St. Louis Community College — Missouri S&T

General Engineering Transfer Guide

Effective as of Fall 2023

Complete Group 1 - Core Requirements and Group 2 - Major Requirements for major of choice.

Group 1 - Core Requirements: All Majors Take All Courses

Engineering students take all Group 1 - Core Requirements and Group 2 - Major Requirements for major of choice. Math prerequisites: While they are not part of Missouri S&T engineering degree requirements, algebra and trigonometry skills are critical to success in calculus. To prepare for entry into calculus, students should follow math placement testing and advising recommendations at their college.

St. Louis Community College			Semester	Missouri S&T		
MTH 210	Analytical Geometry and Calculus I	5		MATH 1214	Calculus I Grade of C or better is required.	4
MTH 220	Analytical Geometry and Calculus II	5		MATH 1215	Calculus II Grade of C or better is required.	4
MTH 230	Analytical Geometry and Calculus III	5		MATH 2222	Calculus III Grade of C or better is required.	4
MTH 240	Differential Equations	3		MATH 3304	Elementary Differential Equations	3
PHY 122	Engineering Physics I	5		PHYSICS 1135	Engineering Physics I Grade of C or better is required.	4
PHY 223	Engineering Physics II	5		PHYSICS 2135	Engineering Physics II Grade of C or better is required.	4
CHM 105	General Chemistry I	5		CHEM 1310, 1319	General Chemistry I and Lab	5
GE 121	Principles of Engineering	3		FR ENG 1100	Study and Careers in Engineering and Computing	1
ENG 101	College Composition I	3		ENGLISH 1120	Exposition and Argumentation	3
ECO 152 or ECO 151	Principles of Microeconomics or Principles of Macroeconomics	3		ECON 1100 or ECON 1200	Principles of Microeconomics or Principles of Macroeconomics	3
	Total Hours	42			Total Hours	35

Group 2 - Major Requirements: Take All Courses for Major of Choice

Engineering students take all Group 1 - Core Requirements (above) and Group 2 - Major Requirements for chosen major from list below. See course requirements on following pages.

Aerospace Engineering	**Engineering Management**
Architectural Engineering	**Environmental Engineering**
Ceramic Engineering	**Geological Engineering**
Chemical Engineering	**Mechanical Engineering**
Chemical Engineering/Biochemistry Emphasis	**Metallurgical Engineering**
Civil Engineering	**Mining Engineering**
Computer Engineering	**Nuclear Engineering**
Electrical Engineering	**Petroleum Engineering**

Engineering Major Requirements are detailed on the following pages.

Free Electives: Some programs allow Free Electives as indicated within each major. Free Electives should be selected in consultation with your advisor and may not include remedial/deficiency courses, algebra, trigonometry, pre-calculus, or extra credits in required courses.

Humanities/Social Science (HSS) Electives: HSS electives may include any art, English and technical communication, etymology, foreign language, music, philosophy, speech and media studies, or theatre. Your campus may have additional acceptable options. Consult with your advisor or email transfer@mst.edu with questions. See Missouri S&T online catalog at https://catalog.mst.edu/undergraduate/degreeprogramsandcourses/ for more information.

