## **ENGINEERING - ASSOCIATE OF SCIENCE**

Students must complete all College degree requirements, which include: General Education requirements and elective credits to total at least 61-65 credits. Developmental coursework will not count towards the degree requirements and/or elective credits, but may be needed in order to take the necessary English and Mathematics coursework.

All courses must be completed with a C- or higher.

General Education  Area I: Communications  English Composition - Level 1 4-3  ENGL 11110G Composition I  English Composition - Level 2 3  ENGL 2210G Professional & Technical Communication or ENGL 2222 Writing in the Humanities and Social Science  Oral Communication 3  COMM 1130G Public Speaking or COMM 11 Introduction to Communication  Area II: Mathematics 3  MATH 1220G College Algebra (Core Curriculum Requirement) 1  Area III: Laboratory Science 8  CHEM 1215G General Chemistry I Lecture and Laboratory for STEM majors (Core Curriculum Requirement) 1  PHYS 1310G Calculus - Based Physics I and Calculus - Based Physics I Laboratory (Core Curriculum Requirement) 1  Area IV: Social/Behavioral Sciences Course 2 3  Area V: Humanities 2 3  Area VI: Creative and Fine Arts 2 3  Area VI: Flexible 3 (General Education Elective) 2 3-4  Core Curriculum Requirements  ENGR 100 G Introduction to Engineering 3  ENGR 111 Mathematics for Engineering Applications 3  ENGR 120 DC Circuit Analysis 4  ENGR 230 AC Circuit Analysis 4  ENGR 230 AC Circuit Analysis 4  MATH 1511G Calculus and Analytic Geometry I 4  Engineering Degree Electives, choose courses from list below: 6-9  C E 151 Introduction to Civil Engineering	Code	Title	Hours		
English Composition - Level 1  ENGL 1110G Composition I  English Composition - Level 2  ENGL 2210G Professional & Technical Communication or ENGL 222 Writing in the Humanities and Social Science  Oral Communication  COMM 1130G Public Speaking or COMM 11 Introduction to Communication  Area II: Mathematics  MATH 1220G College Algebra (Core Curriculum Requirement)  Area III: Laboratory Science  CHEM 1215G General Chemistry I Lecture and Laboratory for STEM majors (Core Curriculum Requirement)  PHYS 1310G Calculus - Based Physics I & PHYS 1310L and Calculus - Based Physics I Laboratory (Core Curriculum Requirement)  Area IV: Social/Behavioral Sciences Course  Area V: Humanities  Area VI: Creative and Fine Arts  Area VII: Flexible 3 (General Education Elective)  Core Curriculum Requirements  ENGR 100 G Introduction to Engineering  ENGR 111 Mathematics for Engineering Applications  ENGR 120 DC Circuit Analysis  ENGR 130 AC Circuit Analysis  ENGR 230 AC Circuit Analysis  ENGR 230 AC Circuit Analysis  MATH 1511G Calculus and Analytic Geometry I  Engineering Degree Electives, choose courses from list below:  C E 151 Introduction to Civil Engineering	General Education	1			
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Systems  ENGR 230 AC Circuit Analysis 4  MATH 1511G Calculus and Analytic Geometry I 1 4  Engineering Degree Electives, choose courses from list below: 6-9  C E 151 Introduction to Civil Engineering		•			
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MATH 1511G Calculus and Analytic Geometry I 4 Engineering Degree Electives, choose courses from list below: 6-9 C E 151 Introduction to Civil Engineering	ENGR 230	•	4		
Engineering Degree Electives, choose courses from list below: 6-9 C E 151 Introduction to Civil Engineering	MATH 1511G		4		
C E 151 Introduction to Civil Engineering					
C E 233 Mechanics-Statics	C E 233	Mechanics-Statics			
ENGR 130 Digital Logic	ENGR 130	Digital Logic			
I E 151 Computational Methods in Industrial Engineering	I E 151	Computational Methods in Industrial Engineering	9		
I E 217 Manufacturing Processes	I E 217				
MATH 1250G Trigonometry & Pre-Calculus	MATH 1250G				
MATH 1521G Calculus and Analytic Geometry II	MATH 1521G				
M E 159 Graphical Communication and Design	M E 159				
M E 210 Electronics and System Engineering	M E 210	Electronics and System Engineering			

PHYS 1320G Calculus-Based Physics II & PHYS 1320L and Calculus-Based Physics II Laboratory

Total Hours 61-64

1

Course is Core Curriculum Requirement and must be completed regardless of transfer credits awarded.

2

See the General Education section of the catalog for a full list of courses.

3

If either MATH 1250G, MATH 1521G or PHYS 1320G/PHYS 1320L are selected as an elective, the course will also count for the General Education Elective requirement.

## A Suggested Plan of Study

Additional classes may be needed based on placement test results and course prerequisites. Visit with an advisor for help with creating a customized plan.

Course First Year Fall	Title	Hours
CHEM 1215G	General Chemistry I Lecture and Laboratory for STEM majors	4
ENGR 100 G	Introduction to Engineering	3
ENGR 120	DC Circuit Analysis	4
ENGL 1110G	Composition I	4
	Hours	15
Spring		
MATH 1511G	Calculus and Analytic Geometry I <sup>1</sup>	4
ENGR 111	Mathematics for Engineering Applications	3
ENGR 230	AC Circuit Analysis	4
Area IV: Social/Behavio	oral Sciences Course <sup>2</sup>	3
	Hours	14
Second Year		
Fall		
ENGR 140	Introduction to Programming and Embedded Systems	4
PHYS 1310G & PHYS 1310L	Calculus -Based Physics I and Calculus - Based Physics I Laboratory	4
Choose one from the following:		
ENGL 2210G or ENGL 2221G	Professional & Technical Communication or Writing in the Humanities and Social Science	
ENGR Elective <sup>3</sup>		3-4
Area VI: Creative and Fine Arts <sup>2</sup>		
Spring	Hours	17-18
COMM 1115G or COMM 1130G	Introduction to Communication or Public Speaking	3
ENGR Elective 3		3-4
ENGR Elective <sup>3</sup>		3-4
Area V: Humanities <sup>2,4</sup>		3
General Education Elective <sup>2, 4</sup>		
	Hours	15-18
	Total Hours	61-65

1

MATH 1511G Calculus and Analytic Geometry I is required for the degree but students may need to take any prerequisites needed to enter MATH 1511G first.

2

See the General Education section of the catalog for a full list of courses.

3

## **Engineering Electives:**

- MATH 1521G Calculus and Analytic Geometry II
- PHYS 1320G Calculus-Based Physics II/PHYS 1320L Calculus-Based Physics II Laboratory
- · C E 151 Introduction to Civil Engineering
- C E 233 Mechanics-Statics
- I E 151 Computational Methods in Industrial Engineering
- I E 217 Manufacturing Processes
- M E 159 Graphical Communication and Design
- M E 210 Electronics and System Engineering

4

If either MATH 1521G Calculus and Analytic Geometry II or PHYS 1320G Calculus-Based Physics II/PHYS 1320L Calculus-Based Physics II Laboratory are selected as an elective, the course will also count for the General Education Elective requirement.