

# Newsletter

## Academic Year 2023 –2024



उत्कृष्ट तंत्रज्ञानार्थं जनशक्तैः शिक्षणं

### Civil Engineering Department

Shri Guru Gobind Singhji

Institute of Engineering & Technology, Vishnupuri, Nanded - 431606

*(An Autonomous Institute owned by State Govt.)*



**Institute Vision:** “Education of Human Power for Technological Excellence”

**Institute Mission:**

- Dissemination of knowledge by offering world class education
- Right to information for all stakeholders
- Promotion of sustainable industrialization to development of appropriate technologies
- Continuing education programs for reengineering of regional socio-economic system in the light of dynamic, global technological changes
- Contribution to national wealth through innovation

**Department Vision:**

- To be a leader in teaching, research, and consultancy services in Civil Engineering

**Department Mission:**

- To provide quality education to students in a vibrant environment for a successful career in Civil Engineering.
- To attract and encourage students for carrying innovative research by providing them with state-of-art infrastructure and knowledge base.
- To provide consultancy services to industries and organizations for resolving real life problems to cater societal needs.
- Integrate sustainable practices into all aspects of departmental planning and operations, focusing both on the current and future implications.

**About Department:**

The Department of Civil Water Management Engineering was established in the year 1984 with an intake of 30. Subsequently, the intake increased to 40 in 2002 and then again increased to 60 in 2015. Change of nomenclature of Civil-Water Management (UG) to Civil Engineering (UG) effected from 2015. The Department has a good academic culture and a conducive working environment. The equipment in the laboratories of different subject areas have been procured from the funding of State Government and AICTE funded projects under the category of MODROB and R&D. The infrastructure is sufficient to achieve academic excellence. In addition to the strong placement, students are getting good ranks in GATE examination.

The Department runs two PG courses namely Water Management since 1991 with an intake of 18 and Structural Engineering since 2015 with intake of 18. The Department is a recognized Research Centre of Swami Ramanand Teerth Marathwada University. The AICTE under QIP has sanctioned two scholarships for full-time research work leading to Ph. D. degree. The M. Tech. and Ph. D. students publish high quality research papers in National and International journals. The department is having close association with the academic institutes like IIT Mumbai, VNIT Nagpur, NIT Warangal and BITS Pilani, Hyderabad campus etc.

## Director Report



**Dr. Manesh B. Kokare**  
**Professor and Director,**  
**SGGSIE&T, VISHNUPURI, Nanded**

**C**ivil Engineering Department, **S**hri Guru Gobind Singhji

Institute of Engineering and Technology (SGGSIET), Nanded has a remarkable journey of achievements and growth in the last academic year 2023-24. I am very and honored to write director's message for the newsletter of I congratulate the faculty and students of the Civil

Engineering department for their proactive step in starting the newsletter.

Despite being located in a rural and backward part, this institute plays a pivotal in engineering education in the state of Maharashtra. After being selected in TEQIP-I in 2003, it came in the national limelight. The institute also got selected in TEQIP-II and then with a center of excellence in Digital and Signal Processing. The success story continued Institute is also selected to participate in TEQIP-III. Thus, having attained a good level of teaching-learning process and infrastructure development, we aspire to move into a higher orbit of PG/ Doctoral and creation of center of excellence in various thrust areas with an aim to gain international visibility.

Department of Civil Engineering has always been on the forefront in building this institution. It is indeed a praiseworthy initiative of newsletter taken up this department. I think this is a good platform to understand and exchange the views of each other and use the same for career building of students as well as for building world class institutes. I suggest having a major theme for the newsletter and thereafter subthemes can be evolved for subsequent versions. As education is the cornerstone of nation building and it can only pave the way for economic growth and prosperity, the theme of the newsletter can be focusing on creating ability to Learn, Think, and Innovate. Thinking out of the box should be encouraged amongst the students, learners and researchers. I also suggest the coordinators to have articles related to automation in Civil Industry, usage and training on software used in Civil Engineering, publish motivational articles about mega structures and engineering marvels.

I hope that the interactions between individuals and groups through this activity will be effective and fruitful from the point of view of bringing the desired changes and improvements.

Wish the publication of the newsletter all success and hope that it will be enjoyable to stakeholders.

