

# Mineral Area College — Missouri S&T

## General Engineering Transfer Guide

Effective as of Fall 2020

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>Mineral Area College</u>			<u>Semester</u>	<u>Missouri S&amp;T</u>			
MAT 1650	Analytical Geometry and Calculus I	5		MATH 1214	Calculus for Engineers I	4	
MAT 2150	Analytical Geometry and Calculus II	5		MATH 1215	Calculus for Engineers II	4	
MAT 2250	Analytical Geometry and Calculus III	5		MATH 2222	Calculus with Analytic Geometry III	4	
MAT 2330	Differential Equations	3		MATH 3304	Elementary Differential Equations	3	
PHS 2230	General Physics I	4		PHYSICS 1135	Engineering Physics I	4	
PHS 2240	General Physics II	4		PHYSICS 2135	Engineering Physics II	4	
PHS 1350	General Chemistry I	5		CHEM 1310, 1319	General Chemistry I and Lab	5	
ENG 1330	English Composition I	3		ENGLISH 1120	Exposition and Argumentation	3	
BUS 2940 or BUS 2930	Principles of Microeconomics or Principles of Macroeconomics	3		ECON 1100 or ECON 1200	Principles of Microeconomics or Principles of Macroeconomics	3	
Total Hours			37	Total Hours			34

### 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**  
**Chemical 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 history, economics, political science, sociology, psychology, philosophy, fine art, literature, or foreign language. Missouri S&T approved HSS courses are listed at [ugs.mst.edu](http://ugs.mst.edu). Your campus may have additional acceptable options. Consult with your advisor or email [transfer@mst.edu](mailto:transfer@mst.edu) with questions.

## Aerospace Engineering Group 2 Major Requirements

	<u>Mineral Area College</u>	<u>Semester</u>		<u>Missouri S&amp;T</u>	
TEC 1300 and TEC 2050	Computer Aided Design and Drafting and Engineering Design & Development	3	MECH ENG 1720	Engineering Design with Computer Appl	3
HIS 1140 or HIS 1230 or HIS 1240 or POS 1180	Western Civilization II or American History I or American History II or American Political Systems	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 1340 or ENG 1440	English Composition or Public Speaking	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
CSC 2400	Computer Programming in C++	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
EGN 2340	Intro to Electrical Engineering	4	EE 2800	Circuit Analysis I	3
EGN 2130	Engineering Mechanics- Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGN 2230	Engineering Mechanics-Dynamics	3	AERO ENG 2360	Dynamics	3
ENG 2330 or ENG 2430 or ENG 2492	English Literature I or American Literature I or Women's Literature (or other literature elective)	3	ENGLISH 1211 or ENGLISH 1221 or ENGLISH 2242	British Literature I: The Beginnings to 1800 or American Literature: 1600 to 1865 or Literature by Women (or other literature elective)	3
	<i>See your advisor for course options.</i>	3		Ethics Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	28		Group 2 Major Requirements	27
	Group 1 Core Requirements	37		Group 1 Core Requirements	34
	Total Hours	65		Total Hours*	61

\*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>Mineral Area College</u>	<u>Semester</u>		<u>Missouri S&amp;T</u>	
TEC 1300 and TEC 2050	Computer Aided Design and Drafting and Engineering Design & Development	3	MECH ENG 1720	Engineering Design with Computer Appl	3
HIS 1140* (or HIS 1230 or HIS 1240)	Western Civilization II* (or American History I or American History II) <small>*HIS 1140 is preferred; 1230 or 1240 will also be accepted.</small>	3	HISTORY 1200* (or HISTORY 1300 or HISTORY 1310)	Modern Western Civilization* (or American History to 1877 or American History since 1877) <small>*HISTORY 1200 is preferred; 1300 or 1310 will also be accepted.</small>	3
EGN 2130	Engineering Mechanics- Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGN 2230	Engineering Mechanics-Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	3
TEC 1540	Surveying I	3	CIV ENG 2401	Fundamentals of Surveying	3
ENG 1340 or ENG 1440 or HSS Elective	English Composition 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
PHS 2410	Physical Geology	5	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	23		Group 2 Major Requirements	21
	Group 1 Core Requirements	37		Group 1 Core Requirements	34
	Total Hours	60		Total Hours*	55

