

## 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.

<u>St. Charles Community College</u>			<u>Semester</u>	<u>Missouri S&amp;T</u>			
MAT 180	Calculus and Analytical Geometry I	5	MATH 1214	Calculus I	Grade of C or better is required.	4	
MAT 230	Calculus and Analytical Geometry II	5	MATH 1215	Calculus II	Grade of C or better is required.	4	
MAT 240	Calculus and Analytical Geometry III	5	MATH 2222	Calculus III	Grade of C or better is required.	4	
MAT 250	Differential Equations	3	MATH 3304	Elementary Differential Equations		3	
PHY 250	Engineering Physics I	5	PHYSICS 1135	Engineering Physics I	Grade of C or better is required.	4	
PHY 251	Engineering Physics II	5	PHYSICS 2135	Engineering Physics II	Grade of C or better is required.	4	
CHM 115	General Chemistry I and Lab	5	CHEM 1310, 1319	General Chemistry I and Lab		5	
EGR 100	Introduction to Engineering	1	FR ENG 1100	Study and Careers in Engineering and Computing		1	
ENG 101	English Composition I	3	ENGLISH 1120	Exposition and Argumentation		3	
ECO 120 or	Principles of Microeconomics or	3	ECON 1100 or	Principles of Microeconomics or		3	
ECO 110	Principles of Macroeconomics		ECON 1200	Principles of Macroeconomics			
Total Hours		40				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**  
**Architectural Engineering**  
**Ceramic Engineering**  
**Chemical Engineering**  
**Engineering/Biochemistry Emphasis**  
**Civil Engineering**  
**Computer Engineering**  
**Electrical Engineering**

Engineering Management  
Environmental Engineering  
Geological Engineering  
Mechanical Engineering  
Metallurgical Engineering  
Mining Engineering  
Nuclear 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/degreeprogramsandscores/> for more information.

## Aerospace Engineering Group 2 Major Requirements

<u>St. Charles Community College</u>			<u>Semester</u>	<u>Missouri S&amp;T</u>		
EGR 104	Engineering Design	3		MECH ENG 1720	Engineering Design with Computer Appl	3
HIS 146 or	Western Civ: Modern European Heritage or			HISTORY 1200 or	Modern Western Civilization or	
HIS 101 or	US History to 1877 or	3		HISTORY 1300 or	American History to 1877 or	3
HIS 102 or	US History Since 1877 or			HISTORY 1310 or	American History Since 1877 or	
POL 101	American Government			POL SCI 1200	American Government	
ENG 102 or	English Composition II or			ENGLISH 1160 or	Writing and Research or	
COM 106 or	Public Speaking or	3		SPMS 1185 or	Principles of Speech or	3
ENG 115	Technical Writing			ENGLISH 3560	Technical Writing	
CPT 182	Beginning Programming in C++	3		CS 1570, 1580	Intro to Programming and Lab (C++)	4
EGR 220	Electrical Circuits	3		EE 2800	Electrical Circuits	3
EGR 170	Engineering Mechanics-Statics	3		CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 210	Engineering Mechanics-Dynamics	3		AERO ENG 2360	Dynamics	3
MAT 242	Introductory Linear Algebra	3		MATH 3108	Linear Algebra	3
LIT 250 or	English Literature Before 1800 or			(Will satisfy the Advanced Math/Comp Sci elective requirement.)		
LIT 210 or	American Literature From 1620-1865 or			ENGLISH 1211 or	British Literature I: The Beginnings to 1800 or	
LIT 272 or	World Lit-Ancient World thru Renaissance or	3		ENGLISH 1221 or	American Literature: 1600 to 1865 or	
LIT 223	African American Literature			ENGLISH 1231 or	World Literature I or	3
	(or other literature elective)			ENGLISH 2245 or	African American Literature	(or
	Ethics Elective	3			other literature elective)	
					Ethics Elective	3
					Engineering, business, bio, social or other ethics approved by advisor.	
	<i>No free electives applied to the degree.</i>	0			Maximum Free Electives	0
	Group 2 Major Requirements	30			Group 2 Major Requirements	31
	Group 1 Core Requirements	40			Group 1 Core Requirements	35
	Total Hours	70			Total Hours*	66

