
4. Providing content to the students for important and difficult topics.
5. Special focus is laid on slow learners by giving Assignment questions and previous years' external question papers.

Slow learners are thus given adequate attention and streamlined into the academic mainstream.

Advanced Learners

The students who distinguish themselves in academics by securing more than 70% marks come under the group of Advanced Learners. We are displaying topper names with photographs on the notice board.

STRATEGIES FOR ADVANCED LEARNERS

1. Encourages students to take additional courses through self-learning, such as NPTEL, MOOCs, etc.
2. Inspires them to participate in conferences, workshops, paper presentations, co-curricular, extracurricular activities and to take part in competitive exams.
3. Encourages them to participate in special training offered by APSSDC, ARC, etc. on new technologies such as IoT, AI & ML, and data sciences to improve their technical skills.
4. Encourages students to join professional organisations such as IETE, IEEE, CSI, and IEI.

File Description	Document
Any additional information	View Document

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

Response: 14.62

File Description	Document
Any additional information	View Document

2.3 Teaching- Learning Process

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

Response:

The teaching-learning process is the main objective and strength of the institute. Modern methods of teaching are adopted which ensure a student-centric and rewarding experience. Experiential learning, participatory learning, and problem-solving methodologies are well adopted to ensure the overall development of students and facilitate life-long learning and knowledge management.

1) Pedagogical initiatives

The following teaching-learning methods are used in addition to ‘CHALK and TALK' and 'PPT'.

- Experiential Learning
- Problem-based learning

- Learning Management System (Moodle)
- Project-based Learning

a) Experiential learning:

- To improve the quality of learning, the curriculum provides laboratory courses to emphasize the concepts learned in theoretical subjects.
- In each laboratory, at least one experiment on virtual lab is introduced

Modern tools: For online classes technology is used for enhancing the learning capability of graduates. The tools used for online classes are Google meet, Zoom and Teams, etc.

b) Problem-based learning:

- Mini projects are incorporated into the curriculum
- The problem is identified based on the existing solutions gathered from a literature survey, as well as the constraints to the problems. The students solve the problem through the mini project and major projects.

c) LMS (Learning Management System):

- **Microsoft Teams**

The Microsoft team classroom is an innovative tool that is used effectively by all the departments. Faculty members share course plans, e-books, course materials, video lectures, question banks, and other materials through this platform.

d) Project-Based Learning:

Academic Projects, field trips are made a part of the curriculum and assessment. Summer-based projects are also promoted among advanced learners. The sampling techniques, methodology of the study, data collection tools and methods, analysis, testing and interpretation of information, report writing enhances practical based learning

2. E-Learning

E-learning is a structured course or learning experience that is delivered electronically and can include performance support content. The purpose of e-learning is to enable people to learn for personal fulfillment or to obtain a professional degree without physically attending a traditional university or academic setting.

- Moodle and self-learning

Moodle and Self-Learning

Moodle is used to provide students for creating personalized learning environments. Moodle is used effectively by faculty to upload syllabus, lesson plans, materials, PPTs, videos, Model question papers, assignment question papers, and also to conduct online quizzes. Students participate in MOOC Courses such as NPTEL, Coursera, Solo Learn, Data Camp, Udacity, Udemy, and Virtual labs demonstrating their

self-learning abilities.

3. Collaborative learning

The college collaborates with industry and academic experts to arrange Guest Lectures/Seminars/Workshops on cutting-edge technologies and tools.

- The college has several student chapters, including IEEE, IETE Student's Forum (ISF), IE, ISTE, and CSI. All the departments frequently arrange guest lectures by experts from industry, academia, and research institutions.
- Students are also encouraged to present technical papers at conferences and project competitions.
- Industrial visits are arranged for the students to learn through interaction and observation of working methods and employment practices.
- Programs are conducted in collaboration with APSSDC, Dassault systems, ARC, Eduskills, ICT Academy, Bytexl, Hebeon Technologies to train students and faculty in industry-based technologies and novel practices.

File Description	Document
Any additional information	View Document

2.3.2 Teachers use ICT enabled tools including online resources for effective teaching and learning process.

Response:

Narasaraopeta Engineering College (NEC) being a technical campus, encourages intensive use of ICT-enabled tools including online resources for effective teaching and learning process. All teachers of the college are using ICT tools and resources available on campus.

The following ICT tools are used by the Institute -

1. Projectors- Projectors are available in Classrooms
2. Desktop and Laptops are used for teaching
3. The laboratories, Seminar Halls, Auditorium, conference room, and other rooms are well equipped with ICT facilities
4. Virtual labs are also used to conduct labs through simulations.
5. Virtual Resource -Online Classes through Zoom, Google Meet, Microsoft Team, Google Classroom)
6. The learning abilities of students are enhanced with NPTEL, Guest Lectures, and Webinars.
7. The faculty members are trained with new methods of teaching and learning methods by agencies like NITTTR and ICT Academy, which are used effectively for the benefit of students
8. Digital library resources include DELNET, NPTEL, and IEEE.

Use of ICT by Faculty:

- Institute uses facilities such as SMS, ERP portal for communicating with students and parents through smartphones, tablets, and laptops.
- Online quiz examinations are conducted through Moodle Software.
- Some faculty have developed e-tutorials for specific topics which helped in making the students understand the concepts very clearly. These are YouTube-based which enable the students to replay as and when required.
- Virtual resources: During the COVID-19 Pandemic period institute has effectively deployed ICT facilities and online platforms to continue the teaching-learning process and academic sessions which include online classes, assignment submission, and project evaluation.
- During the Covid-Pandemic period, the institute continuously monitored students' academic progress and health by providing them with necessary guidance from time to time regarding health as well as academics.
- The blended Teaching-Learning Process has enabled students to learn effectively beyond class hours facilitating them in the improvement of academic performance and pass percentage.
- The overall use of ICT tools has greatly improved the teaching-learning process resulting in improved academic performance of all the students.

File Description	Document
Any additional information	View Document

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

Response: 20.08

2.3.3.1 **Number of mentors**

Response: 182

File Description	Document
Upload year wise, number of students enrolled and full time teachers on roll	View Document

2.3.4 Preparation and adherence of Academic Calendar and Teaching plans by the institution

Response:

Academic Calendar and Teaching plans have been in vogue in the college for a long time, with improvements from time to time. Since this is an autonomous college, the academic calendar becomes vital for running the college effectively. Academic activities are conducted systematically at the institutional, departmental, and teacher levels based on the curricular and teaching plans prepared in well-designed formats. Students are informed about the plans well in advance for their effective participation.

Academic Calendar

The academic calendar is prepared by the Academic Cell and IQAC in consultation with the Controller of Examinations and in consonance with the norms of JNTUK, Kakinada, Andhra Pradesh State Council of Higher Education (APSCHE), under the close supervision of the Principal

Based on the academic calendar, each department prepares a plan at the department level, which includes the above and co-curricular activities such as workshops, conferences, seminars, online courses, projects, and guest lectures by experts from both industry and academia. Extra-curricular activities such as various literary and cultural clubs are also part of the plan. This academic calendar is strictly adhered to, by the college.

The Calendar contains a number of working days duly considering the national and public holidays, festivals, summer vacations, training, and placement activities. In the calendar, the duration of classwork, mid examinations, and end exam details are included. The academic calendar is printed and displayed on notice boards of individual departments, as well as kept on the college website. It is made available to students prior to the start of classwork.

Teaching Plan/Course Information Sheet (CIS)

The teaching plan is prepared for each course in consideration with a number of teaching hours keeping view of academic calendars. Heads of the departments conduct meeting with their respective faculty before the commencement of the semester and allocate the subjects. A unit-wise Course Information Sheet (CIS) is prepared by faculty members. The syllabus coverage is monitored by the concerned HODs.

Faculty members create a CIS for each theory subject that is approved by the department's head. At the start of the semester, this timetable is placed in the course file. The amount of hours in the teaching plan is determined by the course credits, and the students are given access to the lesson plan. The Head of Department and Module Coordinator keep an eye on how well the lessons and lecture schedules are being followed. Each department creates an academic calendar at the start of the academic year that lists academic events such as workshops, conferences, guest lectures, industrial visits, and so on.

The Course Information Sheet is structured in accordance with the needs of Outcome-Based Education, the contents of CIS include:

- Course prerequisites
- Course objectives and outcomes
- Mapping of course outcomes with program outcomes
- Delivery methodologies
- Assessment methods
- Cognitive levels of learning
- Detailed unit wise lecture plan
- Assignment Questions
- Model question papers
- Links to the video lectures
- Learning resources
- Contents beyond the syllabus

File Description	Document
Upload Academic Calendar and Teaching plans for five years	View Document

2.4 Teacher Profile and Quality

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

Response: 99.49

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

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

Response: 15.85

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

2020-21	2019-20	2018-19	2017-18	2016-17
70	66	36	28	32

File Description	Document
Institutional data in prescribed format (Data Template)	View Document
Any additional information	View Document

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

Response: 4.54

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

Response: 1134

File Description	Document
Institutional data in prescribed format	View Document
Any additional information	View Document
Link for Additional Information	View Document

2.5 Evaluation Process and Reforms

2.5.1 Average number of days from the date of last semester-end/ year- end examination till the declaration of results year-wise during the last five years

Response: 14

2.5.1.1 **Number of days from the date of last semester-end/ year- end examination till the declaration of results year wise during the last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
13	25	11	12	09

File Description	Document
Institutional data in prescribed format (Data Template)	View Document
Any additional information	View Document

2.5.2 Average percentage of student complaints/grievances about evaluation against total number appeared in the examinations during the last five years

Response: 0.47

2.5.2.1 **Number of complaints/grievances about evaluation year wise during the last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
22	28	13	15	00

File Description	Document
Number of complaints and total number of students appeared year wise	View Document

2.5.3 IT integration and reforms in the examination procedures and processes including Continuous Internal Assessment (CIA) have brought in considerable improvement in Examination Management System (EMS) of the Institution

Response:

Examination reforms by the Institution keep its examination system open for modifications to strengthen it from time to time, to make the system foolproof. It also, address the grievances of students, if any. The institutional reform activities keep the examination system at par with the examination reforms by AICTE. Examination schedules are prepared by adhering to the institution's academic calendar. In continuous assessment, midterm examinations, and assignments are conducted as per the schedules.

The marks obtained by the students are posted in ERP and it is made visible to both students and parents. All the permissible pre-examination and post-examination tasks have been integrated with Examination Management System using the BET tool of BEES/CAMU software. The college has been involving electronic processes in publishing the examination schedules on the college website, preparing a database of eligible candidates, conducting examinations on pre-printed bar-coded and OMR answer booklets, and post-examination task- declaration of results, and issue of grade cards. The question paper for the Semester End Examinations (SEE) is also set by external members from premier institutions. Enough care is taken to ensure the questions are standard, and from the syllabus with appropriate Bloom's Taxonomy.

Special squad team comprises of internal faculty to take prompt actions against malpractices if any. The examination schedules are determined by following the Institute Academic Calendar. Midterm and assignment tests are administered as part of continuous assessment. Furthermore, skill labs, mini-projects, and one major project are completed by the students, and the reviews are conducted to evaluate them.

The BEES ERP/CAMU software is integrated for handling student attendance, marks, and other activities related to the exams. BET tool of BEES ERP/CAMU manages autonomous tasks such as collecting exam fees, generating hall tickets, seating plans, and analyzing the results after the exam. Students can check their grades and results in each course they have taken through their portals. The software also generates the consolidated marks memo and provisional certificates. Learning management system (MOODLE) software is used for conducting online exams and for uploading teaching-learning material. HEBEON/BYTEXL software tool is used for self-learning of programming languages like C, JAVA, PYTHON, etc. Koha software is used for library automation. Firewall software is implemented for the protection and security of information software.

A detailed seating arrangement for each day, room, and the semester is prepared for all exams. A paper setter who has been teaching the subject for a minimum of three years is selected from the approved list of paper setters for the end semester exam. Enough care is taken to ensure the quality and uniformity of the syllabus, the mapping of COs, and the following of BLOOMS taxonomy, and special squads are arranged to monitor for smooth conduct of examinations and the prompt investigation of malpractices are administered by the Malpractice Enquiry Committee.

Examination Reforms:

Reforms	Positive Impact
Three sets of question papers are maintained for each subject/course	Confidentiality in the question paper selection
Setting the question papers from all the units with internal choice and moderation of question papers	1. Maintain standards and coverage of syllabus among all the units 2. Students are required to study all the units in a given course 3. Improve the course outcomes by implementing the internal choice
Preparation of detailed scheme of evaluation by internal subject/course experts	1. Uniformity in the evaluation among the evaluators 2. Fair judgment for the students
Appointment of a squad consisting of senior faculty members to monitor the semester-end examinations	Strict vigilance for smooth conduction of examinations
Establishment of spot evaluation center	1. Confidentiality and custody of answer booklets are ensured 2. Declaration of results within the stipulated time
Encoding and decoding of answer booklets	Providing confidentiality and unbiased evaluation
Evaluation of 10% of answer booklets by the chief and other examiners of the concerned board at the beginning of the evaluation	Ensure uniform evaluation
Automation of examination management system	1. Improvement in reliability, efficiency, security, transparency, confidentiality, and accuracy in the process 2. Software developed by the institute provides more scope to final year students for their placements and higher studies.
Advance supplementary examinations and timely publication of results and issuing necessary certificates in time	Provides more scope to final year students for their placements and higher studies
Inclusion of security features in grade sheets as well as in answer booklets	Chances of manipulations are nullified

File Description	Document
Any additional information	View Document

2.6 Student Performance and Learning Outcomes

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

Response:

Outcome-Based Education (OBE) is an important demonstration tool for student-centered instruction

that focuses on measuring student performance through outcomes. Quality assurance and improvement processes are about determining whether the set educational objectives meet a general standard of quality. The emphasis of the Outcome-Based Education (OBE) system is on quantifying what the students are capable of doing and the learning outcomes of the courses. Course Outcomes are the statements indicating knowledge and skills that the student is expected to acquire at the end of a course. Program outcomes represent the knowledge, skills, and attitudes the students should have at the end of the program. Program outcomes can be directly measured through course outcomes. The outcome-based education model is based on defining various parameters called Graduates Attributes (POs).

In compliance with the objectives of Outcome-Based Education (OBE), the Program Outcomes (POs), Program Specific Outcomes (PSOs), and Course Outcomes (COs) are framed by the department offering the concerned program after consultation with all faculty and the stakeholders. The Course outcomes framed for each course are displayed through various means as given below.

- College Website
- Syllabus books
- Classrooms
- Laboratories and laboratory manual
- Meetings/ Interactions with employers
- Parent meet
- Faculty meetings
- Alumni meetings
- Professional Body meetings
- Library

While addressing the student's HODs create awareness on POs, PSOs, and COs. The faculty members also inform the students and create awareness on the attainment of the same. The POs/PSOs and COs of the programme are also published through the college website www.nrtec.in.

Weblinks: https://www.nrtec.in/outcome-based-education-obe/

File Description	Document
Upload COs for all courses (exemplars from Glossary)	View Document

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

Response:

The process of attainment of COs, POs, and PSOs starts from writing appropriate COs for each course of the program from the first year to the fourth year in a four-year engineering degree program. The course outcomes are written by the respective faculty member using action verbs of learning levels suggested by Bloom and Anderson. Then, a correlation is established between COs and POs on a scale of 1 to 3, 1 being the slight (low), 2 being moderate (medium) and 3 being substantial (high). A mapping matrix is prepared in this regard for every course in the program including the elective subjects. The course outcomes are

written and their mapping with POs are reviewed frequently by a committee of senior faculty members before they are finalized.

