AISSMS
COLLEGE OF ENGINEERING
ज्ञानम् सकलजनहिताय
Accredited by NAAC with "A+" Grade

CHEMIXIR NEWSLETTER

Principal: Dr. D. S. Bormane **Jan 2026 to Jun 2026** **Head of Dept: Dr. A V Mohod**

Month of Release: July 2026

Department Vision:

To be a leader in Chemical Engineering education providing service to society

Department Mission:

1. To prepare graduates for **responsible positions** in chemical industry, academia and research
2. To prepare graduates to **analyze and solve problems** of chemical industry, academia and research
3. To strengthen industry-institute interaction to develop **industry oriented attributes** like attitude, soft skills, team work and leadership

Program Educational Objectives (PEOs)

1. **Competency:** To prepare competent graduates in Chemical Engineering so that they are successful in their professional career in industry, academia or research
2. **Problem Solving Skills:** To prepare graduates who can identify, analyze, research and solve Chemical Engineering problems of practical importance to industry, academia or research
3. **Leadership Skills:** To prepare graduates with effective communication, teamwork and leadership skills so that they can play effective role in industry, academia and research institutes.

Program Specific Outcomes (PSO)

Chemical Engineering graduates will be able to

4. Identify, analyze, design and develop solutions to Chemical Engineering problems of practical importance to industry and society.
5. Demonstrate sound understanding of Chemical engineering fundamentals to solve problems through the use of modern experimental methods, computer aided design and simulation software



Dr. D S Bormane

From Principal's Desk…

It is a matter of great pride and satisfaction for AISSMS COLLEGE OF ENGINEERING to bring out the News Letter 'CHEMIXIR' Released from the Department of Chemical Engineering. The College has made tremendous progress in all areas of academic, non-academic, and capacity-building relevant to staff and students. I am confident that this issue of the Department News Letter will send a positive signal to the staff, students and the person who are interested in Technical education and Technology based activities. A News Letter is like a mirror that reflects the clear picture of all sorts of activities undertaken by a Department and develops writing skills among students in particular and teaching faculty in general my heartfelt Congratulations to staff members and Students for their fruitful effort. With Best Wishes.



Dr A V Mohod

From HOD's Desk…

Department of Chemical Engineering was established in the year 1996, with an intake capacity of 40 students for UG which was increased to 60 students in 1997. The PG program was started in 2011 with an intake of 18 students. The Department has well-qualified and experienced faculty with an average experience of 8-10 years. Faculty is also involved in research & professional activities inside & outside the campus. They are encouraged to upgrade their knowledge and qualifications The department was successful in giving consistently good academic results in the last three years and motivating the students to be involved in extracurricular and co-curricular activities like paper presentations and project competitions leading towards all-around development of our students. The Department has well-equipped laboratories with sophisticated equipment. We have organized many workshops and seminars for the students and staff.

From the Editor's Desk….

It gives us great pleasure to hand over to you "CHEMIXIR" the newsletter of the Chemical Engineering department. The department has 18 staff members and more than 180 students. All of us are involved in number of activities and working for development of the department. The Newsletter is a common platform to showcase the talents of the department. It also provides for showcasing of achievements and efforts taken by one and all which contribute towards department strengths. It is our attempt to get maximum contribution from staff and students to come together and interact through this newsletter. We try to pick the moments of guest lectures conducted by department, various industry visits carried out, competitions organized, achievements and participation by students and staff. We hope this newsletter will help in its own way to achieve our goal & realize our vision progressively. Hope you will find this newsletter informative. Your suggestions for improvement in the newsletter are welcome

Chemixir, Chemical Department Newsletter

Editorial Board

Published at: Department of Chemical Engg, All India Shri Shivaji Memorial Society's College Of Engineering, Pune - 411001



