



SELF STUDY REPORT

FOR

1st CYCLE OF ACCREDITATION

GOVERNMENT COLLEGE OF ENGINEERING NAGPUR

SECTOR 27, MIHAN REHABILITATION COLONY, KHAPRI, NAGPUR
441108

www.gcoen.ac.in

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1. EXECUTIVE SUMMARY

1.1 INTRODUCTION

Government College of Engineering Nagpur, commonly referred as GCOEN, was started in 2016 with 5 UG Engineering Programmes under the administrative control of Higher and Technical Education, Govt. of Maharashtra. The Institute is affiliated to RTM Nagpur University Nagpur. Within a short span of time, GCOEN has established its own identity not only in the Vidarbha region but also in the Maharashtra State. The students of high caliber are the backbones of the Institute. The Institute strives to impart quality technical education to the students who have always proved their excellence in University and other competitive Examinations. Although academics is the top priority, the students are motivated to participate in co-curricular and extracurricular activities. A conducive environment and opportunities are made available to the students so that the focus is always on their 360 degree development. Many students have brought laurels to the Institute in various activities. The Institute has started various clubs which mainly include Innovation, Robotics, Drone, Astronomy, Automobile, Music, Nature etc. In 2020-21, based on the research and innovation activities conducted by the Institute, National Innovation Council has awarded 4.5 stars out of 5 to the Innovation Cell of the Institute. Government of Maharashtra has granted a Centre of Excellence in “Renewable Energy Utilization and Conservation of Energy” to the Institute. A grant of Rs. 5.0 Crore will be received in near future for its establishment. The Institute is also extending services to society through transfer of technology under “Unnat Bharat Abhiyan (UBA)”. UBA cell of Institute is also awarded a National award of Rs. 1.75 Lakh. The placement of the students reached near to 70% which includes a highest package of Rs. 44.0 Lakh as offered to one of the final year students. Institute has signed MoUs with various nearby Industries and few academic Institutes as well. Dedicated faculty of the Institute, with high quality research background has always been the strength of the Institute. Under the guidance and support from Directorate of Technical Education, Mumbai, this Institute is comfortable to keep the pace of progress. The Institute will attain new height of achievements in coming days.

Vision

To be an Institution of national repute creating globally competent technocrats to serve the society.

Mission

- To impart quality education through need based curriculum in academic programs.
- To promote excellence by creating intellectually stimulating environment for creativity, innovation, research and professional activities.
- To foster relationship with industries, other leading institutions and alumni so as to enhance career opportunities for students.
- To inculcate sense of discipline and responsibility towards nature and society

1.2 Strength, Weakness, Opportunity and Challenges(SWOC)

Institutional Strength

STERNGTHS

- Excellent Library with open access, automation, e-journals and e-library facility
- Meritorious, creative, disciplined and adaptive Students
- Dedicated and highly qualified faculty & staff
- Excellent Results & campus placement ratio

- Good campus connectivity
- Excellent Teaching and Learning facilities with digital smart classrooms
- Well placed alumni

Institutional Weakness

WEAKNESSES

- Lack of senior faculty & technically weak support staff
- Less retention rate of faculty
- Insufficient Laboratory equipments for enhancing skills amongst the students
- Inadequate number of Books for competitive examination
- Less industry institute interaction
- Inadequate grants in certain Heads
- Rigid administrative procedures

- Industrially connectivity

Institutional Opportunity

OPPORTUNITIES

- Starting more PG & dual degree Programmes
- To become recognized centre for Ph D research
- Research, testing and consultancy
- To acquire the autonomous status
- Industrial Development in SEZ and MIHAN project in the region
- Alumni networking for strong brand value, a corpus, industry projects, and more employment opportunities

Institutional Challenge

CHALLENGES

- Dearth of qualified faculty & faculty retention
- Attitude of students to study only exam .point of view
- Lack of entrepreneurial & higher education attitude in students
- Meeting the expectation from Industries due to non-flexibility of revising the curriculum

1.3 CRITERIA WISE SUMMARY

Curricular Aspects

This Institute is an institute of Government of Maharashtra and is affiliated to Rashtrasant Tukadoji Maharaj (RTM) Nagpur University, Nagpur (Maharashtra) and hence, the institute implements the curriculum designed and developed by the University. Institute prepares the detailed academic calendar in line with University academic calendar. For effective implementation of curriculum, academic planning is done by Dean Academics and Heads of Department. The faculty members try to give their best to students in an effective and efficient manner by utilizing various means and audio-visual aids such as e-books, NPTEL video lectures, SWAYAM courses, Power Point presentations, etc.

Industrial visits are the part of curriculum and are regularly conducted by the department to enhance the students learning through observations and also explore and correlate the theoretical concepts with the practical/ field situations. Students are also going for internship preferably during summer vacations. Each department invites experts from industry/ academia to deliver talk preferably on advance technology areas pertaining to discipline, this helps them to enhance their skills and knowledge.

The institution strongly believes in integrating cross-cutting issues such as equity and social inclusion, gender sensitivity, professional ethics, universal human values, environment and sustainability, etc. with the curriculum which creates a positive impact on the students towards societal responsibility.

Feedback on curriculum is obtained at the end of each semester/ academic year from the various stakeholders, analyzed and the required modifications/action that can improve the system is communicated to authorities so as to ensure the academic enrichment of the students.

Teaching-learning and Evaluation

The admission process of the institution is carried out at state level by CET Cell. It is well-publicized and transparent. Selections are solely on a merit basis and as per rules. Institute's primary focus is on strengthening the teaching-learning process through rigorous but transparent assessment and evaluation methods as per University norms.

The Institute organizes Regional level competitions like techno fest Adhaayaa, Inventrix, National level Conference SAMANTRANA and international level conference ICRIPE, to improve their academic knowledge, to develop leadership qualities and management skills.

The 21st century is described as the "Knowledge Century and is an era of e-learning". To accomplish this, ICT tools were acquired and blended Blackboard to Tech-board methods are employed in order to make the

Teaching and Learning process more effective and interesting. The Institute is having online learning platform National Digital Library of India, a Virtual repository of learning resources.

The institute implements OBE approach to develop the attributes in students. Each programme of the institute has clearly stated outcomes in the form of program outcomes (POs) as given by NBA and course outcomes (COs) framed by University/concern faculty and approved by the Institute level committee. The POs expresses the abilities imbibed in the students at the time of graduation and COs are the abilities imbibed in the students at the end of each course.

Case study-based teaching methodologies, industrial visits, expert talks, real-time exposure to the working of industrial process, discussion on emerging research areas, provide an experimental learning experience to the students. It broadens their vision, intellect and opens up new vistas for acquiring knowledge in a particular domain. This helps in bridging the gap between theory and practice. The Institute provides dedicated and well-equipped laboratories to enhance their experimental and computational skills. The students are also encouraged to take an active part in organizing various co-curricular and extra-curricular events which help them in developing their management skills. The industrial visits and 4-6 week internships (monitored industrial training) are mandatory, which broaden the outlook of the students and they get a clear idea about the role of technologist in a various industrial processes. Few advanced learners get job offers from renowned industries after the assessment of their internship.

Students satisfaction level is decided by the kinds of experiences they undergo, extent of the comfort feeling as well as the intellectual stimulation, the learning situations provide. The output of the feedback provides the actual quality of teaching learning process enabling indentifications of the strenghts of teaching as well as the improvemnet needed in teaching learning process.

Research, Innovations and Extension

The institute encourages innovations and research which contribute immensely to the development of key areas of Engineering and Management. One of the aims of the Institution is to promote Research & Innovation and its extension in neighbourhood to meet the societal needs.

The research and other grants are received for UBA projects and also FDPs. Institute has also trained the PWD engineers and working professionals in Solar PV Technologies.

Institute Innovation Council has achieved impressive milestones in last few years. A focus on IPR is evident, with 35 patents granted and 29 published. The institution hosts an INCUBEIN Foundation subcentre. ARIIA 2021 recognition, NIRF participation, a CoE for energy labs, and active engagement in rural development initiatives are the outcomes of research initiatives. Institute has organised 55 workshops, seminars, and conferences, covering subjects like entrepreneurship, intellectual property rights, and research methodology.

Faculty members have published their research in journals, conference and authored books, book chapter. The faculty publication in journals sis more than 150, the faculty also have authored book, book chapters at national and international level.

The knowledge is being extended by working on thirteen different technical projects which has provided indigenou technological solutions to society and industry. Consistent efforts in the area of research have brought many laurels for the Institute.

Institute has signed various MoUs with different agencies, institutions, industries with objectives to provide internship, training, research and other academic activities, field visits, workshops, seminars, guest lectures etc to the students and the faculties and staff also.

Infrastructure and Learning Resources

An adequate infrastructure is provided at GCOEN as per the norms specified by AICTE and Rashtrasant Tukdoji Maharaj Nagpur University to facilitate effective teaching and learning to the students of all the streams. The Institution provides modern infrastructure like smart classrooms, updated laboratories, library with reading room, hostel, 24 x 7 internet facilities 250 MBPS from power grid and 10 MBPS from BSNL for students and staff in the campus.

Classrooms are provided with 20 Smart Board and Interactive Panel, furniture. The institute has sufficient computing facility in the form of 227 computers and 47 printers. Computing facilities are used for laboratories, faculty, library, language lab and office. 150 more computers are expected from DPDC for centralised computer center.

The institution has provided enough space for outdoor games at a playground of 4 Acre. This ground is used for games such as cricket, football, volleyball, kabaddi etc. For indoor games, gymnasium 135sq.m space is provided. **AV Hall with capacity of 150 is equipped with digital podium and audio visual facilities.**

The Institute has its own central library located at administrative building (331.84 Sq m. + 150 Sq m. Reading Room) It includes 8159 text books and reference books. SLIM software is used for library management.

38 % of expenditure is used for infrastructure development and augmentation excluding salary during the last five years and 17% of expenditure incurred on maintenance of physical facilities and academic support facilities excluding salary component, during the last five years

Student Support and Progression

To achieve overall excellence, the institute provides financial support to the students through various scholarships and freeships. Over the past five years, 86.34% of students have benefited from scholarships and this is possible due to generous support from various institutions, government bodies, non-government organizations, industries, individuals, and philanthropists.

The institute organizes Induction Program for all first year students, where sessions are arrange for the students to inculcate soft skills and communication skills. Students also use to practice their language and communication skill in the Language Lab. To inculcate life skills, every year Student Welfare Committee organizes various programs on Yoga, physical fitness, health and hygiene. The institute through III & Placement Department organizes the expert sessions on the UPSC, GATE, CAT and GRE for the students. Also various program and sessions on career guidance are conducted.

Awareness is created amongst students to prevent incidents of sexual harassment & ragging. Expert talks and sessions are conducted and undertakings are obtained from all students regarding non-involvement in ragging activities. Anti-ragging squad, Student Counseling Committee and Women's Grievance Cell are established in the institute to address the issues related with student grievances.

The institute organizes three annual programs viz a technical fest 'Aadhyaya', a cultural fest 'Oranz' and the sport event 'Sfoorti' every year. Apart from this our students use to participate in the Inter College and University events. At department level under departmental student association various technical and cultural programs are conducted.

The Institute has formed Alumni Association for which the registration is under process. Institute alumni is involved by extending their services in the form of expert talks, sponsorships etc.

Governance, Leadership and Management

The Institute is established by Government of Maharashtra under the control of Ministry of Higher & Technical Education through Directorate of technical Education. At regional level, Joint Director Directorate of Technical Education, RO Nagpur is the authority to be followed. For all academic and examinations Institute is bound to follow the directives from RTM Nagpur University

At Institute level, Principal is the Head of Institutes and every department is headed by Head of department. In addition, various Deans are working for different institute level works such as Planning & Administration, Academic, Student Welfare, Corporate Affair, III & Placement, and Research & Quality Assurance. The library is headed by Librarian and a committee headed by Faculty in-charge.

The processes of human resources management including recruitment, trainings, performance appraisal etc are as per State Government Policy. Efforts are made to upgrade the professional competence of the staff.

The Government approves the budget allocation at state level to the various Institutes under various heads for the financial year. The Principal allocates the budget to all the departments within the provision made in the budget.

The internal quality assurance system is in place for which IQAC is formed at Institute level. The institution has mechanisms for academic and administrative auditing. It adopts quality management strategies in all academic and administrative aspects.

Institutional Values and Best Practices

This Institute is the co-education institution, always striving to uphold the principle of gender equity. There is no gender discrimination in any of its policies framed for all the stakeholders. Equal opportunities are provided to all individuals irrespective of gender, race, religion, caste, color, creed, language, religion, political or another opinion, national or social origin, property, birth, or another status.

The Institution is dedicated to fostering sustainability through diverse facilities and initiatives. It prioritizes the adoption of alternative energy sources and implements energy conservation measures. The management of degradable and non-degradable waste is a key focus, with comprehensive programs in place. The institution actively promotes water conservation practices and spearheads green campus initiatives to minimize environmental impact. Furthermore, it is committed to providing a disabled-friendly, barrier-free environment, ensuring inclusivity and accessibility for all.

