Biomedical Engineering, BSE

Academic Plans

Sample Plan of Study

Sample plans represent one way to complete a program of study. Actual course selection and sequence will vary and should be discussed with an academic advisor. For additional sample plans, see MyUI.

Biomedical Engineering, BSE

Course	Title	Hours
First Year		
Fall		
RHET:1030	Rhetoric [a]	4
CHEM:1110	Principles of Chemistry I [a, b]	4
MATH:1550	Engineering Mathematics I: Single Variable Calculus [c, d]	4
ENGR:1100	Introduction to Engineering Problem Solving [e]	3
ENGR:1000	Engineering Success for First-Year Students [e]	1
CSI:1600	Success at Iowa	0
	Hours	**16**
Spring		
MATH:1560	Engineering Mathematics II: Multivariable Calculus [c]	4
MATH:2550	Engineering Mathematics III: Matrix Algebra [a]	2
CHEM:1120	Principles of Chemistry II [a]	4
PHYS:1611	Introductory Physics I [c]	4
ENGR:1300	Introduction to Engineering Computing [c]	3
BME:1010	First-Year Forum [f]	1
	Hours	**18**
Second Year		
Fall		
MATH:2560	Engineering Mathematics IV: Differential Equations [a]	3
BIOL:1411	Foundations of Biology [a]	4
ENGR:2110	Statics [a]	2
ENGR:2120	Electrical Circuits [a]	3
ENGR:2130 or ENGR:2995	Thermodynamics [g] or Introduction to Artificial Intelligence and Machine Learning in Engineering	3
BME:2010	Professional Seminar: Biomedical Engineering [e]	1
	Hours	**16**
Spring		
BIOS:4120 or STAT:3510	Introduction to Biostatistics [h] or Biostatistics	3
BME:2200	Systems, Instrumentation, and Data Acquisition [c]	4
HHP:3500 or BME:2260	Human Physiology or Quantitative Physiology	3
BME:2400	Cell Biology for Engineers [c]	3
BME:2500	Biomaterials and Biomechanics [c]	4
	Hours	**17**
Third Year		
Fall		
GE: Approved Course Subjects [i]		3
GE: Diversity, Equity, and Inclusion [j]		3
PHYS:1612	Introductory Physics II [a]	4
BME:2210	Bioimaging and Bioinformatics [c]	4
Focus Area: required course [k]		3
	Hours	**17**
Spring		
GE: Engineering Be Creative [l]		3
GE: Approved Course Subjects [i]		3
Focus Area: required course [k]		3
Focus Area: topic elective [k]		3
Focus Area: additional elective [k, m]		3
	Hours	**15**
Fourth Year		
Fall		
BME:4910	Biomedical Engineering Senior Design I [e]	4
Focus Area: required course [k]		3
Focus Area: required course [k]		3
Focus Area: topic elective [k]		3
Focus Area: additional elective [k, m]		3
	Hours	**16**
Spring		
GE: Approved Course Subjects [i]		3
BME:4920	Biomedical Engineering Senior Design II [f]	4
Focus Area: additional elective [k, m]		3
Focus Area: additional elective [k, m]		3
Focus Area: additional elective [k, m]		3
Degree Application: apply on MyUI before deadline (typically in February for spring, September for fall) [n]		
	Hours	**16**
	Total Hours	**131**

a Typically this course is offered in fall, spring, and summer sessions. Check MyUI for course availability since offerings are subject to change.

b Enrollment in chemistry courses requires completion of a placement exam.

c Typically this course is offered in fall and spring semesters. Check MyUI for course availability since offerings are subject to change.

d Enrollment in math courses requires completion of a placement exam.

e Typically this course is offered in fall semesters only. Check MyUI for course availability since offerings are subject to change.

f Typically this course is offered in spring semesters only. Check MyUI for course availability since offerings are subject to change.

g Students in the bioimaging or computational bioengineering focus areas can choose to take either ENGR:2130 or ENGR:2995; students in the biomechanics and biomaterials or cellular engineering focus areas are required to take ENGR:2130.

h BIOS:4120 typically is offered in fall, spring, and summer sessions; STAT:3510 typically is offered in fall and spring sessions. Check MyUI for course availability since offerings are subject to change.
i See General Catalog for list of approved course subjects.
j Students select a course from one of two GE CLAS Core areas: Diversity and Inclusion or Values and Culture.
k Students majoring in biomedical engineering select one of four preapproved focus areas: bioimaging, biomechanics and biomaterials, cellular engineering, or computational bioengineering. Each focus area consists of a group of four required courses (12-13 s.h.), two focus area-specific elective courses (6 s.h.), and additional suggested electives (15 s.h.). See General Catalog or consult an advisor for more information.
l See General Catalog for list of approved courses. Students who intend to enroll in a Be Creative course with prerequisites must request a waiver by completing the Request Prerequisite Special Permission form on MyUI.
m Students who choose to pursue pre-medicine can select any focus area and take five of the following courses as their additional electives: BMB:3110, BIOL:1412, BIOL:2512, CHEM:2210, CHEM:2220, or CHEM:2410.
n Please see Academic Calendar, Office of the Registrar website for current degree application deadlines. Students should apply for a degree for the session in which all requirements will be met. For any questions on appropriate timing, contact your academic advisor or Graduation Services.