

# Columbia 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>Columbia College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
MATH 215 and MATH 226 and MATH 235	Differential Calculus and Integral Calculus, Part I and Integral Calculus, Part II	9	MATH 1214 and MATH 1215	Calculus for Engineers I and Calculus for Engineers II <small>Grade of C or better is required.</small>	8
MATH 300	Multivariate Calculus	3	MATH 2222	Calculus with Analytic Geometry III <small>Grade of C or better is required.</small>	4
MATH 370	Differential Equations	3	MATH 3304	Elementary Differential Equations	3
PHYS 211	Calculus-Based Physics I	5	PHYSICS 1135	Engineering Physics I <small>Grade of C or better is required.</small>	4
PHYS 212	Calculus-Based Physics II	5	PHYSICS 2135	Engineering Physics II <small>Grade of C or better is required.</small>	4
CHEM 110, 111L	Chemistry I and Lab	5	CHEM 1310, 1319	General Chemistry I and Lab	5
ENGL 111	English Composition I	3	ENGLISH 1120	Exposition and Argumentation	3
ECON 294 or ECON 293	Microeconomics or Macroeconomics	3	ECON 1100 or ECON 1200	Principles of Microeconomics or Principles of Macroeconomics	3
Total Hours		36	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>Columbia College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
HIST 121 or HIST 122 or HIST 102 or GOVT 112	American History to 1877 or American History since 1877 or Western Civilization II or American Government II	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government	3
ENGL 112 or COMM 110 or ENGL 204	English Composition II or Intro to Speech or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
CISS 241	Programming I	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
MATH 303 or MATH 338	Linear Algebra or Mathematical Statistics and Probability	3	MATH 3108 or STAT 3115	Linear Algebra I or Engineering Statistics <small>(Will satisfy the Advanced Math/Comp Sci elective requirement.)</small>	3
	Literature Elective	3		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	18		Group 2 Major Requirements	18
	Group 1 Core Requirements	36		Group 1 Core Requirements	34
	Total Hours	54		Total Hours*	52

\*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>Columbia College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
HIST 121 (or HIST 122 or HIST 102)	American History to 1877 (or American History since 1877 or Western Civilization II)	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
MATH 338	Mathematical Statistics and Probability	3	STAT 3115	Engineering Statistics <small>(Will be substituted for STAT 3113.)</small>	3
ENGL 112 or COMM 110 or HSS Elective	English Composition II or Intro to Speech 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
GEOL 110	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	12		Group 2 Major Requirements	12
	Group 1 Core Requirements	36		Group 1 Core Requirements	34
	Total Hours	48		Total Hours*	46

\*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>Columbia College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>	
HIST 121 or HIST 122 or HIST 102 or GOVT 112 CHEM 112	American History to 1877 or American History since 1877 or Western Civilization II or American Government II Chemistry II	3    3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200 CHEM 1320	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government General Chemistry II
MATH 338	Mathematical Statistics and Probability	3	STAT 3115	Engineering Statistics (or any statistics course 3000-level or higher. Satisfies statistics elective requirement.)
ENGL 112 or COMM 110 or HSS Elective	English Composition II or Intro to Speech or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language <i>See your advisor for course options.</i> <i>No free electives applied to the degree.</i>	3  3 0	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  Humanities/Social Science Elective
	Group 2 Major Requirements Group 1 Core Requirements	15 36		Maximum Free Electives Group 2 Major Requirements Group 1 Core Requirements
	Total Hours	51		Total Hours* 49

\*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>Columbia College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>	
ENGL 112 or ENGL 204 HIST 121 or HIST 122 or HIST 102 or GOVT 112 CHEM 112 CISS 242 or CISS 241 MATH 338 COMM 110	English Composition II or Technical Writing American History to 1877 or American History since 1877 or Western Civilization II or American Government II Chemistry II Programming II or Programming I Mathematical Statistics and Probability Intro to Speech <i>See your advisor for course options.</i> <i>No free electives applied to the degree.</i>	3   3  3 3 3 3 3 3 0	ENGLISH 1160 or ENGLISH 3560 HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200 CHEM 1320 CS 1500 or CS 1971, 1981 STAT 3115 SP&MS 1185	Writing and Research or Technical Writing American History to 1877 or American History since 1877 or Modern Western Civilization or American Government General Chemistry II Computational Problem Solving (3) or Intro to Programming Method and Lab (C++) Engineering Statistics (Will be substituted for STAT 3113.) Principles of Speech Humanities/Social Science Elective Maximum Free Electives Group 2 Major Requirements Group 1 Core Requirements
	Group 2 Major Requirements Group 1 Core Requirements	21 36		Maximum Free Electives Group 2 Major Requirements Group 1 Core Requirements
	Total Hours	57		Total Hours* 55