\*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>Mineral Area College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
TEC 1300 and TEC 2050	Computer Aided Design and Drafting and Engineering Design & Development	3	MECH ENG 1720	Engineering Design with Computer Appl	3
HIS 1140 or HIS 1230 or HIS 1240 or POS 1180	Western Civilization II or American History I or American History II or American Political Systems	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
EGN 2130	Engineering Mechanics- Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PHS 2350	Organic Chemistry I	5	CHEM 2210,2219*	Organic Chemistry I (3) and Lab* (2) <small>(CHEM 2210 will satisfy technical elective requirement; CHEM 2219 will transfer as elective credit.)</small>	3
PHS 1390	General Chemistry II	4	CHEM 1320	General Chemistry II	3
ENG 1340 or ENG 1440 or HSS Elective	English Composition 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
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	24		Group 2 Major Requirements	21
	Group 1 Core Requirements	37		Group 1 Core Requirements	34
	Total Hours	61		Total Hours*	55

\*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>Mineral Area College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
TEC 1300 and TEC 2050	Computer Aided Design and Drafting and Engineering Design & Development	3	MECH ENG 1720	Engineering Design with Computer Appl	3
ENG 1340	English Composition	3	ENGLISH 1160	Writing and Research	3
HIS 1140 or HIS 1230 or HIS 1240 or POS 1180	Western Civilization II or American History I or American History II or American Political Systems	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
PHS 1390	General Chemistry II	4	CHEM 1320	General Chemistry II	3
PHS 2350	Organic Chemistry I	5	CHEM 2210, 2219	Organic Chemistry I and Lab	5
PHS 2360	Organic Chemistry II	5	CHEM 2220, 2229	Organic Chemistry II and Lab <small>(Will satisfy science elective requirement.)</small>	5
CSC 2400	Computer Programming in C++	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
ENG 1440	Public Speaking	3	SP&MS 1185	Principles of Speech	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	32		Group 2 Major Requirements	31
	Group 1 Core Requirements	37		Group 1 Core Requirements	34
	Total Hours	69		Total Hours*	65

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

## Chemical Engineering - Biochemical Engineering Emphasis Group 2 Major Requirements

<u>Mineral Area College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
TEC 1300 and TEC 2050	Computer Aided Design and Drafting and Engineering Design & Development	3	MECH ENG 1720	Engineering Design with Computer Appl	3
ENG 1340	English Composition	3	ENGLISH 1160	Writing and Research	3
HIS 1140 or HIS 1230 or HIS 1240 or POS 1180	Western Civilization II or American History I or American History II or American Political Systems	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
PHS 1390	General Chemistry II	4	CHEM 1320	General Chemistry II	3
PHS 2350	Organic Chemistry I	5	CHEM 2210, 2219	Organic Chemistry I and Lab	5
PHS 2360	Organic Chemistry II	5	CHEM 2220, 2229	Organic Chemistry II and Lab (Will satisfy science elective requirement.)	5
CSC 2400	Computer Programming in C++	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
ENG 1440	Public Speaking	3	SP&MS 1185	Principles of Speech	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	32		Group 2 Major Requirements	31
	Group 1 Core Requirements	37		Group 1 Core Requirements	34
	Total Hours	69		Total Hours*	65

\*S&T advisor permission is required to transfer more than 71 credits toward the S&T Chemical/Biochemical Engineering degree.

