

Columbia College — Missouri S&T

General Engineering

Transfer Guide Effective as of Fall 2025

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

Students are not required to complete all courses on this guide before transferring to Missouri S&T.

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.

Columbia College			Semester	Missouri S&T		
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	8
MATH 300	Multivariate Calculus	3		MATH 2222	Calculus III	4
MATH 370	Differential Equations	3		MATH 3304	Elementary Differential Equations	3
PHYS 211	Calculus-Based Physics I	5		PHYSICS 1135	Engineering Physics I	4
PHYS 212	Calculus-Based Physics II	5		PHYSICS 2135	Engineering Physics II	4
ENGL 133W	First-Year Writing Seminar	3		ENGLISH 1120	Exposition and Argumentation	3
		Total Hours	28			Total Hours
						26

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.

This transfer guide is published by Missouri University of Science and Technology and is in effect as of Fall 2025.
Further information or updates are available from Missouri S&T Transfer Admissions at transfer@mst.edu, transfer@mst.edu, or 800-522-0938.

Aerospace Engineering Group 2 Major Requirements

Columbia College		Semester	Missouri S&T		
COMM 110 or ENGL 204W	Intro to Speech or Technical Writing	3	ENGLISH 3560 or SPMS 1185	Technical Writing or Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHEM 110, 111L	Chemistry I and Lab	5	CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5
CISS 241	C++ Programming I	3	COMP SCI 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 Will satisfy the Advanced Math/Comp Sci elective requirement.	3
Ethics	Ethics Elective Any engineering, business, bio, social ethics approved by advisor	3	Ethics	Ethics Elective Any engineering, business, bio, social ethics approved by advisor	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. *At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
ENGL 231W or ENGL 232W or ENGL 241W or ENGL 242W or ENGL 263W or HIST 121* or HIST 122* or ARTS 105 or MUSI 120 or	British Literature I or British Literature II or American Literature I or American Literature II or World Literature I American History to 1877* or American History since 1877* or Art Appreciation or Music and the Human Experience or *Satisfies the State of Missouri government requirement.	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Art Appreciation or Music Understanding and Appreciation *Satisfies the State of Missouri government requirement.	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
GEOG 101 or PHIL 101 or PHIL 210 or POSC 111* or PSYC 101 or ECON 294 or ECON 293 or Foreign Language	Intro to Geography or Intro to Philosophy or Logic and Critical Thinking or American National Government* or General Psychology or Microeconomics or Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	6	HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	6
Humanities, Arts, and Social Sciences Select 3 hours.					
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3	HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3
No free electives applied to the degree.		0	Maximum Free Electives		0
Group 2 Major Requirements		32	Group 2 Major Requirements		32
Group 1 Core Requirements		28	Group 1 Core Requirements		26
Total Hours		60	Total Hours*		58
*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

Columbia College		Semester	Missouri S&T			
COMM 110 or ENGL 204W	Intro to Speech or Technical Writing	3	ENGLISH 3560 or SPMS 1185	Technical Writing or Principles of Speech <small>Applies to degree as Gen Ed Communication requirement.</small>	3	
CHEM 110, 111L	Chemistry I and Lab	5	CHEM 1310*, 1319	General Chemistry I and Lab <small>*CHEM 1310 will be substituted for CHEM 1305.</small>	5	
MATH 338	Mathematical Statistics and Probability	3	STAT 3115*	Engineering Statistics* <small>*Will be substituted for STAT 3113.</small>	3	
GEOL 110	Intro to Physical Geology	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3	
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 9 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 3 hours Behavioral and Social Sciences. *At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.						
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.						
ENGL 231W or ENGL 232W or ENGL 241W or ENGL 242W or ENGL 263W or HIST 121* or HIST 122* or ARTS 105 or MUSI 120 or	British Literature I or British Literature II or American Literature I or American Literature II or World Literature I American History to 1877* or American History since 1877* or Art Appreciation or Music and the Human Experience or *Satisfies the State of Missouri government requirement.	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Art Appreciation or Music Understanding and Appreciation *Satisfies the State of Missouri government requirement.	6	
Behavioral and Social Sciences Select 3 hours.						
PHIL 101 or PHIL 210 or POSC 111* or PSYC 101 or ECON 294 or ECON 293 or Foreign Language	Intro to Philosophy or Logic and Critical Thinking or American National Government* or General Psychology or Microeconomics or Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	3	PHILOS 1105 or PHILOS 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	3	
No free electives applied to the degree.		0	Maximum Free Electives		0	
Group 2 Major Requirements		23	Group 2 Major Requirements		23	
Group 1 Core Requirements		28	Group 1 Core Requirements		26	
Total Hours		51			Total Hours*	49
<small>*S&T advisor permission is required to transfer more than 69 credits toward the S&T Architectural Engineering degree.</small>						