With regards,

Dr. Manesh B. Kokare

## HoD's Report



**Dr. P. B. Ullagaddi**  
**Professor and Head,**  
**Civil Engineering Department,**  
**SGGSIE&T, Nanded**

**C**ivil Engineering Department, **S**hri Guru Gobind Singhji Institute of Engineering and Technology (SGGSJET), Nanded has a remarkable journey of achievements and growth in the last academic year 2023-

24. Our **students** and **faculty** have **excelled**, with a **significant percentage** of graduation rates that have increased significantly compared to last year. Numerous **students secured top positions** in university **exams**, and several research articles were published. Significant **investments** were made in **infrastructure**, as Departmental **new building construction** (ongoing) has been started in March-2024.

Over the AY 2023-24, short term training programs and **seminars** was **organized**, and seven faculty were recruited in the department. Our **students excelled in national competitions**, and many secured internships and placements in leading companies. Our faculty have published research articles, chapters and patents in the national and international publishing houses. Department also did the consultancy of significant amount over the years for the Govt. and private projects. We have implemented the National Education Policy (NEP-2020) for Second Year Civil engineering students starting this year.

The Department of Civil Engineering continues to thrive in its mission to provide quality education and foster an environment of innovation and research. The achievements of this year are a testament to the hard work and dedication of our faculty, students, and staff, and we look forward to building on this success in the coming years.

### ***Faculties Outreach Awards and Recognitions***

- Dr. Atul Shinde has Delivered a guest lecture on “[Patenting: An Overview](#)” in the workshop organized by J. D. College of Engineering and Management, Nagpur on October 31, 2023.
- Dr. Atul Shinde has delivered a guest lecture on “[An Overview of Renewable Energy](#)” in One Week FDP organized by Government Polytechnic, Nanded on January 22, 2024.
- Dr. P. N. Balve delivered expert talk on the topic, “[Fuzzy Inference System](#)” in ISTE Approved STTP on “Soft Computing Techniques and Its Application in Engineering” March 12-16, 2024.
- Dr. P. N. Balve delivered expert talk on the topic, “[Introduction and hands on session on TLBO Algorithm and Jaya Algorithm](#)” in ISTE Approved STTP on “Soft Computing Techniques and Its Application in Engineering” March 12-16, 2024.
- ISTE Approved STTP on “[Soft Computing Techniques and Its Application in Engineering](#)” March 12-16, 2024, coordinated by Dr. Pranita Balve Assistant Professor Civil Engineering Department.



## ***ISTE Approved STTP on “Soft Computing Techniques and Its Application in Engineering” March 12-16, 2024***

Department of Civil Engineering had conducted short term training program on, “Soft Computing Techniques and Its Applications in Engineering (SCTAE)” during March 12, 2024 to March 16, 2024 in institute campus premises.

Optimal utilization of available resources plays an important role in developing countries like India. Due to sudden collapsing of the system, it become difficult to fulfil the future demand. To overcome the difficulties of planning and management of limited resources, many modern tools and techniques are becoming popular in engineering and technology. These are extensively used in design problem where the emphasis is an optimization problem. Many techniques like Fuzzy logic, genetic algorithm, artificial neural network and its hybrid modelling, natural inspired algorithms. Also new era like Artificial Intelligence and Machine Learning (AI & ML) techniques also playing an important role in planning and management of available resources.