The institution's commitment to environmental sustainability is underscored by specific initiatives. First,

regular energy audits are conducted to assess and optimize energy consumption. Additionally, the institution actively engages in clean and green campus initiatives, implementing eco-friendly practices within its premises. Beyond the campus, the institution extends its commitment to environmental promotion and sustainability through various activities (eg. Activities under UBA), emphasizing a holistic approach to contribute positively to the broader ecological landscape. These efforts collectively demonstrate the institution's proactive stance in fostering a sustainable and energy-conscious environment.

The Institute takes the responsibility of shaping the students by inculcating human values and inducing professional ethics. The Institute understands and realizes its role and responsibility in spreading the awareness about constitutional values, rights, duties, and responsibilities of citizens among the students and staff, by organizing various programs and ensuring active participation of all. It includes a pledge on World Environment day, awareness programs as National Voters' Day, Swachha Bharat Abhiyaan (Clean India Initiative), etc.

2. PROFILE

2.1 BASIC INFORMATION

Name and Address of the College	
Name	GOVERNMENT COLLEGE OF ENGINEERING NAGPUR
Address	Sector 27, Mihan Rehabilitation Colony, Khapri, Nagpur
City	Nagpur
State	Maharashtra
Pin	441108
Website	www.gcoen.ac.in

Contacts for Communication					
Designation	Name	Telephone with STD Code	Mobile	Fax	Email
Principal	R.P.Borkar	07103-295226	9371459644	-	principal.gcoenagpur@temaharashtra.gov.in
Associate Professor	S. B. Ingole	07103-295220	9822797046	-	sbingole@gcoen.ac.in

Status of the Institution	
Institution Status	Government

Type of Institution	
By Gender	Co-education
By Shift	Regular

Recognized Minority institution	
If it is a recognized minority institution	No

Establishment Details	
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State	University name	Document
Maharashtra	The Rashtrasant Tukadoji Maharaj Nagpur University	View Document

Details of UGC recognition		
Under Section	Date	View Document
2f of UGC	21-04-2022	View Document
12B of UGC		

Details of recognition/approval by stationary/regulatory bodies like AICTE,NCTE,MCI,DCI,PCI,RCI etc(other than UGC)				
Statutory Regulatory Authority	Recognition/Approval details Institution/Department programme	Day,Month and year(dd-mm-yyyy)	Validity in months	Remarks
AICTE	View Document	10-06-2023	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	Sector 27, Mihan Rehabilitation Colony, Khapri, Nagpur	Urban	47226.81	15072.61

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	Twelve pass MHCET JEE	English	60	52
UG	BTech,Mechanical Engineering	48	Twelve pass MHCET JEE	English	60	60
UG	BTech,Electronics And Telecommunication Engineering	48	Twelve pass MHCET JEE	English	60	58
UG	BTech,Computer Engineering	48	Twelve pass MHCET JEE	English	60	60
UG	BTech,Electrical Engineering	48	Twelve pass MHCET JEE	English	60	60
PG	Mtech,Infrastructure Engineering And Technology	48	Engineering GATE ENTRANCE Exam	English	18	3

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	7				16				44			
Recruited	1	0	0	1	4	3	0	7	13	8	0	21
Yet to Recruit	6				9				23			
Sanctioned by the Management/Society or Other Authorized Bodies	3				1				0			
Recruited	3	0	0	3	1	0	0	1	0	0	0	0
Yet to Recruit	0				0				0			

Non-Teaching Staff						
	Male		Female		Others	Total
Sanctioned by the UGC /University State Government						54
Recruited	21		6		0	27
Yet to Recruit						27
Sanctioned by the Management/Society or Other Authorized Bodies						0
Recruited	0		0		0	0
Yet to Recruit						0

Technical Staff				
	Male	Female	Others	Total
Sanctioned by the UGC /University State Government				36
Recruited	22	3	0	25
Yet to Recruit				11
Sanctioned by the Management/Society or Other Authorized Bodies				0
Recruited	0	0	0	0
Yet to Recruit				0

Qualification Details of the Teaching Staff

Permanent Teachers										
Highest Qualification	Professor			Associate Professor			Assistant Professor			Total
	Male	Female	Others	Male	Female	Others	Male	Female	Others	
D.sc/D.Litt/LLD/DM/MCH	0	0	0	0	0	0	0	0	0	0
Ph.D.	4	0	0	5	3	0	7	2	0	21
M.Phil.	0	0	0	0	0	0	0	0	0	0
PG	0	0	0	0	0	0	7	6	0	13
UG	0	0	0	0	0	0	0	0	0	0

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

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

Details of Visting/Guest Faculties					
Number of Visiting/Guest Faculty engaged with the college?	Male		Female		Total
	25	43	0		68

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	184	3	0	0	187
	Female	101	2	0	0	103
	Others	0	0	0	0	0
PG	Male	3	0	0	0	3
	Female	0	0	0	0	0
	Others	0	0	0	0	0

Provide the Following Details of Students admitted to the College During the last four Academic Years					
Category		Year 1	Year 2	Year 3	Year 4
SC	Male	106	123	120	117
	Female	84	73	84	80
	Others	0	0	0	0
ST	Male	52	54	57	56
	Female	24	19	34	31
	Others	0	0	0	0
OBC	Male	315	273	265	258
	Female	138	160	177	141
	Others	0	0	0	0
General	Male	247	267	221	215
	Female	97	129	110	108
	Others	0	0	0	0
Others	Male	81	66	66	94
	Female	22	20	37	32
	Others	0	0	0	0
Total		1166	1184	1171	1132

Institutional preparedness for NEP

1. Multidisciplinary/interdisciplinary:	<p>The institution is affiliated to RTMN Nagpur University, and is abided by the rules and regulation of the University. University's Concern towards multidisciplinary education is reflected in the CBCS system. Such CBCS is in existence for all the programs taught with the introduction of open elective subjects. Thus the subjects start losing boundaries and open for students to gain the skill in multi/ interdisciplinary subjects. Also, the introduction of Add On courses gives full right and choice to the student to opt for the courses of individual choice, the responses were found to be extremely significant. It aims for overall development which means now students can have knowledge across fields through access to infrastructure, trained teachers, and other facilities at the Institute with newly introduced interdisciplinary add-on courses. University is all set for NEP scheme implementation from the academic year 2024-25. The curriculum structure for four years of all streams of Engineering is ready and the syllabus of first year is ready. Faulty members from the institute are actively leading this acitivity as BOS chairman of Civil and Computer Science department and member of Electronics board of studies. The institution encourages students for extended learning through online platforms like NPTEL/Swayam.</p>
2. Academic bank of credits (ABC):	<p>The student-friendly National Education Policy (NEP) 2020 has introduced contemporary concepts to improve the quality of education in India. It is focused on individual development by providing flexibility in the course structure. The academic bank of credit (ABC) proposed in NEP 2020 offers flexibility to students and executives to promote liberal education, according to draft rules prepared by the University Grants Commission (UGC). The institution has taken all the necessary steps to ensure ABC registration of its students. ABC registration ID is made mandatory during admission form submission. All the credits earned by the students in the CBCS program are stored in the academic bank, concerted to appropriate grades, and are well reflected on the grade sheet provided to them. But the suitable entry and exit points are not implemented yet. Participation of International Experts in Conferences organized by the institute, Expert talks by Alumni pursuing higher education outside the</p>

	<p>country is creating bonding for internationalization of education. Faculty members are leading at University level as BOS chairpersons and active members in the design of Curricula and other academic standards. Faculty and students have taken NPTEL courses and cleared the same with Gold, silver and Elite rating.</p>
<p>3. Skill development:</p>	<p>NEP states that in addition to proficiency in languages, the skills like scientific temper and evidence-based thinking; creativity and innovativeness; a sense of aesthetics and art; oral and written communication, health and nutrition; physical education; fitness, wellness, and sports; collaboration and teamwork; problem-solving and logical reasoning; vocational exposure and skills; digital literacy, etc. should be an integral part of the curriculum. The University curricula already gives due importance to developing most of these skills like computational skills, soft skills, life skills, oral and written communication skills, teamwork, problem solving skills, and vocational exposure, etc. The Institute is partnered with CISCO Networking Academy that has offered courses like Introduction to Cyber security, IT Essentials, CCNA, Programming Essentials of Python etc. Many students and faculties have successfully completed these courses. The institute has partnered with Aspire Knowledge And Skills India Pvt. Ltd. for schemes under MSDE and NSDC courses. Value based education has been the prime focus of the Institution. The Induction program covers the complete UHV course, wherein expert UHV trainers from home institution and outside the college elaborate on every aspect in different sessions.</p>
<p>4. Appropriate integration of Indian Knowledge system (teaching in Indian Language, culture, using online course):</p>	<p>Cultural awareness and expression are among the major competencies which are important in the development of the students, in order to provide them with a sense of identity belonging, as well as, an appreciation of other cultures and identities. It is through the development of a strong sense and knowledge of their own cultural history, arts, languages, and traditions that students can build a positive cultural identity and self-esteem. The Engineering Curricula of the RTM Nagpur University involves subjects to impart knowledge to the students of our rich culture and civilization. Celebrations of the various birth Anniversaries , days of national importance like Har Ghar Tiranga, Yoga</p>

	<p>Day is a regular practise in the institution. The celebration involves highlighting the life story of the eminent personalities and creating awareness in faculties and students about their work for the society. In the Institute, all the courses are taught in the English language. The teachers, are conversent and comfortable with Marathi and times when needed explain the concept in Marathi, the local language and also if needed in hindi. Institute takes due care while conducting various extracurricular activities mostly conducted in Hindi or Marathi to ensure maximum participation of the students. Harmony in various diversity is well maintained and balanced. The faculty members are enthusiastic about the conduct of the teaching-learning process in the local language Marathi. Marathi bhasha Diwas is celebrated enthusiastically including online events.</p>
<p>5. Focus on Outcome based education (OBE):</p>	<p>The institution is affiliated to RTM Nagpur University, and is abided by the rules and regulation of the University. At present, the Outcome-Based Education (OBE) system is already in place and being implemented by the University. All the courses are defined with course objectives and outcomes. Civil Engineering BTech Program is NBA accredited. The class test papers clearly map the questions with the course outcome. The CO-PO mapping and PO attainment calculation is a regular practice. The faculty is encouraged to understand the accreditation process by conduction of expert lectures and undergoing NPTEL courses on the same.</p>
<p>6. Distance education/online education:</p>	<p>During the pandemic, the education system went through a phase of realization and learning. To maintain the standards of teaching, Institute hacked its way to find a quick solution to the crisis, by adopting online learning, leaving behind classroom education. Virtual labs were set to give students remote access to hands-on experiment-based learning. Thus, the adoption of these cutting-edge technologies resulted in enhancing the immersive learning experiences. Link to various SWAYAM, NEPTel, e-content courses were also shared to enrich the subject knowledge of the students. Thus blackboard can be shifted to tech board in a hybrid way. A series of online talks were organized for the students for creating awareness about the NEP and related modifications. The 20 smart classrooms provided a strong platform to initiate interactivity</p>

through webinars and live discussions.

Institutional Initiatives for Electoral Literacy

<p>1. Whether Electoral Literacy Club (ELC) has been set up in the College?</p>	<p>Yes, it is set up on 12th Jan2022 Committee is as follows: 1 Nodal Officer - Dr.Kiran Asutkar, Dean SW 2 Campus Ambassador- Dr.P.B.Daigavane, Dean Infra 3 Student President - Bhavika Khode, ME 4th year 4 Secretary- Aditya Tete, CE 3rd year 5 Organization Team member - Tanmay Metangale, CE 3rd year 6 Social Media member- Prathamesh Nakade, EE 2rd year</p>
<p>2. Whether students' co-ordinator and co-ordinating faculty members are appointed by the College and whether the ELCs are functional? Whether the ELCs are representative in character?</p>	<p>Yes, students' co-ordinator and co-ordinating faculty members are appointed by the College & ELC is functional. Dr. Kiran Tajne is the Faculty coordinator and Onkar Kumbhar is the Student coordinator.</p>
<p>3. What innovative programmes and initiatives undertaken by the ELCs? These may include voluntary contribution by the students in electoral processes-participation in voter registration of students and communities where they come from, assisting district election administration in conduct of poll, voter awareness campaigns, promotion of ethical voting, enhancing participation of the under privileged sections of society especially transgender, commercial sex workers, disabled persons, senior citizens, etc.</p>	<p>Voter awareness campaigns are conducted. Experts from local administrative departments are called to make the students aware about their right to vote. Faculty coordinator and other faculty from the institution also guide the students on the importance of voting.</p>
<p>4. Any socially relevant projects/initiatives taken by College in electoral related issues especially research projects, surveys, awareness drives, creating content, publications highlighting their contribution to advancing democratic values and participation in electoral processes, etc.</p>	<p>National voters day celebrated, in one of the proggmes. Deputy Collector Mrs Hema Badhe guided the students on importance of voting.</p>
<p>5. Extent of students above 18 years who are yet to be enrolled as voters in the electoral roll and efforts by ELCs as well as efforts by the College to institutionalize mechanisms to register eligible students as voters.</p>	<p>Registrations camps are conducted for the newly admitted students. All all students above 18 years are enrolled as voters.</p>

Extended Profile

1 Students

1.1

Number of students year wise during the last five years

2022-23	2021-22	2020-21	2019-20	2018-19
1166	1184	1171	1132	846

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

2 Teachers

2.1

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

Response: 30

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

2.2

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

2022-23	2021-22	2020-21	2019-20	2018-19
34	32	30	30	28

3 Institution

3.1

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

2022-23	2021-22	2020-21	2019-20	2018-19
812	252	201	225	364

File Description	Document
Upload Supporting Document	View Document

4. Quality Indicator Framework(QIF)

Criterion 1 - Curricular Aspects

1.1 Curricular Planning and Implementation

1.1.1

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

Response:

Institute is affiliated to RTM Nagpur University and hence the institute implements the curriculum designed and developed by the University. Institute prepares the detailed academic calendar in line with University academic calendar.