Course Outcomes (COs): Statements indicating what a student can do after the successful completion of a course. Every Course leads to some Course Outcomes. The CO statements are defined by considering the course content covered in each module of a course. For every course, there are maybe 5 or 6 COs. The keywords used to define COs are based on Bloom's Taxonomy

Direct attainment displays the student's knowledge and skills from their performance. It can be determined from the performance of the students in all the relevant assessment instruments like internal assessments, assignments, quizzes, and final examinations.

Indirect methods access opinions or thoughts about the graduate's knowledge or skills. Indirect measures can provide information about graduates' perception of their learning and how this learning is valued by different stakeholders. The entire assessment process is depicted in the below figure.

Following are the different methods for Assessment, Evaluation, and Measurement of POs/PSOs

- Direct Assessment Methods
- Indirect Assessment methods

Direct Assessment methods:

Continuous Assessment: COs are assessed through Sessional, Assignment Examinations, and Lab records. The COs are mapped against each question and CO analysis is carried out by faculty for each course and is documented. The contributions of COs are assessed in high, moderate, and low levels, towards the attainment of POs/PSOs.

Semester-end Theory Examinations: The questions in semester-end examinations are tested pertaining to all COs, in varying Bloom's Taxonomy Levels.

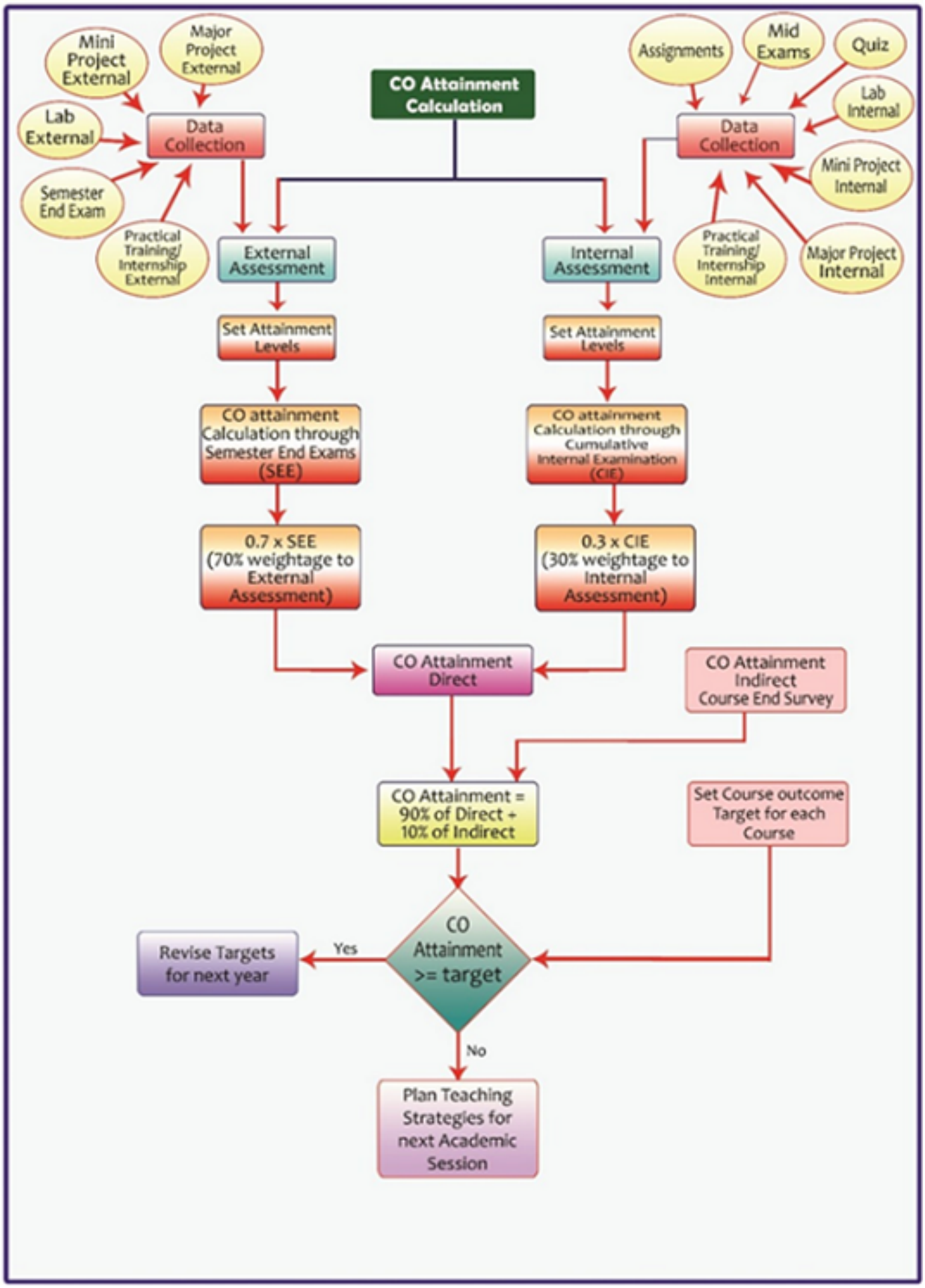
Laboratory Records: Both continuous and semester-end examinations are conducted to test the CO's attainment.

Indirect Assessment Methods:

Programme – Exit survey: This survey was taken from the final year students at the completion of their B.Tech program stands as the comprehensive feedback for the PO/PSO assessment.

Alumni Survey: This survey is conducted annually through Google link or mail with the Alumni to obtain the inputs and suggestions on PO attainment in the real-time societal and professional environment.

Employer Survey: This survey is taken from the employer to measure the PO attainments.


CO Attainment Calculation
Mini Project External
Major Project External
Lab External
Semester End Exam
Practical Training/ Internship External
Data Collection
External Assessment
Set Attainment Levels
CO attainment Calculation through Semester End Exams (SEE)
0.7 x SEE (70% weightage to External Assessment)
Assignments
Mid Exams
Quiz
Lab Internal
Mini Project Internal
Practical Training/ Internship Internal
Major Project Internal
Data Collection
Internal Assessment
Set Attainment Levels
CO attainment Calculation through Cumulative Internal Examination (CIE)
0.3 x CIE (30% weightage to Internal Assessment)
CO Attainment Direct
CO Attainment Indirect Course End Survey
CO Attainment = 90% of Direct + 10% of Indirect
Set Course outcome Target for each Course
CO Attainment >= target
Yes
Revise Targets for next year
No
Plan Teaching Strategies for next Academic Session

External Examination Assessment Process:

Rubrics:

- If 50% of the students crossed 50% of the marks: Attainment Level 1
- If 60% of the students crossed 50% of the marks: Attainment Level 2
- If 70% of the students crossed 50% of the marks: Attainment Level 3

Weblink: https://www.nrtec.in/department-of-cse-attainment/

File Description	Document
Any additional information	View Document

2.6.3 Pass Percentage of students(Data for the latest completed academic year)

Response: 90.49

2.6.3.1 **Total number of final year students who passed the examination conducted by Institution.**

Response: 866

2.6.3.2 **Total number of final year students who appeared for the examination conducted by the Institution.**

Response: 957

File Description	Document
Upload List of Programmes and number of students passed and appeared in the final year examination(Data Template)	View Document
Any additional information	View Document

2.7 Student Satisfaction Survey

2.7.1 Online student satisfaction survey regarding teaching learning process

Response: 3.91

File Description	Document
Upload database of all currently enrolled students	View Document

Criterion 3 - Research, Innovations and Extension

3.1 Promotion of Research and Facilities

3.1.1 The institution's Research facilities are frequently updated and there is a well defined policy for promotion of research which is uploaded on the institutional website and implemented

Response:

NEC aspires to cultivate and encourage a research culture among its faculty, staff, and students in order to foster a scientific mindset and research abilities. It contributes to the college's vision and purposes, as well as national growth, by establishing an institutional fund and strategy to facilitate their participation in research and associated activities, as well as providing the necessary resources and facilities.

It also attempts to ensure that the college's research operations adhere to all applicable rules and regulations, as well as established standards and norms for doing research in a safe and ethical manner.

Objectives of the Research Policy

- Improving institutional capacity for strategic, technical, and operational planning, budgeting, and control of all of the college's research operations.
- Establishing and administering a research fund to assist and facilitate academic and student research initiatives and projects.
- Developing rules, procedures, and guidelines for giving research funds, as well as procedures and guidelines for granting study leave, sabbatical leave, duty leave, workload reduction, and other

research-related benefits to faculty members.

- Promoting interdisciplinary research and developing procedures for planning and carrying out joint research projects involving many disciplines, as well as policies for incorporating external agencies and experts in such projects.
- Developing and encouraging links with the Research Council of the College of Delhi, so that all of the college's researchers can benefit from the council's activities and programmes.
- Identifying and creating partnerships with national and international research organizations, including Memorandums of Understanding (MOUs) for long-term relationships, to broaden the scope of research possibilities and financing alternatives accessible to the college's faculty and students.

Research Policy Implementation Mechanism

- The college's research cell, in collaboration with the college administration, will be responsible for putting the college's research policy into action. The research cell's precise duties and functions will be as follows:
- Assist professors in conducting research and will work with college administration to establish a research fund to provide seed money.
- Encourage and support a research culture by providing research facilities such as laboratory equipment, research journals, and research incentives as necessary by the faculty (eg. Teaching workload remission, opportunities for attending conferences, etc.)
- Collaborate with other research organizations/industries to encourage faculty to conduct research.
- Establish appropriate mechanisms for recognizing the importance of guiding research.
- Assist funding agencies/institutions in establishing specific research units/centers.
- Seek funding from national and international institutions such as the UGC, AICTE, CSIR, DST-SERB, DST, DBT, NATO, DRDO, and BARC for major and minor research initiatives carried out by teachers and students.
- Encourage and support faculty members' publication of research publications in reputable/refereed journals.
- Assist in the development of interdepartmental and multidisciplinary research projects.

File Description	Document
Minutes of the Governing Council/ Syndicate/Board of Management related to research promotion policy adoption	View Document
Any additional information	View Document

3.1.2 The institution provides seed money to its teachers for research (average per year, INR in Lakhs)

Response: 2.23

3.1.2.1 **The amount of seed money provided by institution to its faculty year-wise during the last five years (INR in lakhs).**

2020-21	2019-20	2018-19	2017-18	2016-17
2.48	2.01	2.13	1.77	2.75

File Description	Document
List of teachers receiving grant and details of grant received	View Document
Budget and expenditure statements signed by the Finance Officer indicating seed money provided and utilized	View Document
Any additional information	View Document

3.1.3 Percentage of teachers awarded national / international fellowship for advanced studies/research during the last five years

Response: 0

3.1.3.1 **The number of teachers awarded national / international fellowship for advanced studies / research year wise during last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
00	00	00	00	00

File Description	Document
List of teachers and their international fellowship details	View Document
e-copies of the award letters of the teachers	View Document

3.2 Resource Mobilization for Research

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

Response: 174.31

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

2020-21	2019-20	2018-19	2017-18	2016-17
66.32	21.61	46.69	10.81	28.88

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

3.2.2 Percentage of teachers having research projects during the last five years

Response: 1.19

3.2.2.1 **Number of teachers having research projects during the last five years**

2020-21	2019-20	2018-19	2017-18	2016-17
06	03	04	02	03

File Description	Document
Names of teachers having research projects	View Document
Any additional information	View Document

3.2.3 Percentage of teachers recognised as research guides

Response: 3.2

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

Response: 08

File Description	Document
Upload copies of the letter of the university recognizing faculty as research guides	View Document
Any additional information	View Document

3.2.4 Average percentage of departments having Research projects funded by government and non-government agencies during the last five years

Response: 30

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

2020-21	2019-20	2018-19	2017-18	2016-17
02	02	02	01	04

3.2.4.2 **Number of departments offering academic programes**

2020-21	2019-20	2018-19	2017-18	2016-17
08	08	07	07	07

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

3.3 Innovation Ecosystem

3.3.1 Institution has created an eco system for innovations, creation and transfer of knowledge supported by dedicated centers for research, entrepreneurship, community orientation, Incubation etc.

Response:

The institution has undertaken a comprehensive approach towards the promotion of innovation, incubation, and entrepreneurship. NEC has an **Institution's Innovation Council (IIC)** that works under the 'MoE's Innovation Cell (MIC)' to create a vibrant local innovation ecosystem, a start-up supporting mechanism, a functioning ecosystem for scouting ideas and pre-incubation of ideas, and to improve technology students' cognitive abilities. For its students and faculty, NEC IIC actively organizes and conducts seminars, workshops, field trips, project displays, entrepreneurship boot camps, Idea competitions, and other events.

The **Entrepreneur Development Cell (EDC)** at NEC works to promote entrepreneurship among students by hosting events such as entrepreneurship awareness camps, entrepreneurship development programmes, faculty development programmes, skill development training programmes, and entrepreneurship challenges in starting a social enterprise. Faculty members have been encouraged to

conduct novel research initiatives by the institution. Some of the faculty members are involved in funded projects and also completed their sanctioned projects. Furthermore, the Institute provides financial assistance and facilities to students and staff members who propose feasible ideas.

The main objectives are :

1. To nurture a passion for self-employment. This would pave the way for the development of new knowledge-based hi-tech businesses, industries, and a new generation of technopreneurs, transforming job searchers into job creators and, in turn, propelling the country toward industrial excellence and self-reliance.
2. To impart entrepreneurial theory and practice knowledge and insights through lectures, events, and seminars.
3. To achieve the objectives, collaborate with similar bodies in other technical colleges.
4. To seek collaborations with non-profit entrepreneurial organizations that will link the e-cell to a global network of entrepreneurs.

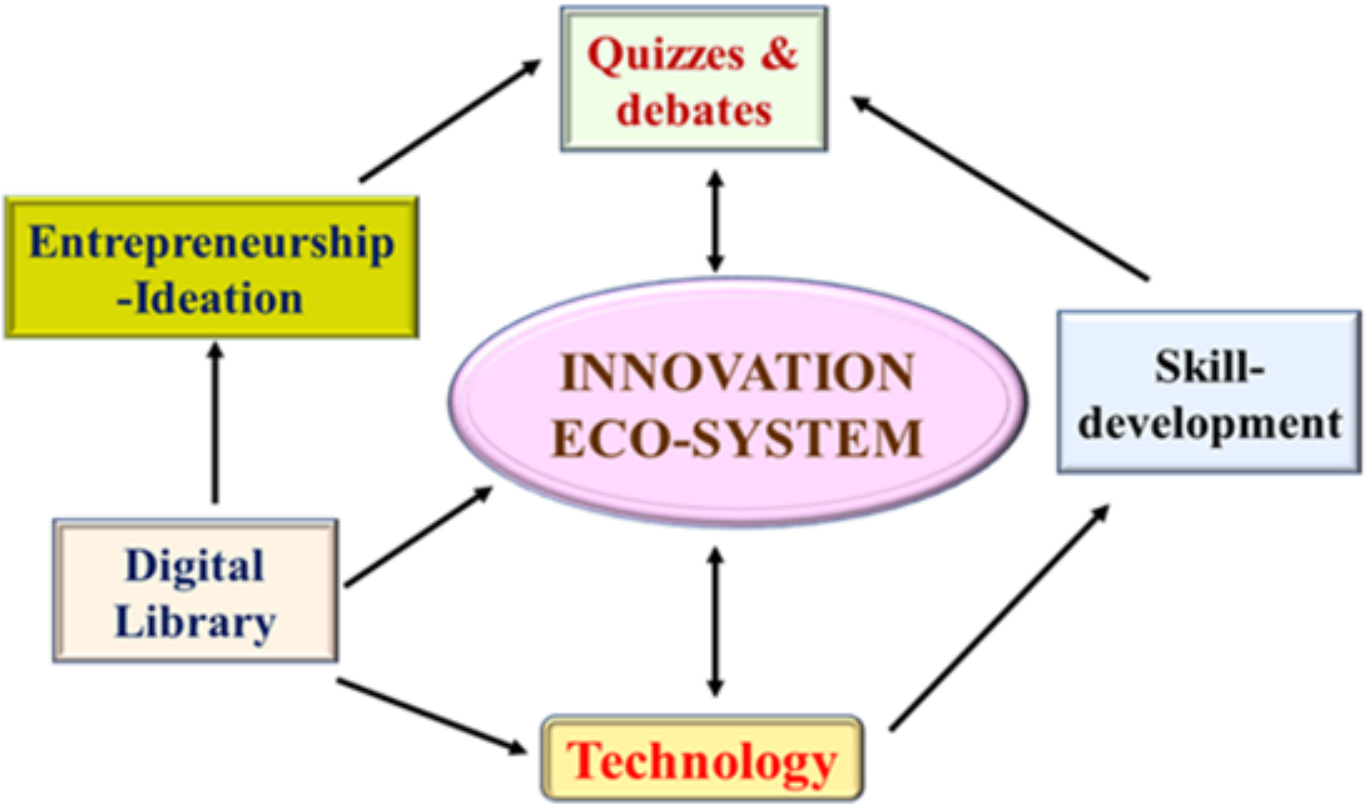


Figure 3.3.1: Innovative Ecosystem

The **Innovation and Incubation Centre** at NEC provides a creative environment in which new ideas and projects can thrive. The incubation center provides a platform for business incubation and innovation, including incubation spaces, business management counseling, technical solutions, interaction with industry and peers, identification of doable issues, and provision of relevant solutions. A systematic process designed for innovators to convert their concepts, ideas into products.

