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

Dept: Engineering and Physics  
College: Mathematics and Science  
Major Code: 6220

University Core  (Total Listed 42-44)

Specific courses within the University Core are listed on pages 90-91.  
• 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.........................................................9-19
PHIL  1123 Contemporary Moral Problems
ECON  1103 Introduction to Economics
FMKT  2323 Global Protocol and Diversity
  (or Foreign Language)

Students majoring in Biomedical Engineering are encouraged to  
complete the following courses in high school.

One year of High School Algebra II and Trigonometry  
OR
MATH  1513 College Algebra  
MATH  1593 Plane Trigonometry  
MATH  1555 College Algebra and Trigonometry

One year High School Physics  
OR
PHY  1003 Introduction to Physics

Major Requirements

Biomedical Engineering.................................................98-101

Biology ................................................................. 11
Required courses:
BIO  1204 Biology I for Majors
BIO  2203 Cell Biology
BIO  2604 Human Physiology and Laboratory

Chemistry ............................................................... 5
Required courses:
CHEM  1103 General Chemistry I
CHEM  1112 General Chemistry I Recitation/Laboratory

Engineering ............................................................ 48
Required courses:
ENGR  1112 Introduction to Engineering and Laboratory
ENGR  1213 Engineering Computing and Laboratory
ENGR  1311 Introduction to Biomedical Engineering
ENGR  2033 Statics
ENGR  2043 Dynamics
ENGR  2303 Electrical Science
ENGR  2311 Electrical Science Laboratory
ENGR  3203 Thermodynamics
ENGR  3222 Digital Logic Design and Laboratory
ENGR  3302 Engineering Statistics and Experimentation

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

ENGR  3323 Signals and Systems & Laboratory
ENGR  3404 Analog Electronics and Laboratory
ENGR  4113 Principles of Biomedical Engineering
ENGR  4132 Biomedical Engineering Laboratory
ENGR  4223 Biomedical Imaging
ENGR  4233 Biomedical Instrumentation
ENGR  4343 Biomechanics
ENGR  4882 Senior Engineering Design I
ENGR  4892 Senior Engineering Design II

Mathematics ........................................................... 14-15
  Required courses:
  MATH  2305 Accelerated Calculus 1 and 2  
  MATH  2313 Calculus 1 AND
  MATH  2323 Calculus 2
  MATH  2333 Calculus 3
  MATH  2343 Calculus 4
  MATH  3103 Differential Equations

Physics ................................................................. 8
  Required courses:
  PHY  2014 Physics for Scientists and Engineers I and  
    Laboratory
  ^ PHY  2114 Physics for Scientists and Engineers II and  
    Laboratory
  ^ A grade of “C” or better must be earned in PHY 2114.

Biomedical Engineering Elective ....................................... 3
  Any 3000/4000 level PHY or ENGR course with the following  
  exceptions: PHY 3014, 3044, 3054 or 3503.

Complete all the courses from one of the following concentrations:  
................................................................. 9-11

Concentration A: (courses in preparation for Pre-Med fields)
CHEM  1223 General Chemistry II
CHEM  1232 General Chemistry II Laboratory
CHEM  3303 Organic Chemistry I
CHEM  3323 Organic Chemistry II

- CONTINUED ON NEXT PAGE -
Concentration B:   (courses in preparation for Instrumentation fields)

PHY 3103 Modern Physics
ENGR 3183 Electromagnetic Fields I
PHY 3883 Mathematical Physics I

The number of credits needed to meet degree requirements exceeds 124 hours and will vary according to course selection.

The following courses are strongly recommended electives:
CHEM 3403 Biochemistry
ENGR 3443 Fluid Mechanics

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 62-63 of the 2011-2012 catalog.