

1. Q: How is the program structured?

A: Every program at SNIOE is tracked through completion of “credits”. In our department, the student must complete 163 credits, out of which 123 credits are through common/departmental core/electives, and remaining 40 are through any inter-university courses called UWE/CCCs that students can take based on their interest. Exact details are mentioned in the attached curriculum.

2. Q: What is the Minor program?

A: The student, while pursuing a major in chemical engineering, will further have an option to do minors in other departments if they find interest (eg: computer science, economics, mathematics, etc). In that case, the target department will specify the courses to be taken as UWE/CCC.

3. Q: What is specialization?

A: The student, while pursuing a major in chemical engineering, will further have an option to do specialization if they find interest. In that case, they must choose departmental elective courses as mentioned in the curriculum.

4. Q: Is it necessary to choose minors/ specialization during admission?

A: Not at all. The first year is common to all students. In the first year the students will understand all the intricacies of the program and will make choices in consultation with the departmental undergraduate advisor (UGA), a dedicated faculty for curriculum-related issues and more.

5. Q: How do students decide whether to pursue industry placements or higher education after graduation?

A: Throughout the four-year undergraduate program, students are systematically exposed to both industrial and research-oriented experiences. They work on projects related to real-world industrial problems as well as research-based investigations, allowing them to understand the practical and academic dimensions of Chemical Engineering. In addition, students regularly interact with experts from industry and academia through invited talks, seminars, workshops and conferences conducted multiple times each semester. These interactions provide insight into career pathways, emerging technologies and long-term prospects in both domains. Based on these academic exposures, professional interactions and their evolving interests and strengths, students make an informed decision, whether to opt for campus placements in industry or pursue higher education and research opportunities.

6. Q: How students get internship?

A: Students actively apply for both industrial internships and academic/research internships during their undergraduate program. While internships are not mandatory, they are strongly encouraged, and students receive continuous guidance from faculty members as well as the Career Development Center (CDC) throughout the application process. Students are supported in identifying suitable opportunities, preparing their CVs, drafting emails to professors or companies, and preparing for interviews. Many students also take the initiative to apply independently, particularly for research internships at premier academic institutions. Over the years, our students have secured internship opportunities at leading institutes such as IIT Bombay, IIT Madras, IISc and IIT

Kanpur, among others. At these institutions, students gain valuable exposure to advanced research environments as well as industry-oriented projects. This experience helps them build technical competence, clarify their career interests, and strengthen their profiles for both higher education and placements. For internships initiated by the students themselves, approval by the department is necessary to evaluate the internship objectives alignment with the departmental mission and vision.

7. Q: Growth in chemical industry, what are top industries in chemical and their recruitment process.

A: Chemical industries involving various process-intensive sectors are experiencing tremendous growth especially sustainable energy, advanced materials, pharmaceuticals, paper, textile, cement, polymer, leather, paints, fertilizers, petrochemicals, etc. with advanced process intensification using AI/ML. In India, as well as globally, the other closely aligned sectors continue to expand due to demand in infrastructure, healthcare, specialty chemicals, and clean technologies.

Public Sector Undertakings such as Indian Oil Corporation (IOCL), Oil and Natural Gas Corporation (ONGC), and Bharat Petroleum (BPCL), Hindustan Petroleum Corporation Limited (HPCL), Coal India, GAIL, NTPC, primarily recruit centrally through GATE (Graduate Aptitude Test in Engineering) scores. We strongly encourage all students to appear for the GATE Exam, as it opens doors to PSU careers, strengthens core technical knowledge, helps in preparation for competitive exams, enhances performance in technical interviews, and supports applications for higher education (M.Tech/MS/PhD). Faculty members actively provide counselling and structured guidance for GATE preparation. Mentorship sessions, problem-solving discussions, and subject revision support help students prepare effectively.

8. Q: Can Chemical Engineering graduates get jobs in big software companies like Microsoft or Google?

A: Yes, Chemical Engineering graduates are eligible to apply to leading software and technology companies such as Microsoft and Google, especially if they build strong skills in programming, data analytics, AI/ML or related domains alongside their core studies. At the same time, it is important to recognize that the core sector also offers excellent global opportunities. Major multinational companies such as Shell, BASF, Dow Chemicals, Sinopec, and SABIC actively recruit Chemical Engineers, often offering highly competitive and attractive compensation packages comparable to leading software firms.

