

# Central Methodist University — Missouri S&T

## General Engineering

Transfer Guide Effective as of Fall 2024

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>Central Methodist University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>			
MA 118	Calculus and Analytic Geometry I	5	MATH 1214	Calculus I <small>Grade of C or better is required.</small>	4	
MA 209	Calculus and Analytic Geometry II	5	MATH 1215	Calculus II <small>Grade of C or better is required.</small>	4	
MA 308	Calculus and Analytic Geometry III	5	MATH 2222	Calculus III <small>Grade of C or better is required.</small>	4	
MA 315	Differential Equations	3	MATH 3304	Elementary Differential Equations	3	
PH 205, 205L	Calculus Physics I and Lab	5	PHYSICS 1135	Engineering Physics I <small>Grade of C or better is required.</small>	4	
PH 206, 206L	Calculus Physics II and Lab	5	PHYSICS 2135	Engineering Physics II <small>Grade of C or better is required.</small>	4	
CH 111, 111L	General Chemistry and Lab	4	CHEM 1310, 1319	General Chemistry I and Lab	5	
EN 110	English Composition I	3	ENGLISH 1120	Exposition and Argumentation	3	
EC 202 or	Microeconomics or	3	ECON 1100 or	Principles of Microeconomics or	3	
EC 201	Macroeconomics	3	ECON 1200	Principles of Macroeconomics	3	
Total Hours			38	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**  
**Biomedical Engineering/Biomanufacturing or Biomaterials**  
**Ceramic Engineering**  
**Chemical Engineering and 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](mailto: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

	<u>Central Methodist University</u>	<u>Semester</u>	<u>Missouri S&amp;T</u>
HI 117 or HI 118 or HI 102 or PS 101	Development of the United States I or Development of the United States II or World History II or Intro to American Nat, State, and Local Govt	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200 American History to 1877 or American History since 1877 or American Government
EN 110 or CT 101 or EN 306 CS 172	Expository Writing or Public Speaking or Technical Writing .NET1	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560 Writing and Research or Principles of Speech or Technical Writing
MA 318	Matricies and Linear Algebra	3	CS 1971, 1981 Intro to Programming Method and Lab (C++) (3)
	Literature Elective	3	MATH 3108 Linear Algebra I
PL 306	Ethics and the Professions <small>or other engineering, business, bio, social ethics approved by advisor</small>	3	PHILOS 1130 How Should I Live? An Introduction to Ethics <small>or other engineering, business, bio, social ethics approved by advisor</small>
	<i>No free electives applied to the degree.</i>	0	Will satisfy the Advanced Math/Comp Sci elective requirement. Literature Elective
	Group 2 Major Requirements	18	Maximum Free Electives
	Group 1 Core Requirements	38	Group 2 Major Requirements
	Total Hours	56	Group 1 Core Requirements
			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>Central Methodist University</u>	<u>Semester</u>	<u>Missouri S&amp;T</u>
HI 117 (or HI 118 or HI 102)	Development of the United States I (or Development of the United States II or World History II)	3	HISTORY 1200* (or HISTORY 1300 or HISTORY 1310) Modern Western Civilization* (or American History to 1877 or American History since 1877)
GL 105	Exploring Geology	3	GEOLOGY 1110 (GEO ENG 1150) Physical and Environmental Geology
Humanities or Social Science or Communication	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language or one communication course from this list: EN 110, EN 306, CT 101.	3	Humanities or Social Science or Communication Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language or one communication course from this list: ENGLISH 1160, 1600, 3560 or SPMS 1185.
	<i>No free electives applied to the degree.</i>	0	Maximum Free Electives
	Group 2 Major Requirements	9	Group 2 Major Requirements
	Group 1 Core Requirements	38	Group 1 Core Requirements
	Total Hours	47	Total Hours*
			43

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

## Biomedical Engineering-Biomanufacturing Group 2 Major Requirements

<u>Central Methodist University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
CT 101	Public Speaking	3	SP&MS 1185	Principles of Speech	3
EN 306	Technical Writing	3	ENGLISH 3560	Technical Writing	3
HI 117 or HI 118 or HI 102 or PS 101	Development of the United States I or Development of the United States II or World History II or Intro to American Nat, State, and Local Govt	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
CH 114, 114L	General Chemistry II and Lab	4	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&amp;T degree requirement. Will transfer as general credit.</small>	3
CH 341, 341L	Organic Chemistry and Lab	4	CHEM 2210, 2219	Organic Chemistry I and Lab	4
CH 342, 342L or BI 101, 101L	Organic Chemistry II and Lab or General Biology I and Lab	4	CHEM 2220, 2229 or BIO SCI 1113, 1219	Organic Chemistry II and Lab or General Biology and Lab <small>Applies to degree as Track Elective.</small>	4
CS 378 or CS 172	Data Structures & Algorithms or .NET1	3	CS 1500 or CS 1971,1981*	Computational Problem Solving or Intro to Programming Methodology and Lab* C++ <small>*Will be substituted for CS 1500.</small>	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	27		Group 2 Major Requirements	26
	Group 1 Core Requirements	38		Group 1 Core Requirements	34
	Total Hours	65		Total Hours*	60

\*S&T advisor permission is required to transfer more than 68 credit hours toward the degree.