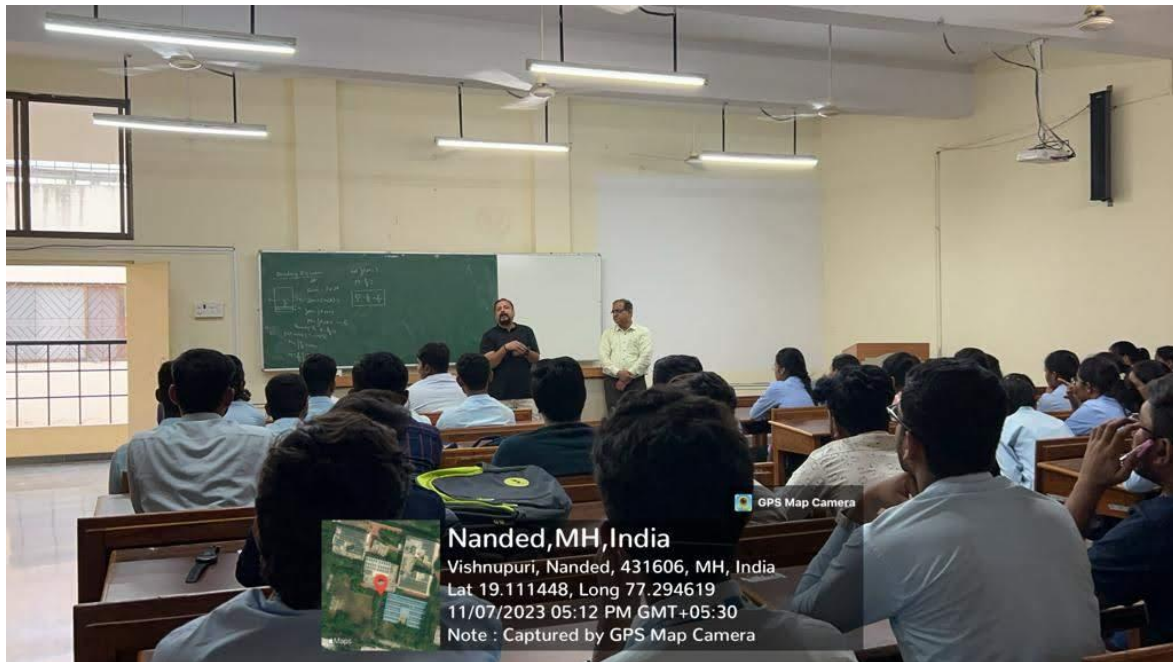
Objective of the proposed program was to give insight about to understand the basics of different soft computing techniques and its field application to solve engineering problems. For the program experts were call from reputed institutes. All sessions were engaged in well manner. Following table shows day wise details.





### ***Guest Lecture/ Training Program***

- A guest lecture by our alumni Mr. Nishikant Shimpi on “[Various Opportunities in the Field of Civil Engineering](#)” for the students of Civil Engineering Department was delivered on November 07, 2023.



**Expert lecture delivered by Alumni Mr. Nishikant Shimpi**

***Students Achievement*****GATE Qualified Students**


Following are some of the students who have **Qualified GATE 2024** exam.

<b>Sr. No.</b>	<b>Name of student</b>	<b>Marks obtained (100)</b>	<b>All India Rank</b>	<b>GATE Score</b>
01	Sanjeeve Ratanlal Gupta	29.39	10635	362
02	Vishal Digambar Mangnale	27.24	12786	337
03	Sakshi Sanjay Satpute	19.77	24451	254
04	Sanket Kamalakar Deshmukh	24.24	16396	304
05	Kunal Sanjeev Gupta	29.39	10635	362
06	Kartik Nagnath Popalwar	20.84	21973	267
07	Yash Shankar Tummod	20.61	22706	264

*Details of Student Placement***Placement Details of Academic Year 2023-24**

		
Abhishek Shinde, Arto Precast Concrete	Bhujbale Ashwini, Shree Maharudra Infrastructures Pvt. Ltd.	Fulbandhe Sakshee Shree Maharudra Infrastructures Pvt. Ltd
		
Gulhane Sakshi ADANI	Bansode Dnyaneshwar ADANI	Wankhade Mohan Shree Maharudra Infrastructures Pvt. Ltd
		
Atharva Sunil Sawalkar Technology Informatics Design Endeavour (TIDE)	Mohit Sudhir Choundiye Toyo Engineering India Pvt Ltd	Piyush Deshmukh Toyo Engineering India Pvt Ltd

		
Laxmi Pawar Ppide Purple	Renuka Maroti Patil Decospaa Interiors Llp	Kale Rishikesh Shree Maharudra Infrastructures Pvt. Ltd.
		
Kuttarmare Shubham Adani	Mane Rutuja Shraddha Construction	Nikam Swapnali Adani
		
Mali Priti Ciel	Sawant Vyankatesh Adani	Vishwakarma Rajat Sustainable Techno- Solutions for Environmental Protection (Step) Pvt. Ltd.