\*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

<u>St. Charles Community College</u>			<u>Semester</u>	<u>Missouri S&amp;T</u>		
MECH ENG 1720	Engineering Design with Computer Appl	3		MECH ENG 1720	Engineering Design with Computer Appl	3
HIS 146*	Western Civ: Modern European Heritage*			HISTORY 1200*	Modern Western Civilization*	
(or HIS 101 or	(or US History to 1877 or	3		(or HISTORY 1300 or	(or American History to 1877 or	3
HIS 102)	US History Since 1877)			HISTORY 1310)	American History since 1877)	
	*HIS 146 is preferred; 101 or 102 will also be accepted.				*HISTORY 1200 is preferred; 1300 or 1310 will also be accepted.	
EGR 170	Engineering Mechanics-Statics	3		CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 210	Engineering Mechanics-Dynamics	3		MECH ENG 2350	Engineering Mechanics-Dynamics	2
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
PHY 125	Intro to Physical Geology	3		GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
	<i>No free electives applied to the degree.</i>	0			Maximum Free Electives	0
	Group 2 Major Requirements	18			Group 2 Major Requirements	17
	Group 1 Core Requirements	40			Group 1 Core Requirements	35
	Total Hours	58			Total Hours*	52

\*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

<u>St. Charles Community College</u>			<u>Semester</u>	<u>Missouri S&amp;T</u>		
MECH ENG 1720	Engineering Design with Computer Appl	3		MECH ENG 1720	Engineering Design with Computer Appl	3
HIS 146 or HIS 101 or HIS 102 or POL 101	Western Civ: Modern European Heritage or US History to 1877 or US History Since 1877 or American Government	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
EGR 170	Engineering Mechanics-Statics	3		CIV ENG 2200	Engineering Mechanics-Statics	3
CHM 240	Organic Chemistry I	3		CHEM 2210	Organic Chemistry I (Not a specific requirement. Will satisfy the advanced chemistry elective requirement.)	4
CHM 116	General Chemistry II and Lab	5		CHEM 1320,1510*	General Chemistry II (3) and Qualitative Analysis* (2) *CHEM 1510 is not an S&T degree requirement; course will transfer as elective credit	3
ENG 102 or COM 106 or HSS Elective	English 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 Principles of Speech or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3
	Humanities/Social Science Elective	3			Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0			Maximum Free Electives	0
	Group 2 Major Requirements	23			Group 2 Major Requirements	22
	Group 1 Core Requirements	40			Group 1 Core Requirements	35
	Total Hours	63			Total Hours*	57

\*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

<u>St. Charles Community College</u>			<u>Semester</u>	<u>Missouri S&amp;T</u>		
MECH ENG 1720	Engineering Design with Computer Appl	3		MECH ENG 1720	Engineering Design with Computer Appl	3
ENG 115	Technical Writing	3		ENGLISH 3560	Technical Writing	3
HIS 146 or HIS 101 or HIS 102 or POL 101	Western Civ: Modern European Heritage or US History to 1877 or US History Since 1877 or American Government	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 116	General Chemistry II and Lab	5		CHEM 1320,1510*	General Chemistry II (3) and Qualitative Analysis* (2) *CHEM 1510 is not an S&T degree requirement; course will transfer as elective credit.	3
CHM 240 and CHM 241 and CHM 243	Organic Chemistry I and Organic Chemistry II and Organic Chemistry Lab	8		CHEM 2210, 2219 and CHM 2220,2229	Organic Chemistry I and Lab and Organic Chemistry II and Lab Will partially satisfy science elective requirement.	8
CPT 135 or CPT 185 or CPT 189 or CPT 182*	Computer Science I with Python (4) or Programming in C Sharp (3) or Java Programming (3) or Beginning Programming in C++*	3		CS 1500 or CS 1570, 1580*	Computational Problem Solving or Intro to Programming and Lab* (C++) (4) *Course will be substituted for CS 1500.	3
COM 106	Public Speaking	3		SP&MS 1185	Principles of Speech	3
	Humanities/Social Science Elective	3			Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0			Maximum Free Electives	0
	Group 2 Major Requirements	31			Group 2 Major Requirements	29
	Group 1 Core Requirements	40			Group 1 Core Requirements	35
	Total Hours	71			Total Hours*	64

