

ENGINEERING SCIENCE: AS

Associate in Science | 62 credit hours minimum

Area of Interest: Science, Technology, Engineering, and Math (STEM)

Academic Advising (<https://stlcc.edu/admissions/advising/>)

Program Description:

The Associate in Science degree in Engineering Science is the first two years of study toward a Bachelor of Science degree at a four-year college or university. Students take fundamental courses common to most engineering disciplines and continue their studies in specialized areas (such as electrical, mechanical, civil, chemical, aerospace, and nuclear) during the remaining years at four-year colleges or universities.

STLCC works with the Missouri University of Science and Technology, University of Missouri-Columbia, Washington University, Southern Illinois University-Edwardsville, UM-St. Louis/Washington University Joint Engineering Program, Parks College of St. Louis University, and Rensselaer Polytechnic Institute to facilitate the transferability of specific courses. For the most current information on transferability, please consult the Engineering Department or the transfer institution's website. This program is designed to provide the necessary flexibility to meet the technical and general education requirements indicated in the receiving institution's transfer guidelines.

Locations. This program is offered in its entirety at Meramec.

Cost of Attendance. For more information on cost of attendance visit MoSCORES (<https://scorecard.mo.gov/Search/>).

Program Career and Salary Information. Pursuant to Missouri HB 1606 (2018), information regarding the number of credit hours, program length, employment rate, wage data, and graduates employed in careers related to their program of study at St. Louis Community College can be found at the following URL: <https://scorecard.mo.gov/scorecard/> (https://www.google.com/url?q=https://scorecard.mo.gov/scorecard/&sa=D&ust=1555536894857000&usg=AFQjCNG1xf3E_i2lO96zEytILO-s5xaJCQ). Search using School / Program "St. Louis Community College" and choose the degree or credential type of interest.

The following limitations to the data apply: Information provided is based on the most recent cohorts available. Typically, most recent cohorts for wage and completion data are six years prior to the current academic year. Time to complete a program of study varies depending on the number of credit hours students earn per semester.

Interested in this program? Start the enrollment process by visiting the Apply to STLCC (<https://www.stlcc.edu/admissions/apply-to-stlcc/>) page.

At the completion of the program, students are expected to:

1. apply mathematical and scientific concepts in identifying, formulating, and solving general engineering problems.
2. design and conduct experiments that generate data for further analysis.
3. summarize professional and ethical responsibility in engineering.
4. communicate the results from solving engineering problems.
5. articulate the potential impact of engineering solutions in a global, economic, environmental, technological, or social context.
6. function effectively in diverse and multidisciplinary teams.

7. apply real-world constraints (environmental, social, political, ethical, health and safety, manufacturability, and sustainability) to engineering problems.
8. utilize basic techniques, skills, and modern engineering tools necessary for engineering practice.
9. describe the importance of soft skills and life-long learning in the engineering profession.

Missouri Civics Examination. Students entering college for the very first time in fall 2019 and who intend to complete an associate's degree must successfully complete a civics examination. Information on who is eligible for a waiver can be found on the STLCC website (<https://stlcc.edu/programs-academics/missouri-civics-exam.aspx>).

Program of Study

Code	Title	Credit Hours
General Education		
ENG 101	College Composition I (MOTR ENGL 100)	3
ENG 102	College Composition II (MOTR ENGL 200)	3
or ENG 103	Report Writing (MOTR ENGL 110)	
or COM 101	Oral Communication I (MOTR COMM 100)	
or COM 107	Public Speaking (MOTR COMM 110)	
MTH 210	Analytic Geometry and Calculus I (or higher)	5
MTH 220	Analytic Geometry and Calculus II	5
MTH 230	Analytic Geometry and Calculus III	5
MTH 240	Differential Equations	3
CHM 105	General Chemistry I (MOTR CHEM 150L)	5
PHY 122	Engineering Physics I (MOTR PHYS 200L)	5
PHY 223	Engineering Physics II	5
XXX xxx	Social & Behavioral Sciences: Civics Requirement (http://catalog.stlcc.edu/general-education/)	3
Program Requirements		
ESC 100	Engineering Computer Applications and Design	3
ESC 101	Scientific Computer Programming	3
ESC 200	Engineering Circuits I	4
ESC 203	Engineering Statics	3
Engineering Electives		
Choose courses from the following based on the engineering field of study 7-11 and transfer institution.		
ESC 204	Engineering Dynamics	
ESC 205	Mechanics of Materials	
ESC 206	Strength of Materials Lab	
ESC 207	Engineering Thermodynamics	
EGR 100	Engineering Drawing ¹	
ME 151	Manufacturing Processes I ¹	
ME 249	Materials and Metallurgy ¹	
CHM 106	General Chemistry II	
ESC 000	Engineering Science Elective	
ECO 151	Principles of Macroeconomics (MOTR ECON 101)	
ECO 152	Principles of Microeconomics (MOTR ECON 102)	
PSY 200	General Psychology (MOTR PSYC 100)	
PHL 103	World Religions (MOTR RELG 100)	

ANT 102	Introduction to Cultural Anthropology (MOTR ANTH 201)
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Total Credit Hours**62-66**¹ Check with transfer institution to determine course acceptability.