	
<p>Mansi Sagar Fortress Infracon Ltd</p>	

**Internship Details****Academic Year 2023-24**

Sr. No.	Name of the Students	Registration No.	Name of the Company
1	Pravin Manoj Painjane	2020BCE002	G.J. Constructions Nanded
2	Chetan Totare	2020BCE003	
3	Amolkumar Gangadhar Khangaonkar	2020BCE004	
4	Khandade Pratik Mangesh	2020BCE005	
5	Balvinder Singh Sandhu	2020BCE067	
6	Prathmesh Janardhan Chavan	2020BCE601	
7	Lakde Shivraj Kumar Naganathrao	2021BCE506	
8	Nikita Shankar Khandre	2020BCE024	Divyaamrit construction India Pvt. Ltd, Nanded
9	Renuka Maroti Patil	2020BCE070	Sanjivani construction PVL
10	Adarsh Bahadure	2020BCE015	Fortress Infracon Limited
11	Manasi Nagnathrao Sagar	2020BCE028	
12	Abhishek Vijayrao Shinde	2020BCE052	
13	Vivek Swami	2020BCE068	Mahalaxmi construction Washim
14	Samruddhi Rajesh Khandarkar	2020BCE019	
15	Sakshi Satpute	2020BCE071	
16	Divya Sudam Bhawar	2021BCE510	Busybee Ventures pvt. Ltd
17	Ankita Madhukar Gawai	2020BCE054	
18	Shubham Prakash Kuttarmare	2020BCE007	Vidarbha Nirman Company , Yavatmal
19	Sakshi Prabhakar Gulhane	2020BCE008	
20	Vishu Ajay Malewar	2020BCE031	
21	Tejas Dafare	2020BCE044	
22	Manthan Gajanan Mahajan	2020BCE055	
23	Mohan Santosh Wankhade	2021BCE509	
24	Chandan Bhalchandra Patil	2020BCE062	Vidarbha Navnirman Company , Yavatmal
25	Rutuja Sunil Mane	2020BCE006	Shapoorji Pallonji Engineering and construction Limited
26	Jatin Kumar	2020BCE001	



27	Ritesh Digambar Boiwar	2020BCE009	T&T Infra Pvt.Ltd. Nanded
28	Laxmi Balaji Pawar	2020BCE011	
29	Tanuja Lalasaheb Deshmukh	2020BCE013	
30	Ajinkya Ashok Kale	2020BCE026	
31	Sanket Vilas Gude	2020BCE056	
32	Rishikesh Dinesh Kale	2021BCE502	
33	Sakshee Rajesh Fulbandhe	2021BCE507	Moniji Associates
34	Vaishnavi Vaibhav Ghadbale	2020BCE027	
35	Kiran Laxmanrao Gajbhiye	2020BCE012	Dhandai construction, Dhule
36	Priti Eknath Mali	2020BCE010	
37	Harsh Subhash Rathod	2020BCE030	
38	Harshada Ganesh Patil	2020BCE033	
39	Vedant Mallikarjun Bharti	2020BCE048	
40	Swapnali Sanjay Nikam	2020BCE059	
41	Raviraj Madhav Jaybhaye	2020BCE029	Sahil Constructions
42	Akshay Vitthalrao Bandkhadke	2020BCE034	
43	Adhave Nakul Dagadu	2020BCE064	
44	Trupti Bandu Pendor	2020BCE051	Sharda Construction & Corp. Pvt. Ltd. Nanded.
45	Gayatri Sanjay Tanmane	2020BCE016	
46	Shreya Balaji Nimadge	2020BCE021	
47	Ayodhya Sonabhau Khadekar	2020BCE023	
48	Sanjivani Datta Kokate	2020BCE046	
49	Rashi Rajesh Dhage	2020BCE050	
50	Bhumika Milind Narwade	2021BCE501	
51	Ashwini Subhash Bhujbale	2020BCE060	
52	Sawant Vyankatesh Ramrao	2021BCE503	IIT Bombay
53	Hakke Vaibhav Angadrao	2020BCE017	Arwade Infrastructure Pvt Ltd, Pune
54	Vishal Mangnale	2020BCE018	
55	Dnyaneshwar Ananda Bansode	2020BCE038	
56	Sanket Kamalakar Deshmukh	2020BCE041	
57	Pavan Jalba More	2020BCE069	
58	Tejas Ganesh Palodkar	2020BCE025	
59	Rushikesh Arun Wanare	2020BCE032	

