



**2024-2025 Academic Year**

# Engineering Science

## Associate in Science Degree (A.S.)

### B-STEM Division

Business, Science, Technology, Engineering and Math

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The **Engineering Science** A.S. degree program prepares students to transfer to a baccalaureate degree program in Engineering. Students develop a strong foundation in mathematics, physics and chemistry, with emphasis on engineering applications and use of the computer as a problem-solving tool. A strong general education curriculum helps students develop communication and analytical skills.

Engineering is a profession that integrates science and mathematics with design and laboratory study. It is and will continue to be the profession upon which the United States depends for its growth and ability to compete in world markets. Engineering offers more career options than any other discipline. Engineers are behind almost all of today's exciting technology. Engineers are problem solvers who search for quicker, better, and less expensive ways to use the forces and materials of nature to meet today's challenges.

### PROGRAM OUTCOMES

- Analyze engineering drawings, demonstrating an understanding of the concept of scale and orthographic projection;
- Assist engineers and technologists in performing tasks relevant to the chosen branch of engineering;
- Complete written engineering reports;
- Write computer programs to solve engineering-based problems;
- Complete computer-aided design (CAD) drawings;
- Communicate effectively both verbally and in writing;
- Demonstrate effective mathematical skills and application of scientific principles in solving engineering problems;
- Apply critical thinking and problem-solving skills in the analysis of data, design of experimental procedures, and evaluation of outcomes;
- Transfer to a four-year institution in an ABET-accredited engineering program with a major in civil, computer, electrical, industrial, mechanical, biomedical, chemical, environmental, or architectural engineering.

### SEE ALSO:

[Civil Engineering Technology](#) degree program

[Engineering Science](#) certificate program

# DEGREE CURRICULUM

2024-2025 Academic Year

ENGR.SCI.AS

CIP 141301

The course sequence below represents a recommended example of how this degree program can be completed in two years, presuming a Fall Term start and satisfaction of all Developmental Studies (Foundations courses) requirements and prerequisites. Actual approaches toward completion depend on each student's anticipated transfer institution, career objectives, or other individual circumstances.

Students are encouraged to meet regularly with an academic advisor or Success Coach to consider options, establish plans, and monitor progress.

Code	Course (lecture/lab hours)	Credits	To Do This Semester
<b>FIRST SEMESTER</b>			
<a href="#">CHE 101</a>	General Chemistry I (3/3)	4	✓ Meet with your faculty advisor to complete an academic plan. Make sure you are aware of any course prerequisites you may need to take, and how long it will take to complete your degree.  ✓ Use your online tools: Check your <a href="#">MercerMail</a> daily, utilize features of Office 365, and get to know <a href="#">Student Planning</a> .  ✓ Take advantage of <a href="#">Learning Centers</a> or <a href="#">Online Tutoring</a> to support your studies and assignments.
<a href="#">ENG 101</a>	English Composition I (3/0)	3	
<a href="#">MAT 151</a>	Calculus I for the Mathematical and Physical Sciences (4/0)	4	
<a href="#">PHY 115</a>	University Physics I (3/3)	4	

## SECOND SEMESTER

<a href="#">CIV 103</a>	Statics (3/0)	3	<p>✓ Transitioning to college can be challenging. Meet with your <a href="#">Success Coach</a> for guidance and support.</p> <p>✓ Apply for <a href="#">financial aid</a> by May 1.</p> <p>✓ Contact professors with questions and use their office hours to develop a connection.</p> <p>✓ Apply for Continuing Student scholarships at <a href="http://www.mccc.edu/m-scholarships">www.mccc.edu/m-scholarships</a>.</p> <p>✓ Begin attending college transfer events and visit campuses. Be sure to visit the <a href="#">Transfer Services</a> and <a href="#">Career Services</a> offices to get to know how the transfer process works and to explore career options.</p> <p>✓ Plan for how you will complete transfer applications while finishing your classes.</p>
<a href="#">CIV 105</a>	Introduction to Engineering (1/0)	1	
<a href="#">ENG 102</a>	English Composition II (3/0)	3	
<a href="#">MAT 152</a>	Calculus II for the Mathematical and Physical Sciences (4/0)	4	
<a href="#">PHY 215</a>	University Physics II (3/3)	4	

## THIRD SEMESTER

<a href="#">CIV 230</a>	Mechanics of Solids (3/3)	4	<p>✓ Keep in contact with each professor and your faculty advisor. Make sure you are on track to graduate.</p>
<a href="#">CMN 112</a>	Public Speaking (3/0)	3	
<a href="#">ECO 112</a>	Microeconomics (3/0)	3	
<a href="#">ENT 116</a>	Engineering Graphics (1/2)		

	OR		2	✓ Complete your applications to desired transfer institutions.
<a href="#">DRA 190</a>	Introduction to Computer-Aided Drafting (1/2)			
<a href="#">MAT 251</a>	Calculus III (4/0)		4	✓ Develop team and leadership skills by getting involved in <a href="#">activities and clubs</a> .  ✓ Manage your stress! Take advantage of the MCCC pool, <a href="#">Fitness Center</a> , free yoga and Zumba. Reach out for <a href="#">counseling</a> or other support if you need it. Your <a href="#">Success Coach</a> can connect you with resources.

#### FOURTH SEMESTER

<a href="#">COS 101</a>	Introduction to Computer Science (3/2)		4	✓ Apply for <a href="#">financial aid</a> by May 1.
<a href="#">MAT 252</a>	Differential Equations (4/0)		4	✓ Talk to your faculty advisor and the <a href="#">Transfer office</a> for advice on how to successfully transition to a new school.
— —	<a href="#">Humanities general education elective</a>		3	
— —	<a href="#">Social Science or Humanities general education elective</a>		3	✓ Apply for Graduating Student scholarships at <a href="http://www.mccc.edu/m-scholarships">www.mccc.edu/m-scholarships</a> .

**NOTE:** Select courses in consultation with an academic advisor in order to assure maximum transfer of credits.