Aerospace Engineering Group 2 Major Requirements

St. Louis Community College			Semester	Missouri S&T		
ESC 100	Engineering Computer Application and Design	3		MECH ENG 1720	Engineering Design with Computer Appl	3
HST 128 or HST 101 or HST 102 or PSC 101	Western Civilization 1500 to Present or US History to 1865 or US History 1865 to Present or Intro to American Politics	3		HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
ENG 102 or COM 107 or ENG 103	College Composition II or Public Speaking or Report Writing	3		ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
ESC 101 or IS 167	Scientific Computer Programming (3) or C++ Programming I (4)	3		CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
ESC 200	Engineering Circuits I	3		EE 2800	Circuit Analysis I	3
ESC 203	Engineering Statics	3		CIV ENG 2200	Engineering Mechanics-Statics	3
ESC 204	Engineering Dynamics	3		AERO ENG 2360	Dynamics	3
ESC 207	Engineering Thermodynamics	3		MECH ENG 2519	Thermodynamics	3
ESC 205	Mechanics of Materials	3		CIV ENG 2210	Mechanics of Materials	3
MTH 215	Linear Algebra	3		MATH 3108	Linear Algebra I or (Will satisfy the Advanced Math/Comp Sci elective requirement.)	3
ENG 210 or ENG 204 or ENG 231 or ENG 216 or ENG 217	British Literature I or American Literature I or World Literature or Women in Literature or Major Black Writers (or other literature elective)	3		ENGLISH 1211 or ENGLISH 1221 or ENGLISH 1231 or ENGLISH 2242 or ENGLISH 2245 or	British Literature I: The Beginnings to 1800 or American Literature: 1600 to 1865 or World Literature I or Literature by Women or African American Literature (or other literature elective)	3
	Ethics Elective Engineering, business, bio, social or other ethics approved by advisor.	3			Ethics Elective Engineering, business, bio, social or other ethics approved by advisor.	3
	No free electives applied to the degree.	0			Maximum Free Electives	0
	Group 2 Major Requirements	36			Group 2 Major Requirements	36
	Group 1 Core Requirements	42			Group 1 Core Requirements	35
	Total Hours	78			Total Hours*	71

*S&T advisor permission is required to transfer more than 68 credits toward the S&T Aerospace Engineering degree.

Architectural Engineering Group 2 Major Requirements

St. Louis Community College			Semester	Missouri S&T		
ESC 100	Engineering Computer Application and Design	3		MECH ENG 1720	Engineering Design with Computer Appl	3
HST 128* (or HST 101 or HST 102)	Western Civilization 1500 to Present* (or US History to 1865 or US History 1865 to Present) *HISTORY 128 is preferred; 101 or 102 will also be accepted.	3		HISTORY 1200* (or HISTORY 1300 or HISTORY 1310)	Modern Western Civilization* (or American History to 1877 or American History since 1877) *HISTORY 1200 is preferred; 1300 or 1310 will also be accepted.	3
ESC 203	Engineering Statics	3		CIV ENG 2200	Engineering Mechanics-Statics	3
ESC 204	Engineering Dynamics	3		MECH ENG 2350	Engineering Mechanics-Dynamics	2
ESC 205	Mechanics of Materials	3		CIV ENG 2210	Mechanics of Materials	3
ESC 206	Strength of Materials Lab	1		CIV ENG 2211	Materials Testing	1
CE 240	Plane Surveying	3		CIV ENG 2401	Fundamentals of Surveying	3
HSS Elective	Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3		HSS Elective	Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3
GEO 111	Physical Geology	5		GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
ESC 207	Engineering Thermodynamics	3		MECH ENG 2527	Thermal Analysis	3
	No free electives applied to the degree.	0			Maximum Free Electives	0
	Group 2 Major Requirements	30			Group 2 Major Requirements	27
	Group 1 Core Requirements	42			Group 1 Core Requirements	35
	Total Hours	72			Total Hours*	62

*S&T advisor permission is required to transfer more than 69 credits toward the S&T Architectural Engineering degree.

Ceramic Engineering Group 2 Major Requirements

St. Louis Community College			Semester	Missouri S&T		
ESC 100	Engineering Computer Application and Design	3		MECH ENG 1720	Engineering Design with Computer Appl	3
HST 128 or HST 101 or HST 102 or PSC 101	Western Civilization 1500 to Present or US History to 1865 or US History 1865 to Present or Intro to American Politics	3		HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
ESC 203	Engineering Statics	3		CIV ENG 2200	Engineering Mechanics-Statics	3
ESC 205	Mechanics of Materials	3		CIV ENG 2210	Mechanics of Materials	3
CHEM 206	Organic Chemistry I	3		CHEM 2210	Organic Chemistry I (Not a speciific requirement. Will satisfy the advanced chemistry elective requirement.)	3
CHM 106	General Chemistry II	5		CHEM 1320, 1520	General Chemistry II (3) and Qualitative Analysis (2)* *Note: CHEM 1510 is not an S&T degree requirement; course will transfer as elective credit.	3
ENG 102 or COM 107 or HSS Elective	College Composition II or Public Speaking or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3		ENGLISH 1160 or SPMS 1185 or HSS Elective	Writing and Research or Public Speaking or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3
	See your advisor for course options.	3			Humanities/Social Science Elective	3
	No free electives applied to the degree.	0			Maximum Free Electives	0
	Group 2 Major Requirements	26			Group 2 Major Requirements	24
	Group 1 Core Requirements	42			Group 1 Core Requirements	35
	Total Hours	68			Total Hours*	59

*S&T advisor permission is required to transfer more than 68 credits toward the S&T Ceramic Engineering degree.