For effective implementation of curriculum, academic planning is done by Dean Academics and Heads of Department. Institute follows AICTE norms for Teaching load of the faculties, Visiting faculties are appointed to take up the extra teaching load, accordingly semester wise Time table is prepared covering entire courses as per curriculum structure.

Various modes used for effective teaching-learning process are -

1. Theory & Tutorials:

Theory lectures and Practical sessions are engaged as per time table. Almost all faculties make use of ppt's, videos wherever necessary for effective implementation of course curriculum. Tutorials are assigned to some courses and are conducted as per teaching scheme of university. A mechanism is developed to monitor the curriculum implementation and overall academic discipline through Dean Academic and R & QA cell. Academic audit is conducted in each academic year through IQAC cell. Faculties and students are encouraged to register for at least one NPTEL/SWAYAM course every year.

As a part of internal assessment of theory courses, 03 class tests are conducted for each theory course as per schedule in academic calendar; assessment record is maintained by the course faculty in prescribed format and also communicated to the students. Students have to submit assignments as a part of continuous assessment. Overall attendance of the students is considered in continuous assessment of the theory and practical courses.

2. Laboratory (Practical) Sessions :

Laboratories in all the departments are well equipped; lab sessions are conducted batch wise in laboratories as per time table. Students make use of Laboratory manuals, experiments to be conducted are demonstrated to the students, students have to maintain lab performance records as per manual. Continuous Assessment is carried out by the faculty during lab sessions and maintains record. The performance of student in continuous assessment considered for internal assessment evaluation at the term end.

3. Industrial visits:

Industrial Visit is mandatory requirement in almost all the disciplines. Industrial visits are the part of curriculum and are regularly conducted by the department to enhance the student learning through observations and also explore and correlate the theoretical concepts with the practical/ field situations. Each department plan for at least two industrial visits during a term.

4. Internship:

It is mandatory for all students to undertake internship for minimum duration of 4 weeks, after end of 6th semester (during vacation) and its evaluation is carried out in 7th semester. Students have to submit internship report along with certificate of successful completion of training assignments. Evaluation is done on the basis of report, presentation and oral exam.

5. Lectures by Industry/Academia experts:

Each department invites experts from industry/ academia to deliver talk or to conduct sessions preferably on advance technology areas pertaining to discipline. Expert technical lectures introduce students to the actual professional experiences and helps them to enhance their knowledge.

File Description	Document
Provide Link for Additional information	View Document

1.2 Academic Flexibility**1.2.1**

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

Response: 83

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

1.2.2

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

Response: 5.2

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

2022-23	2021-22	2020-21	2019-20	2018-19
206	33	7	23	17

File Description	Document
Upload supporting document	View Document
Institutional data in the 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 in transacting the Curriculum

Response:

“Ethics is knowing the difference between what you have a right to do and what is right to do.”

-Potter Stewart-

Ethics and value-based education is part of the formal curriculum structure of all the five B Tech programmes offered by the institution.

1. Universal Human Value courses:

During the Students Induction Programme, Universal Human Values UHV-I is taught to all first-year students by senior faculty members of the institution. All 14 sessions of UHV-I on topics listed by NCCIP-AICTE Model SIP schedule are engaged every year. UHV-II is taught to second year CSE and ETC students as a credit course as part of curriculum.

2. Indian Culture and Constitution (ICC) Course:

This audit course with teaching scheme of 2-theory/week is compulsory for all B Tech students at First Year level since 2020 and earlier the same was titled Ethical Science (ES). The cutting-edge issues addressed in this course are Sustainable Development, Industrial Sociology and Psychology, Social Engineering, Fatigue in Industry, Social Change and Motives for Work. The Socio-legal awareness sections encompasses fundamental rights and directive principles of state policy, right to information and public interest litigation, Role of bureaucracy in modern society and Indian constitution and federal system.

3. Professional Ethics course: B Tech ME programme has this 3-credit course in Semester-4.

It is a comprehensive 3 credit course for budding engineers, managers, and entrepreneurs. The objective of the course is to inculcate a sense of social responsibility among learners and to make them realize the significance of ethics in professional environment, constructed in the interest of humanity in general and that of engineering in particular. It discusses mainly Ethics' Codes, Human Values, Morals, Honesty, Sharing, Respect, and Living Peacefully in a professional environment, thus, inviting learners to look beyond all constructed man-made barriers (race, gender, caste, class, religion, age, disability) and to become a global citizen.

4. Environmental Studies course:

This course provides an interdisciplinary perspective, helping students understand how engineering is intertwined with environmental concerns. Engineers must design and develop solutions that minimize environmental impact, conserve resources, and ensure long-term viability. It encourages ethical thinking by highlighting the social and moral responsibilities. Students learn about the ethical implications of engineering decisions on the environment and society. Environmental studies inspire innovation by challenging engineers to develop eco-friendly technologies and solutions.

A compilation of different value-based courses of different UG Programmes is given in the following table:

S.No.	Course Name	Level at which offered	No of students benefitted	Audit/Credit
1.	Universal Human Value I	B Tech SIP	300	Audit
2.	Universal Human Value II	B Tech Sem III CSE B Tech Sem IV ETC	120	03 - Credit
3.	Indian Culture & Constitution	B Tech Sem II (All Branches)	300	Audit
4.	Professional Ethics	B Tech ME Sem IV	60	03 - credit
5.	Environmental Studies	B Tech Sem III CSE, CE and Sem-IV EE, ETC & ME	240	Audit

5. Gender Sensitivity: All academic, co-/extra-curricular activities conducted with gender neutrality, e.g. Students grouping in labs/projects. Gender sensitivity is maintained by selecting at least one Girl Class Representative from each class.

File Description	Document
Provide Link for Additional information	View Document

1.3.2

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

Response: 63.29

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

Response: 738

File Description	Document
Upload supporting document	View Document
Institutional data in the prescribed format	View Document

1.4 Feedback System**1.4.1**

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

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

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

Criterion 2 - Teaching-learning and Evaluation

2.1 Student Enrollment and Profile

2.1.1

Enrolment percentage

Response: 99.33

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

2022-23	2021-22	2020-21	2019-20	2018-19
298	295	298	300	299

2.1.1.2 Number of sanctioned seats year wise during last five years

2022-23	2021-22	2020-21	2019-20	2018-19
300	300	300	300	300

File Description

Document

Institutional data in the prescribed format

[View Document](#)

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

[View Document](#)

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

[View Document](#)

2.1.2

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

Response: 94.13

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

2022-23	2021-22	2020-21	2019-20	2018-19
146	144	137	139	140

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

2022-23	2021-22	2020-21	2019-20	2018-19
150	150	150	150	150

File Description	Document
Institutional data in the prescribed format	View Document
Final admission list indicating the category as published by the HEI and endorsed by the competent authority.	View Document
Copy of communication issued by state govt. or Central Government indicating the reserved categories(SC,ST,OBC,Divyangjan,etc.) to be considered as per the state rule (Translated copy in English to be provided as applicable)	View Document

2.2 Student Teacher Ratio

2.2.1

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

Response: 34.29

2.3 Teaching- Learning Process

2.3.1

Student centric methods, such as experiential learning, participative learning and problem solving methodologies are used for enhancing learning experiences and teachers use ICT- enabled tools including online resources for effective teaching and learning process

Response:

Response:**(a) Methods used for enhancing learning experience**

The Institute has devised accommodative learner-centric teaching-learning methodologies to augment the students' learning experience.

1.Participative Learning

The students while working on their minor/major projects get an opportunity for project-based participative learning. Their project supervisors guide them for the literature survey, identification of problems, and defining the problem statement. This provides an opportunity to gain professional values, knowledge, and skills.

2.Students' Seminars

The presentations by the students in seminars boost their confidence in public speaking and improve their understanding of a particular topic. Qualitative engagement of the students in seminars provides a unique opportunity to witness the presentation skills of their peers. The students also get exposure to a variety of topics presented by their peers.

3.Experiential Learning

Study based on industrial visits, expert talks, real-time exposure to the industries, provide experiential learning to the students. It broadens their vision, intellect and opens up new vistas for acquiring knowledge.

The industrial visits and mandatory internships help the students to know about the roles of engineers in the industries.

The students are also encouraged to take an active part in organizing various co-curricular and extra-curricular events which help them in developing their management skills.

4.Problem-solving Methodologies

The core subjects in the engineering curriculum such as Civil, Mechanical, Electrical, Electronics and Computer Engineering related Designing, Modeling, and Simulation topics, etc. are covered. The students are taught and trained with problem-solving skills.

5.Blackboard to Tech-board

Use of smart classrooms equipped with LCD projectors, usage of ICT tools, presentations, etc. help in enhancing the learning capacity of the students.

(b) Teachers use of ICT enabled tools for effective teaching-learning process

Information and communication technology (ICT) tools can contribute to the modern interactive teaching-learning process. These tools, as teaching aids, empower the teachers to deliver their lectures

effectively and inefficiently.

1.The World of Internet and Web

- Institute premises are having Wi-Fi connectivity
- Computer laboratories

2.Using ICT for Effective Educational Communication

- Visual Communication through the Power point presentations
- Creating handouts and assignments for online usage

3.Online Courses

- GoogleClassroom/GoogleMeet/Zoom for the conduct of online classes, interactive and doubt clearing sessions etc.

4.Adopting Online/Blended Education in Teaching-learning Process

- Need for combining online and F2F (Face-to-Face) education
- The techno smart classroom
- Evaluation of project reports and presentations
- Curriculum delivery and Evaluation as per the spirit of Bloom's Taxonomy

5.e-Resources

In addition to the traditional chalk-and-talk method of teaching, the teachers use the most relevant and quality videos available on YouTube to enhance the expression of their subject. The main advantage of these e-resources is that the students can access the learning resource as per their convenience and as many times as they wish to watch it.

6.e- Library

The Institute library provides access to journals and e-books to the faculty and students. The institute is a registered member of National Digital Library of India (NDLI). The library has subject-specific search engines/databases for searching technical literature.

File Description	Document
Provide Link for Additional information	View Document

2.4 Teacher Profile and Quality

2.4.1

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

Response: 44.9**2.4.1.1 Number of sanctioned posts year wise during the last five years**

2022-23	2021-22	2020-21	2019-20	2018-19
67	67	71	71	67

File Description**Document**

Sanction letters indicating number of posts sanctioned by the competent authority (including Management sanctioned posts)

[View Document](#)

2.4.2

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

Response: 64.29**2.4.2.1 Number of full time teachers with NET/SET/SLET/Ph. D./ D.Sc. / D.Litt./L.L.D year wise during the last five years**

2022-23	2021-22	2020-21	2019-20	2018-19
21	21	19	19	19

File Description**Document**

List of faculties having Ph. D. / D.Sc. / D.Litt./ L.L.D along with particulars of degree awarding university, subject and the year of award per academic year.

[View Document](#)

Institution data in the prescribed format

[View Document](#)

Copies of Ph.D./D.Sc / D.Litt./ L.L.D awarded by UGC recognized universities

[View Document](#)

2.5 Evaluation Process and Reforms**2.5.1**

Mechanism of internal/ external assessment is transparent and the grievance redressal system is

time- bound and efficient

Response:

Government College of Engineering Nagpur is affiliated to Rashtrasant Tukdoji Maharaj Nagpur University (RTMNU), Nagpur, Maharashtra.

Institute's primary focus is on strengthening the teaching-learning process through rigorous but transparent assessment and evaluation methods as per University norms.

Curriculum structure of each program and course curriculum of each course prescribes the details of evaluation and examination scheme along with teaching scheme.

The weight age for internal and external assessment for theory courses is as follows –

1. (As per NEW SYLLABUS)

- University examination (External assessment) i.e. Term End Examination – 70%
- Internal Assessment at institute level – 30%
- Minimum passing marks – 45%

2. (As per OLD SYLLABUS)

- University examination (External assessment) i.e. Term End Examination – 80%
- Internal Assessment at institute level – 20%
- Minimum passing marks – 40%

For Practical courses (**NEW & OLD Syllabus**) weight age for internal and external assessment is as follows –

1. University examination (External assessment) i.e. Term End Examination – 50%
2. Internal Assessment at institute/department level – 50%
3. Minimum passing marks – 50%

External assessment (University Level)–

1. The end semester theory examination is conducted by the university and the students appear at the center allotted by the university. Assessment of University end semester theory examination is carried out at the centres allotted by the university. .
2. The end semester practical examination is conducted by the institute as per guidelines and schedule declared by the university. The external examiners are appointed by the University for each Practical Courses/Project & Seminar courses. External marks are based on the performance of the student in oral/practical/presentation examination. Marks obtained in practical examination and the project work and seminar are submitted in online mode on the University Examination portal by the respective subject teacher.