\*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. Charles Community College			Semester	Missouri S&T		
MECH ENG 1720	Engineering Design with Computer Appl	3	MECH ENG 1720	Engineering Design with Computer Appl	3	
ENG 115	Technical Writing	3	ENGLISH 3560	Technical Writing	3	
HIS 146 or	Western Civ: Modern European Heritage or	3	HISTORY 1200 or	Modern Western Civilization or	3	
HIS 101 or	US History to 1877 or					
HIS 102 or	US History Since 1877 or					
POL 101	American Government					
CHM 116	General Chemistry II and Lab	5	CHEM 1320,1510*	General Chemistry II (3) and Qualitative Analysis* (2) *CHEM 1510 is not an S&T degree requirement; courses will transfer as elective credit	3	
CHM 240 and	Organic Chemistry I and	8	CHEM 2210, 2219 and	Organic Chemistry I and Lab and	8	
CHM 241 and	Organic Chemistry II and					
CHM 243	Organic Chemistry Lab					
CPT 135 or	Computer Science I with Python (4) or	3	CS 1500 or	Computational Problem Solving or	3	
CPT 185 or	Programming in C Sharp (3) or					
CPT 189 or	Java Programming (3) or					
CPT 182*	Beginning Programming in C++*					
COM 106	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	31		Group 2 Major Requirements	29	
	Group 1 Core Requirements	40		Group 1 Core Requirements	35	
	Total Hours	71		Total Hours*	64	
			*S&T advisor permission is required to transfer more than 70 credits toward the S&T Chemical/Biochemical Engineering degree.			

\*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. Charles Community College			Semester	Missouri S&T	
EGR 104	Engineering Design	3	MECH ENG 1720	Engineering Design with Computer Appl	3
ENG 102 or COM 106 or ENG 115	English Composition II or Public Speaking or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
HIS 146 or HIS 101 or HIS 102 or POL 101	Western Civ: Modern European Heritage or US History to 1877 or US History Since 1877 or American Government	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
PHY 125	Intro to Physical Geology	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
EGR 170	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 210	Engineering Mechanics-Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
	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	21		Group 2 Major Requirements	20
	Group 1 Core Requirements	40		Group 1 Core Requirements	35
	Total Hours	61		Total Hours*	55
			*S&T advisor permission is required to transfer more than 69 credits toward the S&T Civil Engineering degree.		

\*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

<u>St. Charles Community College</u>			<u>Semester</u>	<u>Missouri S&amp;T</u>		
COM 106	Public Speaking	3		SPMS 1185	Principles of Speech	3
ENG 102 or	English Composition II or			ENGLISH 1160 or	Writing and Research or	
ENG 115	Technical Writing	3		ENGLISH 3560	Technical Writing	3
HIS 146 or	Western Civ: Modern European Heritage or			HISTORY 1200 or	Modern Western Civilization or	
HIS 101 or	US History to 1877 or			HISTORY 1300 or	American History to 1877 or	
HIS 102 or	US History Since 1877 or	3		HISTORY 1310 or	American History since 1877 or	3
POL 101	American Government			POL SCI 1200	American Government	
CPT 135 or	Computer Science I with Python (4) or					
CPT 185 or	Programming in C Sharp (3) or	3		CS 1500	Computational Problem Solving	3
CPT 189	Java Programming (3)					
CPT 182	Beginning Programming in C++	3		CS 1570, 1580	Intro to Programming and Lab (C++)	4
CPT 281	Intro to Data Structures with C++	3		CS 1575	Data Structures	3
EGR 170 or	Engineering Mechanics-Statics or			CIV ENG 2200 or	Engineering Mechanics-Statics (3) or	
EGR 210 or	Engineering Mechanics-Dynamics or	3		MECH ENG 2350 or	Engineering Mechanics-Dynamics (2) or	3
CHEM 240	Organic Chemistry I			CHEM 2210	Organic Chemistry I (3)	
					Satisfies a required engineering/science elective.	
EGR 220	Electrical Circuits	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
MAT 242	Introductory Linear Algebra	3		MATH 3108	Linear Algebra (Will satisfy a required math elective.)	3
	Humanities/Social Science Elective	3			Humanities/Social Science Elective	3
	Maximum Free Electives	3			Maximum Free Electives	3
	Group 2 Major Requirements	33			Group 2 Major Requirements	34
	Group 1 Core Requirements	40			Group 1 Core Requirements	35
	Total Hours	73			Total Hours*	69
				*S&T advisor permission is required to transfer more than 68 credits toward the S&T Computer Engineering degree.		