Chemical Engineering Group 2 Major Requirements

St. Louis Community College			Semester	Missouri S&T		
ESC 100	Engineering Computer Application and Design	3		MECH ENG 1720	Engineering Design with Computer Appl	3
ENG 103	Report Writing	3		ENGLISH 3560	Technical Writing	3
HST 128 or HST 101 or HST 102 or PSC 101	Western Civilization 1500 to Present or US History to 1865 or US History 1865 to Present or Intro to American Politics	3		HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
CHM 106	General Chemistry II	5		CHEM 1320	General Chemistry II (3) and Qualitative Analysis (2)* *Note: CHEM 1510 is not an S&T degree requirement; course will transfer as elective credit.	5
CHM 206, 210	Organic Chemistry I and Lab	5		CHEM 2210	Organic Chemistry I	4
CHM 207	Organic Chemistry II and Lab	3		CHEM 2220	Organic Chemistry II and Lab (Will satisfy science elective requirement. Select up to 9 hours from these options.)	4
IS 187 or IS 280 or IS 167* or ESC 101*	Java Programming I (4) or Python (3) or C++ Programming I* (4) or Scientific Computer Programming (3)*	3		CS 1500 or CS 1971,1981*	Computational Problem Solving or Intro to Programming Methodology and Lab* CS 1971,1981 will be substituted by the department for CS 1500.	3
ESC 207	Engineering Thermodynamics	3		MECH ENG 2519*	Thermodynamics* *The combination of MECH ENG 2519 AND CHEM ENG 4000 (an independent study, online S&T course) will be substituted for CHEM ENG 2110 by the chemical engineering department. Students must complete both courses to receive credit.	3
COM 107	Public Speaking	3		SP&MS 1185	Principles of Speech	3
	Humanities/Social Science Elective	3			Humanities/Social Science Elective	3
	No free electives applied to the degree.	0			Maximum Free Electives	0
	Group 2 Major Requirements	34			Group 2 Major Requirements	34
	Group 1 Core Requirements	42			Group 1 Core Requirements	35
	Total Hours	76			Total Hours*	69

*S&T advisor permission is required to transfer more than 68 credits toward the S&T Chemical Engineering degree.

Chemical Engineering - Biochemical Engineering Emphasis
Group 2 Major Requirements

St. Louis Community College			Semester	Missouri S&T		
ESC 100	Engineering Computer Application and Design	3		MECH ENG 1720	Engineering Design with Computer Appl	3
ENG 103	Report Writing	3		ENGLISH 3560	Technical Writing	3
HST 128 or HST 101 or HST 102 or PSC 101	Western Civilization 1500 to Present or US History to 1865 or US History 1865 to Present or Intro to American Politics	3		HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
CHM 106	General Chemistry II	5		CHEM 1320	General Chemistry II	3
CHM 206, 210	Organic Chemistry I and Lab	5		CHEM 2210, 2219	Organic Chemistry I and Lab	4
CHM 207	Organic Chemistry II and Lab	3		CHEM 2220	Organic Chemistry II and Lab (Will satisfy science elective requirement..)	4
IS 187 or IS 280 or IS 167* or ESC 101*	Java Programming I (4) or Python (3) or C++ Programming I* (4) or Scientific Computer Programming (3)*	3		CS 1500 or CS 1971,1981*	Computational Problem Solving or Intro to Programming Methodology and Lab* CS 1971,1981 will be substituted by the department for CS 1500.	3
ESC 207	Engineering Thermodynamics	3		MECH ENG 2519*	Thermodynamics* *The combination of MECH ENG 2519 AND CHEM ENG 4000 (an independent study, online S&T course) will be substituted for CHEM ENG 2110 by the chemical engineering department. Students must complete both courses to receive credit.	3
COM 107	Public Speaking	3		SP&MS 1185	Principles of Speech	3
	Humanities/Social Science Elective	3			Humanities/Social Science Elective	3
	No free electives applied to the degree.	0			Maximum Free Electives	0
	Group 2 Major Requirements	34			Group 2 Major Requirements	32
	Group 1 Core Requirements	42			Group 1 Core Requirements	35
	Total Hours	76			Total Hours*	67