60	Moreswar Somnath Kshirsagar	2020BCE039	Atharva Intra Engineers
61	Om Gunwant Chaudhari	2020BCE045	
62	Shantanu Deelip Dewale	2020BCE072	
63	Atharva Sudarshan Giri	2021BCE504	
64	Mayur Nina Vaidyakar	2021BCE505	
65	Piyush Kishor Deshmukh	2021BCE508	
66	Ozal Khemchand Neware	2020BCE014	Vastu Venture Developers, Nanded
67	Gitesh Madansing Fulkawar	2020BCE058	
68	Vivek Prabhakar Takalkar	2020BCE022	
69	Mogale Krushnkant Arvind	2020BCE049	
70	Kunal Gupta	2020BCE035	L&T Mumbai
71	Atharva Sunil Sawalkar	2020BCE047	TIDE-India
72	Mohit Choundiye	2020BCE063	
73	Rajat Vishwakarma	2020BCE061	Pride Group (Tentative)

*Participation in inter-institute events by students of the program of study*

Sr. No.	Name of student	Name of event	Participation/ Rank	Date	Name of Institute
1	Digvijay Kshirsagar	M <sup>3</sup>	Participation	24-25 February 2024	VJTI, Mumbai
2	Aditi Akarte	CAD War	Participation	23 March 2024	SGGSIE&T, Nanded
3	Fazlur Rahman	Digital Marketing	Participation	27-29 December 2023	IIT Bombay
4	Ajinkya Ashok Kale	CiviQ Zonal	1 <sup>st</sup>	14 March 2023	IIT Bombay
5	Satyajeet Chandrakantrao Damekar	Town Planning	1 <sup>st</sup>	23 March 2024	SGGSIE&T, Nanded
6	Satyajeet Chandrakantrao Damekar	Bridge Building	Participation	23 March 2024	SGGSIE&T, Nanded
7	Satyajeet Chandrakantrao Damekar	Workshop on “Basics of Finance & Accounting”	Participation	28-29 October 2023	SGGSIE&T-AICTE lab & Institutions Innovation Council of SGGSIE&T
8	Satyajeet Chandrakantrao Damekar	Click Nanded	Participation	17-18 February 2024	Department of Cultural Affairs, Directorate of Cultural Affairs, Mumbai and Nanded District Administration

**Memorandum of Understanding [MOU]**

<b>Sr. No.</b>	<b>Name of the Institute</b>	<b>Date of Signature</b>	<b>Duration</b>
01	Aqua [Aqua informatics Pvt. Ltd.]	Nov-2024	3 Years
02	Tide [Technology Informatics Design Endeavour]	Nov-2023	3 Years

## ***BOS Meeting***

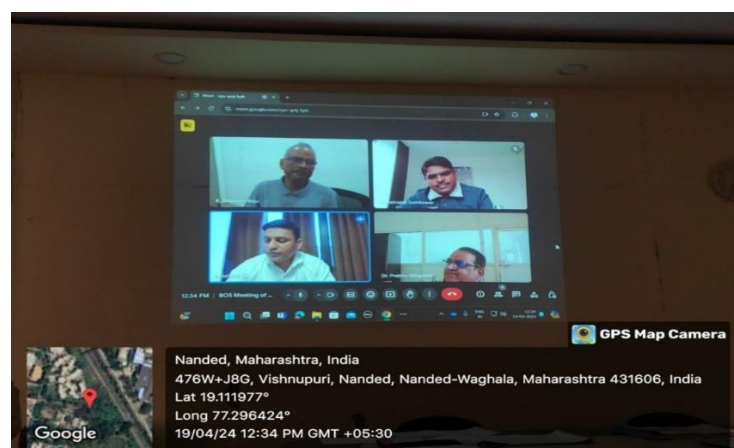
A **BOS (Board of Studies) meeting** conducted by the **Department of Civil Engineering** at **Shri Guru Gobind Singhji Institute of Engineering and Technology (SGGSIE&T), Nanded**, on **April 19, 2024**, at **11:00 AM**.