\*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. Charles Community College			Semester	Missouri S&T		
EGR 104	Engineering Design	3	MECH ENG 1720	Engineering Design with Computer Appl	3	
COM 106	Public Speaking	3	SPMS 1185	Principles of Speech	3	
ENG 102 or	English Composition II or	3	ENGLISH 1160 or	Writing and Research or	3	
ENG 115	Technical Writing		ENGLISH 3560	Technical Writing		
HIS 146 or	Western Civ: Modern European Heritage or		HISTORY 1200 or	Modern Western Civilization or		
HIS 101 or	US History to 1877 or	3	HISTORY 1300 or	American History to 1877 or	3	
HIS 102 or	US History Since 1877 or		HISTORY 1310 or	American History since 1877 or		
POL 101	American Government		POL SCI 1200	American Government		
CPT 135 or	Computer Science I with Python (4) or	3	CS 1500	Computational Problem Solving	3	
CPT 185 or	Programming in C Sharp (3) or					
CPT 189	Java Programming (3)					
EGR 170 and	Engineering Mechanics-Statics (3) and	3-4	CIV ENG 2200 and	Engineering Mechanics-Statics (3) and	3-4	
EGR 210 and	Engineering Mechanics-Dynamics (3)		MECH ENG 2350	Engineering Mechanics-Dynamics (3)		
(BOTH of the courses above or	(Both courses above combined or any one of the following courses will		(BOTH of the courses above or	(Both courses above combined or any one of the following courses will satisfy a		
ONE of the courses below.)	satisfy a required engineering science elective.)		ONE of the courses below.)	required engineering science elective.)		
OR	OR		OR	OR		
CHEM 240	Organic Chemistry I (3)		CHEM 2210	Organic Chemistry I (4)		
EGR 220	Electrical Circuits	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	
MAT 242	Introductory 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	27		Group 2 Major Requirements	27	
	Group 1 Core Requirements	40		Group 1 Core Requirements	35	
	Total Hours	67		Total Hours*	62	
*S&T advisor permission is required to transfer more than 68 credits toward the S&T Electrical Engineering degree.						

\*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. Charles Community College			Semester	Missouri S&T		
EGR 104	Engineering Design	3	MECH ENG 1720	Engineering Design with Computer Appl	3	
PSY 101	Introduction to Psychology	3	PSYCH 1101	General Psychology	3	
HIS 146 or	Western Civ: Modern European Heritage or	3	HISTORY 1200 or	Modern Western Civilization or	3	
HIS 101 or	US History to 1877 or		HISTORY 1300 or	American History to 1877 or		
HIS 102 or	US History Since 1877 or		HISTORY 1310 or	American History since 1877 or		
POL 101	American Government		POL SCI 1200	American Government		
COM 106	Public Speaking	3	SPMS 1185	Principles of Speech	3	
ENG 102 or	English Composition II or	3	ENGLISH 1160 or	Writing and Research or	3	
ENG 115	Technical Writing		ENGLISH 3560	Technical Writing		
CPT 182	Beginning Programming in C++	3	CS 1570, 1580	Intro to Programming and Lab (C++)	4	
EGR 220	Electrical Circuits	3	EE 2800	Electrical Circuits	3	
EGR 170	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3	
EGR 210	Engineering Mechanics-Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2	
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3	
	Maximum Free Electives	3		Maximum Free Electives	3	
	Group 2 Major Requirements	33		Group 2 Major Requirements	33	
	Group 1 Core Requirements	40		Group 1 Core Requirements	35	
	Total Hours	73			Total Hours*	68
			*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. Charles Community College			Semester	Missouri S&T		
EGR 104	Engineering Design	3	MECH ENG 1720	Engineering Design with Computer Appl	3	
ENG 102 or COM 106 or ENG 115	English Composition II or Public Speaking or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3	
HIS 146 or HIS 101 or HIS 102	Western Civ: Modern European Heritage or US History to 1877 or US History Since 1877	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310	Modern Western Civilization or American History to 1877 or American History since 1877	3	
PHY 125	Intro to Physical Geology	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3	
			CHEM 1320	General Chemistry II	3	
BIO 105 or BIO 150	Essentials of Biology (3) or General Biology: Cells to organisms (5)	3	BIO SCI 1113	General Biology	3	
EGR 170	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3	
EGR 210	Engineering Mechanics-Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2	
	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	24		Group 2 Major Requirements	26	
	Group 1 Core Requirements	40		Group 1 Core Requirements	35	
	Total Hours	64		Total Hours*	61	
			*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. Charles Community College			Semester	Missouri S&T		
EGR 104	Engineering Design	3	MECH ENG 1720	Engineering Design with Computer Appl	3	
ENG 115	Technical Writing	3	ENGLISH 3560	Technical Writing	3	
HIS 146 or	Western Civ: Modern European Heritage or	3	HISTORY 1200 or	Modern Western Civilization or	3	
HIS 101 or	US History to 1877 or		HISTORY 1300 or	American History to 1877 or		
HIS 102 or	US History Since 1877 or		HISTORY 1310 or	American History since 1877 or		
POL 101	American Government		POL SCI 1200	American Government		
PHY 125	Intro to Physical Geology	3	GEO ENG 1150 (GEOLOGY 1110)	Physical and Environmental Geology	3	
EGR 170	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3	
EGR 210	Engineering Mechanics-Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2	
BIO 105 or	Essentials of Biology (3) or	3	BIO SCI 1113 or	General Biology or	3	
CHM 116 or	General Chemistry II (5) or		CHEM 1320 or	General Chemistry II or		
CHM 240	Organic Chemistry I (3)		CHEM 2210	Organic Chemistry I		
				or any 3-hour course in chemistry, geochemistry, or biology. Satisfies chemistry/geochemistry elective requirement.		
	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	27		Group 2 Major Requirements	26	
	Group 1 Core Requirements	40		Group 1 Core Requirements	35	
	Total Hours	67			Total Hours*	61
			*S&T advisor permission is required to transfer more than 68 credits toward the S&T Geological Engineering degree.			