Prof. P.S.Tadkar



Ms. Priyanka Santosh Auti



Mr. Londhe Vishwajeet Vijay



Mr. Adarsh Laxman Birje

TOTAL FUNCTIONAL / LIVE MOU INITIATED BY THE DEPARTMENT

Sl.No.	Name of the collaborating agency / institution / industry / corporate house with whom the MoU / collaboration / linkage is made	Year of signing MoU / collaboration / linkage	Duration of MoU / collaboration / linkage	Actual activities under each MOU
1	Super Aqua Services, Pune	14-08-2023	3 years	Placement and Internship in WTP and STP
2	Celestial Institute of Technology, Pune	08-06-2023	3 years	Interaction regarding Waste water treatment
3	Deccan Environmental Consultants Pvt Ltd Pune	11-05-2022	1year	Internship , Expert lectures
4	Apptrain Systems, (Corporate Trainers) Vadodara (Gujarat)	11-05-2022	2 years	Expert Lectures, Assistance for Placement and Internship
5	Chemtrol Industries, Gujarat	11-05-2022	1 year	Placement and Internship
6	Bureau of Indian Standards, Pune Branch Office	04-05-2022	2 years	Acivities under ‘Standards’ Club
7	SARBI Petroleum and Chemicals Pvt Ltd. Mumbai	23-03-2022	2 years	Expert Lectures
8	TKT Consultant , Pune	23-01-2022	1 year	Expert Lectures, MOU
9	Reva Process Technology, Baner, Pune	19-01-2021	10 years	Expert Lectures, MOU
10	Techpert Process Industries, Wakad, Pune	09-01-2020	2 years	Placement, MOU and Industrial Training to students
11	Fluid Technics, Kothrud, Pune	01-01-2020	2 years	Placement, MOU
12	Marcuras Water Treatment India Pvt. Ltd., MIDC, Bhosari, Pune	30-12-2019	2 years	Placement, Industrial Training to students, MOU and Industrial Visit
13	Synergy Process Systems, Baner, Pune	30-12-2019	2 years	Placement, Expert Lectures, Resource Person, Industrial Training to Students and Faculty

				Members, MOU, Industry Institute Interaction Program and Short Term Course propsal
14	Indian Biodiesel Corporation, Baramati, Dist. Pune	11-10-2016	10 years	Project work, Internship

Expert Lectures Organized: AY 2025-2026 (Term -II)

To bridge the gap between industry and academia and to ensure that students stay informed about current trends and practices in the industry, we organize expert lectures every term of the academic year. The list of guest lectures organized during Term I of the academic year 2025–26 is as follows:

Sr.	Topic	Name of Expert	Date	Faculty Coordinator
1.	Faculty orientation program on Environment Studies	Artificial Intelligence and Data Science PVG College of Engineering, Technology and Management, Pune	29/01/2026	K N Bawankar
2.	From Campus to Corporate: A Woman's Right to Dignity and Safety	Dr. Snehal Gaur Certified POSH Trainer –HRCI, SHRM | Gender Sensitization Expert	06.03.2026	Dr. S. Sharma & Dr. M U More
3.	AISSMS Leadership Development Program	AISSM Society	16.03.2026 17.03.2026	Dr. A V Mohod
4.	Unit Operations & Unit Processes in the Industry	Mr. Mandar Shinde, Laxmi Organic Industries Ltd., Mahad	21/03/2026	Mr P M Warke
5.	Green Solutions for Hygiene	Dr. Nalinee Suryawanshi, Board Member & Executive Director, Swiss Newater, Pune India	24/03/2026	Dr M U More

6.	One day session: 'Department Advisory Board Meeting' with Industry Experts	'Standards' Club-Chemical, AISSMS COE, Pune	08/05/2026	Mr.PM Warke
7.	From Campus to Corporate – Navigating Career Options in Manufacturing & MNCs	Mrs. Neetu Patil, Head of Commercials, Pidilite Industries, Mumbai	18/04/2026	K N Bawankar
8.	From Campus to Corporate Navigating Career Options in Manufacturing & MNC's	Ms Neetu Patil, Pidilite India, Mumbai	18/04/2026	Mrs K N Bawankar
9.	Data Science in Pharma Industry	Mr Vinod Kenekar, Romaco India, Hyderabad	26/04/2026	Dr S B Ghugare
10.	'Department Advisory Board Meeting' with Industry Experts		08/05/2026 (2 hrs.)	Dr. P N Dange and Mr. P M Warke
11.	Celebration of HR Day	Institution of Engineers, Pune	19/06/2025	Mr.PM Warke

