



2023-2024 Academic Year

Engineering Science

Associate in Science Degree (A.S.)

B-STEM Division

Business, Science, Technology, Engineering and Math

[609.570.3482](tel:609.570.3482) admiss@mccc.edu

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

2023-2024 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
FIRST SEMESTER			
CHE 101	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.
ENG 101	English Composition I (3/0)	3	
MAT 151	Calculus I for the Mathematical and Physical Sciences (4/0)	4	
PHY 115	University Physics I (3/3)	4	✓ Use your online tools: Check your MercerMail daily, utilize features of Office 365, and get to know Student Planning . ✓ Take advantage of Learning Centers or Online Tutoring to support your studies and assignments.

SECOND SEMESTER

CIV 103	Statics (3/0)	3	<p>✓ Transitioning to college can be challenging. Meet with your Success Coach for guidance and support.</p> <p>✓ Apply for financial aid 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 www.mccc.edu/m-scholarships.</p> <p>✓ Begin attending college transfer events and visit campuses. Be sure to visit the Transfer Services and Career Services 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>
CIV 105	Introduction to Engineering (1/0)	1	
ENG 102	English Composition II (3/0)	3	
MAT 152	Calculus II for the Mathematical and Physical Sciences (4/0)	4	
PHY 215	University Physics II (3/3)	4	

THIRD SEMESTER

CIV 230	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>
CMN 112	Public Speaking (3/0)	3	
ECO 112	Microeconomics (3/0)	3	
ENT 116	Engineering Graphics (1/2)		

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

FOURTH SEMESTER

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

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