\*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>Columbia College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENGL 112 or ENGL 204	English Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIST 121 or HIST 122 or HIST 102 or GOVT 112	American History to 1877 or American History since 1877 or Western Civilization II or American Government II	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government	3
CHEM 112	Chemistry II	3	CHEM 1320	General Chemistry II	3
CISS 242 or CISS 241	Programming II or Programming I	3	CS 1500 or CS 1971, 1981	Computational Problem Solving (3) or Intro to Programming Method and Lab (C++)	3
MATH 338	Mathematical Statistics and Probability	3	STAT 3115	Engineering Statistics (Will be substituted for STAT 3113.)	3
COMM 110	Intro to Speech	3	SP&MS 1185	Principles of Speech	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	21		Group 2 Major Requirements	21
	Group 1 Core Requirements	36		Group 1 Core Requirements	34
	Total Hours	57		Total Hours*	55

\*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>Columbia College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENGL 112 or COMM 110 or ENGL 204	English Composition II or Intro to Speech or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Public Speaking or Technical Writing	3
HIST 121 or HIST 122 or HIST 102 or GOVT 112	American History to 1877 or American History since 1877 or Western Civilization II or American Government II	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government	3
GEOL 110	Intro to Physical Geology	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
MATH 338	Mathematical Statistics and Probability	3	STAT 3115	Engineering Statistics (Will be substituted for STAT 3113.)	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	15		Group 2 Major Requirements	15
	Group 1 Core Requirements	36		Group 1 Core Requirements	34
	Total Hours	51		Total Hours*	49

\*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>Columbia College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
COMM 110	Intro to Speech	3	SPMS 1185	Public Speaking	3
ENGL 112 or ENGL 204	English Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIST 121 or HIST 122 or HIST 102 or GOVT 112	American History to 1877 or American History since 1877 or Western Civilization II or American Government II	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government	3
MATH 225	Discrete Mathematics I	3	CS 1200	Discrete Math for Computer Science	3
CISS 242 or CISS 241	Programming II or Programming I	3	CS 1500 or CS 1971, 1981	Computational Problem Solving or Intro to Programming Method and Lab (C++)	3
MATH 303	Linear Algebra	3	MATH 3108	Linear Algebra <small>(Will satisfy a required math elective.)</small>	3
MATH 338	Mathematical Statistics and Probability	3	STAT 3115	Engineering Statistics <small>(Will be substituted for STAT 3117.)</small>	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	27		Group 2 Major Requirements	27
	Group 1 Core Requirements	36		Group 1 Core Requirements	34
	Total Hours	63		Total Hours*	61

\*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>Columbia College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
COMM 110	Intro to Speech	3	SPMS 1185	Public Speaking	3
ENGL 112 or ENGL 204	English Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIST 121 or HIST 122 or HIST 102 or GOVT 112	American History to 1877 or American History since 1877 or Western Civilization II or American Government II	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government	3
MATH 303	Linear Algebra	3	MATH 3108	Linear Algebra	3
MATH 338	Mathematical Statistics and Probability	3	STAT 3115	Engineering Statistics <small>(Will be substituted for STAT 3117.)</small>	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	15		Group 2 Major Requirements	21
	Group 1 Core Requirements	36		Group 1 Core Requirements	34
	Total Hours	51		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>Columbia College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
PSY 101	General Psychology	3	PSYCH 1101	General Psychology	3
HIST 121 or HIST 122 or HIST 102 or GOVT 112	American History to 1877 or American History since 1877 or Western Civilization II or American Government II	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government	3
ENGL 112 or COMM 110 or ENGL 204	English Composition II or Intro to Speech or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
CISS 241	Programming I	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
MATH 338	Mathematical Statistics and Probability	3	STAT 3115	Engineering Statistics	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	21		Group 2 Major Requirements	21
	Group 1 Core Requirements	36		Group 1 Core Requirements	34
	Total Hours	57		Total Hours*	55