National innovation startup policy (NISP) is introduced in the Institute with a vision to ensure NEC as a hub for startups entrepreneurship, IPR, and to promote rural enterprise. **IPR cell** was established in the college in the year 2018 to provide a platform to share and discuss practical exposure and to assist faculty

members in the patent filing process.

Faculty members will be encouraged to improve their skills and qualifications, and financial aid will be provided. Students in the graduate programmes are encouraged to participate in minor and major projects in the workplace to gain real-world experience. In the classrooms and laboratories, LCD projectors are used to deliver e-learning programmes in a constructive manner. N.S.S. conducted numerous initiatives such as tree planting, Swacch Bharat, blood donation camps, and public awareness campaigns. All of these activities are made possible with the help of the neighborhood community.

File Description	Document
Upload any additional information	View Document

3.3.2 Number of workshops/seminars conducted on Research methodology, Intellectual Property Rights (IPR),entrepreneurship, skill development during the last five years.

Response: 55

3.3.2.1 **Total number of workshops/seminars conducted on Research methodology, Intellectual Property Rights (IPR),entrepreneurship, skill development year-wise during the last five years.**

2020-21	2019-20	2018-19	2017-18	2016-17
12	35	07	01	00

File Description	Document
List of workshops/seminars during last 5 years	View Document

3.4 Research Publications and Awards

3.4.1 The Institution ensures implementation of its stated Code of Ethics for research through the following: 1. Inclusion of research ethics in the research methodology course work 2. Presence of Ethics committee 3. Plagiarism check through software 4. Research Advisory Committee

Response: A. All of the above

File Description	Document
Any additional information	View Document

3.4.2 Number of Ph.D's registered per teacher (as per the data given w.r.t recognized Ph.D guides/ supervisors provided at 3.2.3 metric) during the last five years

Response: 0.88

3.4.2.1 How many Ph.Ds are registered within last 5 years

Response: 7

3.4.2.2 Number of teachers recognized as guides during the last five years

Response: 08

File Description	Document
List of PhD scholars and their details like name of the guide , title of thesis, year of award etc	View Document
URL to the research page on HEI web site	View Document

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

Response: 1.22

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

2020-21	2019-20	2018-19	2017-18	2016-17
63	67	67	108	65

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

3.4.4 Number of books and chapters in edited volumes / books published per teacher during the last five years

Response: 1.06

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

2020-21	2019-20	2018-19	2017-18	2016-17
272	16	13	08	13

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

3.4.5 Bibliometrics of the publications during the last five years based on average citation index in Scopus/ Web of Science or PubMed

Response: 5.01

File Description	Document
Bibliometrics of the publications during the last five years	View Document

3.4.6 Bibliometrics of the publications during the last five years based on Scopus/ Web of Science - h-index of the Institution

Response: 9

File Description	Document
Bibiliometrics of publications based on Scopus/ Web of Science - h-index of the Institution	View Document

3.5 Consultancy

3.5.1 Revenue generated from consultancy and corporate training during the last five years (INR in Lakhs).

Response: 64.08

3.5.1.1 **Total amount generated from consultancy and corporate training year-wise during the last five years (INR in lakhs).**

2020-21	2019-20	2018-19	2017-18	2016-17
25.47	7.05	14.93	8.33	8.30

File Description	Document
List of consultants and revenue generated by them	View Document
Audited statements of accounts indicating the revenue generated through consultancy and corporate training	View Document

3.5.2 Total amount spent on developing facilities, training teachers and staff for undertaking consultancy during the last five years (INR in Lakhs).

Response: 31.09

3.5.2.1 **Total amount spent on developing facilities, training teachers and staff for undertaking consultancy during the last five years (INR in Lakhs)**

2020-21	2019-20	2018-19	2017-18	2016-17
0.20	5.64	11.944	6.664	6.64

File Description	Document
List of training programmes, teachers and staff trained for undertaking consultancy	View Document
List of facilities and staff available for undertaking consultancy	View Document
Audited statements of accounts indicating the expenditure incurred on developing facilities and training teachers and staff for undertaking consultancy	View Document

3.6 Extension Activities

3.6.1 Extension activities are carried out in the neighbourhood community,-sensitising students to social issues, for their holistic development, and impact thereof during the last five years

Response:

Narasaraopeta Engineering College was allotted a National Service Scheme (NSS) Unit in 2002 by Jawaharlal Nehru Technological University, Kakinada with 100 students enrolled as NSS Volunteers. The motto of NSS is "Not Me But You" as stated by Swami Vivekananda. It means service to mankind is service to god. Imparting such values and attitudes into the minds of students is the main aim of the organization. Trusting in this, the institute carries out a number of extension activities in the neighborhood community. Our NSS Unit organized several service-oriented activities at the university level and state level since its inception.

Our NSS unit focuses on the welfare of the neighborhood community and sensitizes their social problems and takes necessary steps for the betterment of society. These social outreach programs brought a great impact on the holistic development of the students as they come across different categories of people and their living standards. Every year during Independence Day and Republic Day, the NSS volunteers coordinate to demonstrate current social problems.

Extension activities in the neighborhood community during the accreditation period:

Free Covid-19 Test and Vaccination Programs, Clean and Green Programs like Swatch Bharath (2016-2020) were conducted at Yallamanda, Guravayapalem, and Kesanupalli the nearby villages and our NSS volunteers explained the importance of cleanliness and its impact on health particularly in the pandemic situation to the villagers.

Implementing several Chlorination Programs in the village and explaining the importance of hygiene to protect health. After the survey, Medical camps were conducted in Yallamanda village to solve their dental, eye, and orthopedic problems which are identified as major health troubles. Dental Camps were conducted byDr.V.Ramesh Babu Garu, Vishnu Nursing Home, Narasaraopet, and our NSS Unit arranged medicines and distributed them free of cost to villagers. Our college conducted certen service oriented activities, plantation, free dental camps, clorination program, awareness on Covid-19 etc., in Y/allamanda Village whic is adopted by college NSS unit. The Unnat Bharath Abhiyan- Central Government Sponsored Scheme funded seed capital for conducted service oriented activities.

Awareness Program on traffic signals to High school children was arranged and explained precautionary measures to protect from road accidents. Massive Plantation Programs were conducted at Yallamanda, Guravayapalem, and Kotappakonda Hill premises. Our students planted hundreds of saplings to make green & clean villages. Due to this plantation air pollution is reduced and residents are benefited. Several Campaigns were conducted on Digital literacy and trained the villagers about cashless transactions through the use of debit cards, online banking, Google Pay, Phone Pay, etc. by the students.

An awareness campaign through a rally on Plastic pollution and the ill effects of plastic usage and plastic waste was carried out in Narasaraopeta town. Usage of paper bags and jute bags is increased. We have conducted Police Commemoration Day, Road Safety Programs, Mock Youth Parliament sessions, National Voters Day, World Waters Day, International Women's Day, World Environment Day, etc. in our

college.

File Description	Document
Upload Any additional information	View Document
Paste link for additional information	View Document

3.6.2 Number of awards and recognition received by the Institution, its teachers and students for extension activities from Government / Government recognised bodies during last five years

Response: 15

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

2020-21	2019-20	2018-19	2017-18	2016-17
03	03	03	03	03

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

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

Response: 35

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

2020-21	2019-20	2018-19	2017-18	2016-17
06	09	07	08	05

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

3.6.4 Average percentage of students participating in extension activities listed at 3.6.3 above during the last five years

Response: 24.23

3.6.4.1 **Total number of students participating in extension activities listed at 3.6.3 above year-wise during the last five years.**

2020-21	2019-20	2018-19	2017-18	2016-17
770	784	803	777	766

File Description	Document
Reports of the event	View Document
Average percentage of students participating in extension activities with Govt or NGO etc	View Document

3.7 Collaboration

3.7.1 Number of Collaborative activities per year for research/ faculty exchange/ student exchange/ internship/ on –the-job training/ project work

Response: 6.8

3.7.1.1 **Total number of Collaborative activities per year for research/ faculty exchange/ student exchange/ internship/ on –the-job training/ project work**

2020-21	2019-20	2018-19	2017-18	2016-17
15	10	07	00	02

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

3.7.2 Number of functional MoUs with institutions of national, international importance, other institutions, industries, corporate houses etc. during the last five years (only functional MoUs with ongoing activities to be considered)

Response: 23

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

2020-21	2019-20	2018-19	2017-18	2016-17
10	04	05	02	02

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

Criterion 4 - Infrastructure and Learning Resources

4.1 Physical Facilities

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

Response:

The Institution has a total Built-up area of 31,362 square meters. There are adequate facilities for teaching and learning. Laboratories are well-established and equipped with cutting-edge technology. There are English language communication skills laboratories and e-learning centers where students can attend remote courses. The central library has national and international journal subscriptions, as well as a large number of book volumes. There are fully equipped seminar halls with a good public address system, Wi-Fi, and different seating capacities for conducting seminars/workshops/FDPs and guest lectures. The Institution has research centers to cater to the needs of research scholars.

BEES ERP software is implemented for student attendance, marks, and other related activities. Autonomous exam section activities like exam fee collection, hall ticket generation, seating plans, and post-processing of results are done by the BET tool of BEES ERP. From this year onwards CAMU software is implemented instead of BEES ERP software. Learning management system (MOODLE) software is used for conducting online exams and for uploading teaching-learning material. Koha software is used for library automation. Sonic Firewall software developed by Sonic wall SGS6600 worth Rs.12,00,000 is implemented for the protection and security of information software.

The institution has **1156** computers for the use of students and staff. All faculty rooms, administrative offices, and department offices are provided with computers. The campus has free Wi-Fi. Many of the classrooms and seminar halls have LCDs and Wi-Fi as ICT facilities. For an uninterrupted power supply, a generator and 17 UPS are available. The institution has adequate **classrooms**, laboratories, Seminar Halls, and drawing halls.

Available Facilities for teaching and learning:

1. Recognized AP CM’s Skill Excellence Centre.
2. Recognized Remote Centre by NMEICT- IIT Bombay.
3. Indo European Skilling Centres for Mechatronics and Industrial Robotics in collaboration with APSSDC & ARC (Applied Robotic Control), Germany, and e-Yantra Robotics Lab in collaboration with IIT Bombay.
4. Part of Stanford University Innovation Fellowship (UIF) Programme.
5. Established Dassault Systems Lab in association with APSSDC.
6. DST has sanctioned 2.5 crores towards the setting up of NIDHI-TBI.
7. Established IIC 3.0(Institution innovation Council) supported by MHRD.
8. Totally 42 MoUs are Signed with reputed industries and international and national organizations like Red Hat Academy, Efftronics Systems PVT Ltd, Byte-XL, New Mexico State University (NMSU), New Mexico, USA, TiE Hyderabad.
9. Member of ICT Academy, IUCEE
10. IEEE,IE(I),CSI,IETE,ISTE Student chapters are established
11. Established Swayam NPTEL Local chapter

12. ECE, CSE, and Mech. Departments are recognized as Research Centers by JNTUK, Kakinada.

The institute has established several cells to create an eco-system of quality improvement, research, and innovation, such as IPRC, EDC, R&D, IIIC, and IQAC, among others. The Training &Placement Cell provides students with campus recruitment training as well as soft skills and interview skills, as well as organizing campus drives.

File Description	Document
Upload Any additional information	View Document
Paste link for additional information	View Document

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

Response:

Cultural: The college has provided a number of facilities to support extracurricular activities related to culture, creativity, arts, and recreation. For conducting literary and cultural events, one AC seminar hall with a seating capacity of 300 was established. By providing financial assistance, the college will encourage students to compete at the college, state, and national levels. The cultural committee at the college is led by a committee comprised of staff and student members.

The college organizes events through various clubs such as the ENERGY CLUB, NATURE CLUB, PAINTING AND PHOTOGRAPHY CLUB, BHUVANAVIJAYAM CLUB, SPORTS CLUB. Throughout the year, the institute actively organizes various events under different clubs. Every year, in addition to club events, the institute organizes a JUBILATION (National level technical, cultural and sports fest), Student-Parent meet, Fresher's Day celebrations, and Annual Day celebrations.

Sports and Games: NEC has adequate facilities for sports and games (indoor and outdoor), as well as a Gymnasium. To train and monitor all sports and games activities, a well-qualified Male and Female Physical Directors were appointed.

Indoor Games:

Table Tennis, Caroms, Chess, and Gymnasium are among the indoor games available at the institute.

S. No	Name of the Sport	Available
1	Table Tennis	2
2	Carom Boards	7
3	Chess	8
4	Gymnasium	1

Outdoor games:

Volleyball, Throw Ball, Basket Ball, Tennikoit, Kabaddi, and Cricket Nets are available in the institute's outdoor games facilities.

S.No	Name of the Game	Number of courts available
1	Basket Ball Court	1
2	Lawn Tennis	1
3	Lawn Tennis(Double)	1
4	Kabaddi Court(Men)	1
5	Kabaddi Court(Women)	1
6	KHO-KHO Court (Men/Women)	1
7	KHO-KHO Court((Sub Juniors)	1
8	Volley Ball Court	1
9	Shuttle Badminton (Singles)	1
10	Shuttle Badminton (Doubles)	1
11	Ball Badminton(Doubles)	1
12	Ball Badminton(Fivers)	1
13	Throwball	1
14	TenniKoit (Single)	1
15	TenniKoit (Doubles)	1
16	Cricket	1

Cultural Activities: Cultural activities are held in the seminar halls at the NEC.

Yoga: Yoga master is available for Yoga training. International Yoga day is celebrated every year with major participation of students and Faculty.

Gymnasium: Treadmills, stationary bicycles, dumbbell sets, and Multi station Gym are available in the campus.

Under the supervision of the Physical Director, all courts, sports, and games equipment are maintained on a regular basis. Students are encouraged to participate in events at the regional, university, national, and international levels by the institute. Some of our students competed in and won major events at various levels.

The college teams in cricket, volleyball, and other sports won the majority of the tournaments.Many of our students have competed in JNTUK Interuniversity Tournaments and brought laurels to the Institute.