\*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. Charles Community College			Semester	Missouri S&T		
EGR 104	Engineering Design	3	MECH ENG 1720	Engineering Design with Computer Appl	3	
HIS 146 or	Western Civ: Modern European Heritage or	3	HISTORY 1200 or	Modern Western Civilization or	3	
HIS 101 or	US History to 1877 or		HISTORY 1300 or	American History to 1877 or		
HIS 102 or	US History Since 1877 or		HISTORY 1310 or	American History since 1877 or		
POL 101	American Government		POL SCI 1200	American Government		
ENG 102 or	English Composition II or	3	ENGLISH 1160 or	Writing and Research or	3	
COM 106 or	Public Speaking or		SPMS 1185 or	Principles of Speech or		
ENG 115	Technical Writing		ENGLISH 3560	Technical Writing		
CPT 182	Beginning Programming in C++	3	CS 1570, 1580	Intro to Programming and Lab (C++)	4	
EGR 220	Electrical Circuits	3	EE 2800	Electrical Circuits	3	
EGR 170	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3	
EGR 210	Engineering Mechanics-Dynamics	3	MECH ENG 2360	Dynamics	3	
MAT 242	Introductory Linear Algebra	3	MATH 3108	Linear Algebra I (Will satisfy the Advanced Math/Computer Science elective requirement.)	3	
LIT 250 or	English Literature Before 1800 or	3	ENGLISH 1211 or	British Literature I: The Beginnings to 1800 or	3	
LIT 210 or	American Literature From 1620-1865 or		ENGLISH 1221 or	American Literature: 1600 to 1865 or		
LIT 272 or	World Lit-Ancient World thru Renaissance or		ENGLISH 1231 or	World Literature I or		
LIT 223	African American Literature (or other literature elective)		ENGLISH 2245 or	African American Literature (or other literature elective)		
	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	31	
	Group 1 Core Requirements	40		Group 1 Core Requirements	35	
	Total Hours	70		Total Hours*	66	
*S&T advisor permission is required to transfer more than 68 credits toward the S&T Mechanical Engineering degree.						

\*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. Charles Community College			Semester	Missouri S&T	
EGR 104	Engineering Design	3	MECH ENG 1720	Engineering Design with Computer Appl	3
ENG 102 or COM 106 or ENG 115	English Composition II or Public Speaking or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
HIS 146 or HIS 101 or HIS 102 or POL 101	Western Civ: Modern European Heritage or US History to 1877 or US History Since 1877 or American Government	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
EGR 170	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
CHM 116	General Chemistry II and Lab	5	CHEM 1320,1510*	General Chemistry II (3) and Qualitative Analysis* (2) *CHEM 1510 is not an S&T degree requirement; course will transfer as elective credit.	3
CHM 240 or EGR 220	Organic Chemistry I or Electrical Circuits	3	CHEM 2210 or EE 2800	Organic Chemistry I or Electrical Circuits <i>Not specifically required for the degree but will satisfy Out-of-Department Technical Elective Requirement</i>	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	31		Group 2 Major Requirements	27
	Group 1 Core Requirements	40		Group 1 Core Requirements	35
	Total Hours	71		Total Hours*	62
			*S&T advisor permission is required to transfer more than 68 credits toward the S&T Metallurgical Engineering degree.		