### ***Key Highlights:***

1. **Purpose of the Meeting:** The meeting focused on the discussion and reorganization of the **Second Year Civil Engineering Syllabus**, aligning with the **NEP-2020 guidelines**.
2. **Mode of Meeting:** The meeting was conducted **online**, with active participation from the listed members.
3. **Attendees:**
  - The meeting was chaired by **Prof. P. B. Ullagaddi** (Head, BOS).
  - Several faculty members from **SGGSIE&T, Nanded**, were present.
  - Notable external participants included **Mr. Chhatrapal Somkuwar** (Industry Expert from FORTRESS) and **Mr. Sandeep Zade** (Industry Expert from Tandon Associates, Mumbai).
4. **Contributions:**

Faculty members and external experts provided **suggestions for reorganizing the syllabus** to improve its structure and relevance under new academic reforms.

The document is official, stamped, and signed by **Prof. P. B. Ullagaddi**, Professor & Head of the Civil Engineering Department, SGGSIE&T. It reflects the institute's efforts to collaborate with industry experts and align academic content with national educational standards.



**Consultancy Details:**

Department has generated significant revenue through Consultancy and Research during **AY 2023-2024.**

**Undergraduate –Civil Engineering:****Program Education Objectives (PEOs)**

The Graduates will be able to:

<b>PEO1</b>	Pursue a successful career in the diversified sectors of the engineering industry and/or higher studies by acquiring knowledge in mathematical, scientific and engineering fundamentals.
<b>PEO2</b>	Analyze and design Civil Engineering systems with social awareness and responsibility.
<b>PEO3</b>	Exhibit professionalism and ethical approach through leadership, team work, good communication skills, and adapt to modern trends by engaging in lifelong learning.

**Program Outcomes (POs)**

On successful completion, graduates will be able to:

<b>PO1</b>	Apply knowledge of mathematics, science and engineering to Civil Engineering problems.
<b>PO2</b>	Identify, formulate and solve Civil Engineering problems.
<b>PO3</b>	Design various structures or particular system that meets desired specifications and requirements.
<b>PO4</b>	Design and conduct experiments, interpret and analyze data, synthesize the information to derive conclusions.
<b>PO5</b>	Select and use appropriate engineering techniques and software tools to analyze Civil Engineering problems with understanding of their applicability and limitations.
<b>PO6</b>	Assess local and global impact of societal issues on Civil Engineering profession.
<b>PO7</b>	Able to understand the impact of engineering solutions on society and demonstrate the knowledge for sustainable development.
<b>PO8</b>	Demonstrate their professional and ethical responsibilities.
<b>PO9</b>	Able to function as a member or a leader on engineering and science teams in various areas of Civil Engineering.



<b>PO10</b>	Communicate effectively in both verbal and written forms.
<b>PO11</b>	Understand and practice engineering and management principles.
<b>PO12</b>	Adapt transformations in industry through independent and lifelong learning.

### Program Specific Outcomes

<b>PSO1</b>	Establish a Civil Engineering career in industry, government or academic field and achieve professional expertise as appropriate.
<b>PSO2</b>	Execute innovation and excellence in Civil engineering problem solving and design in global and societal contexts.
<b>PSO3</b>	Commit to lifelong learning and professional development in the Civil Engineering field to stay updated in technology, research topics and contemporary issues.
<b>PSO4</b>	Understand the fundamentals of Civil Engineering in commercial contexts and in expediting construction projects.

### Postgraduate – M.Tech. Water Management:

#### Program Education Objectives (PEOs)

The Post-Graduates will be able to:

<b>PEO 1</b>	Apply water management knowledge in all phases of water resources planning and management.
<b>PEO 2</b>	Develop an ability to analyse and design integrated natural and engineered water management systems to develop economically, socially and environmentally sustainable infrastructure.
<b>PEO 3</b>	Think critically and to envisage the technical and social consequences of their actions.
<b>PEO 4</b>	Inculcate team spirit, interpersonal, and mass communication skills so as to coordinate and lead multidisciplinary engineering teams in addressing water management issues.
<b>PEO 5</b>	Imbibe spirit of inquiry in order to promote keen interest in pursuing higher studies, research and innovations.