## Biomedical Engineering-Biomaterials Group 2 Major Requirements

<u>Central Methodist University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
CT 101	Public Speaking	3	SP&MS 1185	Principles of Speech	3
EN 306	Technical Writing	3	ENGLISH 3560	Technical Writing	3
HI 117 or HI 118 or HI 102 or PS 101	Development of the United States I or Development of the United States II or World History II or Intro to American Nat, State, and Local Govt	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
CH 114, 114L	General Chemistry II and Lab	4	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&amp;T degree requirement. Will transfer as general credit.</small>	3
CH 341, 341L	Organic Chemistry and Lab	4	CHEM 2210, 2219*	Organic Chemistry I and Lab* <small>*CHEM 2219 Lab applies to the degree as a Track Elective (non-engineering).</small>	4
CH 342, 342L	Organic Chemistry II and Lab	4	CHEM 2220, 2229*	Organic Chemistry II and Lab* <small>CHEM 2229 Lab applies to the degree as a Track Elective (non-engineering).</small>	4
BI 101, 101L	General Biology I and Lab	4	BIO SCI 1113*, 1219*	General General Biology* and Lab* <small>*Applies to degree as Track Elective (Non-engineering).</small>	4
CS 378 or CS 172	Data Structures & Algorithms or .NET1	3	CS 1500 or CS 1971,1981*	Computational Problem Solving or Intro to Programming Methodology and Lab* C++ <small>*Will be substituted for CS 1500.</small>	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	38		Group 1 Core Requirements	34
	Total Hours	66		Total Hours*	61

\*S&T advisor permission is required to transfer more than 65 credits toward the S&T Biomedical Engineering degree.

## Ceramic Engineering Group 2 Major Requirements

<u>Central Methodist University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
HI 117 or HI 118 or HI 102 or PS 101	Development of the United States I or Development of the United States II or World History II or Intro to American Nat, State, and Local Govt	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
CH 341, 341L	Organic Chemistry and Lab	4	CHEM 2210, 2219*	Organic Chemistry I and Lab* <small>Will satisfy the advanced chemistry elective requirement. *CHEM 2219 is not an S&amp;T degree requirement, will transfer as general elective credit.</small>	3
CH 114, 114L	General Chemistry with Qualitative Analysis and Lab	4	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&amp;T degree requirement. Will transfer as general credit.</small>	3
PH 307 EN 305 or CT 101 or HSS elective	Modern Physics Expository Writing or Public Speaking or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3	PHYS 2305 ENGLISH 1160 or SPMS 1185 or HSS Elective	Intro to Modern Physics Writing and Research or Principles of Speech or Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	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	38		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 or Chemical Engineering - Biochemical Engineering Emphasis Group 2 Major Requirements

<u>Central Methodist University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
CT 101 EN 306	Public Speaking Technical Writing	3	SP&MS 1185 ENGLISH 3560	Principles of Speech Technical Writing	3
HI 117 or HI 118 or HI 102 or PS 101	Development of the United States I or Development of the United States II or World History II or Intro to American Nat, State, and Local Govt	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
CH 114, 114L	General Chemistry II and Lab	4	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&amp;T degree requirement. Will transfer as general elective credit.</small>	3
CH 341, 341L	Organic Chemistry and Lab	4	CHEM 2210, 2219*	Organic Chemistry I and Lab* <small>*The lab will apply to the degree as 1 of the 9 science elective credits.</small>	4
CH 342, 342L	Organic Chemistry II and Lab	4	CHEM 2220, 2229*	Organic Chemistry II (3) and Lab* (1) <small>Will partially satisfy the 9-hour science elective requirement. *CHEM 2229 is not an S&amp;T degree requirement. Will transfer as general elective credit.</small>	3
CS 378 or CS 172	Data Structures & Algorithms or .NET1	3	CS 1500 or CS 1971,1981*	Computational Problem Solving or Intro to Programming Methodology and Lab* C++ <small>*Will be substituted for CS 1500.</small>	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	27		Group 2 Major Requirements	25
	Group 1 Core Requirements	38		Group 1 Core Requirements	34
	Total Hours	65		Total Hours*	59