\*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>Columbia College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENGL 112 or COMM 110 or ENGL 204	English Composition II or Intro to Speech or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Public Speaking or Technical Writing	3
HIST 121 or HIST 122 or HIST 102	American History to 1877 or American History since 1877 or Western Civilization II	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200	American History to 1877 or American History since 1877 or Modern Western Civilization	3
GEOL 110	Intro to Physical Geology	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
CHEM 112	Chemistry II	3	CHEM 1320	General Chemistry II	3
BIOL 110	Principles of Biology	3	BIO SCI 1113	General Biology	4
MATH 338	Mathematical Statistics and Probability	3	STAT 3115	Engineering Statistics (Will be substituted for STAT 3113.)	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	21		Group 2 Major Requirements	22
	Group 1 Core Requirements	36		Group 1 Core Requirements	34
	Total Hours	57		Total Hours*	56

\*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>Columbia College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>	
ENGL 112 or COMM 110 or ENGL 204	English Composition II or Intro to Speech or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Public Speaking or Technical Writing
HIST 121 or HIST 122 or HIST 102 or GOVT 112	American History to 1877 or American History since 1877 or Western Civilization II or American Government II	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government
GEOL 110	Intro to Physical Geology	3	GEO ENG 1150 (GEOLOGY 1110)	Physical and Environmental Geology
BIOL 110 or CHEM 112	Principles of Biology or Chemistry II	3	BIO SCI 1113 or CHEM 1320	General Biology or General Chemistry II <small>or any 3-hour course in chemistry, geochemistry, or biology. Satisfies chemistry/geochemistry elective requirement.</small>
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives
	Group 2 Major Requirements	18		Group 2 Major Requirements
	Group 1 Core Requirements	36		Group 1 Core Requirements
	Total Hours	54		Total Hours*
				52

\*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>Columbia College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>	
HIST 121 or HIST 122 or HIST 102 or GOVT 112	American History to 1877 or American History since 1877 or Western Civilization II or American Government II	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government
ENGL 112 or COMM 110 or ENGL 204	English Composition II or Intro to Speech or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing
CISS 241	Programming I	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)
MATH 303 or MATH 338	Linear Algebra or Mathematical Statistics and Probability	3	MATH 3108 or STAT 3115	Linear Algebra I or Engineering Statistics <small>(Will satisfy the Advanced Math/Comp Sci elective requirement.)</small>
	Literature Elective	3		Literature Elective
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives
	Group 2 Major Requirements	18		Group 2 Major Requirements
	Group 1 Core Requirements	36		Group 1 Core Requirements
	Total Hours	54		Total Hours*
				52

\*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>Columbia College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENGL 112 or COMM 110 or ENGL 204	English Composition II or Intro to Speech or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Public Speaking or Technical Writing	3
HIST 121 or HIST 122 or HIST 102 or GOVT 112	American History to 1877 or American History since 1877 or Western Civilization II or American Government II	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government	3
MATH 338	Mathematical Statistics and Probability	3	STAT 3115	Engineering Statistics	3
CHEM 112	Chemistry II	3	CHEM 1320	General Chemistry II	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>	5		Maximum Free Electives	5
	Group 2 Major Requirements	23		Group 2 Major Requirements	23
	Group 1 Core Requirements	36		Group 1 Core Requirements	34
	Total Hours	59		Total Hours*	57

\*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>Columbia College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENGL 112 or ENGL 204	English Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIST 121 or HIST 122 or HIST 102 or GOVT 112	American History to 1877 or American History since 1877 or Western Civilization II or American Government II	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government	3
MATH 338	Mathematical Statistics and Probability	3	STAT 3115	Engineering Statistics	3
GEOL 110	Intro to Physical Geology	3	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	18		Group 2 Major Requirements	18
	Group 1 Core Requirements	36		Group 1 Core Requirements	34
	Total Hours	54		Total Hours*	52

\*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>Columbia College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENGL 112 or ENGL 204	English Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIST 121 or HIST 122 or HIST 102 or GOVT 112	American History to 1877 or American History since 1877 or Western Civilization II or American Government II	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government	3
MATH 303	Linear Algebra	3	MATH 3108	Linear Algebra	3
MATH 338	Mathematical Statistics and Probability	3	STAT 3115	Engineering Statistics	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	36		Group 1 Core Requirements	34
	Total Hours	60		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>Columbia College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENGL 112 or ENGL 204	English Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIST 121 or HIST 122 or HIST 102 or GOVT 112	American History to 1877 or American History since 1877 or Western Civilization II or American Government II	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government	3
GEO 110	Intro to Physical Geology	3	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	15		Group 2 Major Requirements	15
	Group 1 Core Requirements	36		Group 1 Core Requirements	34
	Total Hours	51		Total Hours*	49

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