File Description	Document
Geotagged pictures	View Document
Paste link for additional information	View Document

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

Response: 83.56

4.1.3.1 **Number of classrooms and seminar halls with ICT facilities**

Response: 61

File Description	Document
Institutional data in prescribed format	View Document

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

Response: 24.11

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

2020-21	2019-20	2018-19	2017-18	2016-17
263.38	203.45	236.7	169.80	196.13

File Description	Document
Upload Details of Expenditure , excluding salary during the last five years	View Document
Upload audited utilization statements	View Document

4.2 Library as a Learning Resource

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

Response:

The Central Library is the knowledge resource center in the college and it is located in Block 3. It meets the needs of the college's faculty and students. The library has had circulation section, lending books

section, reference section, SC/ST book bank section and project discussion rooms. Library automation is implemented in phased. The ERP software is integrated with library management system. KOHA software is used which includes all aspects of the library management system. The timings are 8:00 a.m. to 8:00 p.m. on weekdays and 9.00 a.m. to 5:00 p.m. on holidays.

Library Information:

Titles	**7880**
Total No. of Volumes	**65,331**(Including SC/ST Book Bank& MCA)
Book Bank for SC(volumes)	**4758**
Book Bank for SC(Titles)	**610**
Book Bank for ST(volumes)	**617**
Book Bank for ST(Titles)	**130**
Reference Books	**7556**
E-Journals	**3(IEEE(ASPP), DELNET & N LIST)**
E-Books	**34,38,000 (N-List)**
Digital Databases	**1 (DELNET,N-List)**
Print Journals	**70**
Magazines	**10**
Project Reports	**1313**
CD& Videos	**2045**

The digital library has e-resources like DELNET, e-ShodhSindhu- N-List, IEEE, NDLI, NPTEL and a collection of e-books. In addition to this, the library is also equipped with an internet browsing center with unlimited access to various academic resources available on the internet.

Digital Library information

Number of Computers	40 with multimedia and Internet facility Broad
Band Connectivity	100 MBPS
Library Network Membership	DELNET, N-List, IEEE(ASPP)
E-Learning material	16 TB of NPTEL Video lectures on 502 subjects
	NPTEL Web Courses
Book Search	Within the campus through OPAC
Following costly rare books are available at NEC library	Fluid Power Technology, Narendra Modi Harbinger of prosperity & Apostle of world peace.

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

4.2.2 Institution has access to the following: 1. e-journals 2. e-ShodhSindhu 3. Shodhganga Membership 4. e-books 5. Databases 6. Remote access to e-resources

Response: A. Any 4 or more of the above

File Description	Document
Institutional data in prescribed format	View Document

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

Response: 12.96

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

2020-21	2019-20	2018-19	2017-18	2016-17
11.5	10.02	8.9	8.9	25.5

File Description	Document
Details of annual expenditure for purchase of and subscription to journals/e-journals during the last five years	View Document
Audited statements of accounts	View Document

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

Response: 10.94

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

Response: 427

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

4.3 IT Infrastructure

4.3.1 ***Institution has an IT policy covering wi-fi, cyber security, etc., and allocated budget for updating its IT facilities***

Response:

The institute has IT poicy with clearly stating the procedures to be adopted for all IT facilities that are made available in the campus. The Institution's IT infrastructure, including Wi-Fi, is updated on a regular basis. There are 1156 computers, 72 projectors, and 37 printers are available. The CAMPUS has Wi-Fi access, to meet the needs of academic and research. The campus has a 400 Mbps dedicated line internet facility through AIRTEL and a 40 Mbps bundled bandwidth through BSNL, Sonic Firewall(SGS6600) worth of Rs.12,00,000/- that protect the NEC networks from hakers.

AP CM's Skill Excellence Centre,ARC,DASSAULT 3D was established in the institution is association with APSSDC and IoT labs were also established.

The Institute has an intranet with a 1Gbps fiber optic backbone network and three DIGISOL manageable switches, as well as Wi-Fi support from 41 access points that are available 24/7. There are now 88 switches that are unmanageable. There are 96 surveillance cameras on campus. Internet bandwidth was increded in phased manner.

The Institute has Microsoft Volume License and is being renewed every year since 2011. In Sep 2021, it is updated to the Microsoft Azure campus license. This license facilitates regular updating of 9 system software and 27application software including Office365 and MS Teams for all students and faculty.

List of Software available

- Microsoft Campus Agreement License
- Acrobat Flash
- Acrobat Photoshop
- Acrobat Reader
- IBM Rational Rose
- Oracle 8.x,9i,10g
- SCO UNIX
- JAVA 1.5, 1.6, 1.7, 55 - Free Software
- APACHE TOMCAT SERVER 5.5,6.0
- Sun Java Wireless Toolkit
- Android Studio
- Star UML
- Python
- Visual Studio 2013

- Turbo C++
- Putty
- K7 ANTIVIRUS - 3 user
- Norton Anti-Virus – 3 user
- FEDORA 5, 6, 7, 8,9,10,11,12,13,14,15,16,17,18,19,20 - Free Software
- REDHAT 5,9 - Free Software
- Ubuntu 10.0.11.0.12.0 - Free Software
- Python (Anaconda)
- Angular
- Node.js
- Mongo DB
- .Net Framework
- SQL server
- Apache Tomcat server
- XAMPP server
- Net Beans IDE
- Android Projects software
- Android Studio
- Java Script Object Notation(JSON)
- SQLite
- Flask Framework
- Django Framework
- Visual Studio Code
- AnSys
- MATLAB
- MultiSim
- Mentor Graphics
- Cadence
- AUTOCAD

File Description	Document
Upload any additional information	View Document
Paste link for additional information	View Document

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

Response: 3.66

File Description	Document
Student - computer ratio	View Document

4.3.3 Bandwidth of internet connection in the Institution.

Response: ?50 MBPS

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

4.3.4 Institution has the following Facilities for e-content development

1. **Media centre**
2. **Audio visual centre**
3. **Lecture Capturing System(LCS)**
4. **Mixing equipments and softwares for editing**

Response: A. All of the above

File Description	Document
Upload Additional information	View Document
Institutional data in prescribed format	View Document
Link for Additional information	View Document

4.4 Maintenance of Campus Infrastructure

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

Response: 23.66

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

2020-21	2019-20	2018-19	2017-18	2016-17
265.322	108.54	195.98	323.65	191.18

File Description	Document
Details about assigned budget and expenditure on physical facilities and academic facilities	View Document
Audited statements of accounts	View Document

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

Response:

The institution has a well-defined policy to ensure optimal usage and maintenance of physical, academic and support facilities.

Laboratory Maintenance:

- If the equipment/machinery is to be serviced during the warranty period, the supplier of the equipment/machinery will be intimated about the repair and it will be serviced.
- After the warranty period, if the equipment/machinery demands service, the technical staff attached to the respective laboratories will do the service to the extent possible.
- Otherwise, persons outside the organization who can repair the equipment will be identified and contacted for service.
- For the repair of the equipment, a proposal will be sent by the lab in charge to the Principal through the proper channel (concerned HOD).
- The bill (cost of Maintenance) will be sent to the accounts department through the proper channel for payment
- There is a lab instructor in every department, who maintains the stock register by physically verifying the items around the year.

Central Library

- The requirement of books is received from the concerned departments through HODs at the end of every academic year for the next academic year.
- The requirement list is forwarded to the principal for approval and sent to the librarian for procurement.
- After procurement, one copy of each title is kept in the Reference Section duly stamped as Reference Copy.
- A team of faculty members along with library staff conduct stock verification every year.
- To ensure the return of books, ‘no dues’ from the library are mandatory for students at the end of the program.

Sports facilities:

- The sports committee conducts meetings periodically to discuss the budget proposal, conduct collegiate tournaments for each academic year.
    - The sports materials issued to the students are recorded in the issue/return register which reflects the utility and demand of the items along with the student’s interests.
    - Equipment related to various physical activities and sports is updated on regular basis.

Computer maintenance:

- Regular maintenance of Computer Laboratory equipment is done by Laboratory assistants along with Laboratory attendants and they are headed by the faculty in charge.
- ICT-enabled classrooms and seminar Halls are maintained under the supervision of the system

administrator.

- A dedicated team comprising a system administrator and technicians takes care of periodic maintenance and upkeep of all computer systems in the Institute.
- Updating of software is done by lab assistants on regular basis.

Power supply and Maintenance

The campus has a powerhouse that takes responsibility for supplying uninterrupted power

- Reactive power to be checked regularly and corresponding capacity value to be maintained
- All the UPS on the campus are under an annual maintenance contract (AMC) to avoid breakdown and ensure a reliable power supply.
- One week requirement of diesel for the generators will be maintained as a reserve.
- Verification of lightning arresters and filling earth pits are done regularly
- Checking earth resistance and watering the earth pits is done weekly.

Others:

- Regular cleaning of water tanks, proper garbage disposal, pest control, landscaping, and maintenance of lawns are done by Institute campus estate management.
- Maintenance of all facilities and cleanliness of the environment in Boys and Girls hostels is maintained through the Hostel committee.
- Outsourcing is done for the maintenance of wooden furniture, electrification, and plumbing when needed.

File Description	Document
Upload any additional information	View Document

Criterion 5 - Student Support and Progression

5.1 Student Support

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

Response: 72.73

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

2020-21	2019-20	2018-19	2017-18	2016-17
2715	2480	2307	2451	1835

File Description	Document
upload self attested letter with the list of students sanctioned scholarships	View Document
Institutional data in prescribed format	View Document

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

Response: 4.33

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

2020-21	2019-20	2018-19	2017-18	2016-17
0	0	0	201	452

File Description	Document
Upload any additional information	View Document
Institutional data in prescribed format	View Document

5.1.3 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. Awareness of trends in technology

Response: B. 3 of the above

File Description	Document
Details of capability enhancement and development schemes	View Document
Any additional information	View Document

5.1.4 Average percentage of students benefited by career counseling and guidance for competitive examinations as offered by the Institution during the last five years.

Response: 29.31

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

2020-21	2019-20	2018-19	2017-18	2016-17
1031	988	872	980	862

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

5.1.5 The institution 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

File Description	Document
Upload any additional information	View Document
Details of student grievances including sexual harassment and ragging cases	View Document

5.2 Student Progression

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

Response: 52.09

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

2020-21	2019-20	2018-19	2017-18	2016-17
428	424	467	280	351

File Description	Document
Upload any additional information	View Document
Details of student placement during the last five years	View Document

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

Response: 4.85

5.2.2.1 **Number of outgoing student progressing to higher education.**

Response: 42

File Description	Document
Details of student progression to higher education	View Document
Any additional information	View Document

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

Response: 71.84

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

2020-21	2019-20	2018-19	2017-18	2016-17
70	25	29	09	08

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

2020-21	2019-20	2018-19	2017-18	2016-17
84	26	33	19	18

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

5.3 Student Participation and Activities

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

Response: 42

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

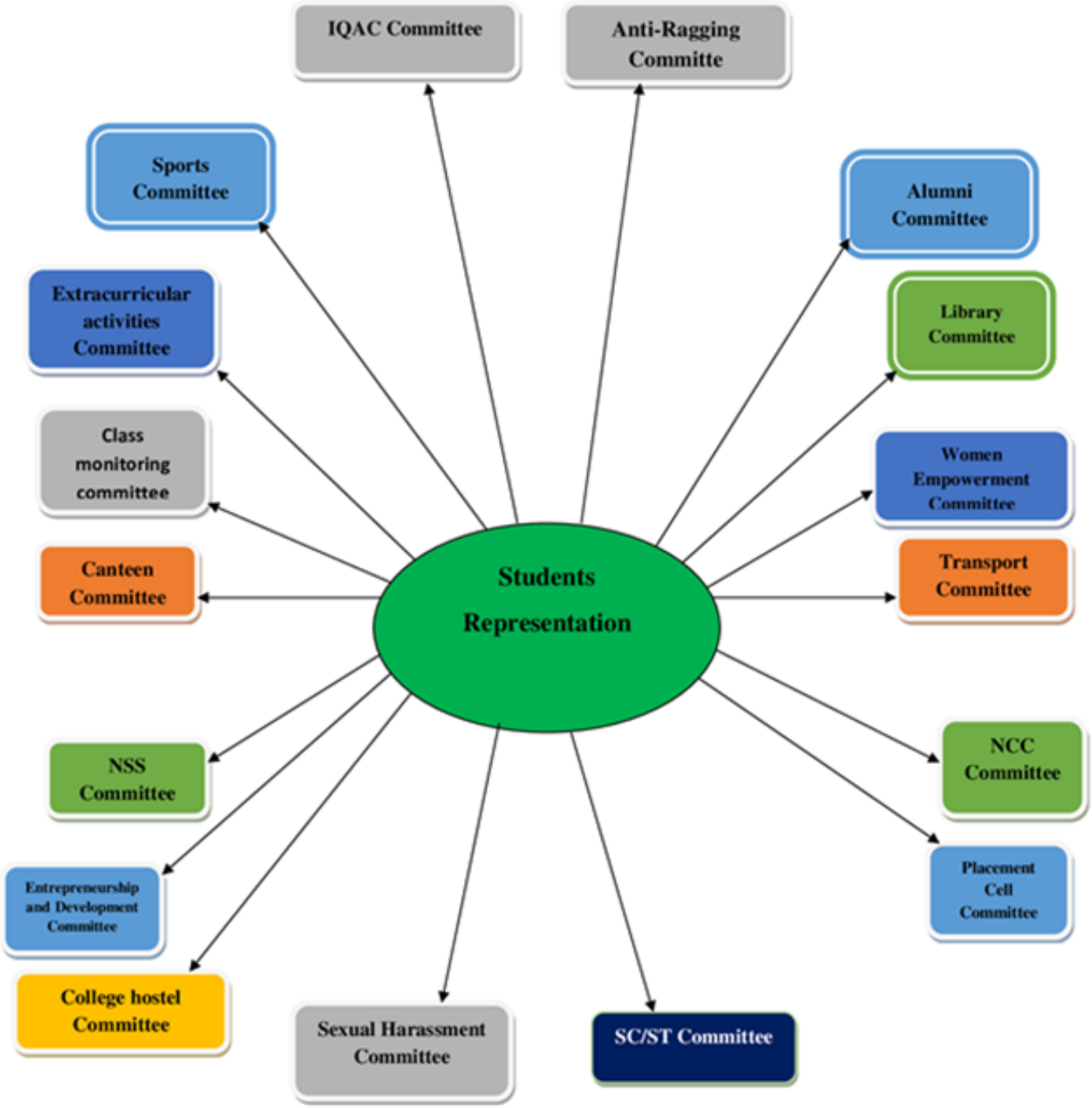
2020-21	2019-20	2018-19	2017-18	2016-17
03	12	16	10	01

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

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

Response:

NARASARAOPETA ENGINEERING COLLEGE (NEC) provides a platform for students to actively participate in various Committees. Under the supervision of faculty members, students coordinate and organize various co-curricular, and extracurricular activities to improve their communication skills, leadership skills as well as interpersonal skills. The Institute has framed various committees to boost the student in participation. The Committees are :



1. IQAC
2. Class Review committee
3. Alumni Committee
4. Canteen Committee
5. Transport Committee
6. Extracurricular activities Committee

7. Library Committee
8. Women Empowerment Committee
9. National Service Scheme(NSS) Committee
10. National Cadet Corps (NCC) Committee
11. Entrepreneurship and Development Committee
12. Placement Cell Committee
13. Sexual Harassment Committee
14. College hostel Committee
15. SC/ST Committee
16. Sports Committee

IQAC committee sets quality benchmarks or parameters for various academic and administrative activities of NEC. It disseminates the information on the various quality parameters of higher education and acts as a nodal agency of the College for quality-related activities. The college has an efficient anti-ragging committee to create awareness in the students on the 'evil effects' of ragging. Anti-ragging Committee explains to the senior students the legal and administrative consequences if they indulge in ragging. EDC motivates students to develop their own start-ups. It organizes IDEA competitions for the students. Internal Complaints Committee examines all matters relating to women in the workplace and will make suggestions and proposals for the institute administration regarding such matters.