Internal Assessment (Institute Level)–

Institute follows the guidelines issued by the affiliating university while conducting internal examinations, assessment of theory and practical courses.

1. Internal assessment of Theory courses-

- Institute level coordinator/committee is constituted for smooth conduction of internal assessment.
- Three internal assessment tests (CT1, CT2 & CT3 – New syllabus and CT1, CT2 – Old syllabus) are conducted at institute level as per schedule in Academic Calendar.
- Assignment submission along with regular attendance of students is also considered as a part of continuous assessment.

2. Internal assessment of Practical/ Seminar/Project courses-

For practical courses, as per the university scheme, 50% of total marks are allotted for internal and remaining 50% for external evaluation. For internal evaluation of practical/ project courses, continuous assessment is carried out during practical/ project sessions.

Transperent system for assessment & evaluation: Class test answer papers, after each class test are shown to the students also the marks are displayed on notice board. Assessment of another component of Internal marks i.e. Teacher's Assessment is also made available to the students.

Grievance Redressal System

Grievances of the students are resolved at the individual faculty, department and at the institute level on case to case basis. Grievences related to internal marks are addressed by showing the answerbooks after every class test. Also university has a well-established mechanism to deal with examination-related grievances. Grievances if any related to examinations are addressed to the Director, Board of Examination and Evaluation through the Principal of the Institute and are resolved at the university level.

File Description	Document
Provide Link for Additional information	View Document

2.6 Student Performance and Learning Outcomes

2.6.1

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

Response:

Government College of Engineering Nagpur is affiliated to RashtrasanthTukdojiMaharaj Nagpur University, Nagpur with five UG program viz. Civil Engineering, Mechanical Engineering, Electrical Engineering, Electronics and Telecommunication Engineering and Computer Science & Engineering

&M. Tech. Infrastructure Engineering and Technology a PG program in Civil Engineering.

Even though the COs are given by the RTMNU along with the syllabus, if necessary, the COs are modified and reframed by the respective course in charge. COs are communicated to the students during the introduction class itself. During the discussion of the course, the outcomes of the course are also focused. During the commencement of each unit and after the completion of the unit, the course outcomes are reviewed. The course outcomes and their mapping with program outcomes are elaborately discussed and derived by the course in charge.

CO and POs are published and disseminated among stakeholders

The COs& POs are published at

- College website <http://www.gcoen.ac.in>
- Department Corridor
- Laboratory Journal
- Department magazine

Process of dissemination of COs and POs among the stakeholders and its awareness:

- COs and POs are published at college website, through which it is disseminated to all stakeholders.
- The POs are displayed on flex board in department corridors. This is one of the ways of conveying to stakeholders particularly students, parents, visitors etc.
- The POs are published in departmental magazine, which is circulated among the students and hence is also one of the way of conveying to students, parents and other stake holders.
- COs and POs are provided in Laboratory journal for practical courses.
- COs and POs are discussed in first lecture of each course.

Institute had carried out the mapping of each course outcome with the Program Outcomes to evaluate & achieve the teaching learning outcome for all courses in the institute.

The mapping of Course Outcome of BECV 801 T (BE Civil) with the Program Outcomes are illustrated below:

Subject:- IRRIGATION ENGINEERING

Course Outcomes

1. Understand the importance and scope of irrigation engineering
2. Compute efficiencies of irrigation, crop water requirement.
3. Plan, design and operate storage reservoir and make use of it in the practical situation.
4. Design the basic profile of dams, spillways, diversion head works and check the stability of Gravity dams and Earth dams.

5. Apply the concept and design lined and unlined canals and detail out the cross sections.

6. Identify water logging and demonstrate the solution to such problem

Table 2.6.1 Mapping of Course Outcome with Program Outcome

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO1	3											1
CO2	3	3										1
CO3	3	2	3	1								1
CO4	3	3	3	1								1
CO5	3	3	3									1
CO6	3	2	2			1	2					1

Rating (3- High Rating, 2- Intermediate rating, 1- Low rating)

File Description	Document
Upload Additional information	View Document
Provide Link for Additional information	View Document

2.6.2

Attainment of POs and COs are evaluated.

Explain with evidence in a maximum of 500 words

Response:

Each programme of the institute has clearly stated outcomes in the form of program outcomes (POs) as given by NBA and course outcomes (COs) framed by University/concern faculty. The POs expresses the abilities imbibed in the students at the time of graduation and COs are the abilities imbibed in the students at the end of each course. POs/COs for all programme offered by institute are stated and displayed on website, laboratory manual, department corridor, notice board and laboratories.

POs are defined from Graduate Attributes stated by Washington Accord whereas COs are provided by the university in the curriculum for each course. However, the course teacher had modified COs of few courses depending upon his content delivery in consultation with module HoD. The COs are mapped with POs. The POs and COs are communicated to the students at the commencement of every semester and academic year and also disseminated through display in department corridor, laboratories and laboratory manuals etc. Faculty members of department plans and conducts activities to achieve the COs and POs attainment.

CO attainment: Two assessment methods are employed for attainment of course outcomes i.e. internal assessment and external assessment. The internal assessment for theory course includes class tests assessment, assignment assessment and for external assessment, university final theory examination was

considered. Similarly for practical course, project and seminar it includes internal assessment and external assessment by University examiner. The guidelines were framed to use a proportion of 80% of weightage to university assessment and 20% weightage to internal assessment for computing direct CO attainment of a theory course. Similarly, for practical course, project and seminar use a proportion of 50% of weightage to university assessment and 50% weightage to internal assessment for computing CO attainment. The program defines the target level of any course as the average marks obtained by the students in the last three university examinations of that course as recommended by program assessment committee.

PO attainment: Two assessment methods are employed for the attainment of program outcomes i.e. direct assessment and indirect assessment. Direct assessment PO is calculated using the overall attainment of COs and its mapping with POs. The program exit survey, alumni survey and guest lectures were considered for the indirect assessment of POs. Further, the overall attainment of POs and PSOs are computed by adding direct attainment and indirect attainment values in proportion of 80:20.

The continuous improvement: PO attainment is compared with the set target value. The target value shall be raised if target is achieved, whereas if target is not achieved then set target is kept the same and POs and corresponding COs are analyzed for the shortcoming and actions to be taken are planned accordingly for the same which should be followed in the next academic year.

File Description	Document
Upload Additional information	View Document

2.6.3

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

Response: 98

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

2022-23	2021-22	2020-21	2019-20	2018-19
348	370	366	335	0

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

2022-23	2021-22	2020-21	2019-20	2018-19
377	370	366	335	0

File Description	Document
Institutional data in the prescribed format	View Document
Certified report from Controller Examination of the affiliating university indicating pass percentage of students of the final year (final semester) eligible for the degree programwise / year-wise.	View Document
Annual report of controller of Examinations(COE) highlighting the pass percentage of final year students	View Document

2.7 Student Satisfaction Survey

2.7.1

Online student satisfaction survey regarding teaching learning process

Response:

File Description	Document
Upload database of all students on roll as per data template	View Document

Criterion 3 - Research, Innovations and Extension

3.1 Resource Mobilization for Research

3.1.1

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

Response: 30.66

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

2022-23	2021-22	2020-21	2019-20	2018-19
2.00	8.00	2.36	6.70	11.60

File Description

Document

Upload supporting document

[View Document](#)

Institutional data in the prescribed format

[View Document](#)

3.2 Innovation Ecosystem

3.2.1

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

Response:

Government College of Engineering, Nagpur has taken significant steps to foster innovation and promote a culture of creativity within its community.

1) The establishment of the Institute Innovation Council (IIC) has been instrumental in driving innovation initiatives. In the IIC journey, Government College of Engineering, Nagpur secured 3 stars in IIC 1.0, 4.5 stars in IIC 2.0, 4 stars in IIC 3.0, and 3.5 stars in IIC 4.0. At our institution, the ideas of students are properly nurtured and transformed into live projects and products. and further protected with the help of IPR. The IPR Coordinator is nominated by the Institute Innovation Council (IIC) and under the guidance of the IPR coordinator, a total of 35 patents have been granted to the college's faculty and students. Furthermore, 29 patents have been published highlighting the college's commitment to sharing their knowledge and discoveries with the wider scientific community. Additionally, the institute is also registered on the KAPILA portal

2) The Institution has taken significant strides to create an ecosystem for the Indian Knowledge System (IKS) and raise awareness about Intellectual Property Rights (IPR). The University curriculum includes subjects such as Ancient Indian History, Indian Culture, Constitution, and Intellectual Property Rights etc. to promote the dissemination of knowledge about IKS and IPR. These subjects are designed to provide students with a comprehensive understanding of the Indian Knowledge System and its importance in the modern world.

3) The Institution has strengthened its innovation ecosystem by establishing a subcentre of the INCUBEIN Foundation within its premises. This subcentre, with a floor area exceeding 500 sq. ft, is a hub for innovation and startups. The collaboration between the Government College of Engineering, Nagpur and INCUBEIN Foundation, RTMNU Nagpur has been formalised through a memorandum of understanding (MoU).

4) In ARIIA 2021, the Institution has secured a position in the "PROMISING" band under the category of "Colleges/Institutes (Govt. & Govt. Aided) (Technical)". The institution has also actively participated in the NIRF Innovation Category in INDIA RANKINGS 2023.

5) The Institution has achieved a significant milestone by securing a substantial grant of Rs. 5.05 crores for establishment of Centre of Excellence in Energy Conservation and Renewable Energy Utilization. This funding will be instrumental in the development of five cutting-edge laboratories.

6) The Institution has also actively participated in two prominent initiatives, namely the Unnat Bharat Abhiyan and Unnat Maharashtra Abhiyan. Through these initiatives, the institution has successfully transferred technology and knowledge to nearby villages such as Khapri, Kalkuhi, Wela Hari, and others, thereby contributing to their socio-economic development.

7) For transfer of knowledge to the stakeholders, various facilities such as Wi-Fi, smartboards etc. are available at the college as well as hostel premises. All computers are connected to a Lease line internet connection having speed (250 MBPS) from PowerGrid and in addition to a 10 MBPS leased line from BSNL for standby. All classrooms are also equipped with LCD Projector access facilities, Internet Connectivity, Smart TVs and Audio Systems.

File Description	Document
Provide Link for Additional information	View Document

3.2.2

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

Response: 55

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

2022-23	2021-22	2020-21	2019-20	2018-19
12	13	14	14	2

File Description	Document
Upload supporting document	View Document
Institutional data in the prescribed format	View Document

3.3 Research Publications and Awards

3.3.1

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

Response: 5.03

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

2022-23	2021-22	2020-21	2019-20	2018-19
25	32	53	17	24

File Description	Document
Link to the uploaded papers, the first page/full paper(with author and affiliation details)on the institutional website	View Document
Link to re-directing to journal source-cite website in case of digital journals	View Document
Links to the papers published in journals listed in UGC CARE list or	View Document
Institutional data in the prescribed format	View Document

3.3.2

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

Response: 3.07

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

2022-23	2021-22	2020-21	2019-20	2018-19
11	21	23	15	22

File Description	Document
List of chapter/book along with the links redirecting to the source website	View Document
Institutional data in the prescribed format	View Document
Copy of the Cover page, content page and first page of the publication indicating ISBN number and year of publication for books/chapters	View Document

3.4 Extension Activities

3.4.1

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

Response:

Students participation and Impact created thereof in different Extension activities are as follows-

1. Unnat Bharat Abhiyan Scheme: Technical support is provided to nearby villages under implementation of Unnat Bharat Abhiyan, since 05/09/2018.

- 05 villages nearby to the institution namely Khapri, Dahegaon, Kalkuhi, Wela Hari and Shankarpur are adopted under UBA.
- Students-teams have completed door-to-door surveys to these villages and prepared Village Development Plans.
- Thirteen different Machines/Apps/tools developed in projects have been handed over to the *Sarpanch* after demonstrations and trainings to villagers.
- One UBA project, “Cattle Health Monitoring System”, has been awarded **best UBA project in Nagpur Region Tech4Seva competition** at VNIT Nagpur on 25/08/2022. The same project has been later presented in Unnati Mahotsava, IIT Delhi.
- A video portraying glimpses of UBA activities of institute was prepared by students and posted on UBA’s Youtube channel. (<https://youtu.be/iXZmd61Wq-A>)

Impact: National level recognition to a UBA project has boosted confidence and made students more

enthusiastic to work in UBA projects. Students have participated in preparation of 8 new project proposals, submitted to UBA.