*S&T advisor permission is required to transfer more than 70 credits toward the S&T Chemical/Biochemical Engineering degree.

Civil Engineering Group 2 Major Requirements

St. Louis Community College			Semester	Missouri S&T		
ESC 100	Engineering Computer Application and Design	3		MECH ENG 1720	Engineering Design with Computer Appl	3
ENG 102 or COM 107 or ENG 103	College Composition II or Public Speaking or Report Writing	3		ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Public Speaking or Technical Writing	3
HST 128 or HST 101 or HST 102 or PSC 101	Western Civilization 1500 to Present or US History to 1865 or US History 1865 to Present or Intro to American Politics	3		HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
GEO 111	Physical Geology	3		GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
ESC 203	Engineering Mechanics I (Statics)	3		CIV ENG 2200	Engineering Mechanics-Statics	3
ESC 204	Engineering Mechanics II	3		MECH ENG 2350	Engineering Mechanics-Dynamics	2
ESC 205	Mechanics of Materials	3		CIV ENG 2210	Mechanics of Materials	3
ESC 206	Strength of Materials Lab	1		CIV ENG 2211	Materials Testing	1
CE 240	Plane Surveying	3		CIV ENG 2401	Fundamentals of Surveying	3
	Humanities/Social Science Elective	3			Humanities/Social Science Elective	3
	No free electives applied to the degree.	0			Maximum Free Electives	0
	Group 2 Major Requirements	28			Group 2 Major Requirements	27
	Group 1 Core Requirements	42			Group 1 Core Requirements	35
	Total Hours	70			Total Hours*	62

*S&T advisor permission is required to transfer more than 69 credits toward the S&T Civil Engineering degree.

Computer Engineering Group 2 Major Requirements

St. Louis Community College			Semester	Missouri S&T		
COM 107	Public Speaking	3		SPMS 1185	Public Speaking	3
ENG 102 or ENG 103	College Composition II or Report Writing	3		ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HST 128 or HST 101 or HST 102 or PSC 101	Western Civilization 1500 to Present or US History to 1865 or US History 1865 to Present or Intro to American Politics	3		HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
MTH 212	Discrete Mathematics	3		CS 1200	Discrete Math for Computer Science	3
IS 167	C++ Programming I or	3		CS 1500	Computational Problem Solving	3
ESC 203 or ESC 204 or ESC 207 or CHM 206 or BIO 225	Engineering Statics (3) or Engineering Dynamics (3) or Engineering Thermodynamics (3) or Organic Chemistry I (3) or Genetics (3)	3		CIV ENG 2200 or MECH ENG 2350 or MECH ENG 2519or CHEM 2210 or BIO SCI 2223	Engineering Mechanics-Statics (3) or Engineering Mechanics-Dynamics (2) or Thermodynamics (3) Organic Chemistry I (4) or General Genetics (3)	3
ESC 200	Engineering Circuits I	3		EE 2100**	Circuits I **A passing grade on the Missouri S&T EE Advancement Exam I is required to receive credit for EE 2100.	3
MTH 215	Linear Algebra	3		MATH 3108	Linear Algebra (Will satisfy a required math elective.)	3
	Humanities/Social Science Elective	3			Humanities/Social Science Elective	3
	See your advisor for course options.	0			Maximum Free Electives	3
	Group 2 Major Requirements	27			Group 2 Major Requirements	30
	Group 1 Core Requirements	42			Group 1 Core Requirements	35
	Total Hours	69			Total Hours*	65

*S&T advisor permission is required to transfer more than 68 credits toward the S&T Computer Engineering degree.