## Civil Engineering Group 2 Major Requirements

<u>Mineral Area College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
TEC 1300 and TEC 2050	Computer Aided Design and Drafting and Engineering Design & Development	3	MECH ENG 1720	Engineering Design with Computer Appl	3
ENG 1340 or ENG 1440	English Composition or Public Speaking	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
HIS 1140 or HIS 1230 or HIS 1240 or POS 1180	Western Civilization II or American History I or American History II or American Political Systems	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
PHS 2410	Physical Geology	5	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
EGR 2130	Engineering Mechanics- Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 2230	Engineering Mechanics-Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	3
TEC 154	Surveying I	3	CIV ENG 2401	Fundamentals of Surveying	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	26		Group 2 Major Requirements	24
	Group 1 Core Requirements	37		Group 1 Core Requirements	34
	Total Hours	63		Total Hours*	58

\*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>Mineral Area College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENG 1440	Public Speaking	3	SPMS 1185	Public Speaking	3
ENG 1340	English Composition	3	ENGLISH 1160	Writing and Research	3
HIS 1140 or HIS 1230 or HIS 1240 or POS 1180	Western Civilization II or American History I or American History II or American Political Systems	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
EGN 2130 and EGN 2230 (BOTH of the courses above or ONE of the courses below.) OR PHS 2350 or BIO 2360	Engineering Mechanics- Statics (3) and Engineering Mechanics- Dynamics (3) (Both courses above combined or any one of the following courses will satisfy a required engineering science elective.) OR Organic Chemistry I (5) or Survey of Genetics (4)	4-6	CIV ENG 2200 and MECH ENG 2350 (BOTH of the courses above or ONE of the courses below.) OR CHEM 2210 or BIO SCI 2223	Engineering Mechanics-Statics (3 hours) and Engineering Mechanics-Dynamics (3 hours) (Both courses above combined or any one of the following courses will satisfy a required engineering science elective.) OR Organic Chemistry I (4 hours) or General Genetics (3 hours)	3-6
EGN 2340	Intro to Electrical Engineering	4	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
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Maximum Free Electives	3
	Group 2 Major Requirements	19		Group 2 Major Requirements	18
	Group 1 Core Requirements	37		Group 1 Core Requirements	34
	Total Hours	56		Total Hours*	52

\*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

<u>Mineral Area College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
TEC 1300 and TEC 2050	Computer Aided Design and Drafting and Engineering Design & Development	3	MECH ENG 1720	Engineering Design with Computer Appl	3
ENG 1440	Public Speaking	3	SPMS 1185	Public Speaking	3
ENG 1340	English Composition	3	ENGLISH 1160	Writing and Research	3
HIS 1140 or HIS 1230 or HIS 1240 or POS 1180	Western Civilization II or American History I or American History II or American Political Systems	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
EGN 2130 and EGN 2230 (BOTH of the courses above or ONE of the courses below.) OR PHS 2350 or BIO 2360	Engineering Mechanics- Statics (3) and Engineering Mechanics- Dynamics (3) (Both courses above combined or any one of the following courses will satisfy a required engineering science elective.) OR Organic Chemistry I (5) or Survey of Genetics (4)	4-6	CIV ENG 2200 and MECH ENG 2350 (BOTH of the courses above or ONE of the courses below.) OR CHEM 2210 or BIO SCI 2223	Engineering Mechanics-Statics (3 hours) and Engineering Mechanics-Dynamics (3 hours) (Both courses above combined or any one of the following courses will satisfy a required engineering science elective.) OR Organic Chemistry I (4 hours) or General Genetics (3 hours)	3-6
EGN 2340	Intro to Electrical Engineering	4	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
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Maximum Free Electives	3
	Group 2 Major Requirements	19		Group 2 Major Requirements	21
	Group 1 Core Requirements	37		Group 1 Core Requirements	34
	Total Hours	56		Total Hours*	55

\*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

<u>Mineral Area College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
TEC 1300 and TEC 2050	Computer Aided Design and Drafting and Engineering Design & Development	3	MECH ENG 1720	Engineering Design with Computer Appl	3
PSY 1130	General Psychology I	3	PSYCH 1101	General Psychology	3
HIS 1140 or HIS 1230 or HIS 1240 or POS 1180	Western Civilization II or American History I or American History II or American Political Systems	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 1340 or ENG 1440	English Composition or Public Speaking	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
CSC 2400	Computer Programming in C++	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
EGN 2340	Intro to Electrical Engineering	4	EE 2800	Circuit Analysis I	3
EGN 2130	Engineering Mechanics- Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGN 2230	Engineering Mechanics-Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	3
	<i>See your advisor for course options.</i>			Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>			Maximum Free Electives	3
	Group 2 Major Requirements	25		Group 2 Major Requirements	30
	Group 1 Core Requirements	37		Group 1 Core Requirements	34
	Total Hours	62		Total Hours*	64

