Program: Engineering Physics
Major: Engineering Physics - Physics
Degree: Bachelor of Science (B.S.)

Dept: Engineering and Physics
College: Mathematics and Science
Major Code: 6243

University Core  (Total Listed 42-44)

Specific courses within the University Core are listed on pages 96-97.
• Courses from the major may apply to the areas marked in the University Core.

Written and Oral Communication ........................................ 9
Quantitative Reasoning/Scientific Method ................................. 10-11
• Math .......................................................... 3
  Life Science ............................................... 4
• Physical Science ........................................... 3-4

Critical Inquiry and Aesthetic Analysis ..................................... 6
Aesthetic Analysis ......................................................... 3
• Critical Inquiry ............................................... 3

Support Courses

Support Courses ..........................................................9-18
PHIL 1123 Contemporary Moral Problems
ECON 1103 Introduction to Economics
FMKT 2323 Global Protocol and Diversity
(or Foreign Language)
*MATH 1533 Algebra for STEM OR Placement Score AND
*MATH 1593 Plane Trigonometry OR Placement Score

*A grade of ‘C’ or better is required for both MATH 1533 and 1593 to take MATH 2313.

Students majoring in the Engineering Physics program are encouraged to complete the following course in high school.

One year of high school physics OR
PHY 1003 Introduction to Physics

Major Requirements

Engineering Physics - Physics ...........................................91-96

Physics ................................................................. 23
Required courses .......................................................... 17
PHY 2014 Physics for Science and Engineering I and Lab
PHY 2114 Physics for Science and Engineering II and Lab
PHY 3103 Modern Physics
PHY 3883 Mathematical Physics I
*PHY 4203 Quantum Mechanics
*Physics or Engineering Elective ......................................... 3
  4000-level PHY, ENGR, or BME course
*Physics Elective ...................................................... 3
  4000-level PHY course

Engineering .............................................................. 48
Required courses .......................................................... 45
ENGR 1112 Introduction to Engineering and Laboratory
ENGR 1213 Engineering Computing and Laboratory
ENGR 2033 Statics
ENGR 2043 Dynamics
ENGR 2303 Electrical Science

American Historical and Political Analysis .............................. 6
American National Government ......................................... 3
American History ......................................................... 3
• Cultural and Language Analysis ................................... 3-4
Second Language ......................................................... 4
OR
Cultural Analysis ........................................................ 3
• Social and Behavioral Analysis ...................................... 3

Life Skills ........................................................................ 5
Required Health Course .................................................. 2
• Elective Life Skills .................................................. 3

Minimum Required Hours

Minimum Required Hours

ENGR 2311 Electrical Science Laboratory
#ENGR 3183 Electromagnetic Fields I
ENGR 3203 Thermodynamics
ENGR 3303 Engineering Probability and Statistics
#ENGR 3323 Signals and Systems
ENGR 3331 Signals and Systems Laboratory
ENGR 3403 Analog Electronics
ENGR 3421 Analog Electronics Laboratory
#ENGR 3443 Fluid Mechanics
ENGR 3703 Computational Methods in Engineering
ENGR 4263 Engineering Optics
#ENGR 4882 Senior Engineering Design I
#ENGR 4892 Senior Engineering Design II

Engineering Electives ..................................................... 3
Any 2000-level, 3000-level, or 4000-level ENGR or BME course

Mathematics ...................................................................... 15

Required courses:
MATH 2313 Calculus 1
MATH 2323 Calculus 2
MATH 2333 Calculus 3
MATH 2343 Calculus 4
MATH 3103 Differential Equations

Chemistry ......................................................................... 5-10

Required courses:
CHEM 1315 Chemistry for Engineering and Lab
OR
CHEM 1103 General Chemistry I AND
CHEM 1112 General Chemistry I Recitation/Laboratory AND
CHEM 1223 General Chemistry II AND
CHEM 1232 General Chemistry II Recitation/Laboratory

*Students in the Accelerated BS/MS program in Engineering Physics must enroll in the graduate level versions of this course. Students may take only three 5000-level courses as part of the accelerated program.

# Admission into Engineering and Physics Upper Division is required.

- CONTINUED ON NEXT PAGE -
Program: Engineering Physics - continued
Major: Engineering Physics - Physics
Degree: Bachelor of Science (B.S.)

- CONTINUED FROM PREVIOUS PAGE -

Electives to bring total to ........................................... 124*

*Total hours required for this major may exceed the minimum 124 credit hour institutional requirement and will vary according to course selection. It is recommended students complete high school algebra II, trigonometry, physics and two years of a second language in high school.

Minimum Grade Requirements
1. Average in (a) all college course work, and (b) course work at UCO .............................................................. 2.00
2. A minimum grade of “C” must be earned in all courses in the major to count toward meeting degree requirements.

For other regulations pertaining to graduation, see pages 67-68 of the 2017-2018 catalog.

Admission into Engineering and Physics Upper Division
Students seeking the B.S. in Biomedical Engineering, Engineering Physics – Electrical Engineering, Engineering Physics – Mechanical Engineering, and Engineering Physics – Physics are required to make formal application to the Chairperson of the Department of Engineering and Physics for admission into the upper division of each of these majors. Applications must be submitted to the Department of Engineering and Physics on or before the last Monday of January for Fall admission and the last Monday of August for Spring admission.

Upper division admission is open to students meeting Engineering and Physics upper division admission requirements. To be admitted into upper division, the student must have:

• A minimum retention grade point average (GPA) of 2.00 in all course work completed by the time the student is formally admitted into upper division.
• Completed 60 semester credit hours by the time the student is formally admitted into upper division.
• Completed the following courses or their equivalent with a minimum grade of “C” by the time the student is formally admitted into upper division:
  MATH 2313 Calculus 1
  MATH 2323 Calculus 2
  MATH 2333 Calculus 3
  MATH 2343 Calculus 4
  MATH 3103 Differential Equations (Recommended)
  PHY 2014 Physics for Science & Engineering I & Lab
  PHY 2114 Physics for Science & Engineering II & Lab
  ENGR 1112 Introduction to Engineering & Lab
  ENGR 1213 Engineering Computing & Lab
  ENGR 2033 Statics
  ENGR 2303 Electrical Science
  ENGR 2311 Electrical Science Lab
  ENGR 3303 Engineering Probability and Statistics (Recommended)
  CHEM 1103 General Chemistry I OR (for Biomedical Engineering)
  CHEM 1315 Chemistry for Engineering and Lab (for Engineering Physics-Electrical Engineering, Mechanical Engineering, and Physics)

Formal approval by the department Faculty Advisor and Department Chair is required for admission. Preference is given to University of Central Oklahoma students. The student may enroll in no more than nine (9) hours of 3000 and 4000 level courses in the major prior to admission into upper division unless they secure formal approval from the Department of Engineering and Physics.