List of Social Visits organized during A. Y. (2025-26)

Sr. No.	Name of the Social Visit	Faculty Coordinator	Class (No. of Students)	Date
1.	Women's Day Celebration on 6th March 2026- Lecture given by Dr. Snehal Gaur	Dr M U More Dr S Sharma	SE, TE, BE, Chemical	06-03-2026
2.	Social Visit to Lohagad Fort	Asst. Prof. H. L. Kamble Asst. Prof. P. S. Tadkar	SE, TE, BE, Chemical (30)	29.03.2026
3.	NSS one day visit to camp in Kalyan gaon from 25th Jan 2026 to 26th Jan 2026	Dr M U More	SE, TE, BE, Chemical	29.03.2026

List of Industrial Visits organized during A. Y. (2025-26)

Sr.no	Name Of the Industry	Faculty Coordinator	Class (No. Of Students)	Date
1.	LiqSure Pvt. Ltd. Solpaur	Dr. A V Mohod	R&D interns from TE Chemical	23.01.2026
2.	S Cube Mass Transfer Pvt. Ltd., Survey No.613/4, Kuruli, Chakan, Pune	Dr. A S Jadhav	SE Chemical	03/02/2026
3.	Techpert Process Industries Pvt. Ltd. Pune	Mr. P M Warke	R&D interns from TE Chemical	04.02.2026
4.	A.T.E. HUBER Envirotech Pvt Ltd , Andheri , Mumbai	Dr. M Y Naniwadekar	R&D interns from TE Chemical	06.02.2026
5.	ChemTech World Expo, Goregaon (E), Mumbai	K N Bawankar	BE Chemical	06.02.2026

6.	Akashganag Construction Machinery Ltd., Satara	Dr. A S Jadhav	SE Chemical	14/02/2026
7.	AKASHGANGA Pvt Ltd, Satara	Dr A S Jadhav	SE Chemical	14.02.2026
8.	Vimali Soap Industries Ltd., Bhor-Shirur Rd, Bhor	Dr. A S Jadhav	BE Chemical	20/03/2026.
9.	Mapro Foods Pvt. Ltd, Pune	Mr. P. S. Tadkar and Mrs. H. L. Kamble	SE Chemical	27/03/2026

Achievements of this year:

Faculty

Awards/Recognition:

1. Dr. A V Mohod served as a Resource Person for the one-week STTP/FDP on sustainable waste and water management.
2. Dr. M Y Naniwadekar served as a Resource Person for the one-week STTP/FDP on sustainable waste and water management.
3. Mr. P M Warke, Dr. A V Mohod, Dr. M Y Naniwadekar, and Dr. M U More secured Rs. 28 Lakh R&D consultancy projects and paid internships for TE Chemical students from A.T.E. HUBER Envirotech Pvt. Ltd., Mumbai.
4. Mr. P M Warke guided 7 'Standards' Clubs, securing Rs. 2.85 Lakhs in funding for college programs.
5. Mr. P M Warke coordinated T&P activities, helping place students across engineering streams in chemical industries.
6. Mr. P M Warke judged the National Level Business Model Competition at AISSMS COE.
7. Mr. P M Warke secured Rs. 60,000 in paid internships for 8 TE Chemical students with A.T.E. HUBER Envirotech.
8. Mr. P M Warke managed Industry-Institute Interaction as Associate Dean and attended HR Day at the Institution of Engineers.
9. Mrs. K N Bawankar judged the Inter-college Marathi Kathakathan Competition at AISSMS COE.
10. Mr. P S Tadkar served as a Resource Person for the one-week STTP/FDP on sustainable waste and water management.
11. Mr. P S Tadkar earned the "IGIP International Engineering Educator" certification from Austria.
12. Mr. P S Tadkar was recognized as an NPTEL Star-Motivated Learner.
13. Mr. P S Tadkar achieved Elite status in the NPTEL course on Outcome Based Pedagogic Principles.
14. Dr. S Sharma served as a Resource Person for the one-week STTP/FDP on sustainable waste and water management.
15. Dr. M More served as a Resource Person for the one-week STTP/FDP on sustainable waste and water management.