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

## Civil Engineering Group 2 Major Requirements

<u>Central Methodist University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
EN 110 or CT 101 or EN 306	Expository Writing 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
HI 117 or HI 118 or HI 102 or PS 101	Development of the United States I or Development of the United States II or World History II or Intro to American Nat, State, and Local Govt	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
GL 105	Exploring Geology	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	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	38		Group 1 Core Requirements	34
	Total Hours	50		Total Hours*	46

\*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>Central Methodist University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
CT 101	Public Speaking	3	SPMS 1185	Principles of Speech	3
EN 110 or EN 306	Expository Writing or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HI 117 or HI 118 or HI 102 or PS 101	Development of the United States I or Development of the United States II or World History II or Intro to American Nat, State, and Local Govt	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
MA 107	Discrete Math	3	CS 1200	Discrete Math for Computer Science	3
CS 378 or CS 172	Data Structures & Algorithms or .NET1	3	CS 1500 or CS 1971,1981*	Computational Problem Solving or Intro to Programming Methodology and Lab* C++ <small>*Will be substituted for CS 1500.</small>	3
PH 307 or CH 341, 341L	Modern Physics (3) or Organic Chemistry and Lab (4)	3	PHYSICS 2305 or CHEM 2210, 2219*	Intro to Modern Physics (3) or Organic Chemistry I (3) and Lab* (1) <small>PHYSICS 2304 or CHEM 2210 will satisfy a required engineering/science elective. *CHEM 2219 is not an S&amp;T degree requirement, will transfer as general elective credit.</small>	3
MA 318	Matrices and Linear Algebra	3	MATH 3108	Linear Algebra <small>Will satisfy a required math elective.</small>	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Electives	Maximum Free Electives	3	Electives	Maximum Free Electives	3
	Group 2 Major Requirements	27		Group 2 Major Requirements	27
	Group 1 Core Requirements	38		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 Computer Engineering degree.

## Electrical Engineering Group 2 Major Requirements

<u>Central Methodist University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
CT 101	Public Speaking	3	SPMS 1185	Principles of Speech	3
EN 110 or EN 306	Expository Writing or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HI 117 or HI 118 or HI 102 or PS 101	Development of the United States I or Development of the United States II or World History II or Intro to American Nat, State, and Local Govt	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
CS 378 or CS 172	Data Structures & Algorithms or .NET1	3	CS 1500 or CS 1971,1981*	Computational Problem Solving or Intro to Programming Methodology and Lab* C++ <small>*Will be substituted for CS 1500.</small>	3
PH 307 or CH 114	Modern Physics or Organic Chemistry	3	PHYSICS 2305 or CHEM 2210	Intro to Modern Physics or Organic Chemistry I	3
MA 318	Matrices and Linear Algebra	3	MATH 3108	Linear Algebra	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Electives	Maximum Free Electives	3	Electives	Maximum Free Electives	3
	Group 2 Major Requirements	24		Group 2 Major Requirements	24
	Group 1 Core Requirements	38		Group 1 Core Requirements	34
	Total Hours	62		Total Hours*	58

\*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>Central Methodist University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
PY 101	General Psychology	3	PSYCH 1101	General Psychology	3
HI 117 or HI 118 or HI 102 or PS 101	Development of the United States I or Development of the United States II or World History II or Intro to American Nat, State, and Local Govt	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
CT 101	Public Speaking	3	SPMS 1185	Principles of Speech	3
EN 110 or EN 306	Expository Writing or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
CS 172	.NET1	3	CS 1971, 1981	Intro to Programming Method and Lab (C++) (3)	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	3	Electives	Maximum Free Electives	0
	Group 2 Major Requirements	18		Group 2 Major Requirements	18
	Group 1 Core Requirements	38		Group 1 Core Requirements	34
	Total Hours	56		Total Hours*	61

\*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>Central Methodist University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
EN 110 or CT 101 or EN 306	Expository Writing 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
HI 117 or HI 118 or HI 102	Development of the United States I or Development of the United States II or World 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
GL 105	Exploring Geology	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
CH 114, 114L	General Chemistry II and Lab	4	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&amp;T degree requirement. Will transfer as general credit.</small>	3
BI 101, 101L	General Biology I and Lab		BIO SCI 1113, 1219*	General Biology and Lab* <small>*BIO SCI 1219 is not an S&amp;T degree requirement, will transfer as general elective credit.</small>	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	16		Group 2 Major Requirements	18
	Group 1 Core Requirements	38		Group 1 Core Requirements	34
	Total Hours	54		Total Hours*	52

\*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>Central Methodist University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
EN 306	Technical Writing	3	ENGLISH 3560	Technical Writing	3
HI 117 or HI 118 or HI 102 or PS 101	Development of the United States I or Development of the United States II or World History II or Intro to American Nat, State, and Local Govt	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
CS 378 or CS 172	Data Structures & Algorithms or .NET1	3	CS 1500 or CS 1971, 1981	Computational Problem Solving or Intro to Programming Methodology and Lab	3
GL 105	Exploring Geology	3	GEO ENG 1150 (GEOLOGY 1110)	Physical and Environmental Geology	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	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	38		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 Geological Engineering degree.