\*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

<u>Mineral Area College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
TEC 1300 and TEC 2050	Computer Aided Design and Drafting and Engineering Design & Development	3	MECH ENG 1720	Engineering Design with Computer Appl	3
ENG 1340 or ENG 1440	English Composition or Public Speaking	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
HIS 1140 or HIS 1230 or HIS 1240	Western Civilization II or American History I or American History II	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310	Modern Western Civilization or American History to 1877 or American History Since 1877	3
PHS 2410	Physical Geology	5	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
PHS 1390	General Chemistry II	4	CHEM 1320	General Chemistry II	3
BIO 1150	General Biology	5	BIO SCI 1113	General Biology	4
EGN 2130	Engineering Mechanics- Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGN 2230	Engineering Mechanics-Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	32		Group 2 Major Requirements	28
	Group 1 Core Requirements	37		Group 1 Core Requirements	34
	Total Hours	69		Total Hours*	62

\*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

	<u>Mineral Area College</u>	<u>Semester</u>		<u>Missouri S&amp;T</u>	
TEC 1300 and TEC 2050	Computer Aided Design and Drafting and Engineering Design & Development	3		MECH ENG 1720 Engineering Design with Computer Appl	3
ENG 1340 or ENG 1440	English Composition or Public Speaking	3		ENGLISH 1160 or SPMS 1185 Writing and Research or Principles of Speech	3
HIS 1140 or HIS 1230 or HIS 1240 or POS 1180	Western Civilization II or American History I or American History II or American Political Systems	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
PHS 2410	Physical Geology and Lab	5		GEO ENG 1150 (GEOLOGY 1110) Physical and Environmental Geology	3
EGN 2130	Engineering Mechanics- Statics	3		CIV ENG 2200 Engineering Mechanics-Statics	3
EGN 2230	Engineering Mechanics-Dynamics	3		MECH ENG 2350 Engineering Mechanics-Dynamics	3
BIO 1150 or PHS 1390 or PHS 2350	General Biology (5) or General Chemistry (4) or Organic Chemistry I (5)	4-5		BIO SCI 1113,1219* or CHEM 1320 or CHEM 2210, 2219* General Biology (3) and Lab (2) or General Chemistry II (3) or Organic Chemistry I (4) and Lab* (1) <small>or any 3-hour course in chemistry, geochemistry, or biology. Satisfies chemistry/geochemistry elective requirement. *Lab sections will transfer as elective credit.</small>	3-4
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	26		Group 2 Major Requirements	24
	Group 1 Core Requirements	37		Group 1 Core Requirements	34
	Total Hours	63		Total Hours*	58

\*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

	<u>Mineral Area College</u>	<u>Semester</u>		<u>Missouri S&amp;T</u>	
TEC 1300 and TEC 2050	Computer Aided Design and Drafting and Engineering Design & Development	3		MECH ENG 1720 Engineering Design with Computer Appl	3
HIS 1140 or HIS 1230 or HIS 1240 or POS 1180	Western Civilization II or American History I or American History II or American Political Systems	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 1340 or ENG 1440	English Composition or Public Speaking	3		ENGLISH 1160 or SPMS 1185 Writing and Research or Principles of Speech	3
CSC 2400	Computer Programming in C++	3		CS 1971, 1981 Intro to Programming Method and Lab (C++)	3
EGN 2340	Intro to Electrical Engineering	4		EE 2800 Circuit Analysis I	3
EGN 2130	Engineering Mechanics- Statics	3		CIV ENG 2200 Engineering Mechanics-Statics	3
EGN 2230	Engineering Mechanics-Dynamics	3		MECH ENG 2360 Dynamics	3
ENG 2330 or ENG 2430 or ENG 2492	English Literature I or American Literature I or Women's Literature <small>(or other literature elective)</small>	3		ENGLISH 1211 or ENGLISH 1221 or ENGLISH 2242 British Literature I: The Beginnings to 1800 or American Literature: 1600 to 1865 or Literature by Women <small>(or other literature elective)</small>	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	28		Group 2 Major Requirements	27
	Group 1 Core Requirements	37		Group 1 Core Requirements	34
	Total Hours	65		Total Hours*	61