**Program Outcomes (POs)**

On successful completion, graduates will be able to:

<b>PO 1</b>	Capability to apply in-depth engineering knowledge and use of modern technology in developing water management systems and facilities.
<b>PO 2</b>	Plan and conduct necessary experiments for use in analysis and design of water management systems.
<b>PO 3</b>	Recommend economically sustainable solutions and alternatives for water management problems by including considerations of risk, uncertainty, sustainability, life-cycle principles, and environmental impacts.
<b>PO 4</b>	Use modern/advanced techniques, tools, and skills for water management practice and research.
<b>PO 5</b>	Communicate effectively, to function with and lead/direct multidisciplinary teams and communities to achieve the goals.
<b>PO 6</b>	Understand concepts of professional practice, project management, and the roles and responsibilities of public institutions and private organizations pertaining to water management and regulations.
<b>PO 7</b>	Understand ethical and societal responsibilities as water management engineer.
<b>PO 8</b>	Recognize the need for, and an ability to engage in independent and reflective life-long learning.

**Program Specific Outcomes**

<b>PSO 1</b>	Excel in the research, innovation, design and problem solving in Water Management domain
<b>PSO 2</b>	Interact with stakeholders effectively and execute quality work within the stipulated resources.

**Postgraduate – M.Tech. Structural Engineering:****Program Education Objectives (PEOs)**

The Post-Graduates will be able to:

<b>PEO1</b>	Impart concepts of Structural Engineering through the use of analytical techniques, experiments, computer simulation methods, and other modern engineering tools in the analysis and effective design of variety of civil engineering structures.
<b>PEO2</b>	Imbibe critical thinking in analyzing a complex problem in Structural Engineering field.
<b>PEO3</b>	Develop skills of communicating structural design effectively and undertake research in upcoming areas.

**Program Outcomes (POs)**

On successful completion, graduates will be able to:

<b>PO1</b>	Acquire and be able to evaluate, analyze and synthesize current body of knowledge in Structural Engineering.
<b>PO2</b>	Be able to identify, formulate and solve complex Structural Engineering problems with independent judgment.
<b>PO3</b>	Be able to conceptualize and design Civil Engineering structures with appropriate consideration for public health and safety, environmental, cultural and societal considerations.
<b>PO4</b>	Be able to explore and extract information of complex problems including design of experiments and tools, analyze and interpret data for development of technical knowledge in Structural Engineering.
<b>PO5</b>	Be able to apply appropriate resources, techniques & tools to various problems in Structural Engineering.
<b>PO6</b>	Be able to function effectively as an individual as well as a member or leader of a multi-disciplinary team.
<b>PO7</b>	Be able to understand critical issues for professional practice such as detailing work and the interaction with various agencies during project life cycle.
<b>PO8</b>	Be able to communicate effectively on complex engineering problems by written oral and visual means to the stake holders.
<b>PO9</b>	Be able to recognize the need and have an ability to engage lifelong learning process.

<b>PO10</b>	Be able to understand and commit to professional ethics and responsibilities while carrying out research and design activities.
<b>PO11</b>	Be able to critically analyze, scrutinize and rectify one's decisions and actions and apply self- corrective measures
<b>PO12</b>	Be able to communicate effectively on complex engineering problems by written oral and visual means to the stake holders.

**Program Specific Outcomes**

<b>PSO1</b>	Excel in the research, innovation, design and problem solving in Structural Engineering domain.
<b>PSO2</b>	Interact with stakeholders effectively and execute quality work within the stipulated resources.

***Journal Paper/Conference/Book Chapter/Patent Published***

1. Kadam, K., Shinde, A., Kadam, S., and Joshi, R. (2023) “Multifunctional Door and Table” granted by the Patent Office, Government of India. Design no. 389394-001
2. Bhatkar, T., Tekade, S., & Mandal, A. (2023). Variation of earth pressure on retaining wall for different wall movement, Journal of Harbin Engineering University, Vol 44, No.9.
3. Bhoi, A., Kadam, M., Desai, A. (2023). Response of reinforced concrete buildings to earthquake and tsunami forces, ISET Journal of Earthquake Technology, Vol 59 (4), Dec 22, PP129-150.
4. Modi, A., Bhagat, C., & Mohapatra, P. K. (2024). Bio-geo-chemical trade-offs of Ganga River system: An overview on its current challenges and potential management practices. River Basin Ecohydrology in the Indian Sub-Continent, 3-21.
5. Bhagat, C., Srivastava, V., & Kumar, M. (2024). Expounding heavy metal pollution and associated risks in the River Ganga, India: A meta-analysis approach. In River Basin Ecohydrology in the Indian Sub-Continent (pp. 225-240). Elsevier.