2. Astronomy Club Extension Activities:

Since its inception in 2017, different outreach activities conducted by Club students to cater students' unique interest in astronomy are:

- Sky observation Session for 85 students from nearby secondary school 'Utkarsh Vidyalaya' in collaboration with Raman Science Centre on 24/01/2018.
- STARSQUEEZ: Interschool quiz competitions on astronomy for secondary school students, held twice on 21/07/2018 and 12/09/2019. The objective of the event is provide young students mentorship to nurture their interest.
- Invited for conducting a sky observation session for students of Kailashpat Singhanian High School Saoner on 15/12/2018.
- During the lockdown period:
 - **Astrominar:** a webinar on June 21, 2020 on Cisco Webex for 239 participants. Topics discussed were from the basics to state of art. Significance of Astronomy for our Ancestors, Light in Observational Astronomy, Space Exploration, Space Agencies, Solar Eclipse, and observation of annular solar eclipse.
 - **Presentonomers:** National level power point presentation competition organized during 11-16, Jan.2021. 46 participating teams in School-age-group and Other-age-group have presented on a topic chosen from given 40.

Impact: The Astronomy Club has established itself in the region. Student-coordinators of the Club have been given opportunity to participate free in an International Conference. Club has been invited by VIBHA Nagpur for a mega sky observation session arranged at 5 locations.

3. Rertract Club Activities 2022-23:

Cloth Donation Drive: In August-2022, 30KG of clothes were donated to Muk Badhir Vidyalaya, Savner and Shasakiya Apang Baalvikasgruha, Nagpur.

Blood Donation Drive: A blood donation camp in collaboration with Dr.Hedgewar Blood Bank was held in October-2022, witnessed participation of 50 plus donors.

Niragas Children's Day, celebration: A joyous event was organized for the children from a local orphanage, filled with fun activities, games, and interactive sessions. The event was an opportunity for members to bond with the children and demonstrate commitment to their well-being.

News-paper donation drive for cat shelter: Organized a newspaper donation drive to support the local cat shelter for use as bedding material.

File Description	Document
Provide Link for Additional information	View Document

3.4.2**Awards and recognitions received for extension activities from government / government recognised bodies****Response:****(A) Awards to Institute****1. Only Institute in Maharashtra was selected by MNRE for organizing Roof Top Solar Grid Engineering Program**

Rooftop Solar Grid Engineer Course is the only course sanctioned by National Institute of Solar Energy (NISE) supported by Ministry of New and Renewable Energy (MNRE) with the grand of 7.3 lakh per batch. The course offers training to persons from solar PV industries and entrepreneurs. The first batch had successfully completed during 21-31, Jan 2019 and 15-25 March 2019.

2. UBA Perennial Award

Government College of Engineering, Nagpur is a part of Unnat Bharat Abhiyan since September 2018. The total sanction grant for various projects is Rs 7,75,000/-. The projects submitted for perennial assistance award under Unnat Bharat Abhiyan were sanctioned by IIT Delhi and need to be developed and deployed in the adopted villages. Projects are related to create hygienic environment, employment generation and to support entrepreneurship.

3. National level 'Unnati Mahotsav' IIT Delhi

Government College of Engineering, Nagpur represented at 'Unnati Mahotsav' a national level expo/event held at Indian Institute of Technology(IIT), Delhi on the 17th and 18th of March 2023. It was organized for the innovators who excelled at project making under Unnat Bharat Abhiyan by Govt. of India. 'Cattle Health Monitoring System' was the title of the project. Their previous triumph at the regional level competition held at VNIT, Nagpur earned them the chance to be a part of 'Unnati Mahotsav' at IIT-D. Principal Investigator of the project Dr. Rajeshree Raut along with the student team as Gagan Pardhi, Nipun Mahajan, Arya Mahashabde and Yash Deshmukh.

4. Students Solar Ambassador Workshop, A Global Event mentored by IIT Bombay

The Student Solar Ambassador Workshop, the seed concept of the Gandhi Global Solar Yatra, aimed to sensitize the young (future) generations A workshop to train students was organized on 2nd October 2019 at Govt. College of Engineering Nagpur under the mentorship of IIT Bombay. The entire event was planned under Deptt. of Energy, IIT Bombay. Government College of Engineering Nagpur had to train 1100 students. All these students were from this Institute and also from the various Engineering Colleges in Nagpur mainly Yashwantrao Chavan College of Engineering, G.H.Raisoni Institute of Engineering & Technology, Tulsiram Gaikwad Patil College of Engineering, Suryodaya College of Engineering, Wainganga College of Engg. and G.H.Raisoni Institute of Polytechnic Nagpur. Chief coordinator of the workshop Dr. N.D. Ghawghawe.

(B) Awards to Faculty

Dr N D Ghawghawe received Devang Mehta Award for Best Professor in Electrical Engineering. Dr Latesh Malik received Devang Mehta Awards for Best Associate Professor in Computer & Science Engineering. IETE Brig. M.L. Anand Award is received by Dr P. R. Deshmukh, Head ETC. Dr. Rajeshree Raut has received Nagpur Women Achiever Award, on 8th March 2019.

(C) Awards to Student

Students of Govt College of Engineering Nagpur received Second prize in innovation festival organized by Raman Science Center in Feb 2020, Mayor's Innovation Award to Danial Qureshi, VIA Award to Young Innovators of Computer Science & Engg.

File Description	Document
Provide Link for Additional information	View Document

3.4.3

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

Response: 27

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

2022-23	2021-22	2020-21	2019-20	2018-19
7	10	3	1	6

File Description	Document
Photographs and any other supporting document of relevance should have proper captions and dates.	View Document
Institutional data in the prescribed format	View Document
Detailed report for each extension and outreach program to be made available, with specific mention of number of students participated and the details of the collaborating agency	View Document

3.5 Collaboration

3.5.1

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

Response: 27

File Description	Document
Summary of the functional MoUs/linkage/collaboration indicating start date, end date, nature of collaboration etc.	View Document
List of year wise activities and exchange should be provided	View Document
List and Copies of documents indicating the functional MoUs/linkage/collaborations activity-wise and year-wise	View Document
Institutional data in the prescribed format	View Document

Criterion 4 - Infrastructure and Learning Resources

4.1 Physical Facilities

4.1.1

The Institution has adequate infrastructure and other facilities for,

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

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

Response:

An adequate infrastructure is provided at GCOEN as per the norms specified by AICTE and Rashtrasant Tukdoji Maharaj Nagpur University to facilitate effective teaching and learning to the students of all the streams. The Institution provides modern infrastructure like smart classrooms, updated laboratories, library with reading room, hostel, 24 x 7 internet facilities 250 MBPS for students and staff in the campus.

1. Classrooms

Classrooms are provided with Smart Board and Interactive Panel, furnitures. The laboratories are well maintained and updated. The performance of equipment is monitored on a regular basis and the stock verification committee takes care of verification of instruments, its record in dead stock register and right-off of the equipment before the beginning of each academic year .

2. Library

Library automation is in place for which SLIM software is used for library processes. Institute is availing the facility of Digital library (NDLS) . As per the curriculum requirement, the upgradation of library is done regularly.

3. Computing Facility

The institute has computer laboratories that are equipped with the following facilities for students, faculties and staff.

The institute has sufficient computing facility in the form of 227 computers and 47 printers. Computing facilities are used for laboratories, faculty, library, language lab and office.

4. ICT Infrastructure

Institute has 227 computers on the campus. 150 more computers are expected from DPDC for centralised computer center. All computers have updated windows licensed copies of operating systems. In addition to regular use, computers are used in laboratories. Sufficient number of computers is allocated to all

departments with necessary software and hardware configuration.

20 smart class rooms are used for teaching learning process. Gogle class rooms, MOODLE are used for LMS. Institute has signed MOU with COEP Technological University Pune for virtual laboratories.

Wi-Fi facility is also available at college as well as hostel premises for all. Wi-Fi facility is provided to all departments by installing sufficient number of access points. All computers are connected to a Lease line internet connection having speed (250 MBPS) from Powergrid and in addition to 10 MBPS leased line from BSNL as standby.

5. Facilities for Cultural and Sports Activities

Overall development of students is enhanced through cultural activities which are carried out at college level through different clubs e.g. 18 different clubs , Annual cultural festival, 'ORANZ" which provides platform for students to exhibit their skills in singing , acting and music club. Sports activities "SFOORTI" i.e. indoor and outdoor, gymnasium, yoga centre is also run in campus and a large number of students utilise these facilities on regular basis.

The institution has provided enough space for outdoor games at a playground of 4 Acre. This ground is used for games such as cricket, football, volleyball, kabaddi etc. For indoor games, gymnasium 135sq.m space is provided.

Auditorium

AV Hall equipped with digital podium and audio visual facilities.

File Description	Document
Upload Additional information	View Document
Provide Link for Additional information	View Document

4.1.2

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

Response: 38.88

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

2022-23	2021-22	2020-21	2019-20	2018-19
359	100.27	50	41	170.57

File Description	Document
Institutional data in the prescribed format	View Document
Audited income and expenditure statement of the institution to be signed by CA for and counter signed by the competent authority (relevant expenditure claimed for infrastructure augmentation should be clearly highlighted)	View Document

4.2 Library as a Learning Resource

4.2.1

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

Response:

The Institute has its own central library located at administrative building (331.84 Sq m. + 150 Sq m. Reading Room) It includes :

No. of Titles of Reference books & Text books

Text Book and Reference Books	8159
Nos. of Title	1758
Journals	26
News Papers	5

Software for Library Integrated Management System software, SLIM 21 enabled with internet and barcode scanner is in place. The library database is maintained as per the standard classification system for easy retrieval.

Library Area		331.84 sq m. & Reading Room area 150 sq. m.															
Total Expenditure on Books																	
Sr. No	Course	2016-17	2017-18	2018-19		2019-20		2020-21		2021-22		2022-23		Total			
		(1429950)	(350847)	(1983168)		(141108)						(.....)		(3905073)			
		Vol.	Title	Vol.	Title	Vol.	Title	Vol.	Title	Vol.	Title	Vol.	Title	Vol.	Title		
1	Mechanical	44	49	89	37	445	73	21	12	0	0	0	0	446	256	1442	427

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	En gg.																
2	Ele ct. En gg.	56 1	57 7	16 33	554	59	29	6	0	0	0	0	169	51	1480	206	
3	Ci vil En gg.	42 3	66	97 27	633	57	27	21	0	0	0	0	361	220	1541	391	
4	Co mp ute r E ng g.	55 3	89 5	10 51	704	105	42	21	0	0	0	0	249	124	1653	390	
5	EN TC En gg.	20 3	14	79 13	399	56	35	27	0	0	0	0	107	24	823	134	
6	Sci . & Hu m.	60 5	17	76 15	44	5	23	7	0	0	0	0	273	17	1021	61	
9	Ge ner al Bo oks	31	21	58 29	18	12	0	8	0	0	0	0	92	79	199	149	
	Tot al	28 17	31 3	67 20 1	2797 5	367	177	102	0	0	0	0	1697	771	8159	1758	
Sr. No.	Library Details	Available as on 2022-23						Departmental Details			Library Total	All total					
		Vol	Ref. Books	Comp. Books	Exam	Total	Civil	Mech	Elect	Total							
1	Books Details Volume	7615	282	262		8159	603	315	383	1301	9460						
2	Books Details Title	1439	209	110		1758	114	61	60	235	1993						
3	e-Journals	0	0	0		0											
4	Hard Copy Journals	26	National 16	Internation 13		29											
5	Survyelin g System	1	0	0		1											

6	Library Management SLIM Software	0	0	1																
7	Xerox Machine	1	0	0	1															
8	News Paper	5	0	0	5															

Library Privileges :

Teacher and Heads of Departments : Maximum 8 - 10 books issued each for 30 days.

UG students : Maximum 1 Books issued for 15 days.

The IT – based services like OPAC, WebOPAC, Internet, e-Resource, online e-journals, and e-books (National Digital Library) can also be used freely by the students and the faculty of GCOEN which is an added advantage.

e-resources

- NDL (National Digital Library) Kharagpur

Average annual expenditure

Name of component	2022-23	2021-22	2020-21	2019-20	2018-19
Books	9,00,000/-	Nil	Nil	1,00,000/-	15,62,309/-
Journals	Nil	Nil	Nil	99,595/-	1,99,163/-

File Description	Document
Upload Additional information	View Document
Provide Link for Additional information	View Document

4.3 IT Infrastructure

4.3.1

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

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

Response:

Computing facility and Internet

The components of IT infrastructure are made up of interdependent elements, and the two core groups of components are hardware and software. Hardware uses software—like an operating system—to work. And likewise, an operating system manages system resources and hardware. Operating systems also make connections between software applications and physical resources using networking components. Hardware components include Desktop computers, Servers, Data centers, Hubs, Routers, Switches, Facilities.

A computer center as centralised facility for all students of 150 computers, UPS backup support, CCTV surveillance with full networking approx cost 1.99 Cr is sanctioned and will be setup very shortly.

Institute has 227 computers on the campus. All computers have updated windows licensed copies of operating systems. In addition to regular use, computers used in laboratories. Sufficient number of computers are allocated to all departments with necessary software and hardware configuration. Every department has 1 computer lab and computer science and engineering department have 6 computer labs.

The speed of data can also be manually adjusted as per requirement of a specific department for bifurcation of bandwidth and management. Manageable switches are installed at prominent places.