\*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

<u>Mineral Area College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
TEC 1300 and TEC 2050	Computer Aided Design and Drafting and Engineering Design & Development	3	MECH ENG 1720	Engineering Design with Computer Appl	3
ENG 1340 or ENG 1440	English Composition or Public Speaking	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
HIS 1140 or HIS 1230 or HIS 1240 or POS 1180	Western Civilization II or American History I or American History II or American Political Systems	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
EGN 2130	Engineering Mechanics- Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PHS 1390	General Chemistry II	4	CHEM 1320	General Chemistry II	3
PHS 2350 or EGN 2340	Organic Chemistry I (5) or Intro to Electrical Engineering (4)	4-5	CHEM 2210 or EE 2800	Organic Chemistry I (4 hours) or Electrical Circuits (3 hours)	3-4
	<i>See your advisor for course options.</i>	3		<i>Not specifically required for the degree but will satisfy Out-of-Department Technical Elective requirement.</i>	
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	5		Humanities/Social Science Elective	3
	Group 2 Major Requirements	27		Maximum Free Electives	5
	Group 1 Core Requirements	37		Group 2 Major Requirements	26
	Total Hours	64		Group 1 Core Requirements	34
				Total Hours*	60

\*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

<u>Mineral Area College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
TEC 1300 and TEC 2050	Computer Aided Design and Drafting and Engineering Design & Development	3	MECH ENG 1720	Engineering Design with Computer Appl	3
ENG 1340	English Composition	3	ENGLISH 1160	Writing and Research	3
HIS 1140 or HIS 1230 or HIS 1240 or POS 1180	Western Civilization II or American History I or American History II or American Political Systems	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
EGN 2130	Engineering Mechanics- Statics	3	CIV ENG 2200*	Engineering Mechanics-Statics	3
EGN 2230	Engineering Mechanics-Dynamics	3	MECH ENG 2350*	Engineering Mechanics-Dynamics	3
PHS 2410	Physical Geology	5	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	26		Group 2 Major Requirements	24
	Group 1 Core Requirements	37		Group 1 Core Requirements	34
	Total Hours	63		Total Hours*	58

\*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>Mineral Area College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
TEC 1300 and TEC 2050	Computer Aided Design and Drafting and Engineering Design & Development	3	MECH ENG 1720	Engineering Design with Computer Appl	3
ENG 1340	English Composition	3	ENGLISH 1160	Writing and Research	3
HIS 1140 or HIS 1230 or HIS 1240 or POS 1180	Western Civilization II or American History I or American History II or American Political Systems	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
EGN 2130	Engineering Mechanics- Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	6		Maximum Free Electives	6
	Group 2 Major Requirements	24		Group 2 Major Requirements	24
	Group 1 Core Requirements	37		Group 1 Core Requirements	34
	Total Hours	61		Total Hours*	58

\*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

<u>Mineral Area College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
TEC 1300 and TEC 2050	Computer Aided Design and Drafting and Engineering Design & Development	3	MECH ENG 1720	Engineering Design with Computer Appl	3
ENG 1340	English Composition	3	ENGLISH 1160	Writing and Research	3
HIS 1140 or HIS 1230 or HIS 1240 or POS 1180	Western Civilization II or American History I or American History II or American Political Systems	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
PHS 2410	Physical Geology	5	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
EGN 2130	Engineering Mechanics- Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGN 2230	Engineering Mechanics-Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	26		Group 2 Major Requirements	24
	Group 1 Core Requirements	37		Group 1 Core Requirements	34
	Total Hours	63		Total Hours*	58

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