

FOCUS AREA: ENGINEERING

This focus area is intended for students who plan to major in Engineering at a 4 year college or university, after completion of their associate's degree at St. Louis Community College. Your official degree that you will be pursuing at St. Louis Community College within this focus area is the Associate in Science - General STEM Transfer Studies (<http://catalog.stlcc.edu/programs/general-stem-transfer-studies-associate-science/#programrequirements>).

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>).

PLEASE NOTE: If you originally enrolled at STLCC prior to Fall 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	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/)			
MCE 100	Missouri Civics Examination	0		
	Credit Hours	13		
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	
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	
Elective		3		See suggested list below or check with transfer school.
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	Credit Hours	12		
	Total Credit Hours	58		

Suggested Electives

Code	Title	Credit Hours
ANT 102	Introduction to Cultural Anthropology (MOTR ANTH 201)	3
CHM 106	General Chemistry II	5
ECO 151	Principles of Macroeconomics (MOTR ECON 101)	3
ECO 152	Principles of Microeconomics (MOTR ECON 102)	3
EGR 100	Engineering Drawing	3

ESC 204	Engineering Dynamics	3
ESC 205	Mechanics of Materials	3
ESC 206	Strength of Materials Lab	1
ESC 207	Engineering Thermodynamics	3
ME 151	Manufacturing Processes I	3
ME 249	Materials and Metallurgy	3
PHL 103	World Religions (MOTR RELG 100)	3
PSY 200	General Psychology (MOTR PSYC 100)	3

*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.

This academic plan is a recommended sequence for this pathway. It serves as a **general guideline** to help you build a course schedule each term that supports your timely completion. The College has made every effort to ensure its accuracy. However, **the map is not a substitute for academic advisement—contact your advisor if you have any questions about your degree requirements.**

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This plan is designed for those students wishing to major in Civil Engineering, Mechanical Engineering, or Electrical Engineering at University of Missouri - St. Louis (UMSL) through their Joint Engineering Program with Washington University.

Code	Title	Hours	Prerequisites	Milestones/Notes
First Year				
Fall				
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	This fulfills the written communications requirement.
MTH 210	Analytic Geometry and Calculus I ¹	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	This fulfills the mathematics requirement.
CHM 105	General Chemistry I (MOTR CHEM 150L) ¹	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	This fulfills part of the natural science requirement.
ANT 102	Introduction to Cultural Anthropology (MOTR ANTH 201)	3	Reading Proficiency	This fulfills part of the elective requirement.
	Credit Hours	16		
Spring				
PHY 122	Engineering Physics I (MOTR PHYS 200L) ¹	5	MTH 210 with a minimum grade of "C" and Reading Proficiency	This fulfills part of the natural science requirement.
MTH 220	Analytic Geometry and Calculus II ¹	5	MTH 210 with a grade of "C" or better and Reading Proficiency	This fulfills part of the elective requirement.
ESC 101 or IS 167	Scientific Computer Programming ¹ or C++ Programming I	3	MTH 160 (or MTH 160S) or higher with a minimum grade of "C" and Reading Proficiency	This fulfills part of the elective requirement.
XXX xxx	MOTR Social and Behavioral Science (http://catalog.stlcc.edu/general-education/)	3		This fulfills part of the elective requirement.
	Credit Hours	16		
Second Year				
Fall				
PHY 223	Engineering Physics II ¹	5	PHY 122 and MTH 220 with a minimum grades of "C" and Reading Proficiency	This fulfills part of the elective requirement.
MTH 230	Analytic Geometry and Calculus III ¹	5	MTH 220 with a grade of "C" or better and Reading Proficiency	This fulfills part of the elective requirement.
ESC 203	Engineering Statics ¹	3	PHY 122 with a minimum grade of "C" and Reading Proficiency	This fulfills part of the elective requirement.
XXX xxx	MOTR Social and Behavioral Science (http://catalog.stlcc.edu/general-education/)	3		This fulfills part of the elective requirement.
	Credit Hours	16		
Spring				
MTH 240	Differential Equations ¹	3	MTH 230 with a grade of "C" or better and Reading Proficiency	This fulfills part of the elective requirement.
ESC 204	Engineering Dynamics ¹	3	ESC 203 with a minimum grade of "C" and Reading Proficiency	This fulfills part of the elective requirement.

ESC 205	Mechanics of Materials ¹	3	ESC 203 with a minimum grade of "C" and Reading Proficiency	This fulfills part of the elective requirement.
MCE 100	Missouri Civics Examination	0		
HST 101 or 102	United States History to 1865 (MOTR HIST 101) or United States History from 1865 to the Present (MOTR HIST 102)	3	Reading Proficiency or concurrent enrollment in RDG 079	This fulfills the civics requirement.
	Credit Hours	12		
	Total Credit Hours	60		

¹ A student must earn a 2.5 GPA over the sequence of pre-engineering courses.

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