Software components can include Operating systems, Web servers. Networks are comprised of switches, routers, hubs and servers. All computers are well maintained and LAN connected through a dedicated leased line. Wi-Fi facility is also available at college as well as hostel premises for all. Wi-Fi facility is provided to all departments by installing sufficient number of access points. All computers are connected to a Lease line **internet connection having speed (250 MBPS) from Powergrid and in addition to 10 MBPS leased line from BSNL for standby.** Switches connect network devices on local area networks (LAN) like routers, servers and other switches. Routers allow devices on different LANs to communicate and move packets between networks. Hubs connect multiple networking devices to act as a single component. Server core hardware component needed for IT infrastructure is a server. These are essentially computers that allow multiple users to access and share resources. A central server room is maintained to look after connectivity of all computers and cyber security related issues.

Licensed firewall in all the systems help to secure computers from any malware and restrict access to unwanted sites to students.

Sufficient number of Surveillance cameras throughout the campus help to maintain a safe and secure atmosphere in campus.

Biometric system is used to record the daily attendance of all the staff members and students staying in hostel.

File Description	Document
Upload Additional information	View Document
Provide Link for Additional information	View Document

4.3.2

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

Response: 4.76

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

Response: 245

File Description	Document
Purchased Bills/Copies highlighting the number of computers purchased	View Document
Extracts stock register/ highlighting the computers issued to respective departments for student's usage.	View Document

4.4 Maintenance of Campus Infrastructure

4.4.1

Percentage expenditure incurred on maintenance of physical facilities and academic support facilities excluding salary component, during the last five years (INR in Lakhs)

Response: 17.23

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

2022-23	2021-22	2020-21	2019-20	2018-19
70.4	54.3	44.9	61.2	88.6

File Description	Document
Institutional data in the prescribed format	View Document
Audited income and expenditure statement of the institution to be signed by CA for and counter signed by the competent authority (relevant expenditure claimed for maintenance of infrastructure should be clearly highlighted)	View Document

Criterion 5 - Student Support and Progression

5.1 Student Support

5.1.1

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

Response: 86.34

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

2022-23	2021-22	2020-21	2019-20	2018-19
1128	1046	921	979	674

File Description

Document

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

[View Document](#)

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

[View Document](#)

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

[View Document](#)

Institutional data in the prescribed format

[View Document](#)

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

[View Document](#)

5.1.2

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

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

Response: A. All of the above

File Description	Document
Report with photographs on Programmes /activities conducted to enhance soft skills, Language and communication skills, and Life skills (Yoga, physical fitness, health and hygiene, self-employment and entrepreneurial skills)	View Document
Report with photographs on ICT/computing skills enhancement programs	View Document
Institutional data in the prescribed format	View Document

5.1.3

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

Response: 61.12

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

2022-23	2021-22	2020-21	2019-20	2018-19
493	926	1068	874	0

File Description	Document
Upload supporting document	View Document
Institutional data in the prescribed format	View Document

5.1.4

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

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

Response: A. All of the above

File Description	Document
Proof w.r.t Organisation wide awareness and undertakings on policies with zero tolerance	View Document
Proof related to Mechanisms for submission of online/offline students' grievances	View Document
Proof for Implementation of guidelines of statutory/regulatory bodies	View Document
Details of statutory/regulatory Committees (to be notified in institutional website also)	View Document
Annual report of the committee motioning the activities and number of grievances redressed to prove timely redressal of the grievances	View Document
Provide Links for any other relevant document to support the claim (if any)	View Document

5.2 Student Progression

5.2.1

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

Response: 60.2

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

2022-23	2021-22	2020-21	2019-20	2018-19
186	256	235	170	0

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

2022-23	2021-22	2020-21	2019-20	2018-19
348	370	354	335	0

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

5.2.2

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

Response: 15.18

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

2022-23	2021-22	2020-21	2019-20	2018-19
17	37	29	2	0

File Description	Document
List of students qualified year wise under each category and links to Qualifying Certificates of the students taking the examination	View Document
Institutional data in the prescribed format	View Document

5.3 Student Participation and Activities

5.3.1

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

Response: 40

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

2022-23	2021-22	2020-21	2019-20	2018-19
13	8	0	7	12

File Description	Document
Upload supporting document	View Document
list and links to e-copies of award letters and certificates	View Document
Institutional data in the prescribed format	View Document

5.3.2

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

Response: 11.4

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

2022-23	2021-22	2020-21	2019-20	2018-19
18	8	2	12	17

File Description	Document
Upload supporting document	View Document
Institutional data in the prescribed format	View Document

5.4 Alumni Engagement**5.4.1**

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

Response:

The Government College of Engineering Nagpur Alumni Association (GCOENAA) is an illustrious example of the enduring connection between an institution and its graduates. GCOENAA registration is in process with acknowledgement number (Maha/221/97NAG PTR) under the Societies Registration Act, 1860, and the Maharashtra Public Trust Act, 1950. GCOENAA plays a pivotal role in developing and improving the esteemed Government College of Engineering, Nagpur. With its registered office located on the GCOEN campus, the association's presence is a testament to its strong connection with the institution. The following are invaluable contributions made by GCOENAA to the institution:

1) Financial support for Project Competition and Graduation ceremony: One of the most prominent initiatives of GCOENAA is the annual Project Competition. This competition serves as a platform for students to exhibit their technical skills and innovative projects. Two outstanding projects from each department are selected, and the students behind these projects are awarded cash prizes. The winner receives cash prize against 1st and 2nd positions. The Project Competition has raised the standards for project quality and technical innovation among students, enhancing the institution's reputation and fostering a culture of healthy competition.

2) Motivational Sessions: GCOENAA plays a pivotal role in organizing motivational sessions featuring distinguished alumni who have achieved remarkable success in their professional careers. These accomplished alumni, now serving in higher positions across various industries, serve as inspiring role models for the current students. They share their life experiences, insights, and wisdom, providing invaluable guidance to aspiring engineers. The interaction between alumni and students fosters a sense of belonging and strengthens the mentorship culture within the GCOEN community.

3) Expert Sessions on Competitive Exams: GCOENAA extends its support to students by organizing expert sessions on competitive exams. These sessions are conducted by alumni who have excelled in various competitive examinations such as GATE, CAT, GRE, and IELTS. They share their strategies, insights, and tips for success with the current students. Expert Session on Career Guidance was taken by Mr. Rajat Motghare (currently pursuing Msc in Computer Engineering. He also interned at various companies such as ECDS, BSNL and AIR Akahsvani. Expert Session on Entrepreneurship was taken by Mr. Yogendra Pal (founder and CEO of Memo Yo Animations Pvt. Ltd., Managing director of hiring aqua Pvt. Ltd. and chief marketing officer in BBR Pvt. Ltd).

In conclusion, the Government College of Engineering Nagpur Alumni Association (GCOENAA) is not just a representation of an institution's past but a driving force for its present and future. Its contributions through the Project Competition, motivational sessions featuring successful alumni, development projects, and expert sessions on competitive exams have a profound and lasting impact on the college's students, infrastructure, and academic programs. This association is a source of inspiration and motivation, continually working towards excellence in the field of engineering education.

File Description	Document
Upload Additional information	View Document
Provide Link for Additional information	View Document

Criterion 6 - Governance, Leadership and Management

6.1 Institutional Vision and Leadership

6.1.1

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

Response:

Vision and Mission of the Institute- The Institute, since its establishment carried out the extensive exercise to decide the vision of the Institute. The inputs from various stake holders, such as faculty, staff, students and the industry experts were considered to finalize the same as below-

Vision of the Institute

To be an Institution of national repute creating globally competent technocrats to serve the society.

Mission of the Institute

? To impart quality education through need based curriculum in academic programs.

? To promote excellence by creating intellectually stimulating environment for creativity, innovation, research and professional activities.

? To foster relationship with industries, other leading institutions and alumni so as to enhance career opportunities for students.

? To inculcate sense of discipline and responsibility towards nature and society

The Institute's policies and functioning are in line with the Institute's Vision and Mission. The governance systems are set according to achieve the goals as per institute's vision.

As per the Maharashtra University Act 2017, the Institute has constituted the College Development Committee. The Institute's development roadmap was approved by the committee. It included the short term and long term goals. In order to meet the Institute's vision of becoming the Institute of national importance for creating the engineers of international standing, the students are nurtured from the very first year of their admission.

Different missions are effectively implemented as below-

Although the Institute is affiliated to University, the Institute is actively participating in the curriculum revision process in which the industry needs are taken into consideration.

The Institute has created ecosystems by forming various student clubs and associations so as to effectively carry out the research and innovation activities. Institute Innovation Council is formed as per MHRD directives. It is responsible for motivating the students for these activities and also for compiling the outcomes of the various clubs such as Drone club, Robotics club, Astronomy club etc. In addition, various departmental associations and the societies such as IEI, ISTE and IETE are actively working for attainment of the mission.

Institute has excellent rapport with the nearby industries. By signing MoUs with various industries, the Institute can place the students for internship, undertaking industry based projects, conducting trainings and workshops etc.

Institute has also established good relations with society by through technology transfer to

nearby villages. Several activities are conducted and developed projects under Unnat Bharat Abhiyan.

Recently Government of Maharashtra has issued the Resolution to implement the NEP. The NEP based curriculum will be implemented from 2024-25 session at the University level and hence Institute has taken various steps for its awareness amongst all the stake holders. ABC registration of all the students, which is an important aspect of NEP, is almost completed.

In nutshell, all the Institute development activities are carried out with a reflection of vision and mission of the institute. Also for effective administration and governance, systems and processes are designed which are in line with the institute's Vision and Mission.

File Description	Document
Upload Additional information	View Document

6.2 Strategy Development and Deployment

6.2.1

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

Response:

Government College of Engineering, Nagpur is an affiliated institute of Government of Maharashtra. The institute is affiliated to Rashtrasant Tukdoji Maharaj Nagpur University, Nagpur. The institute is working under the umbrella of Director, Directorate of Technical Education, Mumbai Maharashtra state. As per State University Act 2016, the college Development Committee (CDC) is constituted under the Chairmanship of Principal. The regular meetings are called for and minutes of meeting are prepared and approved. Then action taken by the institute is monitored by CDC. The committees are also formed as per the requirement of AICTE / GoM and faculty are also involved as members and participated in various decisions.

The management at the institute level is categorically classified as administrative, academics, finance, research and quality assurance, industry institute interaction and placement, student's activities, infrastructure etc. The Principal of the institute is looking after all day to day work and decision making authority at institute level. The various activities mentioned above are headed by Deans or coordinator, Head of Department. There are Six Head of Department including Science & Humanities and Seven Deans. The administrative office is headed by Administrative officer of the institute. The faculties are working under Head in department and at institute level under Dean as co-ordinator of the activities.

The faculties are appointed by Govt. of Maharashtra through Maharashtra Public Service Commission as per the requirement at all levels i.e. Assistant Professor, Associate Professor, Professor and Principal. The Administrative officer and Registrar of the office are appointed through MPSC or by promotion. All clerical staff, Technical Laboratory assistant, laboratory assistant, workshop staff and library staff is appointed and transferred by government. The service rules for all faculty and staff are governed by

Maharashtra Civil Services Rules 1981 (General Conditions of Services, Pay, Joining times, Leaves, Pension, honoraria, Fees, CL & HRA, Occupation of Govt. Residence and travelling allowances,).

The program such as first year INDUCTION program, annual technical program 'ADHYAAYA', annual cultural program 'ORANZ', annual sport event 'SFOORTI', first year Admission activities, yearly degree distribution program are organized with the team of faculty and staff members. These activities are planned meticulously and executed enthusiastically with the participation of all.

Institute development plan was prepared in 19-20 and approved by CDC. The new institute development planned was submitted to Government of Maharashtra in which five aspects were considered viz. Physical facility, Equipment's, Skilled faculty and staff, Academic ambience, Sustainable Development. The deployment of plan is under process and will be executed as per approval of Government and availability of grants. However, key features of the institute development plan are effectively deployed and functioning. The institute campus is developed fully green campus through 1600 planted trees in last six years and the same is continue years together. Similarly, the institute installed a solar energy production unit of 110 kW on roof top of the building which saves thermal electricity resulting in sustainable environment development. Also, a rain water harvesting project is planned and is under way step by step.

File Description	Document
Upload Additional information	View Document
Institutional perspective Plan and deployment documents on the website	View Document
Provide Link for Additional information	View Document

6.2.2

Institution implements e-governance in its operations

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

Response: A. All of the above

File Description	Document
Screen shots of user interfaces of each module reflecting the name of the HEI	View Document
Institutional expenditure statements for the budget heads of e-governance implementation ERP Document	View Document
Annual e-governance report approved by the Governing Council/ Board of Management/ Syndicate Policy document on e-governance	View Document

6.3 Faculty Empowerment Strategies

6.3.1

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

Response:

Performance Appraisal System for teaching and non-teaching staff

- For Teaching Staff:

A performance Based Appraisal System adopted as per Govt. of Maharashtra and Evaluation is online. 360 degree feedback system is used for evaluation. Data filled in prescribed format which is related to academic activity, co-curricular activity and research and publication.