The Library committee considers policy matters regarding Central Library/Departmental libraries including the policy for procurement of books and journals. It also supervises the allocation and utilization of funds for different departments for the purchase of books and journals departmental libraries. Student Welfare Committee works to enhance the overall personality development of students in all spheres of life, to bring out their hidden talents by providing opportunities, and to motivate students to participate in various activities and competitions at the university, state, and national level. NSS Committee makes education more relevant to the present situation and supplements the education of the students by bringing them face to face with the rural situation. The sexual Harassment committee prevents discrimination and sexual harassment against women, by promoting gender respect and harmony among students and employees.

Transport Committee provides and schedules transport facilities for students and staff for different routes. Canteen Committee monitoring the timings of the Canteen discussing hygenic and quality food, and fixing up of the menu and Price lists. Women Empowerment Committee to promote a cultural aspect/respect and empathy towards female gender. To generate awareness on guidelines of Supreme Court with respect to sexual harassment and to educate women on the importance of good health and nutrition. Students are encouraged to participate in institutional sports events.

File Description	Document
Upload any additional information	View Document

5.3.3 Average number of sports and cultural events / competitions organised by the institution per year

Response: 8.6

5.3.3.1 **Number of sports and cultural events / competitions organised by the institution year - wise during the last five years.**

2020-21	2019-20	2018-19	2017-18	2016-17
10	07	08	09	09

File Description	Document
Report of the event	View Document
Number of sports and cultural events / competitions organised per year	View Document

5.4 Alumni Engagement

5.4.1 The Alumni Association / Chapters (registered and functional) contributes significantly to the development of the institution through financial and other support services.

Response:

It is a matter of pride that the alumni of Narasaropet Engineering College have a strong placement record which explains that our former students occupy various key positions and have a strong eminent history in their walks of life. The institution has a registered alumni association to strengthen the network among the alumni, faculty, and management. Our alumni association was established in the year 2016 Ref No. 275 of 2021 with the Office of the Registrar of Societies, Narasaraopet. Narasaraopet Engineering College Alumni Association (NAA) is a platform through which alumni evoke with their classmates and alma mater. The main objective of NAA is to enroll all alumni as members of the association and facilitate the active participation of the alumni inappropriate activities and events. The alumni association conducts activities periodically and supports the betterment of the institute. In addition, a telegram group is also created as a platform to bring the alumni together.

Functions & Responsibilities of the Committee

- To promote a lifelong relationship and to act as a forum for the exchange of information among its members.
- To exchange professional knowledge, organize technical conferences, seminars workshops & training courses.
- To provide guidance to the present students in their endeavor for better employment and higher studies.
- To arrange teaching and training classes for the students studying in the college and also for the members to upgrade technical and general skills.
- To get the valuable advice of the Alumni in the overall development of the college.
- To promote the campus placements through the old students working in reputed industries in India and abroad.

As students get several chances to participate in learning, discussing, and researching about practical knowledge, it shapes their moral, intellectual, and psychological attitudes.

It has a governing body with President, Vice-president, Secretary, Treasurer, and Joint Secretary. President is the senior student who looks after all the meetings, financial aids, and organizes various events with the help of the members of the association and under the guidance of faculty coordinators. The vice-president discharges his duties in the absence of the President. Treasurer takes care of the financial issues and other responsibilities assigned to him by the President. The Management members take part actively in all the activities performed by the alumni association. Top alumnus is placed in prestigious companies like CGI, TCS, INFOSYS, Tech- Mahindra, Wipro, Accenture, Cognizant, Thought works, etc., Most of them are handling responsibilities like Software Engineers, R&D Engineers, NDT Engineers, System Engineers, Tech Support Engineers, Software Testers and other government organizations.

NAA encourages alumni to provide technical lectures to provide students with the latest technological trends. As part of the career guidance program, NAA also organizes lectures and/or career counseling sessions. These activities can be arranged at a convenient time and date in consultation with the NAA Secretary, Department Coordinators, and/or the HoD.

Awards/Medals/Prizes are presented to students who excel in academics, leadership qualities, all-around performance, extracurricular activities, and sports. The alumni have consistently provided many initiatives each year. NAA encourages alumni to visit the college for campus placements, provides project assistance, encourages employee referrals, and facilitates industrial visits for students.

File Description	Document
Any additional information	View Document

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

Response: A. ? 15 Lakhs

File Description	Document
Any additional information	View Document

Criterion 6 - Governance, Leadership and Management

6.1 Institutional Vision and Leadership

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

Response:

- The Institute's vision and mission statements were developed in collaboration with stakeholders.
- Internal stakeholders, including administrative and alumni, were considered in the analysis, which was based on feedback forms.
- Armed with this information, the institutional faculty met several times to develop and cultivate a strong and meaningful vision and mission. The following components were also used to finalize the mission.
    - Quality Education
    - Professional career
    - Higher Education
    - Creativity
    - Life-long learning

Our dedication and commitment are to achieve long-term and unrivaled excellence in Technical Education. To that end, we are pursuing continuous infrastructure development and upgrading state-of-the-art equipment in order to provide our students with a technologically advanced and intellectually

stimulating environment for learning, research, creativity, innovation, and professional activity, as well as instill ethical and moral values in them.

Vision:

To emerge as a center of excellence in technical education with a blend of effective student-centric teaching-learning practices as well as research for the transformation of lives and community.

Mission:

- Provide the best class infrastructure to explore the field of engineering and research
- Build a passionate and determined team of faculty with student-centric teaching imbibing experimental innovative skills.
- Imbibe lifelong learning skills entrepreneurial skills and ethical values in students for addressing societal problems.

File Description	Document
Link for additional information	View Document

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

Response:

A strategic plan is an important tool for a college to effectively manage itself because it

- Provides a framework for effectiveness and sense of direction
- Outlines the goals and measurable targets
- Is useful for guiding day-to-day actions
- Helps in evaluating progress and changing approaches when moving forward

The plan is designed to plant deep roots that will provide a firm foundation for the institution's continuous improvement, as well as to energize the drive for experimentation and innovation while remaining focused on the institution's vision and mission. The strategic plan establishes a framework for the Institution's priorities.

The Chairman, Vice-Chairman, Secretary, and members of the Governing Body felt the need to prepare a formal written strategic development plan for the institution. The Principal was tasked with developing the institution's strategic plan for the years 2018-2023. The management and top leadership team met to discuss SWOC and stakeholder expectations.

The leadership team met several times, deliberated in-depth, and came up with NEC's vision, mission, quality policy, and core values. The scanning of the environment was done with vision in mind. The team also discussed the Institute's strategic High-Level Goals for 2023.

As illustrated below Figure, it is an iterative process at both stages, namely when framing and when implementing.

The main theme for developing strategies, sub-strategies, and a road map to achieve them was the institution's strategic goals. Each strategy was discussed, and sub-strategies were developed to help with the implementation plan. The implementation plan outlined all of the specifics, such as the budget, the resources required, and the leaders who would be in charge of implementing the plan on time. The institution's head is in charge of this implementation on a separate basis.

Departments are important to the institution, so each department worked on its vision, mission, and short, mid, and long term goals. The implementation plan for the departments also included all details such as budget, resources required, and the leader in charge with timelines. Under the direction of Deans/Principals, HODs form the core team for implementing departmental goals.

The Strategic Development Plan focuses on evaluation measures, monitoring teams, and deviation steps, if any, over time. The evaluative components for each stakeholder are clearly stated, as well as the frequency of performance evaluation reviews.

The final version of the document was discussed with GB, and after a thorough review, the suggestions for its effective implementation were incorporated. This comprehensive plan will serve as a guideline for the years 2018-2023.

File Description	Document
Link for strategic plan and deployment documents on the website	View Document

6.2 Strategy Development and Deployment

6.2.1 The institutional Strategic / Perspective plan is effectively deployed

Response:

Yes, the Institute has a long-term strategic plan and deployment strategy. The institution has a solid strategic plan with well-defined goals.

1. Effective teaching and learning process
2. Student and faculty development and participation
3. Accreditation from statutory bodies
4. Internal Quality Assurance System
5. Research and Development Work
6. Social engagement and Community service
7. Industrial and Alumni Interaction
8. Physical infrastructure and facility
9. Placement and Training
10. Entrepreneurship
11. Incubation Centers and Start-Ups

The Strategic Plan ensures that the targets are accomplished through an accountability process that includes review, evaluation, reporting, and re-planning.

The Chairman, Vice-Chairman, Secretary, and members of the Governing Body felt the need to prepare a formal written strategic development plan for the institution. The Principal was tasked with developing the institution's strategic plan for the years 2018-2023. The management and top leadership team met to discuss SWOC and stakeholder expectations. The Leadership team met several times, deliberated in-depth, and came up with NEC's vision, mission, quality policy, and core values. The scanning of the environment was done with vision in mind. The team also talked about the Institute's strategic high-level goals that need to be met by the end of the year.

The main theme for developing strategies, sub-strategies, and a road map to achieve them was the institution's strategic goals. Each strategy was discussed, and sub-strategies were developed in order to create an implementation plan. The implementation plan outlined all of the specifics, such as the budget, the resources required, and the leaders who would be in charge of implementing the plan on time. The institution's head is in charge of this implementation on a separate basis.

Departments are important to the institution, so each department worked on its vision, mission, and short, mid, and long term goals. The implementation plan for the departments also included all details such as budget, resources required, and the leader in charge with timelines. Under the direction of Deans/Principals, HODs form the core team for implementing departmental goals.

The Strategic Development Plan focuses on evaluation measures, monitoring teams, and deviation steps, if any, over time. The evaluative components for each stakeholder are clearly stated, as well as the frequency of performance evaluation reviews.

The final version of the document was discussed with GB, and after a thorough review, the suggestions for its effective implementation were incorporated. This comprehensive plan will serve as a guideline for the years 2018-2023. The perspective plan for the institute's development is presented in the additional information link.

File Description	Document
Link for Strategic Plan and deployment documents on the website	View Document

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

Response:

The institute has a clearly defined organizational hierarchy and structure to support clear and consistent decision-making processes that support effective decision-making. Through the involvement of stakeholders on various Boards, the organizational structure lends itself to the maintenance of institutional capacity and educational effectiveness.

The UGC/University provides guidelines for various Statutory Bodies to follow in order for the institute to function properly and achieve its goals.

Governing Body:

The Governing Body has identified a few key parameters, among others, for envisioning the strategic plan to plan, implement, monitor, evaluate, and update institutional practices.

Academic Council:

The Academic Council is the highest academic body that makes decisions and provides advice on all academic issues. The academic council reviews and approves BOS academic proposals from each department, with or without modifications. It also recommends/advises the Governing Body on a new programme of study proposals and other academic matters. Other duties as assigned by the Governing Body are performed by the Academic Council.

Functions of Board of Studies:

The Board of Studies of a department within the institute shall:

1. Prepare syllabi for various courses while keeping in mind the institute's objectives, stakeholders' interests, and national requirements, for consideration and approval by the Academic Council.
2. Propose methodologies for novel teaching and evaluation techniques.
3. Make a panel of names available to the Academic Council for appointment as paper setters, evaluators, examiners, and so on.
4. Coordinate the department's or college's research, teaching, extension, and other academic activities.
5. Develop discussions about the start of new courses, programs, and so on.

The Finance Committee's functions include:

1. Budget estimates for income from fees and other sources.
2. Budget estimates for grants received/receivable from the UGC/AICTE, if any, and income from fees, etc. collected for activities related to the autonomy scheme.
3. To collect all major and minor expenditure proposals from various committees, analyze them, establish priorities, and submit a preliminary budget to GB on time.

The organization has a well-organized administrative structure, with the Governing Body serving as the highest decision-making body, as well as other functional bodies and committees.

Service rules, Procedures, Recruitment, and Promotional Policies:

Narasaraopeta Engineering College has defined policies that were developed with the participation of various stakeholders such as the Principal, members of Management, and members of the Governing Body. The policy has been revised, and new policy amendments have been introduced for the benefit of stakeholders.

To raise awareness among employees and students, the documents are published and made available in the institute library as well as in all departments. The detailed information on the above policies and procedures is available in the Service Rules and Regulations & Administrative Manual, which is linked to for more information.

File Description	Document
Link to Organogram of the Institution webpage	View Document

6.2.3 Implementation of e-governance in areas of operation

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

Response: A. All of the above

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

6.3 Faculty Empowerment Strategies

6.3.1 The institution has effective welfare measures for teaching and non-teaching staff and avenues for career development/ progression

Response:

The Institution provides effective welfare measures to both teaching and non-teaching staff. All statutory welfare measures are implemented. To the satisfaction of the employees, various monetary and non-monetary measures toward personal and professional growth are being implemented. This fosters a friendly environment and improves work efficiency.

The list of existing welfare measures for teaching and non-teaching staff:

1. The 6th Pay Commission recommendations are implemented in accordance with AICTE guidelines.
2. General Insurance covers all teaching and non-teaching staff.
3. Non-teaching employees are covered by EPF.
4. Non-teaching personnel is given access to ESI.
5. All teaching and non-teaching staff are granted maternity and medical leaves.
6. On-campus full-service medical facility with a qualified doctor and nurse.
7. Providing 12 casual and 12 earned leaves to all teaching and non-teaching staff for one academic year.
8. Study Leaves are sanctioned to all teaching and non-teaching staff for higher education and qualification enhancement.
9. Financial assistance to all staff members for professional development activities.
10. Offering Tuition Fee Concessions to Staff Children in Our Institutions.
11. The availability of free transportation for all employees.
12. Allowing all teaching and non-teaching staff two to three weeks of summer vacation.
13. Financial incentives for all employees who publish papers in reputable journals and obtain patents.
14. Providing financial support for all staff to attend conferences/workshops and to pay professional body membership fees.
15. Festival Bonus for all non-teaching personnel.
16. Providing uniforms for all non-teaching staff in class IV.
17. Free on-campus accommodation for all teaching and non-teaching staff.
18. The institute introduces new laboratory equipment and software to improve practical skills and allow students to advance in their professional careers.
19. The institution has signed Memorandums of Understanding (MOUs) with a number of organizations with the goal of fostering collaborative learning between industry and academia in order to improve staff technical skills.
20. The institute provides subsidized food services in the Canteen.

File Description	Document
Link for additional information	View Document

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

Response: 38.93

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

2020-21	2019-20	2018-19	2017-18	2016-17
101	131	136	125	96

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

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

Response: 17.4

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

2020-21	2019-20	2018-19	2017-18	2016-17
21	24	25	14	03

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

6.3.4 Average percentage of teachers undergoing online/ face-to-face Faculty Development Programmes (FDP)during the last five years (Professional Development Programmes, Orientation / Induction Programmes, Refresher Course, Short Term Course).

Response: 32.15

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

2020-21	2019-20	2018-19	2017-18	2016-17
75	125	126	91	72

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

6.4 Financial Management and Resource Mobilization

6.4.1 Institution conducts internal and external financial audits regularly

Response:

Finance is the lifeblood of any organization. Regular auditing of financial transactions will ensure effective financial management. Every fiscal year, NEC has a system of both internal and external audits for all financial transactions carried out in the institute. The accounts department maintains financial accounts on a daily basis and prepares all financial statements. Financial planning for the organization is done well in advance, and an efficient budgeting and control mechanism is implemented by involving the Institute's various Academic Departments and Administrative Sections. Financial planning and review are done on a regular basis by the Finance Committee, which is chaired by the principal and includes members from administration and accounting. The Finance Committee meets twice a year to review the income-expenditure statements and make recommendations for future action. Management examines income and expenditure patterns through the Governing Body, and pragmatic recommendations are made.