Staff Achievements:

1. Mr. P S Tadkar completed a 4-week NPTEL course on "Outcome based Pedagogic Principles for Effective Teaching" (Feb–March 2026).
2. Mr. P S Tadkar completed an 8-week NPTEL course on "Assessment of Student Performance" (Feb–April 2026).
3. Mr. P S Tadkar completed an 8-week NPTEL course on "Effective Writing" (Feb–March 2026).
4. Dr. S. Sharma completed an 8-week NPTEL course on "Computational process design" (Jan–May 2026).

Research Publications

1. Dr. A V Mohod co-authored a research publication with faculty members from Brazil and Halliburton, India, in *Journal of The Institution of Engineers (India): Series E*.
2. Dr. A V Mohod published research with Italian members in a polymers journal.
3. Dr. A V Mohod published research with Italian members in a *Total Environment Engineering* journal.
4. Dr M Y Naniwadekar presented the paper at 2 nd International conference on Advances in Chemical and Material Sciences (ACMS-2026) IIChE Conference dated 12-14 April 2026 on the topic- Experimental Recovery of Lithium Carbonate from Discarded Mobile Phone Lithium-Ion Batteries by Acid Leaching.
5. P. N. Dange co-authored a paper titled "Redox-tuned core shell Au nanoparticles encapsulated in benzene sulphonic acid doped polypyrrole for multiplexed toxic gas detection (1-24)" in the Journal Nanoparticle Research

Financial Support

1. Ms Samruddhi Suryawanshi and Dr. A V Mohod got funding of Rs. 10000 per month for three months from Wenyan Fellowship for execution of the project Development and Characterization of Bioplastic from BSF Protein and Biopolymer for Sustainable Applications in AY 2025-26.
2. Mr Yogeshwar Ingale, Miss Sfurti Kaduskar and Mr P S Tadkar got funding of Rs 4500 from Ignited Innovators of India competition organized by Bhau Institute of Innovation, Entrepreneurship & Leadership, COEP Technological University, Pune, for the development of the plasticizer from epoxide oul in AY 2025-26

Faculty Development Programme

1. Dr. A V Mohod attended the STTP/FDP on Sustainable Waste & Water Management at AISSMS COE / ISTE (21 Mar 2026).
2. Dr. A S Jadhav attended the STTP/FDP on Sustainable Waste & Water Management at AISSMS COE / ISTE (21 Mar 2026).
3. Dr. M Y Naniwadekar attended the STTP/FDP on Sustainable Waste & Water Management at AISSMS COE / ISTE (21 Mar 2026).
4. Dr. P N Dange attended the STTP/FDP on Sustainable Waste & Water Management at AISSMS COE / ISTE (21 Mar 2026).
5. Mrs. H L Kamble attended the STTP/FDP on Sustainable Waste & Water Management at AISSMS COE / ISTE (21 Mar 2026).
6. Mr. P M Warke attended the STTP/FDP on Sustainable Waste & Water Management at AISSMS COE / ISTE (21 Mar 2026).
7. Mr. K B Gandhi attended the STTP/FDP on Sustainable Waste & Water Management at AISSMS COE / ISTE (21 Mar 2026).
8. Mr. K B Gandhi attended an FDP on Automation, Robotics, and Control with AI-ML at Pravara Rural Engg. College (2–7 Feb 2026).
9. Dr. S B Ghugare attended the STTP/FDP on Sustainable Waste & Water Management at AISSMS COE / ISTE (21 Mar 2026).
10. Mrs. K N Bawankar attended an FDP on Green Hydrogen Production at MMMIT, Gorakhpur (12–16 Jan 2026).
11. Mrs. K N Bawankar attended a Faculty Orientation on Environment Studies at PVG COE, Pune (29 Jan 2026).
12. Mrs. K N Bawankar attended the STTP/FDP on Sustainable Waste & Water Management at AISSMS COE / ISTE (21 Mar 2026).
13. Mr. P S Tadkar attended the STTP/FDP on Sustainable Waste & Water Management at AISSMS COE / ISTE (21 Mar 2026).
14. Mr. P S Tadkar completed an NPTEL-AICTE FDP on Student Performance Assessment (Feb–Apr 2026).
15. Mr. P S Tadkar completed an NPTEL-AICTE FDP on Effective Writing Assessment (Jan–Mar 2026).
16. Mr. P S Tadkar completed an NPTEL-AICTE FDP on Outcome-Based Pedagogic Principles (Feb–Mar 2026).