- For Non-Teaching Staff:

Evaluation is based on activity carried out throughout the year. The performance is evaluated in prescribed format in off-line mode

Effective Welfare Measures for Teaching And Non-Teaching Staff

- Financial assistance to meet medical expenses of staff and their family member.
- Short term advance provided to non-teaching staff (like festival advance etc.)
- Vehicle loan and home loan scheme for staff.
- Withdrawal from provident fund to meet emergency expenses.
- Various scheme such pension, GPF, NPSS, GIS, Insurance, salary bank account facility etc. available.
- Relief in office time, additional TA and financial aid for equipment for Disable staff/faculty
- Home town travel concession and leave travel concession for faculty & staff
- Financial assistance for attaining conferences and workshop.
- **Leave**

- Casual, sick leave and earn leave as per the policy of Government of Maharashtra.
- Maternity leave for six months for female employees.
- Paternity leave for employees.
- Duty leaves for attending conferences, symposium, seminar etc.
- Head quarter leave and vacation as per academic calendar.
- Study leave for teaching staff.

Avenues for Career Development/Progression

- Faculty encourages to upgrade their qualification through QIP and other programme.
- Various promotion scheme under CAS for faculty and Time bound promotion scheme for non-teaching staff
- The institute motivates faculty for industrial training, FDP, expert talks etc
- The institute organize and motivates the non-teaching staff to attend skill development and training programs.

File Description	Document
Upload Additional information	View Document

6.3.2

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

Response: 24.68

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

2022-23	2021-22	2020-21	2019-20	2018-19
10	24	0	1	3

File Description	Document
Policy document on providing financial support to teachers	View Document
Institutional data in the prescribed format	View Document
Copy of letter/s indicating financial assistance to teachers and list of teachers receiving financial support year-wise under each head.	View Document
Audited statement of account highlighting the financial support to teachers to attend conferences / workshop s and towards membership fee for professional bodies	View Document
Provide Links for any other relevant document to support the claim (if any)	View Document

6.3.3

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

Response: 55

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

2022-23	2021-22	2020-21	2019-20	2018-19
17	21	22	16	12

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

2022-23	2021-22	2020-21	2019-20	2018-19
3	0	0	3	0

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

6.4 Financial Management and Resource Mobilization

6.4.1

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

Response:

The institute receives the grant from government of Maharashtra under various heads such as salary, material and equipment, office expenditure, consumables, library, PPSS (for visiting faculty remuneration), repair and maintenance etc. All these grants are being utilized by the institute under the specified heads of account effectively.

The institute development fee and other fees are utilized for the purpose of purchasing equipment, annual sport and gathering program, students training etc. effectively.

The institute also received grant from AICTE for training / UBA activity, District Planning and Development Committee for innovative projects, Directorate of Technical Education for conducting various training program, Fund from MLA for gymnasium in the institute. All these funds were utilized by the institute for the specified works.

The mechanism for internal and external audit is given below

Audit (Internal)

The internal audit consists of tallying the receipt and expenditure at the end of each financial year. The account is closed on 31st March of every financial year and verified internally by the Principal. The institute also conducts internal verification of equipment's and furniture purchased by the institute every year. The reports of verification are scrutinized by the Principal and appropriate action is taken.

Audit (External)

The financial audit of the Institute carried out by Accountant General (AG) (Maharashtra-2) normally once in five years. AG audit team used to scrutinize the expenditure as per their convenience. All the grants received from State Government, other agencies like AICTE, DST, fees collected and internal revenue generated will be scrupulously audited. The audit committee will submit its report along with the relevant findings and objections, if any to the Institute and the Director, Technical Education. The compliance of the objections raised by the auditors will be reported by the Institute within the framework of rules and regulations. Since the beginning of the college i.e. from 2016, AG audit team not yet visited the institute.

The institute conducted audit through Chartered Accountant for a grant received through fee collected and deposited in PLA account of the Principal. AICTE fund / DTE fund is also audited through CA. The audit reports of all audits are available and placed on record.

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

Response:

Internal Quality Assurance Cell (IQAC)

Internal Quality Assurance Cell (IQAC) has been constituted under chairmanship of Principal in 2021-22. The constitution of IQAC committee has been approved in College Development Committee.

Objective:

1. To develop a quality system for conscious, consistent and catalytic programmed action to improve the academic and administrative performance of the College
2. To promote measures for institutional functioning towards quality enhancement through internationalization of quality culture and institutionalization of best practices

Quality assurance strategies and Procedures in Teaching Learning Procedure

1.Student Feedback on Academic performance:

Feedback is collected in two ways.

- 1.Feedback from CRs before Class Tests
- 2.Feedback from all students at the end of the semester

The institute has designed feedback form for the students.

Feedback is informed to the concern teacher for required improvement, if any. The concerned faculty member plans for corrective measures in the delivery/assessment based on the feedback and the instructions obtained from HOD. In addition to this, based on the overall feedback from the students and mentor, HOD focuses on planning and implementing on common areas of concern by way of suggesting/discussing the plan of action and the activities based on the areas of concern.

1.Academic Audit

In every educational institute, Academic Audit is needed for ensuring quality of education. With this vision IQAC meeting has been held and the format for academic audit is prepare and the same are circulated to departments. Academic audit of all programmes are conducted by a two member internal committee. The reports of such audits are communicated to Dean (R&QA) and concerned department. Then action is being taken at department level and the same is communicated to IQAC.

1.Result Analysis

The result analysis mechanism is intricately tied to the university's processes. Paper assessment and result declaration are centralized functions performed by the university itself. The college follows a structured protocol where examination papers are assessed by university-appointed evaluators. Post-assessment, the university takes charge of result compilation and declaration. This centralized approach ensures consistency and fairness in the evaluation process. Faculty members assess results, identifying trends and areas for improvement. Comprehensive reports are generated, aiding in academic counselling and targeted interventions. This meticulous approach fosters a culture of continuous improvement and helps students understand their strengths and weaknesses

(D) Academic parameters

(i) NBA

Government College of Engineering, Nagpur NBA accreditation has been applied for Civil Engg and Mechanical Engg programmes. The NBA team for two programs Civil Engineering and Mechanical Engineering has visited institute from 27 to 29 Jan 2023. Civil Engg program is accredited for three years and other is under process.

(ii) National Innovation Ranking (ARIIA)

Government College of Engineering, Nagpur has participated Atal Ranking of Institutions on Innovation Achievement (ARIIA) – 2022 and has uploaded all the data related to Innovation, Patents, Copyrights, startups etc. We have also participated Atal Ranking of Institutions on Innovation Achievement (ARIIA)

– 2021 and is recognised in the band "PROMISING" under the category "Colleges/Institutes (Govt. & Govt. Aided) (Technical)".

File Description	Document
Provide Link for Additional information	View Document

6.5.2

Quality assurance initiatives of the institution include:

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

Response: A. Any 4 or more of the above

File Description	Document
Quality audit reports/certificate as applicable and valid for the assessment period.	View Document
NIRF report, AAA report and details on follow up actions	View Document
List of Collaborative quality initiatives with other institution(s) along with brochures and geo-tagged photos with caption and date.	View Document
Link to Minute of IQAC meetings, hosted on HEI website	View Document
Provide Links for any other relevant document to support the claim (if any)	View Document

Criterion 7 - Institutional Values and Best Practices

7.1 Institutional Values and Social Responsibilities

7.1.1

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

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

Response:

7.1 Institutional Values and Social Responsibilities (50)

7.1.1 Institute has initiated the Gender Audit and measures for the promotion of gender equity during the last five years

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

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

Response: This Institute is a co-education institution, always striving to uphold the principle of gender equity. There is no gender discrimination in any of its policies framed for all the stakeholders. Equal opportunities are provided to all individuals irrespective of gender, race, religion, caste, color, creed, language, religion, political or another opinion, national or social origin, property, birth, or another status. Safety, security, and well-being, along with gender equity and a friendly working atmosphere are the issues of prime concern to the Institute. Some of the concrete steps ascertained to ensure gender equity includes:

Gender Audit:- Gender audit is carried out for last five years. Girl's percentage is in the range of 31-38%. For year 2022-23, girls percentage is 31.3 (365students) out of total 1166 students.

Equal Opportunity: At the Institute level, boys and girls are given equal opportunity in organizing co-curricular and extra-curricular activities, departmental student forums, research projects, in classrooms, and in laboratory sessions. Male and female faculty members are recruited without being prejudiced and responsibilities are given to them without any kind of gender discrimination. Sports activities at Institute and University level are also an arena, which promotes gender equity by ensuring equal representation of both genders. Equal opportunity to both genders is given in the conduct of NCC &NSS activities such as blood donation camps, tree plantation drives, visits to various places to look at their standard of living and in figuring out the solutions in the best possible way.

Safety and Security: Institute shows gender sensitivity through various initiatives and actions for creating a safe, secure, and healthy atmosphere on the campus. Institute has a 24x7 security system, that includes security guards and CCTV surveillance with high-resolution cameras, with the facility of distributed recording in the control room. It also helps in tracing out the unwanted elements entering the

campus. Such surveillance ensures freedom to students and staff as they have assured security during their stay on the campus. Various activities are conducted under Virina Cell to create awareness regarding women health and safety.

The Outcome of Gender Equity: The outcome of gender equity is fairly reflected in the placements, as both the genders were exposed to organize various activities, which constructively manifested the outcome in boosting leadership qualities, team spirit, decision making, etc. that results in the development of their overall personality and in turn helped them in handling any sort of such issues they may face in future.

It is noteworthy to mention that, due to these initiatives and measures taken by the Institute administration, cases of gender discrimination, etc. are never noticed within the Institute's campus

File Description	Document
Provide Link for Additional information	View Document

7.1.2

The Institution has facilities and initiatives for

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

Response: A. 4 or All of the above

File Description	Document
Policy document on the green campus/plastic free campus.	View Document
Geo-tagged photographs/videos of the facilities.	View Document
Circulars and report of activities for the implementation of the initiatives document	View Document
Bills for the purchase of equipment's for the facilities created under this metric	View Document

7.1.3

Quality audits on environment and energy regularly undertaken by the Institution. The

institutional environment and energy initiatives are confirmed through the following

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

Response: A. All of the above

File Description	Document
Report on Environmental Promotional activities conducted beyond the campus with geo tagged photographs with caption and date	View Document
Policy document on environment and energy usage Certificate from the auditing agency	View Document
Green audit/environmental audit report from recognized bodies	View Document
Certificates of the awards received from recognized agency (if any).	View Document

7.1.4

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

Response:

7.1.4 Inclusion, sensitization to Human values, rights, duties

Response: Being a State Government Institute, it takes the responsibility of shaping the students by inculcating human values and inducing professional ethics.

Some of the initiatives are enlisted below:

Harmony in Cultural Diversity

The various cultural events are organized during annual social gathering Oranz. Dholida- Dance competition and Ganesh festival celebrations showcase various cultural diversities under one umbrella.

Harmony in Linguistic Diversity

To respect linguistic diversities, various events are being organized on various themes such as Matrubhasha diwas. Marathi Bhasha Gaurav din is also celebrated in the institute. Programs such as debate competitions, singing competitions are conducted in Hindi, Marathi (the local language) and English.

Harmony in Regional Diversity

The students from other states such as J&K are admitted under PMSS. As per state government policy 70% seats are reserved for Nagpur region and 30 % candidates are admitted from rest of Maharashtra. This takes care of harmony in regional diversity at state level.

Tolerance Building and Sensitization

In process of building tolerance among its students, Institute celebrates days of National importance like Independence Day, Republic day. Students and institute stake holders participated enthusiastically in the “ Azadika Amrut Mahotsav”. Pledge is taken on days like Rashtriya Ekta Diwas, Constitution day, Tobacco free India etc. Birth anniversaries, commemoration days are celebrated in the Institute every year to provide an inclusive environment.

Community Welfare Activities

Institute always strives for community welfare by encouraging students and staff to cultivate the spirit of integration and the sense of social responsibility by organizing numerous programs such as blood donation camps, social awareness camps, cleanliness drives, tree plantation drive etc. Student Induction Program is conducted every year for newly admitted students, where efforts are taken to foster cordial relation amongst the peers. The curriculum includes courses on ethical values and professional ethics.

Socio-economic Support

Institute has admission of students from different socio economic groups. Different Schemes and scholarships from Government of India and State Government are availed by students. The platform of MAHADBT is available to the students of Institute for application for different scholarships and freeships. These schemes also support for lodging and boarding and other educational needs. Students belonging to EBC are given financial support.

Sensitization of students and employees of the Institution to the constitutional obligations: values, rights, duties and responsibilities of citizens

The Institute understands and realizes its role and responsibility in spreading the awareness about constitutional values, rights, duties, and responsibilities of citizens. The programs include a pledge on World Environment day, awareness programs as National Voters' Day, Swachha Bharat Abhiyaan (Clean India Initiative), etc. Students are encouraged to participate through group discussion, poster making, essay writing, cleanliness drives, tree plantation drives, etc.

During this program, the code of ethics, universal human values, fundamental rights, duties, and responsibilities of a real citizen are emphasized. Teaching and non-teaching staff is constantly involved in all the election-related duties. The staff is also serving the Collector office for disaster management in Nagpur city.