Electrical Engineering Group 2 Major Requirements

St. Louis Community College			Semester	Missouri S&T		
ESC 100	Engineering Computer Application and Design	3		MECH ENG 1720	Engineering Design with Computer Appl	3
COM 107	Public Speaking	3		SPMS 1185	Public Speaking	3
ENG 102 or ENG 103	College Composition II or Report Writing	3		ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HST 128 or HST 101 or HST 102 or PSC 101	Western Civilization 1500 to Present or US History to 1865 or US History 1865 to Present or Intro to American Politics	3		HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
IS 167	C++ Programming I or	3		CS 1500	Computational Problem Solving	3
ESC 203 and ESC 204 (BOTH of the courses above or ONE of the courses below.) OR ESC 207 or CHM 206 or BIO 225	Engineering Statics (3) and Engineering Dynamics (3) (Both courses above combined or any one of the following courses will satisfy a required engineering science elective.) OR Engineering Thermodynamics (3) or Organic Chemistry I (3) or Genetics (3)	3		CIV ENG 2200 and MECH ENG 2350 (BOTH of the courses above or ONE of the courses below.) OR MECH ENG 2519 or CHEM 2210 or BIO SCI 2223	Engineering Mechanics-Statics (3) and Engineering Mechanics-Dynamics (2) (Both courses above combined or any one of the following courses will satisfy a required engineering science elective.) OR Thermodynamics (3) or Organic Chemistry I (3) or General Genetics (3)	3
ESC 200	Engineering Circuits I	3		EE 2100**	Circuits I **A passing grade on the Missouri S&T EE Advancement Exam I is required to receive credit for EE 2100.	3
MTH 215	Linear Algebra	3		MATH 3108	Linear Algebra	3
	Humanities/Social Science Elective	3			Humanities/Social Science Elective	3
	Maximum Free Electives	3			Maximum Free Electives	3
	Group 2 Major Requirements	30			Group 2 Major Requirements	30
	Group 1 Core Requirements	42			Group 1 Core Requirements	35
	Total Hours	72			Total Hours*	65

*S&T advisor permission is required to transfer more than 68 credits toward the S&T Electrical Engineering degree.

Engineering Management Group 2 Major Requirements

St. Louis Community College			Semester	Missouri S&T		
ESC 100	Engineering Computer Application and Design	3		MECH ENG 1720	Engineering Design with Computer Appl	3
PSY 200	General Psychology I	3		PSYCH 1101	General Psychology	3
HST 128 or HST 101 or HST 102 or PSC 101	Western Civilization 1500 to Present or US History to 1865 or US History 1865 to Present or Intro to American Politics	3		HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
ENG 102 or ENG 103	College Composition II or Report Writing	3		ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
ESC 101 or IS 167	Scientific Computer Programming (3) or C++ Programming I (4)	3		CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
ESC 200	Engineering Circuits I	3		EE 2800	Circuit Analysis I	3
ESC 203	Engineering Statics	3		CIV ENG 2200	Engineering Mechanics-Statics	3
ESC 204	Engineering Dynamics	3		MECH ENG 2350	Engineering Mechanics-Dynamics	2
ESC 202	Thermal Analysis	3		MECH 2527	Thermal Analysis	3
ESC 205	Mechanics of Materials	3		CIV ENG 2210	Mechanics of Materials	3
ESC 206	Strength of Materials Lab	1		CIV ENG 2211	Materials Testing	1
	Humanities/Social Science Elective	3			Humanities/Social Science Elective	3
	Maximum Free Electives	3			Maximum Free Electives	3
	Group 2 Major Requirements	37			Group 2 Major Requirements	36
	Group 1 Core Requirements	42			Group 1 Core Requirements	35
	Total Hours	79			Total Hours*	71

*S&T advisor permission is required to transfer more than 68 credits toward the S&T Engineering Management degree.

