

Engineering Science

Associate in Science Degree

Program **ENGR.SCI.AS**
CIP 141301



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.

A.S. Curriculum

Code	Course (lecture/lab hours)	Credits
FIRST SEMESTER		
CHE 101	General Chemistry I (3/3)	4
CMN 112	Public Speaking (3/0)	3
ENG 101	English Composition I (3/0)	3
MAT 151	Calculus I (4/0)	4
PHY 115	University Physics I (3/3)	4
SECOND SEMESTER		
CHE 102	General Chemistry II (3/3)	4
CIV 103	Statics (3/0)	3
ENG 102	English Composition II (3/0)	3
MAT 152	Calculus II (4/0)	4
PHY 215	University Physics II (3/3)	4
THIRD SEMESTER		
CIV 230	Mechanics of Solids (3/3)	4
ECO 112	Microeconomics (3/0)	3
ENT 116	Engineering Graphics (1/2)	2
	OR	
DRA 190	Introduction to Computer-Aided Drafting (1/2)	4
MAT 251	Calculus III (4/0)	
PHY 225	University Physics III (3/3)	4
FOURTH SEMESTER		
COS 101	Introduction to Computer Science (3/2)	4
MAT 252	Differential Equations (4/0)	4
— —	General Education elective ¹	3
— —	General Education elective ¹	3
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NOTE: Select courses in consultation with an academic advisor in order to assure maximum transfer of credits.

¹ Select courses from either Humanities or Historical Perspective general education categories.

NOTE: All program listings are subject to periodic updates. Please consult your program advisor, academic division, or www.mccc.edu/programs_degree