File Description	Document
Provide Link for Additional information	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

Title of the Practice:

Fostering the Culture of Innovation through Institute Innovation Council(IIC)

Objectives of the Practice:

IIC functions under the aegis of MoE Innovation Cell (MIC)GOI. It's activities are planned to promote innovation and entrepreneurship through continuous mentoring and support. All innovation and start-up related activities on campus are coordinated centrally by IIC. Objectives of the practice are-

1. Imparting knowledge on innovation and entrepreneurship through MIC, IIC calendar activities, self-driven activities, day celebrations, expert sessions, and workshops
2. Identification and motivation of entrepreneurial talent
3. Formulation of institute innovation and startup policy in accordance with National Innovation and Startup Policy (NISP)
4. Encouragement/support for prototype development and IPR generation
5. Mentoring Entrepreneurship Development Cell (EDC)

The Context:

Being newly incepted institution, high end research facilities have been improving. Meritorious students from rural section and tier-2/tier-3 cities of Maharashtra is the strength. MIC's programme for Innovation and Startup promotion has come as a boon and IIC was established in 2018. Seven faculty members have undergone trainings of AICTE for Advanced Innovation Ambassador, NISP coordinator and contributed in constituting IIC.

The Practice:

IIC conducts all calendar activities of MIC that are on innovation, ideation, design thinking, entrepreneurial skill development, idea hackathons and prototype development competitions, etc. Faculty members coordinates MIC activities and AICTE initiatives namely SIH, NIC, YUKTI, NISP, IPR (KAPILA), ARIIA, NIRF and IITB EDC.

Conduct of institute level competitions and Tech-Fest help in identifying students interested in innovation, technical skills, entrepreneurial ventures, financial skills, etc. IIC extends support in generating IPR and mentoring. As per the recommendations of GCOEN I&S Policy-2022, institute has allocated a budget for IIC activities. From 2023-24, Department Student Associations are also involved in IIC activities.

Institute's IIC is helping other HEIs towards establishment of ecosystem of innovation and startup by instituting IIC under mentor-mentee scheme of MIC.

Evidence of Success:

1. Thirteen patents and twenty designs have been granted to 07 faculty members since 2019.
2. President IIC has mentored other HEIs for establishing IIC since Feb 2022. MIC has upgraded our status as IIC mentoring institution.
3. Awarded Incubation Sub-centre of RTMNU T&B incubator *Incubein*, enabling access to high end research facilities.
4. Formulated GCOEN I&S policy-2022.
5. Recognition of IIC performance by MIC in regional meet on 29/07/2022.
6. ARIIA-2021: Secured a position in "PROMISING" band in category of "Colleges/Institutes (Technical)".
7. Participated in NIRF Innovation Category in INDIA RANKINGS 2023
8. Conducted session on innovation in school.

Awards and recognitions:

1. IIC's MIC-Star Ratings are 3, 4.5 and 4 for the academic years 2018-19, 2019-20 and 2020-21 respectively.
2. Conducted DTE sponsored STTP on "Building an Ecosystem of Innovation and Startup," for 80 Engineering faculty members, Feb 1-5, 2022.

Problems Encountered and Resources Required: Raising funds for IIC activities was very difficult. NISP-2019 suggests, 1% of total institute budget should be allocated for I&S related activities, institute has made some provision.

Note: This practice can be effectively utilized by HEI for promotion of innovation and entrepreneurship. It links the HEI to national level I&S promotion schemes/competitions.

1. Title of the Practice

Consultancy services provided by the institute to the outside world

2. Objectives of the Practice

The objectives are

1. To provide services related to available technical knowhow in the institute to the society
2. Internal Revenue Generation (IRG) for the institute
3. To keep faculty and students updated about field problems and solutions thereof

Principles /concepts

The institute have technically competent faculty. The society (e.g. Govt. agencies/ offices, private companies/ Industries) is in need of solutions to technical problems faced by them. In order to facilitate growth of the society, the available technical expertise in the institute can be utilized by providing consultancy services. This also facilitates generation of funds for the institute. The funds are partially used for enhancing facilities (instruments, maintenance, calibration, raw materials, etc.). These services also enhance problem solving ability of faculty which in turn benefits students due to their direct (hands on training) or indirect involvement.

3. The Context

Various established Govt. and Private Institutes also provide similar services. Being new, In order to establish itself, institute mainly focused on upgraded consultancy services to its client. Along with technically competent expertise, institute also provides prompt report. The fee charged is as per Govt. norms and is reasonable. The teachers and staff complete assignments without disturbing or in consonance with the academic schedule and activities.

Departments provide consultancy in the areas such as Structural Audit, Structural Design scrutiny, Third party audit, Product (Machineries, Furniture, etc.) specification verification as per relevant standards, Feasibility for Erecting 132 KV Overhead Transmission Line, Scrutiny of Electrical Specifications for various works, etc.

4. The Practice

Uniqueness

Since now a days faculty are highly educated, their specialization are also unique. This advice /service help society to grow. The aim of higher education is to impart education to the students and upgrade their skills. While participating in real life challenges faced in consultancy services, real life projects the students of this institute learn the practical application of the theory and gain hands on experience.

The constraints faced by the institute are limited faculty, availability of high end testing facility and equipments and funds.

5. Evidence of Success

The evidence of success can be judged form the quantum of consultancy services provided by the institute in last five years and the IRG as follows.

Sr. No	Department	Last five Years Total Departmental consultancy amount in Rs.	Institute total in Rs.
1	Applied Mechanics	12471021/-	23241474/-
2	Civil Engineering	10274644/-	
3	Electrical Engineering	238127/-	
4	Mechanical Engineering	38232/-	
5	Computer Science and Engineering	219450/-	

6. Problems Encountered and Resources Required

Institute was new in the region. Institute approached many Govt. and private agencies for consultancy work. Gradually with quality work, institute established its brand. The other constraints faced by the institute are limited faculty. The grants received for the purchase of high end equipment from State Govt. also are limited.

In spite all these challenges the institute is progressing ahead in the field of consultancy.

File Description	Document
Any other relevant information	View Document
Best practices as hosted on the Institutional website	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:

Unnat Bharat Abhiyan (UBA), a flagship programme of Ministry of Education (MoE) GOI

1. Participation in Unnat Bharat Abhiyan (UBA), a flagship programme of Ministry of Education (MoE) GOI

UBA is to involve higher education institutes of the country for indigenous development of self-sufficient and sustainable village clusters for Inclusive India. The programme was formally launched by the MoE on 11th November 2014, with the IIT Delhi as National coordinating institute.

The thematic areas of UBA are sustainable agricultural systems; water resource management; rural energy systems; artisans; industries & livelihoods; and basic amenities (Rural Infrastructure, connectivity, school education etc). UBA aims to primarily leverage the existing strengths of the Higher educational institutions to enrich Rural India. UBA guidelines allow funding support only for the following:

1. For Field Visits - Rs. 10,000 per village
2. For customisation of an available technology - Rs. 50,000.00
3. For development of a new technology - Rs.1,00,000.00

The institute is actively participating in UBA since the beginning of its phase -2. The project started in the institute on 05/09/2018 with following objectives.

2. Objectives:

1. To motivate the students for innovation and startup related project work leading to value addition to the society.
2. To imbibe the social responsibility and culture of innovation among the students.
3. To motivate the faculty members to achieve consistency and high standards in innovation and research activities addressing environment and society-related research problems.
4. To develop experimental and computational skills amongst students to address a particular technical problem.
5. To motivate UG students for writing small technical proposals for identified societal problems

The Institute has talented and motivated faculty members supported by enthusiastic, sincere, and hardworking students. For guiding the students in ideation, to inculcate the aptitude of innovation and to develop their problem-solving skills, faculty members got motivated to undertake UBA projects based on the problems faced by villagers of five adopted villages and strived to obtain technical solutions. Following fourteen technical projects have been developed, demonstrated, and handed over to Self Help Groups in the adopted villages.

As per mandated by UBA implementation format, the institution has adopted five different nearby villages and prepared Village Development Plans (VDPs). These plans were prepared by team of students by conducting different surveys based on UBA guidelines. This exercise encourages students to identify the societal problems in their immediate vicinity that can be solved by giving technological solutions. Based on the different proposals submitted by the institutions 8 different projects of total grant Rs. 7,75,000/- have been funded by UBA as listed below.

3. List of UBA projects awarded Since 2018:

S.No.	Grant Head and date of sanction	Project Title	Village name: site of implementation	Amount sanctioned	Date of completion
1	UBA Seed Money 05/09/2018	Seed Money for initialization of UBA related activities in nearby villages Dr Latesh Mallik, CSE	Khapri, Dahegaon, Kalkuhi, Wela Hari, Shankarpur,	50,000/-	31/01/2020
2	Contribution to societal scheme 01/01/2019	Mobile ON/OFF Controller for Three Phase Motor DR P.R. Deshmukh, ETC	Wela Hari	1,00,000/-	10/01/2020
3	contribution to societal scheme 01/01/2019	Smart Compost Bin Dr K M Tajne, CE	Khapri	1,00,000/-	10/01/2020
4	Technology customization 24/06/2020	Solar based electric supply system with backup for community hall Dr. R B Yarasu, ME	Shankarpur	50,000/-	March-2022
5	Technology demonstration 27/01/2021	Cattle care and monitoring system	Dahegaon	1,00,000/-	11/03/2022

		Dr R Raut, ETC			
6(i)	Perennial Assistance	Smart Dustbin (IOT+ Solar Operated), Dr VM Athawale, ME	Dahegaon		06/05/2022
6(ii)	05/03/2021	Solar operated semi-automatic organic manure making machine, Dr S A Tekade, CE	Dahegaon		10/05/2022
6(iii)		Smart Robotic solar cleaning machine with Bluetooth module, Mrs S Nagrale, ETC	Dahegaon	1,75,000/-	March -2022
6(iv)		Development of Fruit and vegetablesolar dryer for entrepreneurship development, Mr P V Nandankar, EE	Kalkuhi		10/03/2022
6(v)		CONNECT (Mobile App to connect them for agricultural, healthandgovt schemes) Dr Latesh Malik, CSE	Khapri		25/04/2022
6(vi)		Semi-Automatic Cotton Wick Machine Dr R B Yarasu, ME	Shankarapur		Ongoing
6(vii)		Machine for making of incense sticks	Wela Hari		04/03/2022

		and fragrant cones from offered flowers Dr J B Randhawa, S&H			
7	Technology Customization 18/05/2022	Village waste water treatment Dr P B Daigavane, CE	Khapri	1,00,000/-	Ongoing
8	Technology Customization 30/01/2023	Boiling of Turmeric Using High Parabolic Trough Solar Collector Prof S R Wagh, ME	Khapri	1,00,000/-	Ongoing
		Total		7,75,000/-	

Besides these projects students have taken up different activities for the adopted villages as listed below:

1. Inviting Dr Vijay Bhatkar for meeting and public talk for all adopted village representatives and students
2. Plastic free village campaign
3. Video preparation of institute activities for UBA official YouTube channel
4. Participating in all activities/competitions conducted by RCI VNIT Nagpur

4. Success stories:

i) Immediately on submission of VDP the institute won UBA Perennial Assistant Award by competing at National Level

ii) Won first prize for its project 'Cattle Health Monitoring System (CHMS)' in Tech4Seva competition of UBA projects convened by RCI VNIT Nagpur for all 17 Vidarbha Level UBA institutes.

iii) CHMS Project is also selected as one of the 75 different projects from all over India for presentation in Unnati Mahotsav held at IITDelhi

File Description	Document
Appropriate web in the Institutional website	View Document
Any other relevant information	View Document

5. CONCLUSION

Additional Information :

Institutional Strategic Plan and its Effective Implementation and Monitoring-

The institutional strategic development plan is prepared after considering the SWOC Analysis. It includes the short term goals upto 2023 and long term goals upto 2027. The important attainments of the strategic plan are:

1. Acquired the accreditation status to one of the programmes
2. Start of PG Course
3. Sanction of Centre of Excellence

The Principal, all HoDs, faculty, staff and stakeholders are involved in the process to accomplish the Institute's Vision.

External Support Systems: External linkages are established with Industries, academia and society. MoUs are signed and also regular interactions are carried out with these organizations.

NEP Implementation: Institute is abide to implement the NEP based curriculum as prescribed by the affiliating University RTMNU. Accordingly Outcome-Based Teaching-Learning Processes are in place.

Core Values- The core values adopted by the Institute as enduring principles are Integrity, Excellence, Accountability, and Transparency.

Integrity: Research and teaching is being carried out in an environment of academic freedom and honesty. The Institute adheres to the highest standards of ethics in all its activities.

Excellence: The Institute is committed to excellence in all spheres of its activities, and through internal and external reviews, work towards continuous improvement. The Institute recognizes exceptional efforts through awards and honors.

Accountability: The Institute is an organization of Government of Maharashtra and administered by Higher & Technical Education. It is affiliated to RTM Nagpur University. All stake holders including faculty and supporting staff are accountable to immediate superiors.

Transparency: The Institute functions according to defined procedures and rules. The information about the Institute is displayed on the official website which is always available in the public domain.

Concluding Remarks :

The continuous and collective efforts of all faculty members, staff and students of the Institute for academic excellence have made it possible to attain the milestones of Institute's development road map. Interactions with alumni, industry organizations, government officials and social organizations have been carried out regularly

for establishing the Institute's brand throughout the globe. Every stake holder is striving to accomplish the vision of the Institute through its different missions.