

B.S. IN ENGINEERING SCIENCE

Curriculum Requirements

Code	Title	Credit Hours
Engineering Courses		
CAE 210	Mechanics of Solids I	3
ECE 201	Electrical Circuit Theory	3
ECE 204	Electrical Circuits Laboratory	1
ECE 305	Electronics I	3
ISE 311	Applied Probability and Statistics	3
MAE 111	Introduction to Engineering I	3
MAE 112	Introduction to Engineering II	2
MAE 202	Dynamics	3
MAE 207	Mechanics of Solids II	3
MAE 241	Measurements Laboratory	3
MAE 301	Engineering Materials Science	3
MAE 302	Mechanical Behavior of Materials	3
MAE 303	Thermodynamics	3
MAE 309	Fluid Mechanics	3
MAE 412	System Dynamics	3
Applied Elective		3
Technical Elective		3
Math and Science Courses		
MTH 151	Calculus I for Engineers	5
MTH 162	Calculus II	4
MTH 210	Introduction to Linear Algebra	3
MTH 310	Multivariable Calculus	3
MTH 311	Introduction to Ordinary Differential Equations	3
CHM 121	Principles of Chemistry	4
CHM 113	Chemistry Laboratory I	1
CHM 221	Introduction to Structure and Dynamics	4
CHM 114	Chemistry Laboratory II	1
CHM 201	Organic Chemistry I (Lecture)	3
CHM 205	Chemical Dynamics Laboratory	1
CHM 360	Physical Chemistry I (Lecture)	3
PHY 221	University Physics I	3
PHY 222	University Physics II	3
PHY 223	University Physics III	3
PHY 224	University Physics II Lab	1
PHY 225	University Physics III Lab	1
PHY 350	Intermediate Electricity and Magnetism	3
PHY 351	Intermediate Electricity and Magnetism II	3
or CHM 202	Organic Chemistry II (Lecture)	
PHY 360	Introduction to Modern Physics	3
General Education Requirements		
Written Communication Skills:		
WRS 105	First-Year Writing I	3
WRS 107	First-Year Writing II: STEM	3
Quantitative Skills:		
MTH 151	Calculus I for Engineers (fulfilled through the major)	
Areas of Knowledge:		

Arts and Humanities Cognate	9
People and Society Cognate	9
STEM Cognate (9 credits) (fulfilled through the major)	
Total Credit Hours	127

Suggested Plan of Study

Freshman Year		Credit Hours
Fall		
MAE 111	Introduction to Engineering I	3
WRS 105	First-Year Writing I	3
MTH 151	Calculus I for Engineers	5
PHY 221	University Physics I	3
Credit Hours		14
Spring		
MAE 112	Introduction to Engineering II	2
CAE 210	Mechanics of Solids I	3
WRS 107	First-Year Writing II: STEM	3
MTH 162	Calculus II	4
PHY 222	University Physics II	3
PHY 224	University Physics II Lab	1
Credit Hours		16
Sophomore Year		
Fall		
MAE 207	Mechanics of Solids II	3
CHM 121	Principles of Chemistry	4
CHM 113	Chemistry Laboratory I	1
MTH 210	Introduction to Linear Algebra	3
HA Cognate (HA Elective) ¹		3
PHY 223	University Physics III	3
PHY 225	University Physics III Lab	1
Credit Hours		18
Spring		
MAE 202	Dynamics	3
ECE 201	Electrical Circuit Theory	3
CHM 221	Introduction to Structure and Dynamics	4
CHM 114	Chemistry Laboratory II	1
MTH 310	Multivariable Calculus	3
PS Cognate (PS Elective) ¹		3
Credit Hours		17
Junior Year		
Fall		
ISE 311	Applied Probability and Statistics	3
MAE 303	Thermodynamics	3
MTH 311	Introduction to Ordinary Differential Equations	3
PHY 350	Intermediate Electricity and Magnetism	3
HA Cognate (HA Elective) ¹		3
Credit Hours		15
Spring		
MAE 241	Measurements Laboratory	3
ECE 204	Electrical Circuits Laboratory	1
MAE 309	Fluid Mechanics	3
MAE 301	Engineering Materials Science	3

PS Cognate (PS Elective) ¹		3
Credit Hours		13
Senior Year		
Fall		
MAE 302	Mechanical Behavior of Materials	3
MAE 412	System Dynamics	3
CHM 360	Physical Chemistry I (Lecture)	3
PHY 360	Introduction to Modern Physics	3
PS Cognate (Adv. PS Elective) ¹		3
Credit Hours		15
Spring		
PHY 351 or CHM 202	Intermediate Electricity and Magnetism II or Organic Chemistry II (Lecture)	3
ECE 305	Electronics I	3
CHM 205	Chemical Dynamics Laboratory	1
Applied Elective ²		3
Technical Elective ³		3
HA Cognate (Adv. HA Elective) ¹		3
Credit Hours		16
Total Credit Hours		124

¹ You must complete a minimum of 1 PS cognate and 1 HA cognate to be selected from the list of available cognates. Each cognate should be a minimum of three courses (9 credit hours).

² Applied electives are advanced courses selected in coordination with the Faculty Advisor and require his/her approval.

³ Technical Electives are advanced courses in mathematics, science or engineering, approved by the Faculty Advisor, as appropriate for individual objectives.