Full-Time Academic Plan

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PLEASE NOTE: If you originally enrolled at STLCC prior to Spring 2024, you may need to view an archived catalog (<https://www.stlcc.edu/programs-academics/course-catalog/>) for your correct program requirements. Please speak with an advisor or the program coordinator for more information.

Code	Title	Hours	Prerequisites	Milestones/Notes
First Year				
Fall				
MTH 210	Analytic Geometry and Calculus I (or higher)	5	MTH 185 or (MTH 160 or MTH 160S and MTH 170) with grades of "C" or better or satisfactory score on placement test and Reading Proficiency	
CHM 105	General Chemistry I (MOTR CHEM 150L)	5	MTH 140 (or MTH 140S or at least one and a half years of high school algebra) and CHM 101 with a minimum grade of "C" or one year of high school chemistry, and Reading Proficiency	
ENG 101	College Composition I (MOTR ENGL 100)	3	Placement score or ENG 030 or ENG 070 with a grade of "C" or better or recommendation of department and Reading Proficiency or concurrent enrollment in RDG 079	
ESC 100	Engineering Computer Applications and Design	3	MTH 140 (or MTH 140S) or higher with a minimum grade of "C" and Reading Proficiency	
	Credit Hours	16		
Spring				
MTH 220	Analytic Geometry and Calculus II	5	MTH 210 with a grade of "C" or better and Reading Proficiency	
PHY 122	Engineering Physics I (MOTR PHYS 200L)	5	MTH 210 with a minimum grade of "C" and Reading Proficiency	
ESC 101	Scientific Computer Programming	3	MTH 160 (or MTH 160S) or higher with a minimum grade of "C" and Reading Proficiency	
XXX xxx	Social & Behavioral Sciences: Civics Requirement (http://catalog.stlcc.edu/general-education/)	3		
	Credit Hours	16		
Second Year				
Fall				
MTH 230	Analytic Geometry and Calculus III	5	MTH 220 with a grade of "C" or better and Reading Proficiency	
PHY 223	Engineering Physics II	5	PHY 122 and MTH 220 with a minimum grades of "C" and Reading Proficiency	
ESC 203	Engineering Statics	3	PHY 122 with a minimum grade of "C" and Reading Proficiency	

ESC 200	Engineering Circuits I	4	PHY 122 with a minimum grade of "C", concurrent or prior enrollment in MTH 230 with a minimum grade of "C", and Reading Proficiency	
	Credit Hours	17		
Spring				
MTH 240	Differential Equations	3	MTH 230 with a grade of "C" or better and Reading Proficiency	
Engineering Science Elective		3		Choose from: ESC 204, ESC 205, ESC 206, ESC 207, EGR 100, ME 151, ME 249, CHM 106, ECO 151, ECO 152, PSY 200, PHL 103, ANT 102, or any other ESC course not already required for the program.
Engineering Science Elective		3		Choose from: ESC 204, ESC 205, ESC 206, ESC 207, EGR 100, ME 151, ME 249, CHM 106, ECO 151, ECO 152, PSY 200, PHL 103, ANT 102, or any other ESC course not already required for the program.
Engineering Science Elective		1-5		Choose from: ESC 204, ESC 205, ESC 206, ESC 207, EGR 100, ME 151, ME 249, CHM 106, ECO 151, ECO 152, PSY 200, PHL 103, ANT 102, or any other ESC course not already required for the program.
ENG 102 or 103 or COM 101 or COM 107	College Composition II (MOTR ENGL 200) or Report Writing (MOTR ENGL 110) or Oral Communication I (MOTR COMM 100) or Public Speaking (MOTR COMM 110)	3	ENG 101 with a minimum grade of "C" and Reading Proficiency	Check with transfer institution for recommendation.
	Credit Hours	13-17		
	Total Credit Hours	62-66		

*Click on the hyperlinked course number to view additional information about the course.

**Students completing a course that has been assigned a MOTR number may transfer that course to any public institution in Missouri. Those who complete CORE 42 requirements will have that verification on their transcript.

*** It is your responsibility to verify that the courses listed above will transfer to the four-year institution of your choice. Maximize your transfer credits/classes by meeting with an academic advisor.