

MECHANICAL ENGINEERING (BS) - BIOMEDICAL ENGINEERING TRACK

Degree Requirements

Code	Title	Hours
See General Education Requirements		54

Major Requirements

Engineering Course Requirements

Complete the following:

EG 101	Intro to Engineering & Design (or EG 201 for LINK students)	2
EG 220	Electrical Circuits	3
EG 231	Intro to Ethics and Economics	3
EG 270	Engineering Thermodynamics	3
EG 283	Statics	3
EG 284	Dynamics	3
EG 315	Mechanics of Materials	3
EG 360	Fluid Mechanics	3

Mechanical Engineering Course Requirements

ME 135	Engr Graphics and Comm (Only two attempts are permitted to earn grade C or better. Failure to meet this requirement will result in dismissal from the program.)	3
ME 228	Computational Engineering	3
ME 312	Mech Engr Thermodynamics	3
ME 314	Machine Component Design	3
ME 316	Instrumentatn & Exp Method	3
ME 317	Heat Transfer	3
ME 326	Materials Science	3
ME 328	Numerical Methods	3-4
ME 336	Material Science Lab-W	1
ME 410	Principles of Eng Design-W	3
ME 426	Dynamic Systems and Control	3
ME 429	Controls & Instr. Lab	1
ME 472	Vibration Analysis-Synthesis	3
ME 414	Capstone Design	1
ME 416	Capstone Design Project	2

Biomedical Track Requirements

BLY 121 & 121L	General Biology I and General Biology I Lab	4
BLY 122 & 122L	General Biology II and General Biology II Laboratory	4
BME 467	Intro to Biomedical Eng	3
CH 132 & 132L	General Chemistry II and General Chemistry II Lab	4

FE Exam

All students must attempt the NCEES FE (Fundamentals of Engineering) examination.

Minor Requirements

A minor is not required for this degree program 0

Total Hours 130-131

General Education Requirements

Code	Title	Hours
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Area I – Written Composition

EH 101	English Composition I (Students who earn an English ACT score of 27, or written SAT score of 610, can opt out of EH 101.)	3
EH 102 or EH 105	English Composition II Honors Composition - H	3

Area II – Humanities & Fine Arts

CA 110	Public Speaking	3
A. Select one of the following:		3
EH 215	Brit Lit before 1785	
EH 216	Brit Lit after 1785	
EH 225	Am Lit before 1865	
EH 226	Am Lit after 1865	
EH 235	World Lit before 1650	
EH 236	World Lit after 1650	

B. Select one of the following: 3

ARH 100	Survey of Art	
ARH 103	Art History I	
ARH 123	Art History II	
ARS 101	Art Appreciation	
DRA 110	Introduction to Theatre	
MUL 101	Introduction to Music	

Area III – Natural Sciences & Mathematics

MA 125	Calculus I	4
CH 131 & 131L	General Chemistry I and General Chemistry I Lab	4
PH 201 & 201L	Calculus-Based Physics I and Calculus-Based Physics I Lab	4

Area IV – History, Social & Behavioral Sciences

A. Select 3 hours from the following:		3
HY 101	HY of Western Civilization I	
HY 102	HY of Western Civilization II	
HY 135	US History to 1877	
HY 136	US History since 1877	

B. Select 3 hours from the following: 3

AN 100	Intro to Cultural Anthropology	
AN 101	Intro Archaeology-Bio Anthro	
CA 100	Intro to Communication	
CA 211	Interpersonal Comm	
CJ 105	Introduction to Criminal Justice	
ECO 215	Prin of Microeconomics	
ECO 216	Prin of Macroeconomics	
GEO 114	People, Places, Environment	
GEO 115	World Regional Geography	
GS 101	Intro to Gender Studies	
IS 100	Global Issues	
IST 201	Seasons of Life	
NAS 101	Intro Native American Studies	

PSC 130	Intro to US Government
PSY 120	Introduction to Psychology
PSY 250	Life Span Development
SY 109	Introductory Sociology
SY 112	Social Problems

C. Select an additional 3 hours from either List A or List B above in Area IV 3

Area V - Pre-Professional, Major, Elective Courses

Complete the following:

MA 126	Calculus II	4
MA 227	Calculus III	4
MA 237	Linear Algebra I	3
MA 238	Differential Equations I	3
PH 202 & 202L	Calculus-Based Physics II and Calculus-Based Physics II Lab	4

Total Hours 54

Additional Information

It is important that students make adequate progress in the Mechanical Engineering program. Satisfactory completion of a set of fundamental courses is required before a student is allowed to take advanced courses. Professional Component Standing (PCS) is awarded by the Chair of the Department when the student completes the College of Engineering PCS requirements and the WBBJ MABE Departmental PCS requirements.