A well-organized financial section is in place, and all financial transactions are recorded using the software. Financial rules are in place at the Institute, and the "No-Cash" Transaction System is used to the greatest extent possible. Fees are also paid through an online transaction. Internal and external auditing ensures that the budget is used and executed optimally. Internal and external audits are used to ensure that the departmental budget is followed, that funds are used efficiently, and that the budget is monitored. Internal audits are carried out on an annual basis by the internal audit committee, which is chaired by the Principal. Internal audits are performed on a sampling basis to ensure the accuracy of the Institution's financial transactions and statement affairs. The Committee physically verifies the Cashbook, Bank accounts, Ledgers, Bills, Vouchers, and Statement of Cash Position and Cash Flow, as well as performing sample checks on the heads of various accounts, balance dates, and postings. Chartered accountants conduct statutory external audits on a yearly basis. External Audit: With all statutory obligations met, there were no major audit objections until the most recent audit. An effective Financial Management System is used, which takes great care to adhere to the best accounting practices, leaving no room for financial mismanagement. Audited financial statements are made public by placing them on the institute's website.

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

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

Response: 0

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

2020-21	2019-20	2018-19	2017-18	2016-17
00	00	00	00	00

File Description	Document
Institutional data in prescribed format	View Document

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

Response:

Mobilization of Funds:

The primary goal of the institution is to improve its quality and reputation. The annual fee collected from students is the college's primary source of revenue. The fee is collected in accordance with the fee and guidelines established by the AP State fee regulatory authority. Funds are also mobilized through sponsored projects from National funding Agencies such as UGC, AICTE and DST. Funds are also raised through consulting and philanthropic donations. Strategies for making the best use of financial resources: During the institution's budget preparation, all academic and section heads are asked to provide the annual budget requirements while keeping in mind the development and updating of laboratories, computing facilities, libraries, the teaching-learning process, training, extension activities, software, and so on. The budget will be used to cover day-to-day operational and administrative expenses, as well as the upkeep of fixed assets.

Estimated budgets for each department/section are gathered, and a budget is prepared. The same is presented to the Finance committee, which will deliberate and make any necessary changes. The same will be submitted for approval to the Governing Body. The budget is then approved by the Governing Body.

RESOURCE MOBILISATION

The following are the different ways of mobilizing the funds in the Institution:

Tuition fees:

Tuition fees collected from students are the primary source of revenue generation. The Fee Regulatory Authority of the Government determines the appropriate fee in accordance with the rules.

RESOURCE MANAGEMENT

According to the approved budget, the resources are used for the following purposes:

- The resources are utilized for the following as per the approved budget
- Employee Salaries and benefits are a major component of expenditure
- Furniture, Laboratory Equipment, Consumables, etc.
- Establishing Centres of excellence and Industry Collaborative Labs
- R & D and Incentives
- Skill Development and Innovation
- Training & Placement
- Software procurement, up-gradation, and maintenance
- Wi-Fi, Internet & Networking
- Student Services- NCC, NSS, Sports
- Power and fuel
- Printing and Stationery
- Postage and telephones
- Affiliation and Renewals
- Travel and conveyance
- Repair, Replacements, and Maintenance
- Taxes and licenses
- Scholarships to merit and poor students
- Sanitation- housekeeping-
- Gardening and security charges
- Other miscellaneous expenses

File Description	Document
Link for additional information	View Document

6.5 Internal Quality Assurance System

6.5.1 Internal Quality Assurance Cell (IQAC) has contributed significantly for institutionalizing the quality assurance strategies and processes visible in terms of – Incremental improvements made for the preceding five years with regard to quality (in case of first cycle) Incremental improvements made for the preceding five years with regard to quality and post accreditation quality initiatives (second and subsequent cycles)

Response:

The IQAC initiated Academic Audit and Administrative Audit (AAA) for the purpose to ensure the implementation of OBE in all programmes of institutions as well as to identify the resources required for effective implementation of OBE. It includes assessment policies, strategies, and functions of various administrative departments.

Before the external audit, the internal audit team is constituted with senior faculty members from other departments and the team checks the quality of the question paper as per Bloom's Taxonomy, course outcomes and the attainment of course and programmes.

The action was taken for continuous improvement and examine qualitative report will submit to IQAC cell which in turn provide suggestions to the respective departments. The external audit team conducts a comprehensive audit covering all aspects of the institution. The suggestions given by the external audit team are discussed with the principal and action taken is prepared.

The CSE & ECE departments accredited by NBA under Tier-II three times and under Tier-I one time.

Incremental Initiatives made in the preceding five years to enhance the skill set of the faculty and students

- Conduct of Faculty development programmes
- Promoting research by faculty
- Financial support is extended partially to those faculties who are pursuing research for purchase of equipment, materials required, and for attending workshops /conferences.
- Due weightage is given for research in the performance appraisal systems.
- Encouragement of faculty to participate in conferences to present papers, attend FDPs outside the college.
- Organizing workshops/seminars/conferences by the institution.
- Dedicated training programs for improvement in terms of Soft Skills, Programming Skills, and Technical Skills have been arranged for specifically targeted students resulting in better placements. A dedicated center for Career guidance and Training Team to train on programming and technical skills has been made available.
- English Communication Skills lab facility resulted in improvement of student communication skills.
- Establishment of Industry Institution Interaction Cell and advanced labs.
- Activities of the Centre for Innovation, Incubation, and Entrepreneurship have been strengthened.
- Media Centre has been established.
- All classrooms, laboratories, and Seminar halls are ICT enabled.

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

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

Response:

IQAC deployed standard structures and methodologies for the review of the teaching-learning process and learning outcomes at periodic intervals. Regarding the review of the teaching-learning process, the

IQAC has set up the following practices at our institution.

Internal Academic Audit:

In a semester, every department is audited thrice every semester by two auditors from other departments nominated by the Chairperson of IQAC (Principal). The auditors will verify the following parameters and submit the compliance to IQAC.

- Course Objectives and Course Outcomes (COs).
- Course articulation matrix (Mapping of COs, POs, and PSOs).
- Lesson Plan Schedules.
- Details of learning material as well as e-content developed by the faculty.
- Posting of attendance in attendance registers.
- HODs weekly review in the lesson plan and in the attendance register.
- Syllabus coverage as per the schedule or not.
- I-Mid, II-Mid, and End Semester Question Papers and Scheme of valuation.
- Posting of Internal Marks in attendance registers.

Initiatives implemented

- Autonomous -OBE Curriculum for holistic education.
- APSSDC – Center of Excellence for certification courses.
- Value Added courses and NPTEL.
- Skill laboratories are introduced and new courses CSE (AI) in emerging areas are introduced.
- Effective mentoring system for the all-round development of students.
- ERP module for academic planning, monitoring
- LMS and Lecture Capturing system to integrate ICT in the Teaching-Learning process.
- Clubs and Professional student chapter CSI, IEEE, IE & ISTE.
- NPTEL Active chapter, NMEICT-IIT Bombay Remote Center.
- Enhancement in Ph.D. qualified faculty and Cadre Ratio.
- Student-centric learning environment.
- Reformation in the Assessment process as per AICTE, UGC, NAAC, and NBA.
- NBA Accreditation of UG – Tier-I CSE, ECE,
- Outcome-Based Education (OBE) is Practiced by Faculty and Students
- Career Guidance, Guidance for Competitive examination and Soft Skill training by Enhancement in Placement and Higher studies
- Jubilation-Technical and Cultural events
- Improvement in Alumni Engagement
- Green Campus, Innovative Best Practices like Bodhana, Sadhana, Nipuna, and Ekalavya
- Industrial Innovation Council is established.
- More than 30 MOU’s industrial and academic.
- Spoken tutorial initiatives by IIT-Bombay are implemented.
- With industry support, AP CM’s Excellence Centre, advanced laboratories like Advanced Robot Control lab, Dassault 3D experience lab, and IOT labs are established.
- Collaboration with ICT academy to conduct training programmes and skill development of students.
- IPR cell was established and motivated faculty towards IPR activities. As a result, 35 books and more than 25 patents are published.

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

6.5.3 Quality assurance initiatives of the institution include:

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

Response: All of the above

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

Criterion 7 - Institutional Values and Best Practices

7.1 Institutional Values and Social Responsibilities

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

Response:

The institute conducts regular gender equity promotion programs. Gender sensitivity is an inherent value in the cultural ethos of the institute and its neighboring community, as is evident by the following facilities.

1. Safety and Security
2. Hi-Tech Surveillance system
3. Hostels
4. Medical Facilities
5. Girls rest Room
6. Counseling

A. **Safety & Security:**

The institution has no compromise regarding security issues for girl students. The security personnel monitors the movements on the campus around the clock. Grievances Redressal Cell functions to look into the grievances regarding academic matters health services, library, and other services. Any form of discontent or dissatisfaction on the part of the students can be informed to the cell. The Grievance cell also looks into matters of harassment. Anyone with a genuine grievance may approach the Co-ordinator or member of the Students' Grievance cell. Grievances may also be sent through e-mail to the Co-ordinator of the Students' Grievance Cell. The cell then redresses the grievances promptly judiciously.

B. **Hi-Tech Surveillance system**:

Our institution maintains CCTV Surveillance with high-resolution cameras throughout day and night. This facility of distributed recording has been set up on the campus to have strict monitoring over any strangers entering the college.

C. Hostels:

An on-campus accommodation facility is available for our students. There are separate hostel buildings for boys and girls and the girls' hostel is located inside the campus premises. They are AC and non AC rooms spacious. Our hostels can accommodate more than 500 students comfortably. There are spacious dining halls with the TV attached to make them feel at home. Students' safety is monitored under a set of well-defined rules and guidelines by the wardens. All the students and staff were required to carry their ID cards on campus at all times, guaranteeing that no outsiders, including unauthorized individuals, were admitted. A wi-Fi-enabled reading room is available in the women's hostel and the library.

D. Medical Facilities:

Student Health care is located within the campus within easy reach of all the students. If a student is ill

he/ she will be immediately taken to the hospital nearby in an ambulance.

E. Girls Rest Room:

The majority of the student community comprises girls and the college takes special care of them by providing girls restrooms and facilities like a sanitary deposing machine and first aid box. There are separate restrooms along with washrooms with a 24X7 water facility at each block of our campus.

F. Counselling:

NEC has consistently strived to address contemporary issues like gender sensitization, women's concern, inferiority complex, peer group issues, teasing, ragging, safety, security, etc. We counsel through the various seminars, workshops, and awareness programs by guest lecturers and senior faculty. The anti-ragging committee and the head of the departments are vigilant and always available for students to bring forth their concerns and counsel them amicably.

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

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

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

Response: A. 4 or All of the above

File Description	Document
Geotagged Photographs	View Document

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

- **Solid waste management**
- **Liquid waste management**
- **Biomedical waste management**
- **E-waste management**
- **Waste recycling system**

- **Hazardous chemicals and radioactive waste management**

Response:

The NSS unit of NEC has played a prominent role in this by organizing various awareness programs, conducting tree plantations, and various other activities. Apart from these activities, the importance of waste management and methods of waste disposal mechanism is taught to students through courses such as Environmental Studies, Solid waste Management, etc. In NEC campus the following initiatives are taken towards waste management are as follows:

Solid Waste Management

The major solid waste materials generated in the college consist of horticultural waste, which includes dried leaves or plant clippings from the lawn, paper, plastic, wrappers, glass, cardboard, and food wastes from the canteen and hostel. Dustbins are positioned in each classroom, laboratory, restroom, canteen, and at different places on the campus. Sweepers are allotted to manage all of the waste generated on the campus. All waste/garbage from the college and hostel is segregated at the source and disposed of in a proper manner. The collected food waste is deposited in the biogas plants. The gas made out of the biogas plant is used for cooking purposes.

Liquid waste Management

The major liquid waste consists of effluents from lavatories and laboratories. These are collected in separate septic pits and allowed to settle into the soil. Since the effluent pits are not located close to any water bodies and the college is situated in the soil area, the effluent water gets evidently filtered. The college has a proper drainage facility to drain off the excess liquid waste into the municipal drains safely to keep it away from stagnation.

E-Waste Management

Electronic goods are put to ultimate use; the minor repairs are carried out through the Laboratory assistants however the major repairs are carried out through the Technical Assistant and are reused. The equipment that cannot be refurbished is disassembled and segregated to send to recyclable units.

E-waste generated on the campus is collected via the maintenance team and is appropriately disposed of through vendors. The students also gain awareness about E-waste management and its results in various seminars. Various aspects of E-Waste like disposal, sick effects, recycling, limitations, etc. have been mentioned in those seminars.

Chemical Waste

The Institution follows excellent laboratory practices to make certain the protection of the personnel and adheres to a strict protocol of liquid waste disposal in its laboratories. Indiscriminate use of chemical compounds is discouraged all through practical training and laboratory liquid chemical wastes are effectively disposed of. Any glassware used inside the laboratory is rinsed with water and located inside the liquid waste container. Inorganic wastes which include concentrated acidic or alkaline solutions are neutralized before disposal.

File Description	Document
Relevant documents like agreements/MoUs with Government and other approved agencies	View Document
Geotagged photographs of the facilities	View Document
Any other relevant information	View Document

7.1.4 Water conservation facilities available in the Institution:

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

Response: A. Any 4 or all of the above

File Description	Document
Geotagged photographs / videos of the facilities	View Document

7.1.5 Green campus initiatives include:

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

Response: A. Any 4 or All of the above

File Description	Document
Various policy documents / decisions circulated for implementation	View Document

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

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

Response: A. Any 4 or all of the above

File Description	Document
Reports on environment and energy audits submitted by the auditing agency	View Document

7.1.7 The Institution has disabled-friendly, barrier free environment

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

Response: B. 3 of the above

File Description	Document
Policy documents and information brochures on the support to be provided	View Document

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

Response:

Narasaraopeta Engineering College remains exemplary in executing cultural and social activities by providing an inclusive environment for the students. The purpose of conducting such events in the institute is to inculcate a sense of peace, equality & harmony among students. People of all cultural orientations work in harmony that is safe from abuse, harassment, or unfair criticism. Everyone has the freedom to express his or her own opinions and is given equal opportunity to participate in teaching, learning, work, and social activities.

The Institute affirms pristine transparency by meritorious admissions indeed unbiased and keeps chances equally open to all students irrespective of the caste, creed, region, and religion. The institute has an active student council and NSS wing to imbibe discipline, harmony, and unity at ease. There is no segregation of students on the basis of their lingual or communal background and they feel safe and secured throughout.

Anti-ragging cell exerts to keep up harmony, tolerance and are ready to take any measures. All-round vigilance and surveillance prevail within the campus. Gender equality is ascertained and encouraged through mixed team sports, events, and leadership roles as well participation in all acts of cultural, and social services to an extent of all most events. The renowned institute maintains a sense of respect towards all cultural and technical activities such as Jubilation, Swecha, Flash Mob, Radio FM.

Our Institution commemorates days like Sri Mokshagundam Visvesvarayya's birth anniversary, honoring teachers on Teachers Day by reminding the great guru Dr.Sarvepalli Radhakrishnan, Yoga Day. Etc. Women's Day celebrations are encouraged every year among the women and girl students to take up leadership roles and participate actively in all student activities. etc. Awareness programmes like Blood denotation camps, planting trees in nearby villages to safeguard the environment takes place in the institution.

The Institute conducts hands-on technical sessions as conveyed by eventual engineers and alumni for the students which helps to create the bond among the students. To promote a sense of gender equality, many mixed team sports events are organized.

Experienced faculty deliver lectures with an acceptance and appreciation for different ideas, opinions, and learning styles of the students and make an earnest effort to understand the racial and cultural characteristics of students. There is a student grievance redressal cell in the institute, which deals with grievances without considering anyone's racial or cultural background.

Besides curriculum, additional communication and soft skills classes along with team bounding activities are conducted to set aside the shortcomings and communicate professionally with technical jargon. All national and state-wide festivals are celebrated with full spirits. Pongal celebrations are celebrated with great ease and enthusiasm. This built unity and reliance among students.