Environmental Engineering Group 2 Major Requirements

St. Louis Community College			Semester	Missouri S&T		
ESC 100	Engineering Computer Application and Design	3		MECH ENG 1720	Engineering Design with Computer Appl	3
ENG 102 or COM 107 or ENG 103	College Composition II or Public Speaking or Report Writing	3		ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Public Speaking or Technical Writing	3
HST 128 or HST 101 or HST 102	Western Civilization 1500 to Present or US History to 1865 or US History 1865 to Present	3		HISTORY 1200 or HISTORY 1300 or HISTORY 1310	Modern Western Civilization or American History to 1877 or American History since 1877	3
GEO 111	Physical Geology	3		GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
CHM 106	General Chemistry II	5		CHEM 1320, 1510	General Chemistry II (3) and Qualitative Analysis (2)* *Note: CHEM 1510 is not an S&T degree requirement; course will transfer as elective credit.	3
BIO 140	Principles of Biology I	3		BIO SCI 1113	General Biology	4
ESC 203	Engineering Statics	3		CIV ENG 2200	Engineering Mechanics-Statics	3
ESC 204	Engineering Dynamics	3		MECH ENG 2350	Engineering Mechanics-Dynamics	2
ESC 205	Mechanics of Materials	3		CIV ENG 2210	Mechanics of Materials	3
ESC 206	Strength of Materials Lab	1		CIV ENG 2211	Materials Testing	1
	Humanities/Social Science Elective	3			Humanities/Social Science Elective	3
	No free electives applied to the degree.	0			Maximum Free Electives	0
	Group 2 Major Requirements	33			Group 2 Major Requirements	31
	Group 1 Core Requirements	42			Group 1 Core Requirements	35
	Total Hours	75			Total Hours*	66

*S&T advisor permission is required to transfer more than 69 credits toward the S&T Environmental Engineering degree.

Geological Engineering Group 2 Major Requirements

St. Louis Community College			Semester	Missouri S&T		
ESC 100	Engineering Computer Application and Design	3		MECH ENG 1720	Engineering Design with Computer Appl	3
ENG 103	Report Writing	3		ENGLISH 3560	Technical Writing	3
HST 128 or HST 101 or HST 102 or PSC 101	Western Civilization 1500 to Present or US History to 1865 or US History 1865 to Present or Intro to American Politics	3		HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
GEO 111	Physical Geology	3		GEO ENG 1150 (GEOLOGY 1110)	Physical and Environmental Geology	3
ESC 203	Engineering Statics	3		CIV ENG 2200	Engineering Mechanics-Statics	3
ESC 204	Engineering Dynamics	3		MECH ENG 2350	Engineering Mechanics-Dynamics	2
ESC 205	Mechanics of Materials	3		CIV ENG 2210	Mechanics of Materials	3
BIO 140 or CHM 106 or CHM 206	Principles of Biology I (5) or General Chemistry II (5) or Organic Chemistry I (3) or any 3-hour course in chemistry, geochemistry, or biology. Satisfies chemistry/geochemistry elective requirement.	3		BIO SCI 1113 or CHEM 1320 or CHEM 2210	General Biology or General Chemistry II or Organic Chemistry I or any 3-hour course in chemistry, geochemistry, or biology. Satisfies chemistry/geochemistry elective requirement.	3
	Humanities/Social Science Elective	3			Humanities/Social Science Elective	3
	Humanities/Social Science Elective	3			Humanities/Social Science Elective	3
	No free electives applied to the degree.	0			Maximum Free Electives	0
	Group 2 Major Requirements	30			Group 2 Major Requirements	29
	Group 1 Core Requirements	42			Group 1 Core Requirements	35
	Total Hours	72			Total Hours*	64

*S&T advisor permission is required to transfer more than 68 credits toward the S&T Geological Engineering degree.