## Mechanical Engineering Group 2 Major Requirements

<u>Central Methodist University</u>	<u>Semester</u>	<u>Missouri S&amp;T</u>			
HI 117 or HI 118 or HI 102 or PS 101	Development of the United States I or Development of the United States II or World History II or Intro to American Nat, State, and Local Govt	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
EN 110 or CT 101 or EN 306	Expository Writing 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
CS 172	.NET1	3	CS 1971, 1981	Intro to Programming Method and Lab (C++) (3)	3
MA 318	Matrices and Linear Algebra	3	MATH 3108	Linear Algebra I <small>Will satisfy the Advanced Math/Statistics elective requirement.</small>	3
	Literature Elective	3		Literature Elective	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	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	38		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 Mechanical Engineering degree.

## Metallurgical Engineering Group 2 Major Requirements

<u>Central Methodist University</u>	<u>Semester</u>	<u>Missouri S&amp;T</u>			
EN 110 or CT 101 or EN 306	Expository Writing 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
HI 117 or HI 118 or HI 102 or PS 101	Development of the United States I or Development of the United States II or World History II or Intro to American Nat, State, and Local Govt	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
CH 114, 114L	General Chemistry II and Lab	4	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&amp;T degree requirement. Will transfer as general credit.</small>	3
CH 341, 341L or PH 307	Organic Chemistry with Lab (4) or Modern Physics (3)	3	CHEM 2210, 2219* or PHYSICS 2305	Organic Chemistry I (3) and Lab* (1) or Intro to Modern Physics (3) <small>Not specifically required for the degree but will satisfy out-of-department technical elective requirement. *CHEM 2219 is not an S&amp;T degree requirement, will transfer as general elective credit.</small>	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Electives	Maximum Free Electives	5	Electives	Maximum Free Electives	3
	Group 2 Major Requirements	24		Group 2 Major Requirements	21
	Group 1 Core Requirements	38		Group 1 Core Requirements	34
	Total Hours	62		Total Hours*	55

\*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>Central Methodist University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>	
EN 110 or EN 306	Expository Writing or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	3
HI 117 or HI 118 or HI 102 or PS 101	Development of the United States I or Development of the United States II or World History II or Intro to American Nat, State, and Local Govt	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	3
GL 105	Exploring Geology	3	GEOLOGY 1110 (GEO ENG 1150)	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	3
	<i>No free electives applied to the degree.</i>	0		0
	Group 2 Major Requirements	15		15
	Group 1 Core Requirements	38		34
	<b>Total Hours</b>	<b>53</b>		<b>Total Hours*</b> <b>49</b>

\*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>Central Methodist University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>	
EN 110 or CT 101 or EN 306	Expository Writing or Public Speaking or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	3
HI 117 or HI 118 or HI 102 or PS 101	Development of the United States I or Development of the United States II or World History II or Intro to American Nat, State, and Local Govt	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	3
CS 172	.NET1	3	CS 1971, 1981	3
MA 318	Matrices and Linear Algebra	3	MATH 3108	3
PH 307	Modern Physics	3	PHYSICS 2305	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	3
Electives	Maximum Free Electives	6	Electives	6
	Group 2 Major Requirements	27		27
	Group 1 Core Requirements	38		34
	<b>Total Hours</b>	<b>65</b>		<b>Total Hours*</b> <b>61</b>

\*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>Central Methodist University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>	
EN 110 or EN 306	Expository Writing or Technical Writing	3	ENGLISH 3560 or ENGLISH 1160	3
HI 117 or HI 118 or HI 102 or PS 101	Development of the United States I or Development of the United States II or World History II or Intro to American Nat, State, and Local Govt	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	3
GL 105	Exploring Geology	3	GEOLOGY 1110 (GEO ENG 1150)	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	3
	<i>No free electives applied to the degree.</i>	0		0
	Group 2 Major Requirements	15		15
	Group 1 Core Requirements	38		34
	<b>Total Hours</b>	<b>53</b>		<b>Total Hours*</b> <b>49</b>

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