

The goals of the program are

- to give students a strong education in the fundamentals of physics, engineering, applied mathematics, and computation;
- to develop skill in real-world problem solving starting from fundamental physical principles;
- to improve communication skills; and
- to develop ability to work in a team.

The student must choose either the Electrical Engineering Option or the Mechanical Engineering Option. The requirements are listed below. Students must earn a C or better in all required courses.

Requirements for Electrical Option (128 credits)

Physics (40 credits)

PHYS 213, Mechanics.....	3
PHYS 213L, Experimental Mechanics.....	1
PHYS 214, Electricity and Magnetism.....	3
PHYS 214L, Electricity and Magnetism Laboratory.....	1
PHYS 217, Heat, Light, and Sound.....	3
PHYS 217L, Experimental Heat, Light, and Sound.....	1
PHYS 315, Modern Physics, or PHYS 325, Semiconductor Materials and Devices.....	3
PHYS 315L, Experimental Modern Physics.....	2
PHYS 451, Intermediate Mechanics I.....	3
PHYS 454, Intermediate Modern Physics I.....	3
PHYS 455, Intermediate Modern Physics II.....	3
PHYS 475, Advanced Experimental Modern Physics, or PHYS 471, Modern Experimental Optics.....	2
PHYS 480, Thermodynamics.....	3
PHYS 495, Mathematical Methods of Physics I.....	3
Physics electives.....	6

Electrical Engineering (41 credits)

E E 111, Introduction to Electrical and Computer Engineering.....	4
E E 161, Computer-Aided Problem Solving.....	4
E E 211, AC Circuits.....	4
E E 221, Electronics I.....	4
E E 261, Digital Design I.....	4
E E 311, Signals and Systems.....	4
E E 315, Electromagnetics I.....	4
E E 341, Control Systems, or E E 332, Introduction to Electrical Power Engineering.....	4
E E 498, Capstone Design I.....	3
E E 499, Capstone Design II.....	3
Electrical engineering elective.....	3

Mathematics (15 credits)

MATH 191, Calculus and Analytic Geometry I.....	3
MATH 192, Calculus and Analytic Geometry II.....	3
MATH 291, Calculus and Analytic Geometry III.....	3
MATH 391, Vector Analysis.....	3
MATH 392, Ordinary Differential Equations.....	3

Natural Science (4 credits)

CHEM 111, General Chemistry I.....	4
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Additional General Education Requirements (28 credits)

ENGL 111G, Rhetoric and Composition.....	4
ENGL 218G, Technical and Scientific Communication.....	3
Critical thinking/analysis elective (non-computer).....	3
Historical perspective elective.....	3
Human thought elective.....	3
Social analysis elective.....	3
Literature/fine arts elective.....	3
Viewing a Wider World electives*.....	6

*Viewing a Wider World courses cannot be taken in engineering or physics.

Requirements for Mechanical Option (129 credits)

Physics (37 credits)

PHYS 213, Mechanics.....	3
PHYS 213L, Experimental Mechanics.....	1
PHYS 214, Electricity and Magnetism.....	3
PHYS 214L, Electricity and Magnetism Laboratory.....	1

PHYS 217, Heat, Light, and Sound.....	3
PHYS 217L, Experimental Heat, Light, and Sound.....	1
PHYS 315, Modern Physics, or PHYS 325, Semiconductor Materials and Devices.....	3
PHYS 315L, Experimental Modern Physics.....	2
PHYS 454, Intermediate Modern Physics I.....	3
PHYS 455, Intermediate Modern Physics II.....	3
PHYS 461, Intermediate Electricity and Magnetism I.....	3
PHYS 462, Intermediate Electricity and Magnetism II.....	3
PHYS 475, Advanced Experimental Modern Physics, or PHYS 471, Modern Experimental Optics.....	3/2
PHYS 495, Mathematical Methods of Physics I.....	3
Physics elective.....	3

Mechanical Engineering (45 credits)

M E 102, Introduction to Mechanical Engineering.....	3
M E 159, Graphical Communication and Design.....	3
M E 235, Mechanics of Materials.....	3
M E 236, Engineering Mechanics I.....	3
M E 237, Engineering Mechanics II.....	3
M E 240, Thermodynamics.....	3
M E 260, Mechanical Engineering Problem Solving.....	3
M E 328, Engineering Analysis I.....	3
M E 329, Engineering Analysis II.....	3
M E 333, Intermediate Dynamics.....	3
M E 338, Fluid Mechanics.....	3
M E 341, Heat Transfer.....	3
M E 426, Design Project Laboratory I.....	3
M E 427, Design Project Laboratory II.....	3
M E 449, Senior Seminar.....	1
Engineering elective.....	3

Mathematics (15 credits)

MATH 191, Calculus and Analytic Geometry I.....	3
MATH 192, Calculus and Analytic Geometry II.....	3
MATH 291, Calculus and Analytic Geometry III.....	3
MATH 392, Ordinary Differential Equations.....	3
Math elective from M E list.....	3

Natural Science (4 credits)

CHEM 111, General Chemistry I.....	4
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Additional General Education requirements (28 credits)

ENGL 111G, Rhetoric and Composition.....	4
ENGL 218G, Technical and Scientific Communication.....	3
Critical thinking/analysis elective (non-computer).....	3
Historical perspective elective.....	3
Human thought elective.....	3
Social analysis elective.....	3
Literature/fine arts elective.....	3
Viewing a Wider World electives*.....	6

*Viewing a Wider World courses may not be taken in engineering or physics.

CHEMICAL ENGINEERING

Professor Charles L. Johnson, department head

Professors Long*†, Johnson, Munson-McGee, Patton (emeritus), Roubicek (emeritus), Wilson (emeritus); **Associate Professors** Andersen, Mitchell, Rockstraw*; **Assistant Professor** Creed; **College Professor** Del Valle†
(505) 646-1214

*Registered Professional Engineer (NM)

†Registered Professional Engineer (State other than NM)

DEGREE: Bachelor of Science in Chemical Engineering

Chemical engineers combine their knowledge of science, mathematics, and physics with their expertise in engineering analysis to solve industrial problems in both the private and public sectors. An undergraduate degree leads to an exciting career in fields such as computer chip manufacturing; environmental restoration and pollution prevention; biotechnology and bioengineering;