File Description	Document
Supporting documents on the information provided (as reflected in the administrative and academic activities of the Institution)	View Document

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

Response:

India is a country known for its myriad culture and traditions it includes people from various walks of life viz., cultural, social, economic, linguistic, and ethnic diversities governed and guided by the Constitution irrespective of caste, religion, race, and sex.

Narasaraopeta Engineering College sensitizes the students and the employees of the Institution to the constitutional obligations about values, rights, duties, and responsibilities of citizens which enables them to conduct as responsible citizens.

The college is known for its innovative excellence in academics and is recognized for its human values and ethics. The students at NEC are sheltered under teachers' guidance and motivation, they are nurtured in self-learning and pave way for creative thinking and entrepreneurship. The first and foremost criteria of NEC is to furnish students with the knowledge, skill, and values that are necessary for sustaining one's balance between a livelihood and life and by empowering them with an educational experience where they can hone important skills for the future.

These elements are inculcated in the value system of the autonomous community which assiduously strain to make students aware through curriculum and extra-curricular activities. In this regard, students focus on various concepts related to Artificial Intelligence, Cyber Space, and the Indian IT act serves as the electives.

The students are inspired by participating in various programs on culture, traditions, values, duties, and responsibilities by inviting eminent people. The institute conducted awareness programs by involving students to take the lead by planting trees, awareness on sanitary and hygiene, Swatch Bharat, etc.

International Women's Day 8th of March is observed every year. Various games and competitions are conducted for women various competitions like essay writing, elocution, singing, painting, Mehanadi are conducted to encourage girl students. Lady Police officer is invited as Chief Guest to address the female students on self-defense she encouraged how important the Disha App is and threw light on the installation of the App. Guest lectures and workshops are arranged by eminent personalities to deliver lectures on ethics, values, duties, and responsibilities and on saving the environment. Ethical Values, rights, duties, and responsibilities of citizens are some of the topics that are enlisted in Elocution, debates, and class presentation which gives incredible experience and motivates the young minds to react and contribute to building the nation.

Celebration of National Festivals, the commemoration of Birth and Death Anniversaries of great Indian Personalities takes place every year in the Institute with enthusiasm. The Institute celebrates Republic Day, Independence Day, Gandhi Jayanthi, the birth anniversary of Dr. Sarvapalli Radha Krishnan., etc. Flag hosting with the National anthem and oath of national integrity is the regular decorum.

Celebration of Constitution Day 25th November, Human Rights Day on 10th December, National Youth Day on 12th January, and National Voters Day on 25th January takes place on our campus. Students of all branches, staff members, non-teaching participate with a great sense of patriotism.

File Description	Document
• Details of activities that inculcate values; necessary to render students in to responsible citizens	View Document

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

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

Response: A. All of the above

File Description	Document
Details of the monitoring committee composition and minutes of the committee meeting, number of programmes organized, reports on the various programs etc., in support of the claims	View Document

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

Response:

NEC is an Institute of certain pristine principles and objectives guided by the faculty, management, and some important wings which are inclined to conduct some national festivals, birth anniversaries of national leaders and create awareness on nationalism, Independence day, and republic day is celebrated every year. The celebration of these festivals commemorates the sacrifices of our great leaders and freedom fighters who laid down their lives in the foundation of this country. It also helps to cherish the thoughts and ideologies of the great personalities of our nation. It is our national festival that unites the whole country for celebrating under one roof portraying national unity and patriotism.

The Institution remembers the birth/death anniversaries of great Indian personalities like Mahatma Gandhi, Dr.A.P.JAbdulKalam, and Dr.BabasahebAmbedkar. etc on this auspicious day, eminent guests are invited as spokesperson to share views and throw light on their sacrifices laid for the wellbeing of the nation.

The Institute conducts technical fest and engineers day annually where students exhibit their hidden talents by involving in different technical activities such as paper presentation, poster presentation, Group discussion, and Seminars. In our college, all national festivals are celebrated with great enthusiasm to inculcate a sense of patriotism among students. Students are given an opportunity a platform is being set to express their patriotism during national festivals and also to bring out the hidden talents among the student's cultural programs like dance, musical concepts skits, and speeches are conducted.

Short films and photography are encouraged to impart confidence amid them. NSS unit organizes many awareness events and welcomes students in blood donation campaigns etc., NSS unit takes the responsibility to address the prevailing social issues. Where students participate with zeal and reasonability.

Women’s day is being observed on March 8 as a mark of respect to women owing to their courageous endeavors in personal and professional life. Few competitions are conducted for girl students and a police officer is invited to enhance and empower them. The Institute takes pride to conduct Gandhi Jayanthi in commemoration of the father of the nation who is known for Ahimsa, truth, and simplicity.

National education day is conducted on the birth anniversary of Dr . APJ Kalam. In this regard, the institute conducts various competitions like essay writing and elocution. International Yoga day is observed every year, students and staff participate wholeheartedly. All national festivals are celebrated with reverence to build unity, among people of different racial and cultural backgrounds. Apart from these, India celebrates Teachers' Day on September 5 every year to mark the birth anniversary of Dr. Sarvepalli

Radhakrisnan., World water day and events like Yoga Day are observed with the same energy and patriotism.

File Description	Document
Annual report of the celebrations and commemorative events for the last five years	View Document

7.2 Best Practices

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

Response:

BEST PRACTICE-1

1. Title of the Practice: Bodana-Sadhana-Nipuna-Programme **(BSNP)**

2. Objective:

Narasaraopeta Engineering College believes in giving students every opportunity to go beyond the regular curriculum, broaden their learning experiences, and expand their future options. Within the four-year graduation programme, the institution offers all students an additional learning opportunity to develop their practical laboratory abilities. It encourages students to pursue careers in research and development. They learn to use their knowledge and talents to identify and address societal and industrial problems. They are attempting to incubate the ideas and later turn those into prototypes further moulding them into commercial models that will lead to the development of entrepreneurship.

3. The context:

Innovation and creativity are critical characteristics for the creation of cutting-edge technologies which can tackle the difficulties of globalization. The transformation of Science, Engineering, and Technology has shifted the focus of a student's success from theoretical to applied knowledge. These factors encourage technical institutes to broaden their teaching and learning processes to include more practical courses and activities. It is critical to encourage engineering graduates to pursue careers in research and development in order to boost the country's economic development. It is necessary to place a greater emphasis on project-based and situation-based learning because it allows them to think out of the box and use their imagination to its full potential. Project and model making begins with the selection of a topic from a field of interest and continues with the development of creative solutions to numerous project-related problems and other technical hurdles. Project and model making constantly improve the existing system, allowing graduates to think socially while maintaining technical altitude and idea.

4. The Practice:

The Institute provides a robust infrastructure across its campus for creating high-quality Models that are

up to date. For skill development programmes among teachers and students, the college has MOUs with a number of reputed national and international organizations such as AWS Academy, Microchip academic programme, Blueprism University, Celonis, Juniper Networks, Paloalto Cyber Security academy, Cloud and Automation academy through EduSkills, Microsoft and Redhat Academy, Dassault Systems- 3D Experience, Applied Robotic Control Lab in association with European Centre for Mechatronics-Germany, Embedded Systems and Robotics Lab under E-Yantra initiative by IIT Bombay. The institute maintains a partnership with Bennet University through APSSDC to provide students with additional training and internship opportunities. Many training programmes for faculty are conducted by the ICT Academy in partnership with the institute. Students are offered mini projects from the second year onwards to build or fabricate unique technological models and this is done under the able guidance of the senior academicians. The college hosts idea-churning sessions with industry professionals (Global Business Incubator) and alumni entrepreneurs. Students are being encouraged to attend summer projects/internships in the industries/prestigious academic institutions to acquire practical knowledge.

Faculty encourage students to go beyond the syllabus in every laboratory course including Virtual Labs. Students are guided to identify day-to-day problems encountered by society and are motivated to find enabling solutions through their projects. The instructors and students work together to enhance their knowledge and skills and it is one of the most remarkable aspects of this technique. The professors assist and guide students in developing unique models. The students are encouraged to work in collaboration with the faculty and publish their research work in reputed journals and international conferences. The institute encourages students to join professional student chapters such as IETE, ISTE, IEEE, IEI(I), and CSI. Various events are held under the auspices of these organizations.

The departmental research groups assist students in undertaking mini/major projects to develop working models. A college incubation center is established with the necessary facilities. Projects that are financially viable are supported for fabrication and testing. There is a provision in the budget proposal for financial support for model making, and the college reimburses 50% of the model cost. A team of faculty members reviews all the completed projects.

5. Evidence:

Students and faculty are oriented to solve and provide feasible solutions for society's real-time problems. Mechanical Engineering students fabricated Go Kart Vehicle and participated in National level competitions. This project is funded by the college with Rs. 1.5 Lakh. Different laboratory Apparatus is designed and fabricated in collaboration with the faculty. 3D printing models and mini-robots are built by the students. As a green initiative, Solar-powered vehicle is designed and fabricated by students.

The students are participating in industry-driven National / Global level student Competitions like TCS– CODEVITA, Hackathons, etc., and getting rewards and job opportunities. During the Covid pandemic period, students have built automatic sanitizer dispensers. Students' passion continues in the implementation of Sensor Controlled Street Lamps and automatic water level controllers. Hybrid solar and wind power generation, Solar-powered tricycle, Electronic Display Notice Board, Smart Dust bin, Spin Broom, Coconut DE husking machine are a few live examples of students' thirst-quenching activities in exhibiting their skills.

Students got involved in soil testing, water quality testing, concrete testing, and surveying activities of Govt. of Andhra Pradesh agencies like R&B and Panchayat Raj, bringing their classroom learning in real-time situations. Various health monitoring apps like Brain Tumor prediction, Heart disease prediction are

developed by the students. Students developed the Hill Festival App which is much appreciated by the Govt. of AP.

6. Problems Encountered

Learning styles and retention differ widely among students, posing a challenge to classroom deliverables within the given limited time. In advanced fields, there is a lack of expertise. Better departmental collaboration is required, which will lead to the development of interdisciplinary models.

Resources Required

It is necessary to obtain more modern tools and equipment. More training for both faculty and students by Industry experts is required. Industry interaction has to be improved. Paid Internships are to be enhanced. Industry Live Projects are to be exposed to the students. While revising the curriculum, a full semester may be allotted for project/training at the onsite industry.

Best Practice – 2

1. Title of the Practice: EkalavyaProgramme (Encouraging students for self-learning)

2. Objectives of the Practice:

NEC believes in giving its students every opportunity to advance beyond the traditional curriculum, enhancing their learning experiences and expanding their career options. The graduate will have certain skills and competencies upon completion. The objective behind this practice is to provide an additional learning opportunity to all the students within the four-year graduation programme. Students also get remote access to simulation-based labs in a variety of science and engineering areas. Through remote experimentation, they will be able to acquire fundamental and sophisticated concepts. As a result, the institution strives to live up to its ultimate aim of "Promoting Collaborative and Self-Learning."

3. The Context:

After completing the degree, all engineering students expect to secure a dream career. However, curriculum alone may not be sufficient to achieve the desired outcome. In this context, the university has taken steps to give extra certification or training courses, as well as to prepare students to be industry-ready and equipped with the necessary engineering skills. For the implementation of skill upgrading and certification programmes, NEC has entered into agreements with organizations, enterprises, and academic institutions sponsored by the federal and state governments. The university has a partnership with certain related programmes that are open to students from all disciplines. As a result, students have the option to increase their awareness and pursue multidisciplinary programmes. Students can save time because many of the programmes are available online. The students can save time as many of the programmes are fast-paced. In the case of online programmes, students can pursue the courses at their own pace.

4. The Practice:

The Institute encourages online learning. NEC has NPTEL local Chapter in association with IITM – Chennai. The institution had a tie-up with L4G Solutions. This initiative has given an opportunity to both students and faculty to pursue many Coursera online courses. Also, the institution has an AP CM Skill

Excellence center sponsored by APSSDC. Spoken tutorials offered by IIT Bombay are arranged for students. Dassault systems 3D experience lab is set up to enhance the modeling and analysis skills of students on advanced software. Students are motivated to do online certification courses offered bySololearn, Udemy, AWS, Great learning. Institute has an MoU with ICT academy through which students are given basic training and allowed to practice on their own and further exposed them to National and International level competitions on cutting edge technologies.

5. Evidence of Success:

The efforts to promote additional certification courses or internships have proven to be highly fruitful. NPTEL courses benefited and expanded the knowledge of around 865 students and faculty. More than 2,117 Sololearn credentials, 180 Udemy certifications, 299 Data Camp certifications, and 2048 APSSDC certifications were successfully obtained by students. A large number of students enrolled in MOOCs certification courses.

Through its partnership with L4G Solutions, the College is able to encourage online learning, and both professors and students have completed a large number of certification courses (2654+). Students who have completed the courses will undoubtedly have an advantage in their interviews, particularly in the technical rounds. Later, they used this information to improve their performance in domain areas at work. The institute has heeded the government's appeal to educate India's youth in cutting-edge technology that will help them advance their careers and expand their horizons. The institute also grabs the initiative of the Ministry of Education, Government of India i.e virtual labs, and effectively implemented Virtual labs in the curriculum to habituate students towards remote experimentations.

6. Problems Encountered and Resources Required:

1. Additional certification programmes may intimidate students. The completion of these online courses is required of all students. The additional coursework may be tough for students to handle.

2. The academic calendar is usually set in stone. The examination timetable is rescheduled in the event of unforeseen circumstances. The NPTEL programme timetable may conflict with examination schedules in certain instances.

3. Students can pursue additional online courses from the comfort of their own homes. Some students, however, may not have access to the internet or sufficient bandwidth to complete the courses at home.

Resources Required

As a motivational gesture, students who received a gold certificate may be paid for their examination fee. Computer labs may be kept open beyond college hours to help students with internet Band problems they are having at home. Because the institute is autonomous, conflicts between end-of-semester exams and the NPTEL final test may be handled by postponing end-of-semester exams for the student's convenience.

File Description	Document
Best practices in the Institutional web site	View Document
Any other relevant information	View Document

7.3 Institutional Distinctiveness

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

Response:

The key points of the Vision and Mission of the Institution are

VISION

- Centre of excellence
- Student-centric teaching-learning Practices & Research
- Community

MISSION

- Best class infra-structure
- Innovative Skill Programs for Faculty and Students
- Societal problems

The thrust areas focused to achieve “VISION” are

- Outcome-Based Education
- Training of faculty and students in Latest Technologies
- Societal relevant problems

To achieve the vision, the Institute has identified the thrust areas and established various labs in association with Industries, Govt. & Pvt. Sectors thereby realize a comprehensive outcome-based model with required skill sets and social consciousness to make them industry-ready professionals.

INSTITUTIONAL DISTINCTIVENESS:

Out of the thrust areas mentioned above the Institute has a distinction by establishing several Centres of Excellence (CoE) and Industry Collaborative Laboratories. The Institute has established Four Centres of Excellence (CoE) and the details are described below.

CENTERS OF EXCELLENCE (CoE):

Andhra Pradesh State Skill Development Corporation (APSSDC), Government of Andhra Pradesh sanctioned a “CM’s Skill Excellence Center” to bridge the skill gap between the colleges and the industry requirement. This CoE is equipping students with the required competencies to suit industry needs &

expectations. 37 laptops were provided under this scheme. Students were trained in courses like Python, IoT, Revit structures, Auto CAD, PCB & PLC. APSSDC in collaboration with DASSAULT systems, set up a 3D-EXPERIENCE center to make students industry-ready in the field of Automotive, Aerospace & Defence, and shipbuilding. The center enhances the employability skills of engineering students by making them industry ready through skill enhancement and certification on the 3D-EXPERIENCE platform consisting of 3 modules-Catia, Simulia & Delimia which are useful for 3D design, analysis & simulation of objects.

