



BACHELOR OF SCIENCE Chemical Engineering

Chemical engineers play significant roles in the conceptualization of a new or improved product and the process to manufacture it as well as in the development, design, operation, and improvement of those processes.

The Bachelor of Science In Chemical Engineering (BS CHEM E) program aims to build competencies needed in collaborative investigation and solution of complex process problems and in making ethical, professional decisions that minimize cost and impact to health, safety and environment.

The program begins with students acquiring foundational knowledge on natural sciences and mathematics, holistic understanding, civic competencies, and skills to use basic engineering tools.

Students then undergo learning experiences that enable them for chemical engineering analysis and design in collaborative teams.

In the final year, students are required to demonstrate abilities for analysis, synthesis, design, research, communication and interpersonal skills through team-based capstone projects on chemical process and product design, research-based thesis, and industry internship.



UNIVERSITY of SAN CARLOS
SCIENTIA • VIRTUS • DEVOTIO

The Program in Chemical Engineering builds competencies for these jobs:

Manufacturing Industry

- Process engineers
- Product engineers
- Production manager/supervisors
- Manufacturing operations engineer
- Plant managers
- Pollution control officer
- Safety engineers
- Quality assurance engineer

Professional, Scientific and Technical Services

- Process design engineers
- Product development engineers
- Patent engineers
- Research and development engineer
- Engineering consultants
- Technical sales engineer

Government Service & Business

- Environmental management specialists
- Technical advisers
- Technopreneurs

Academe

- Research associates
- Graduate students

- Chemistry for Engineers
- Physics for Engineers
- Analytical Chemistry
- Organic Chemistry
- Physical Chemistry for Engineers 1 and 2
- Calculus 1 and 2
- Differential Equations with ChE Applications
- Engineering Data Analysis
- Engineering Mechanics
- Engineering Economics

CORE COURSES

- Engineering Management
- Computer Fundamentals and Programming
- Computer-Aided Drafting
- Technopreneurship
- Environmental Science and Engineering Fundamentals
- Materials Science and Engineering Fundamentals
- Electrical and Electronics Engineering Fundamentals

PROFESSIONAL COURSES

- Material and Energy Balance Calculations
- Fluid Transport Principles and Applications
- Thermodynamic Analysis of Processes
- Thermodynamic Analysis and Modeling of Mixtures
- Chemical Process Industries
- Mathematical Models and Solution Techniques in Chemical Engineering
- Analysis and Design of Heat and Mass Transfer Equipment
- Analysis and Design of Chemical Reactors
- Analysis and Design of Separation Process Equipment
- Analysis and Design of Particle Handling and Treatment Operations
- Analysis and Synthesis of Bioprocesses
- Analysis and Design of Process Control Systems
- Laboratory Simulation of Industrial Product Manufacture
- Chemical Engineering Laboratory Investigations 1
- Chemical Engineering Laboratory Investigations 2
- Chemical Product Development and Process Design 1
- Chemical Product Development and Process Design 2
- Chemical Engineering Research 1
- Chemical Engineering Research 2
- Management and Control of Industrial Wastes
- Plant Inspections and Seminars
- Legal and Ethical Considerations in Chemical Engineering Practice
- Chemical Engineering Industry Internship

ELECTIVE COURSES

- Fuels & Energy Production
- Commodity, Bulk and Specialty Chemical Production
- Minerals and Materials Processing
- Pharmaceuticals, Food and Water Production
- Environmental and Engineering Management
- Technopreneurial Management