Mechanical Engineering PCS Courses

Minimum Grade C is required in all the following courses:

Code	Title	Hours
MA 227	Calculus III	4
MA 237	Linear Algebra I	3
PH 202	Calculus-Based Physics II	4
EG 283	Statics	3
ME 135	Engr Graphics and Comm (maximum 2 attempts)	3

College of Engineering PCS Courses

Minimum Grade C is required in all the following courses:

Code	Title	Hours
EH 101	English Composition I (if not exempt)	3
EH 102 or EH 105	English Composition II Honors Composition - H	3
CH 131	General Chemistry I (+Lab)	4
MA 125	Calculus I	4
MA 126	Calculus II	4
PH 201	Calculus-Based Physics I (+Lab)	4

Graduation Plan

(130-131 Total Hours)

The Sample 4-year plan is designed as a guide for students preparing for their course selections. This information provides only a suggested schedule. Actual course selections should be made in consultation with an advisor. Courses listed as Milestones are required to obtain Professional Component Standing (PCS). Two designated writing (W) courses are required with at least one course chosen from offerings in

the student's major or minor. Courses carrying this required credit are identified in the University Bulletin by a W after the course title.

Course	Title	Hours
First Year		
Fall		
EG 101	Intro to Engineering & Design	2
EH 101	English Composition I ^{1,2}	3
MA 125	Calculus I	4
CH 131 & 131L	General Chemistry I and General Chemistry I Lab	4
General Education	Area II or IV ^{1,2}	3
Milestone Notes		
Must complete at least 12 hours with a 2.0 or higher GPA		
Hours		16
Spring		
EH 102	English Composition II (or EH 105) ^{1,2}	3
MA 126	Calculus II	4
PH 201 & 201L	Calculus-Based Physics I and Calculus-Based Physics I Lab	4
ME 135	Engr Graphics and Comm	3
CH 132 & 132L	General Chemistry II and General Chemistry II Lab	4
Milestone Notes		
MA 125	Calculus I	
CH 131 & 131L	General Chemistry I and General Chemistry I Lab	
EH 101	English Composition I (if not exempt)	
Hours		18
Second Year		
Fall		
MA 227	Calculus III	4
MA 237	Linear Algebra I	3
PH 202 & 202L	Calculus-Based Physics II and Calculus-Based Physics II Lab	4
EG 283	Statics	3
General Education	Area II or IV ^{1,2}	3
Milestone Notes		
PH 201 & 201L	Calculus-Based Physics I and Calculus-Based Physics I Lab	
MA 126	Calculus II	
EH 102 or EH 105	English Composition II or Honors Composition - H	
ME 135	Engr Graphics and Comm	
Hours		17
Spring		
EG 270	Engineering Thermodynamics	3
EG 284	Dynamics	3
EG 315	Mechanics of Materials	3
MA 238	Differential Equations I	3
ME 228	Computational Engineering	3
Milestone Notes		
MA 227	Calculus III	
PH 202 & 202L	Calculus-Based Physics II and Calculus-Based Physics II Lab	
EG 283	Statics	
MA 237	Linear Algebra I	
Hours		15
Third Year		
Fall		
EG 220	Electrical Circuits	3
EG 360	Fluid Mechanics	3
ME 312	Mech Engr Thermodynamics	3

ME 326	Materials Science	3
ME 328	Numerical Methods	3-4
CA 110	Public Speaking	3

Milestone Notes

MA 238	Differential Equations I	
Hours		18-19

Spring

EG 231	Intro to Ethics and Economics	3
ME 314	Machine Component Design	3
ME 316	Instrumentatn & Exp Method	3
ME 317	Heat Transfer	3
ME 336	Material Science Lab-W	1
General Education	Area II or IV ^{1,2}	3

Milestone Notes

Apply for graduation		
Apply to take FE Exam		
Hours		16

Fourth Year**Fall**

ME 410	Principles of Eng Design-W	3
ME 426	Dynamic Systems and Control	3
ME 472	Vibration Analysis-Synthesis	3
BLY 121 & 121L	General Biology I and General Biology I Lab	4
General Education	Area II or IV ^{1,2}	3

Milestone Notes

FE Exam		
Hours		16

Spring

BLY 122 & 122L	General Biology II and General Biology II Laboratory	4
BME 467	Intro to Biomedical Eng	3
ME 414	Capstone Design	1
ME 416	Capstone Design Project	2
ME 429	Controls & Instr. Lab	1
General Education	Area II or IV ^{1,2}	3

Hours		14
Total Hours		130-131

¹ Courses meet general education requirements.

² Students who earn an English ACT score of 27, or a written SAT score of 610, can opt out of EH 101.

Note: Students not Term 1-Calculus I ready will exceed the number of hours required for this degree. If math is not started prior to Fall-Year 1, the four-year graduation timetable is likely to be extended. Students with ACT Math scores 21 and below should begin math courses in the summer before Fall-Year 1.