In addition, our graduates have successfully built careers in top non-core sectors including consulting, defense, aviation, analytics and other interdisciplinary industries, demonstrating the versatility and wide career scope of a Chemical Engineering degree. In addition to their core curriculum, students have the opportunity to pursue a Minor program in a university-wide discipline of their choice, such as Economics, Computer Science, Biotechnology and other emerging areas. Upon completion, they graduate with a Major in Chemical Engineering along with a **Minor in the chosen discipline**, which is different from the department specialization. This interdisciplinary combination enhances their academic profile and broadens their career prospects. By complementing Chemical Engineering with a minor in areas like computing, management, or life sciences, students become eligible for a wider range of

roles across technology, analytics, finance, biotech, consulting, and other relevant industries, thereby significantly expanding their placement opportunities.

Furthermore, the comparative growth in process industries is much faster if the students spend a couple of years in the plant because industry is always in dire need of experienced chemical/process engineers. Their career flourishes by the age of 35-40, while it stagnates in other industries especially IT.

9. Q. Regarding safety in chemical industries and chemical labs, will students and graduates get exposed to harsh chemicals and equipment-handling environment?

A. This is a very valid concern, and safety is a top priority both during academics and in professional careers. In our undergraduate program, laboratory courses are designed with strict safety standards. Students typically work with mild chemicals in controlled environments and are provided with complete personal protective equipment (PPE) and proper safety training. All research laboratories follow rigorous safety protocols, standard operating procedures, and compliance guidelines to ensure a secure working environment. With respect to careers in the chemical industry, most entry-level roles offered to graduates are Supervisory, Engineering Trainee, or Managerial in nature. These roles primarily involve monitoring, controlling, and optimizing plant operations rather than direct manual handling of chemicals or equipment. Modern chemical plants are highly automated, with operations controlled through distributed control systems (DCS) and centralized control rooms. In fact, many of our graduates working in core industries hold positions such as Business Analysts, Project Managers, R&D Analysts, Sales Managers, Process Engineering Scientists, and Process Engineers. These roles are largely office-based or control-room-based, focusing on analysis, design, optimization, safety compliance, and decision-making rather than direct exposure to hazardous environments. Overall, today's chemical industry emphasizes automation, regulatory compliance, and stringent safety standards, making it a highly structured and professionally managed work environment.

10. Q: Specifically, is chemical engineering safe for girl students?

A: Absolutely. In fact, collectively female students make-up about 60% of our student strength, with some of the batches having as high as 80% female students. For now, we have two female faculty, and minimum 2-3 female staff working in our labs at all times. Contrary to the perception, our involvement with mild chemicals is bare minimum for undergraduate laboratory sessions. We do enforce safety standards, and entire SNIoE is ISO14001 and ISO45001 certified after a rigorous evaluation of the safety protocols by government agencies.

11. Q: Do students interact with seniors /professors on making various decisions?

A: Yes, students are strongly supported through continuous interaction with both senior students and faculty members. Senior students play an important mentoring role by guiding juniors in academics, internships, extracurricular activities, and even in adjusting to campus life. This peer support system helps students make informed decisions based on shared experiences. The department also encourages students to participate in various technical and cultural clubs, allowing them to explore their interests, build leadership skills, and develop confidence beyond the classroom. On the academic side, faculty members closely monitor student progress through regular interactions and class

committee meetings. These meetings provide a structured platform to identify areas of improvement and ensure that students stay on track academically. Additionally, the department appoints a dedicated Undergraduate (UG) Advisor who serves as the primary faculty point of contact for students to discuss academic planning, course selection, higher education options, and other concerns. At the university level, professional counseling teams are also available to support students in personal, emotional, or career-related matters, ensuring holistic guidance throughout their undergraduate journey.

12. Q: How and when should students apply for higher education after graduation? Will they receive guidance from the institute?

A: Students are guided through the higher education application process during their final year. The Career Development Center (CDC) conducts structured sessions covering the entire procedure, right from identifying suitable universities to understanding application protocols and deadlines. Workshops are organized on CV preparation, Statement of Purpose (SOP) formatting and mock interviews to help students present themselves effectively. Dedicated mentors are assigned to support students throughout the application and admission process. In addition, faculty members actively assist by providing strong letters of recommendation and guiding students in shortlisting universities aligned with their academic profile and career goals. Support is also extended for company placements, ensuring students are well-prepared for both higher studies and professional opportunities.