\*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. Charles Community College			Semester	Missouri S&T	
EGR 104	Engineering Design	3	MECH ENG 1720	Engineering Design with Computer Appl	3
ENG 102 or	English Composition II or	3	ENGLISH 1160 or	Writing and Research or	3
COM 106	Public Speaking		ENGLISH 3560	Technical Writing	
HIS 146 or	Western Civ: Modern European Heritage or	3	HISTORY 1200 or	Modern Western Civilization or	3
HIS 101 or	US History to 1877 or		HISTORY 1300 or	American History to 1877 or	
HIS 102 or	US History Since 1877 or		HISTORY 1310 or	American History since 1877 or	
POL 101	American Government		POL SCI 1200	American Government	
EGR 170	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 210	Engineering Mechanics-Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
PHY 125	Intro to 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	24		Group 2 Major Requirements	23
	Group 1 Core Requirements	40		Group 1 Core Requirements	35
	Total Hours	64		Total Hours*	58
			*S&T advisor permission is required to transfer more than 68 credits toward the S&T Mining Engineering degree.		

\*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

<u>St. Charles Community College</u>			<u>Semester</u>	<u>Missouri S&amp;T</u>		
EGR 104	Engineering Design	3	MECH ENG 1720	Engineering Design with Computer Appl	3	
ENG 102 or	English Composition II or		ENGLISH 1160 or	Writing and Research or		
COM 106 or	Public Speaking or	3	SPMS 1185 or	Principles of Speech or	3	
ENG 115	Technical Writing		ENGLISH 3560	Technical Writing		
HIS 146 or	Western Civ: Modern European Heritage or		HISTORY 1200 or	Modern Western Civilization or		
HIS 101 or	US History to 1877 or		HISTORY 1300 or	American History to 1877 or		
HIS 102 or	US History Since 1877 or	3	HISTORY 1310 or	American History since 1877 or	3	
POL 101	American Government		POL SCI 1200	American Government		
CPT 182	Beginning Programming in C++	3	CS 1570, 1580*	Intro to Programming and Lab (C++)* (4)	3	
MAT 242	Introductory Linear Algebra	3		*CS 1570, 1580 will be substituted for CS 1971, 1981..		
EGR 170	Engineering Mechanics-Statics	3	MATH 3108	Linear Algebra	3	
EGR 220	Electrical Circuits	3	CIV ENG 2200	Engineering Mechanics-Statics	3	
	Humanities/Social Science Elective	3	EE 2800	Electrical Circuits	3	
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3	
	Maximum Free Electives	6		Humanities/Social Science Elective	3	
	Group 2 Major Requirements	33		Maximum Free Electives	6	
	Group 1 Core Requirements	40		Group 2 Major Requirements	33	
				Group 1 Core Requirements	35	
	Total Hours	73			Total Hours*	68
*S&T advisor permission is required to transfer more than 68 credits toward the S&T Nuclear Engineering degree.						

\*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. Charles Community College			Semester	Missouri S&T		
EGR 104	Engineering Design	3	MECH ENG 1720	Engineering Design with Computer Appl	3	
ENG 102 or	English Composition II or	3	ENGLISH 1160 or	Writing and Research or	3	
COM 106	Public Speaking		ENGLISH 3560	Technical Writing		
HIS 146 or	Western Civ: Modern European Heritage or		HISTORY 1200 or	Modern Western Civilization or		
HIS 101 or	US History to 1877 or	3	HISTORY 1300 or	American History to 1877 or	3	
HIS 102 or	US History Since 1877 or		HISTORY 1310 or	American History since 1877 or		
POL 101	American Government		POL SCI 1200	American Government		
PHY 125	Intro to Physical Geology	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3	
EGR 170	Engineering Mechanics-Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3	
EGR 210	Engineering Mechanics-Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2	
	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	24		Group 2 Major Requirements	23	
	Group 1 Core Requirements	40		Group 1 Core Requirements	35	
	Total Hours	64		Total Hours*	58	
*S&T advisor permission is required to transfer more than 69 credits toward the S&T Petroleum Engineering degree.						

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