COLLEGE OF ENGINEERING
Chemical & Environmental Engineering

Approved Engineering Electives for Chemical Engineers

ABE 455: Soil and Water Resources Engineering
ABE 475A: Applied Plant Physiology
ABE 479: Applied Instrumentation for Controlled Environment Agriculture
AME 300: Instrumentation Laboratory
AME 313: Aerospace/Mechanical Engineering Laboratory
AME 324A: Mechanical Behavior of Engineering Materials
AME 480: Introduction to Nuclear Engineering
ATMO 469B/569B: Air Pollution II – Aerosols
BME 416: Biomedical Imaging
CE 381: Construction Engineering Management
CHEE 370R: Environmental Water Engineering
CHEE 400R: Water Chemistry for Engineers
CHEE 412: Electrochemical Engineering
CHEE 415: Microelectronics Manufacturing and the Environment
CHEE 435: Corrosion and Degradation
CHEE 436: Engineering Innovation
CHEE 437: Surface Science
CHEE 474: Fate and Transport Processes in Environmental Engineering
CHEE 476A: Water Treatment System Design
CHEE 476B: Wastewater Treatment Design System
CHEE 478: Introduction to Hazardous Waste Management
CHEE 481A: Engineering of Biological Processes
CHEE 482/582: Analysis of Emerging Environmental Contaminants
CHEE 487: Topics in Transport Phenomena
CHEE 489/589: Trends in Nanomedicine Engineering – Fundamentals of Therapeutics and Drug Delivery Systems
ECE 304A: Design of Electronic Circuits
ECE 320A: Circuit Theory
ECE 330B: Computational Techniques
ECE 351C: Electronic Circuits
ECE 373: Object-Oriented Software Design
ECE 446: Semiconductor Processing
ECE 474A: Computer-Aided Design
ENGR 452/ENGR 552: Globalization, Sustainability and Innovation
ENGR 498A: Cross-disciplinary Design (if not used as senior design)
ENGR 498B: Cross-disciplinary Design (if not used as senior design)
MNE 411: Mineral Processing
MSE 331R: Fundamentals of Materials for Engineers
MSE 434: Electrical and Optical Properties of Materials
MSE 446: Semiconductor Processing
MSE 450: Materials Selection for the Environment
MSE 455: Physical Metallurgy and Processing of Alloys
MSE 460: Materials Science in Polymers
MSE 462: Materials Aspect/Composite Materials
SIE 321: Probabilistic Models in Operations Research
SIE 406: Quality Engineering
SIE 408: Reliability Engineering
SIE 410A: Human Factors & Ergonomics in Design
SIE 415: Technical Sales and Marketing
SIE 457: Project Management
SIE 482: Lean Engineering

Only 3 units total from the following courses may count toward your degree:

CHEE 391: Preceptorship
CHEE 399: Independent Study
CHEE 491: Preceptorship
CHEE 499: Independent Study
Other electives must be approved by the CHEE academic adviser, who can be reached at advisor@chee.arizona.edu.

Options for Chemical Engineers

Environmental Engineering

If you want an environmental engineering option within chemical engineering, you will need to take the following elective courses in addition to the regular chemical engineering curriculum:

Engineering electives (6 units):
CHEE 370: Water Sup/Wastewater, CHEE 476: Water/Wastewater Treatment Process

Technical electives (6 units):
Choose from the following courses: CHEE 415, 469A, 478, 481, CEEM 423, HWR 450A/B, 438, 478, 490, SWES 325, 425, 438, 440, 466, 470

Premedical Students

If you want to major in chemical engineering and go on to medical school, take these electives:

Engineering electives (6 units): CHEE 481A, BME 416 and/or BME 417

Technical electives (6 units): BIOL 181 and 182 (these are 4-unit courses; premedical students will have 130 units upon graduation)

Tier II General Education: Psychology, anthropology or sociology are recommended.

Biomedical Engineering

Advanced science: BME 410, BME 411 or PSIO 403
Engineering electives: Either BME 416 or BME 417

Technical electives (two from the following list): ABE 423, AME 466, BME 416 (if not taken as engineering elective), BME 417 (if not taken as engineering elective), CHEE 481, MSE 461, PHYS 402, PHYS 430

Biomedical Engineering Accelerated MS

Take 12 units as technical and engineering electives from the following:

BME 517: Bioinstrumentation
BME 561: Biomaterials
BME 566: Biomechanics
BME 516: Bioimaging