17. Mr. P S Tadkar attended an AICTE ATAL FDP on Energy, Sustainability & Climate Change (5–10 Jan 2026).
18. Mr. P S Tadkar attended an ISTE FDP on Transformative Engineering Pedagogy under NEP-2020 at AISSMS COE (2–7 Feb 2026).
19. Dr. S Sharma attended the STTP/FDP on Sustainable Waste & Water Management at AISSMS COE / ISTE (21 Mar 2026).
20. Dr. S Sharma attended an ISTE FDP on Transformative Engineering Pedagogy under NEP-2020 at AISSMS COE (2–7 Feb 2026)
21. Dr. M U More attended the STTP/FDP on Sustainable Waste & Water Management at AISSMS COE / ISTE (21 Mar 2026).

Online Courses

1. Mrs. K N Bawankar worked as an External Judge for Inter college Marathi Kathakathan Competition held on January 27, 2026 organized by AISSMS College of Engineering, Pune
2. Mr. P S Tadkar developed e-content on "Heat Transfer" via YouTube.
3. Dr. S. Sharma developed e-content on "Chemical Reaction Engineering" via YouTube.

Industrial Training / MOU/STTP

1. Dr. A S Jadhav attended the STTP/FDP on Sustainable Waste & Water Management at AISSMS COE / ISTE (21 Mar 2026).
2. Dr. M Y Naniwadekar attended the STTP/FDP on Sustainable Waste & Water Management at AISSMS COE / ISTE (21 Mar 2026).
3. Dr. P N Dange attended the STTP/FDP on Sustainable Waste & Water Management at AISSMS COE / ISTE (21 Mar 2026).
4. Mrs. H L Kamble attended the STTP/FDP on Sustainable Waste & Water Management at AISSMS COE / ISTE (21 Mar 2026).
5. Mr. P M Warke attended the STTP/FDP on Sustainable Waste & Water Management at AISSMS COE / ISTE (21 Mar 2026).
6. Mr. K B Gandhi attended the STTP/FDP on Sustainable Waste & Water Management at AISSMS COE / ISTE (21 Mar 2026).
7. Dr. S B Ghugare was invited as Resource Person as evaluator for Seminar Competition on Occasion of Engineers' Day 2025 Event on 17 September 2025, by the Department of Chemical

Engineering, AISSMSCOE, Pune Dr. A V Mohod attended the STTP/FDP on Sustainable Waste & Water Management at AISSMS COE / ISTE (21 Mar 2026).

8. Dr. S B Ghugare attended the STTP/FDP on Sustainable Waste & Water Management at AISSMS COE / ISTE (21 Mar 2026).
9. Mrs. K N Bawankar attended the STTP/FDP on Sustainable Waste & Water Management at AISSMS COE / ISTE (21 Mar 2026).
10. Mr. P S Tadkar attended the STTP/FDP on Sustainable Waste & Water Management at AISSMS COE / ISTE (21 Mar 2026).

Students Achievements

Sr. No.	Name of Student/ Students	Event Name	Event Organised by	Prize/Rank /Achievement
1.	Ms Samruddhi Suryawanshi			Funding of Rs. 10000 per month for three months from Wenyan Fellowship
2.	Mr Yogeshwar Ingale, Miss Sfurti Kaduskar		Organized by Bhau Institute of Innovation, Entrepreneurship & Leadership, COEP Technological University, Pune,	funding of Rs 4500 from Ignited Innovators of India competition
3.	Mr Adarsh Birje and Miss Priyanka Auti	Technical Poster competition	Syntropy 2026 AICHE STUDENT CHAPTER, MIT WPU.	Runner up
4.	Mr Adarsh Birje and Miss Priyanka Auti	Technical Poster competition	organised by Shri Bhagubahi Mafatlal Polytechnic and College of Engineering Mumbai	First prize
5.	Sayali Patil and Neha Tambe	Technofiesta – Innovate X	Dr. D. Y. Patil Institute of Technology,Pune	Second Prize
6.	Sayali Patil and Neha Tambe	Technical Poster competition	organised by Shri Bhagubahi Mafatlal Polytechnic and College of Engineering Mumbai	Third Prize