An Indo-European skilling Centre for Mechatronics & Industrial Robotics lab was established on 2nd November 2019 by APSSDC in collaboration with GC German Centre for engineering & Management studies, Germany & European Centre for Mechatronics APS GmBH Aachen to establish a framework for initiating innovation models. It consists of 3 modules-ARC 1.0,2.0 & 3.0. ECE, EEE & ME students of 85 members have undergone training on ARC modules. Faculty members are sent to Germany for training on ARC Modules.

MICROSOFT INNOVATION CENTRE:

The College has MOU with Microsoft Pvt Ltd for the established Microsoft Innovation Centre. It has equipped with promotional material, technical content, and educational content & curriculum. Microsoft provides royalty-free license software like Microsoft Office 365, Microsoft Visual Studio, SQL Server, Windows Server, etc., and to use the Microsoft trademark solely as part of the Microsoft innovation center organized technical training & certification Programmes.

ICT ACADEMY:

ICT Academy is an initiative of the Government of India in collaboration with the state Governments and Industries. ICT Academy is a not-for-profit society, the first of its kind pioneer venture under the Public-Private-Partnership (PPP) model that endeavors to train the higher education teachers and students thereby exercises on developing the next generation teachers and industry-ready students. To bridge the Industry-Academia skill gap, and **to develop the next generation teachers & students.** ICT Academy provides consultancy and training through industry-specific research thereby creating a new generation of the talent pool. IUCEE (Indo Universal Collaboration in Engineering Education): NEC has a consortium member of IUCEE in 2018. As a consortium member faculty got a chance to attend a series of webinars to upgrade the Technology and Teaching-Learning Process.

E-YANTRA / EMBEDDED SYSTEMS AND ROBOTICS LAB:

The college takes relevant measures to improve research culture among the students and faculty in the field of Robotics. The R&D lab is established in association with IIT Bombay. The department is recognized as a Research Centre by Jawaharlal Nehru Technological University, Kakinada. This lab is also used by 3rd & 4th Year UG students for research & Project work.

NSS ACTIVITIES:

In autonomous regulations, participation in NSS is made mandatory for all students. NSS unit in the college to involve the entire student community in serving society. The Institute, through NSS units, organizes various activities for the benefit of the society and thereby inculcating the service motto in the students.

Some of the activities by NSS units: NSS received appreciation from DSP, Narasaraopet for participating in “Mahasivaratri Local Festival” at Kotappakonda for service the pilgrims. NSS received appreciation from MPDO office, Narasaraopet for participating in Vanam – Manam program. Conducted a number of Blood donation camps and medical camps. Provided services to the victims of natural calamities, Conducted International Waters Day, conducted International Day of Yoga, Conducted Traffic awareness Program, Vanam – Manam Program, Conducted Free Eye Check-Up Camp, Organized an Awareness on Plastic Waste, Pollution Awareness Program, Conducted a Ralley on Plastic Waste Pollution in Narasaraopeta Town, Youth Festival, Participation in a rally of DISHA Act to support women protection from assault by alerting Police, introduced by Govt. of A.P. Distribution of fruits at Old age home.

DOCTORITE:

Through the Doctorite app, students can connect and share their feelings anonymously with Empathetic Listener, who is an individual that is trained in Active Listening skills and undergoes curated and scientifically validated content for an understanding around mental health issues such as suicide, self-harm, grief, etc .to listen to the student in a safe space without judgment. The human connection helps alleviate fears and provides the needed support and validation for students. This encourages mental and emotional wellness among students, promotes collaboration, and extends mutual support in achieving academic excellence.

VIRTUAL LABORATORIES:

The Institute always encourages self-learning among students. As a part of it, every laboratory is added with at least one virtual lab experiment. A virtual lab portal developed by MHRD, Govt. of India is utilized for this activity. Students can perform any number of experiments at their convenient time and also gets the opportunity to use complex and advanced equipment which is not available on campus.

File Description	Document
Any other relevant information	View Document

5. CONCLUSION

Additional Information :

With dedicated effects of over two decades, Narasaraopeta Engineering College has emerged as a Centre of Excellence in engineering education. Our faculty is our strength. 70 of our eminent faculty hold doctorate degrees, and more than 50% of faculty are ratified by JNTUK Kakinada. With their expertise, 25 + patents and 165+ publications have been published. A dedicated and committed faculty team strives hard for realizing the VISION through well-defined MISSION. The Institution has UGC recognition and obtained 2(f) & 12(B) status.

To encourage students for becoming entrepreneurs and to leverage start-ups, an incubation center has been established in the college. In partnership with Global level industries, students are trained to incubate their innovative ideas into start-ups. NEC got approved for NATIONAL INITIATIVE FOR DEVELOPING AND HARNESSING INNOVATIONS (NIDHI) Technology Business Incubator (NIDHI-TBI) by DST, Govt. of India with a grant of 2.5 crores and inaugurated by AP Governor Sri ViswabhushanHariChandan on 05-02-2021. Four start-ups were already launched and six more start-ups are in the pipeline. Apart from the above Grant, the faculty of several departments received funding of one crore worth from AICTE/DST/UGC

AP CM's Skill Excellence Centre, Dassault Systems Lab in association with APSSDC was established to provide access to the students in the most advanced courses by industry giants. The college has an Indo-European skilling Centre for Mechatronics and Industrial Robotics in collaboration with APSSDC and ARC (Applied Robot Control), Germany. The college has established Institution Innovation Council(IIC) as per the norms of Innovation Cell, Ministry of HRD, Govt. of India with a ranked 3.5 Star Rating.

Training and Development is an integral part of NEC's training and placement cell through which students are imparted various skills. The placement cell at NEC offers 100% placement assistance.

Institute has separate hostels(A/C &Non-A/C) for Boys and Girls inside the campus. NEC offers a transport facility to all its students and staff. Bus facility is available locally and also from nearby towns.

NEC alumni have accomplished several entrepreneurial and engineering feats after pursuing our undergraduate and post-graduate research and academic programs, and the credit for their success, in part, goes to our outstanding, industry-renowned faculty.

Concluding Remarks :

Institute has a well-framed vision and mission, considering the needs of the society. The quest to adapt quality assurance initiatives – NBA Accreditation in 2009, 2013, 2017 (tier-2), UGC Autonomous conferred in the year 2016, NAAC- A grade in the year 2015. NBA tier-1 accreditation for CSE and ECE programs is valid till 2025.

Best academics, infrastructure, laboratories, industry-interaction, self-learning, and co-curricular and extra-curricular activities are some of the special features which cater to the holistic development of the students.

Providing a vibrant academic ambiance is our priority and this is fulfilled through the implementation of an

industry-suitable curriculum with time changes. The Institution practices Outcome-Based Education (OBE) with a well-designed flexible curriculum with defined COs, POs, and PSOs as per the guidelines of UGC and AICTE.

The Institution is continuously upgrading the physical and academic infrastructure including ICT tools to enhance the student skills. ICT tools have been used in the delivery of the courses and hands-on training has been offered in advanced courses in addition to the regular laboratory experiments. Appropriate content delivery methods are in practice to strengthen the Teaching-Learning process. Performance Appraisal System is in place to assess the performance of faculty and guide them for further improvement

The governance comprises of Governing Body, Academic Council, Board of Studies, Departmental Advisory Committee, Internal Quality Assurance Cell, College Academic Committee, and various Institute level committees. All these play a significant role in the evolutionary reforms towards positioning the Institute in the preferred list of all stakeholders.

The R&D cell encourages faculty for improving the quality of research publications, submission of project proposals, and patent filing.

The mentoring system takes care of the academic and personal issues of the students. The Training and Placement cell imparts necessary training for the students and assists them in securing placements.

The Institution has a strategic plan implemented with the help of certain key performance indicators. IQAC continuously monitors the implementation of OBE in the teaching-learning process through regular academic audits and feed on stakeholders.

The Institution always strives to progress continuously by proper planning and execution of all activities for the overall development of students and making them employable.

6.ANNEXURE

1.Metrics Level Deviations

Metric ID	Sub Questions and Answers before and after DVV Verification
1.2.1	**Percentage of new courses introduced of the total number of courses across all programs offered during the last five years.** 1.2.1.1. How many new courses are introduced within the last five years Answer before DVV Verification : 710 Answer after DVV Verification: 477 1.2.1.2. **Number of courses offered by the institution across all programmes during the last five years.** Answer before DVV Verification : 3490 Answer after DVV Verification: 3490 Remark : Input edited excluding duplicates from the supporting documents
1.2.2	**Percentage of Programmes in which Choice Based Credit System (CBCS) / elective course system has been implemented (Data for the latest completed academic year).** 1.2.2.1. **Number of Programmes in which CBCS / Elective course system implemented.** Answer before DVV Verification : 16 Answer after DVV Verification: 16
2.1.1	**Average Enrolment percentage (Average of last five years)** 2.1.1.1. **Number of students admitted year-wise during last five years** Answer before DVV Verification:

2020-21	2019-20	2018-19	2017-18	2016-17
1031	988	872	980	862

Answer After DVV Verification :

2020-21	2019-20	2018-19	2017-18	2016-17
1005	864	712	715	884

2.1.1.2. **Number of sanctioned seats year wise during last five years**
Answer before DVV Verification:

2020-21	2019-20	2018-19	2017-18	2016-17
1254	1290	1230	1320	1320

Answer After DVV Verification :

2020-21	2019-20	2018-19	2017-18	2016-17
1254	1290	1230	1320	1320

Remark : Input edited as per supporting documents

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

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

Answer before DVV Verification : 1304

Answer after DVV Verification: 1134

3.1.3 **Percentage of teachers awarded national / international fellowship for advanced studies/research during the last five years**

3.1.3.1. **The number of teachers awarded national / international fellowship for advanced studies / research year wise during last five years**

Answer before DVV Verification:

2020-21	2019-20	2018-19	2017-18	2016-17
03	01	00	00	00

Answer After DVV Verification :

2020-21	2019-20	2018-19	2017-18	2016-17
00	00	00	00	00

Remark : Input edited as HEI had provided supporting documents which are not relevant to this metric as per SOP.

3.3.2 **Number of workshops/seminars conducted on Research methodology, Intellectual Property Rights (IPR),entrepreneurship, skill development during the last five years.**

3.3.2.1. **Total number of workshops/seminars conducted on Research methodology, Intellectual Property Rights (IPR),entrepreneurship, skill development year-wise during the last five years.**

Answer before DVV Verification:

2020-21	2019-20	2018-19	2017-18	2016-17
14	44	07	01	00

Answer After DVV Verification :

2020-21	2019-20	2018-19	2017-18	2016-17
12	35	07	01	00

Remark : Input edited considering only workshops/seminars conducted on Research Methodology, Intellectual Property Rights (IPR) and entrepreneurship only from the supporting documents provided by HEI as per SOP

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

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

Answer before DVV Verification:

2020-21	2019-20	2018-19	2017-18	2016-17
70	71	75	121	79

Answer After DVV Verification :

2020-21	2019-20	2018-19	2017-18	2016-17
63	67	67	108	65

Remark : Input edited considering only the journals having ISSN numbers and which are listed in UGC-CARE, SCOPUS, SCIENCE DIRECT & WEB OF SCIENCE.

3.5.2 **Total amount spent on developing facilities, training teachers and staff for undertaking consultancy during the last five years (INR in Lakhs).**

3.5.2.1. **Total amount spent on developing facilities, training teachers and staff for undertaking consultancy during the last five years (INR in Lakhs)**

Answer before DVV Verification:

2020-21	2019-20	2018-19	2017-18	2016-17
0.21	00	2.38	00	00

Answer After DVV Verification :

2020-21	2019-20	2018-19	2017-18	2016-17
0.20	5.64	11.944	6.664	6.64

Remark : Input edited as per supporting documents uploaded by HEI

3.6.2 **Number of awards and recognition received by the Institution, its teachers and students for extension activities from Government / Government recognised bodies during last five years**

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

Answer before DVV Verification:

2020-21	2019-20	2018-19	2017-18	2016-17
05	05	03	03	04

Answer After DVV Verification :

2020-21	2019-20	2018-19	2017-18	2016-17
03	03	03	03	03

3.7.1 **Number of Collaborative activities per year for research/ faculty exchange/ student exchange/ internship/ on –the-job training/ project work**

3.7.1.1. **Total number of Collaborative activities per year for research/ faculty exchange/ student exchange/ internship/ on –the-job training/ project work**

Answer before DVV Verification:

2020-21	2019-20	2018-19	2017-18	2016-17
67	25	09	02	02

Answer After DVV Verification :

2020-21	2019-20	2018-19	2017-18	2016-17
15	10	07	00	02

Remark : Input edited considering Collaborative activities (not number of students) for research, Faculty exchange, Student exchange/ internship/ on –the-job training/ project work only from the supporting documents provided by HEI as per SOP

3.7.2 **Number of functional MoUs with institutions of national, international importance, other institutions, industries, corporate houses etc. during the last five years (only functional MoUs with ongoing activities to be considered)**

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

Answer before DVV Verification:

2020-21	2019-20	2018-19	2017-18	2016-17
14	08	07	02	02

Answer After DVV Verification :

2020-21	2019-20	2018-19	2017-18	2016-17
10	04	05	02	02

Remark : Input edited referring supporting documents uploaded by HEI

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

4.1.3.1. **Number of classrooms and seminar halls with ICT facilities**

Answer before DVV Verification : 59

Answer after DVV Verification: 61

Remark : Input edited as per the supporting documents [geotagged photographs] provided by HEI

5.1.3

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. Awareness of trends in technology

Answer before DVV Verification : A. All of the above
Answer After DVV Verification: B. 3 of the above
Remark : Input edited as per the supporting documents provided by HEI

5.1.4

Average percentage of students benefited by career counseling and guidance for competitive examinations as offered by the Institution during the last five years.

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

Answer before DVV Verification:

2020-21	2019-20	2018-19	2017-18	2016-17
4329	3663	3964	3472	2191

Answer After DVV Verification :

2020-21	2019-20	2018-19	2017-18	2016-17
1031	988	872	980	862

Remark : Input edited according to metric 2.1

5.3.1

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

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

Answer before DVV Verification:

2020-21	2019-20	2018-19	2017-18	2016-17
06	12	21	10	01

Answer After DVV Verification :

2020-21	2019-20	2018-19	2017-18	2016-17
03	12	16	10	01

6.3.4

Average percentage of teachers undergoing online/ face-to-face Faculty Development Programmes (FDP)during the last five years (Professional Development Programmes, Orientation / Induction Programmes, Refresher Course, Short Term Course).

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

Answer before DVV Verification:

2020-21	2019-20	2018-19	2017-18	2016-17
75	126	126	92	72

Answer After DVV Verification :

2020-21	2019-20	2018-19	2017-18	2016-17
75	125	126	91	72

7.1.7

The Institution has disabled-friendly, barrier free environment

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

Answer before DVV Verification : A. Any 4 or all of the above
Answer After DVV Verification: B. 3 of the above
Remark : Input edited referring supporting documents uploaded by HEI

2.Extended Profile Deviations

ID	Extended Questions
1.1	**Number of programs offered year-wise for last five years**

Answer before DVV Verification:

2020-21	2019-20	2018-19	2017-18	2016-17
16	15	14	14	14

Answer After DVV Verification:

2020-21	2019-20	2018-19	2017-18	2016-17
16	15	14	15	15

2.1

Number of students year-wise during last five years

Answer before DVV Verification:

2020-21	2019-20	2018-19	2017-18	2016-17
3654	3219	3234	3085	2982

Answer After DVV Verification:

2020-21	2019-20	2018-19	2017-18	2016-17
3654	3219	3234	3085	2982

3.2

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

Answer before DVV Verification:

2020-21	2019-20	2018-19	2017-18	2016-17
250	312	325	307	323

Answer After DVV Verification:

2020-21	2019-20	2018-19	2017-18	2016-17
250	312	325	307	323

4.4

Total number of computers in the campus for academic purpose

Answer before DVV Verification : 1156

Answer after DVV Verification : 998