Mechanical Engineering Group 2 Major Requirements

St. Louis Community College			Semester	Missouri S&T		
ESC 100	Engineering Computer Application and Design	3		MECH ENG 1720	Engineering Design with Computer Appl	3
HST 128 or HST 101 or HST 102 or PSC 101	Western Civilization 1500 to Present or US History to 1865 or US History 1865 to Present or Intro to American Politics	3		HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
ENG 102 or COM 107 or ENG 103	College Composition II or Public Speaking or Report Writing	3		ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
ESC 101 or IS 167	Scientific Computer Programming (3) or C++ Programming I (4)	3		CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
ESC 200	Engineering Circuits I	3		EE 2800	Circuit Analysis I	3
ESC 203	Engineering Statics	3		CIV ENG 2200	Engineering Mechanics-Statics	3
ESC 204	Engineering Dynamics	3		MECH ENG 2360	Dynamics	3
ESC 207	Engineering Thermodynamics	3		MECH ENG 2519	Thermodynamics	3
ESC 205	Mechanics of Materials	3		CIV ENG 2210	Mechanics of Materials	3
ESC 206	Strength of Materials Lab	1		CIV ENG 2211	Materials Testing	1
MTH 215	Linear Algebra	3		MATH 3108	Linear Algebra I or (Will satisfy the Advanced Math/Computer Science elective requirement.)	3
ME 249	Materials and Metallurgy	3		MET ENG 2110	Metallurgy for Engineers	3
ENG 210 or ENG 204 or ENG 231 or ENG 216 or ENG 217	British Literature I or American Literature I or World Literature or Women in Literature or Major Black Writers (or other literature elective)	3		ENGLISH 1211 or ENGLISH 1221 or ENGLISH 1231 or ENGLISH 2242 or ENGLISH 2245 or	British Literature I: The Beginnings to 1800 or American Literature: 1600 to 1865 or World Literature I or Literature by Women or African American Literature (or other literature elective)	3
	Humanities/Social Science Elective	3			Humanities/Social Science Elective	3
	No free electives applied to the degree.	0			Maximum Free Electives	0
	Group 2 Major Requirements	40			Group 2 Major Requirements	40
	Group 1 Core Requirements	42			Group 1 Core Requirements	35
	Total Hours	82			Total Hours*	75

*S&T advisor permission is required to transfer more than 68 credits toward the S&T Mechanical Engineering degree.

Metallurgical Engineering Group 2 Major Requirements

St. Louis Community College			Semester	Missouri S&T		
ESC 100	Engineering Computer Application and Design	3		MECH ENG 1720	Engineering Design with Computer Appl	3
ENG 102 or COM 107 or ENG 103	College Composition II or Public Speaking or Report Writing	3		ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Public Speaking or Technical Writing	3
HST 128 or HST 101 or HST 102 or PSC 101	Western Civilization 1500 to Present or US History to 1865 or US History 1865 to Present or Intro to American Politics	3		HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
ESC 203	Engineering Mechanics I (Statics)	3		CIV ENG 2200	Engineering Mechanics-Statics	3
ME 249	Materials and Metallurgy	3		MET ENG 2110	Metallurgy for Engineers	3
CHM 106	General Chemistry II	5		CHEM 1320, 1510	General Chemistry II (3) and Qualitative Analysis (2)* *Note: CHEM 1510 is not an S&T degree requirement; course will transfer as elective credit.	3
CHM 206 or ESC 200	Organic Chemistry I or Engineering Circuits	3		CHEM 2210 or EE 2800	Organic Chemistry I (4) or Electrical Circuits (3) or *Not specifically required for the degree but will satisfy Out-of-Department Technical Elective Requirement.*	3
	Humanities/Social Science Elective	3			Humanities/Social Science Elective	3
	Humanities/Social Science Elective	3			Humanities/Social Science Elective	3
	Maximum Free Electives	5			Maximum Free Electives	3
	Group 2 Major Requirements	34			Group 2 Major Requirements	30
	Group 1 Core Requirements	42			Group 1 Core Requirements	35
	Total Hours	76			Total Hours*	65

*S&T advisor permission is required to transfer more than 68 credits toward the S&T Metallurgical Engineering degree.