7.	Mr. Yash Kamble	GATE		AIR rank 168
8.	Mr. Pratish Mane	GATE		AIR rank 778
9.	Pratiksha Hadse	Ministry of Electronics & Information Technology (MeitY), Govt. of India	Conducted by NIELIT.	National Level
10.	Mrunal Gatkul	Zest 2026	Organized by COEP	secured Silver Medal.
11.	Hariom Kute	Zest 2026	Organized by COEP	secured Gold Medal.
12.	Sahej Pardeshi	Zest 2026	Organized by COEP	secured Gold Medal.
13.	Chaitanya Nimbalkar	Rajarshi Shahu Maharaj Krida Mahotsav 2026	Organized by AISSMS,COE	secured Silver Medal.
14.	Atharva Kharadekar	Elevate	organized by APCOER	secured Silver Medal.
15.	Pratham Dhage	Elevate	Organized by APCOER	secured Silver Medal.

Students Placed

Sr No	Name of Student Placed	Name of Organization	Package Rs. LPA
1	Siddharth Kinagi	Thermax Ltd., Pune	5.0
2	Akhilesh Patra	Thermax Ltd., Pune	5.0
3	Sanskar Jadhav	Reliance Industries Ltd. (RIL)	7.5 with bonus 2.0
4	Rohit Korade	RIL	7.5 with bonus 2.0
5	Yogesh Chaudhari	RIL	7.5 with bonus 2.0
6	Jaydip Deshmukh	RIL	7.5 with bonus 2.0
7	Sfurti Kaduskar	UPL, Ahmedabad	5.25
8	Kumar Gome	UPL, Ahmedabad	5.25
9	Vaishnavi Rokade	Solar Industries India Ltd., Nagpur	5.5
10	Shruti Kothawade	Solar Industries India Ltd., Nagpur	5.5
11	Samruddhi Suryavanshi	Solar Industries India Ltd., Nagpur	5.5
12	Satyam Raut	Solar Industries India Ltd., Nagpur	5.5
13	Sarthak Phalke	Laxmi Organic Industries Ltd., Mahad	2.76
14	Samruddhi Ingale	Laxmi Organic Industries Ltd., Mahad	2.76
15	Mayur Tandalekar	Quatech Engineering Solutions Pvt. Ltd., Mumbai	2.88
16	Sujal Shedge	Mincem Engineering Consultants Pvt. Ltd.,Pune	3.6
17	Krishna Swami	Wex Technologies, Pune	4.25

18	Mahesh Khandagale	Cosmofilms Ltd., Chhatrapati Sambhaji Nagar	2.5
19	Jayesh Marathe	Cosmofilms Ltd., Chhatrapati Sambhaji Nagar	2.5
20	Shubham Gore	Finolex Cables Ltd, Pune	2.5
21	Smruti Chandankhede	Marcuras Water Treatment (India) Ltd., Pune	2.16
22	Nikita Sinha	CH Four Energy Solutions, Pune	2.4
23	Jyotiraditya Yesugade	Finolex Cables Ltd, Pune	2.5
24	Narayan Jagtap	Cosmofilms Ltd., Chhatrapati Sambhaji Nagar	2.5
25	Sidhant Dhoke	Finolex Cables Ltd, Pune	2.5
26	Vaibhav Kurhade	Clean Science TechnologiesLtd., Pune	Selected but not joined
27	Prathmesh Jadhav	Nicco Engineering Services Ltd., Kolkata	3.24
28	Prathmesh Kukade	Grasim Industries Ltd., Kalyan	2.16
29	Shaikh Mustakim Faruk	Shaya Polymers Ltd., Pune	3.24
30	Kalyani Rokade	Atharva Metafin Pvt. Ltd., Pune	Internship of 02 months - Job

Program Outcomes (PO)

Engineering Graduates will be able to:

- **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

- **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

- **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

- **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

- **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

- **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

- **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary setting

- **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

- **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

- **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.