Mining Engineering Group 2 Major Requirements

St. Louis Community College			Semester	Missouri S&T		
ESC 100	Engineering Computer Application and Design	3		MECH ENG 1720	Engineering Design with Computer Appl	3
ENG 102 or ENG 103	College Composition II or Report Writing	3		ENGLISH 1160 or ENGLISH 3560 or ENGLISH 1600	Writing and Research or Technical Writing or Intro to Technical Communications	3
HST 128 or HST 101 or HST 102 or PSC 101	Western Civilization 1500 to Present or US History to 1865 or US History 1865 to Present or Intro to American Politics	3		HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
ESC 203	Engineering Statics	3		CIV ENG 2200*	Engineering Mechanics-Statics	3
ESC 204	Engineering Dynamics	3		MECH ENG 2350	Engineering Mechanics-Dynamics	2
ESC 207	Engineering Thermodynamics	3		MECH ENG 2527	Thermal Analysis	3
ESC 205	Mechanics of Materials	3		CIV ENG 2210	Mechanics of Materials	3
GEO 111	Physical Geology	3		GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
	Humanities/Social Science Elective	3			Humanities/Social Science Elective	3
	Humanities/Social Science Elective	3			Humanities/Social Science Elective	3
	No free electives applied to the degree.	0			Maximum Free Electives	0
	Group 2 Major Requirements	30			Group 2 Major Requirements	29
	Group 1 Core Requirements	42			Group 1 Core Requirements	35
	Total Hours	72			Total Hours*	64

*S&T advisor permission is required to transfer more than 68 credits toward the S&T Mining Engineering degree.

Nuclear Engineering Group 2 Major Requirements

St. Louis Community College			Semester	Missouri S&T		
ESC 100	Engineering Computer Application and Design	3		MECH ENG 1720	Engineering Design with Computer Appl	3
ENG 102 or ENG 103	College Composition II or Report Writing	3		ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HST 128 or HST 101 or HST 102 or PSC 101	Western Civilization 1500 to Present or US History to 1865 or US History 1865 to Present or Intro to American Politics	3		HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
MTH 215	Linear Algebra	3		MATH 3108	Linear Algebra	3
ESC 203	Engineering Statics	3		CIV ENG 2200	Engineering Mechanics-Statics	3
ESC 205	Mechanics of Materials	3		CIV ENG 2210	Mechanics of Materials	3
ME 249	Materials and Metallurgy	3		MET ENG 2110	Metallurgy for Engineers	3
ESC 101 or IS 167	Scientific Computer Programming (3) or C++ Programming I (4)	3		CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
	Humanities/Social Science Elective	3			Humanities/Social Science Elective	3
	Humanities/Social Science Elective	3			Humanities/Social Science Elective	3
	Maximum Free Electives	6			Maximum Free Electives	6
	Group 2 Major Requirements	36			Group 2 Major Requirements	36
	Group 1 Core Requirements	42			Group 1 Core Requirements	35
	Total Hours	78			Total Hours*	71

*S&T advisor permission is required to transfer more than 68 credits toward the S&T Nuclear Engineering degree.

Petroleum Engineering Group 2 Major Requirements

St. Louis Community College			Semester	Missouri S&T		
ESC 100	Engineering Computer Application and Design	3		MECH ENG 1720	Engineering Design with Computer Appl	3
ENG 102 or ENG 103	College Composition II or Report Writing	3		ENGLISH 3560 or ENGLISH 1160	Technical Writing (preferred) or Writing and Research or	3
HST 128 or HST 101 or HST 102 or PSC 101	Western Civilization 1500 to Present or US History to 1865 or US History 1865 to Present or Intro to American Politics	3		HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
GEO 111	Physical Geology	3		GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
ESC 203	Engineering Statics	3		CIV ENG 2200	Engineering Mechanics-Statics	3
ESC 204	Engineering Dynamics	3		MECH ENG 2350	Engineering Mechanics-Dynamics	2
ESC 205	Mechanics of Materials	3		CIV ENG 2210	Mechanics of Materials	3
ESC 207	Engineering Thermodynamics	3		MECH ENG 2527	Thermal Analysis	3
	Humanities/Social Science Elective	3			Humanities/Social Science Elective	3
	Humanities/Social Science Elective	3			Humanities/Social Science Elective	3
	No free electives applied to the degree.	0			Maximum Free Electives	0
	Group 2 Major Requirements	30			Group 2 Major Requirements	29
	Group 1 Core Requirements	42			Group 1 Core Requirements	35
	Total Hours	72			Total Hours*	64

*S&T advisor permission is required to transfer more than 69 credits toward the S&T Petroleum Engineering degree.