Biomedical Engineering-Biomanufacturing Group 2 Major Requirements

Columbia College		Semester	Missouri S&T			
COMM 110	Intro to Speech	3	SP&MS 1185	Principles of Speech Applies to degree as Gen Ed Communication requirement.	3	
CHEM 110, 111L	Chemistry I and Lab	5	CHEM 1310, 1319	General Chemistry I and Lab	5	
CHEM 112, 112L	Chemistry II (3) and Lab (2)	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) *CHEM 1510 is not a degree requirement, transfers as general elective credit.	3	
BIOL 110, 110L	Principles of Biology and Lab	5	BIO SCI 1113, 1219	General Biology and Lab Applies to degree as Track Elective.	4	
CISS 241	C++ Programming I	3	COMP SCI 1971,1981*	Intro to Programming Methodology and Lab*(C++) *Will be substituted for COMP SCI 1500.	3	
Humanities, Arts, and Social Sciences General Education Requirements						
From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines.						
*At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.						
Humanities and Fine Arts						
Select 6 hours from at least two specific disciplines.						
ENGL 231W or ENGL 232W or ENGL 241W or ENGL 242W or ENGL 263W or HIST 121* or HIST 122* or ARTS 105 or MUSI 120 or	British Literature I or British Literature II or American Literature I or American Literature II or World Literature I American History to 1877* or American History since 1877* or Art Appreciation or Music and the Human Experience or *Satisfies the State of Missouri government requirement.	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Art Appreciation or Music Understanding and Appreciation *Satisfies the State of Missouri government requirement.	6	
Select 6 hours from at least two specific disciplines to include PHILOS 3223.						
PHIL 460	Biomedical Ethics	3	PHILOS 3223	Bioethics	3	
GEOG 101 or POSC 111* or PSYC 101 or ECON 294 or ECON 293 or Foreign Language	Intro to Geography or American National Government* or General Psychology or Microeconomics or Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	3	HISTORY 2110 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	World Regional Geography or American Government* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	3	
Humanities, Arts, and Social Sciences						
ENGLISH 3560 required.						
ENGL 204W	Technical Writing	3	ENGLISH 3560	Technical Writing	3	
No free electives applied to the degree.		0	Maximum Free Electives		0	
Group 2 Major Requirements		36	Group 2 Major Requirements		33	
Group 1 Core Requirements		28	Group 1 Core Requirements		26	
Total Hours		64			Total Hours*	59
*S&T advisor permission is required to transfer more than 69 credit hours toward the degree.						

Biomedical Engineering-Biomaterials Group 2 Major Requirements

Columbia College		Semester	Missouri S&T			
COMM 110	Intro to Speech	3	SP&MS 1185	Principles of Speech Applies to degree as Gen Ed Communication requirement.	3	
CHEM 110, 111L	Chemistry I and Lab	5	CHEM 1310, 1319	General Chemistry I and Lab	5	
CHEM 112, 112L	Chemistry II (3) and Lab (2)	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) *CHEM 1510 is not a degree requirement, transfers as general elective credit.	3	
BIOL 110, 110L	Principles of Biology and Lab	5	BIO SCI 1113*, 1219*	General Biology* and Lab* *Applies to degree as Track Elective (Non-engineering).	4	
CISS 241	C++ Programming I	3	COMP SCI 1971,1981*	Intro to Programming Methodology and Lab* (C++) *Will be substituted for COMP SCI 1500.	3	
Humanities, Arts, and Social Sciences General Education Requirements						
From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines.						
*At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.						
Humanities and Fine Arts						
Select 6 hours from at least two specific disciplines.						
ENGL 231W or ENGL 232W or ENGL 241W or ENGL 242W or ENGL 263W or HIST 121* or HIST 122* or ARTS 105 or MUSI 120 or	British Literature I or British Literature II or American Literature I or American Literature II or World Literature I American History to 1877* or American History since 1877* or Art Appreciation or Music and the Human Experience or *Satisfies the State of Missouri government requirement.	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Art Appreciation or Music Understanding and Appreciation *Satisfies the State of Missouri government requirement.	6	
Select 6 hours from at least two specific disciplines to include PHILOS 3223.						
PHIL 460	Biomedical Ethics	3	PHILOS 3223	Bioethics	3	
GEOG 101 or POSC 111* or PSYC 101 or ECON 294 or ECON 293 or Foreign Language	Intro to Geography or American National Government* or General Psychology or Microeconomics or Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	3	HISTORY 2110 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	World Regional Geography or American Government* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	3	
Humanities, Arts, and Social Sciences						
ENGLISH 3560 required.						
ENGL 204W	Technical Writing	3	ENGLISH 3560	Technical Writing	3	
No free electives applied to the degree.		0	Maximum Free Electives		0	
Group 2 Major Requirements		36	Group 2 Major Requirements		33	
Group 1 Core Requirements		28	Group 1 Core Requirements		26	
Total Hours		64			Total Hours*	59
*S&T advisor permission is required to transfer more than 69 credits toward the S&T Biomedical Engineering degree.						

Ceramic Engineering Group 2 Major Requirements

Columbia College			Semester	Missouri S&T			
COMM 110 or ENGL 204W	Intro to Speech or Technical Writing	3		ENGLISH 3560 or SPMS 1185	Technical Writing or Principles of Speech <small>Applies to degree as Gen Ed Communication requirement.</small>	3	
CHEM 110, 111L	Chemistry I and Lab	5		CHEM 1310, 1319	General Chemistry I and Lab	5	
CHEM 112, 112L	Chemistry II (3) and Lab (2)	5		CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not a degree requirement, transfers as general elective credit.</small>	3	
MATH 338	Mathematical Statistics and Probability	3		STAT 3115	Engineering Statistics <small>or any statistics course 3000-level or higher. Satisfies statistics elective requirement.</small>	3	
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. *At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.							
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.							
ENGL 231W or ENGL 232W or ENGL 241W or ENGL 242W or ENGL 263W or HIST 121* or HIST 122* or ARTS 105 or MUSI 120 or	British Literature I or British Literature II or American Literature I or American Literature II or World Literature I American History to 1877* or American History since 1877* or Art Appreciation or Music and the Human Experience or <small>*Satisfies the State of Missouri government requirement.</small>	6		ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Art Appreciation or Music Understanding and Appreciation <small>*Satisfies the State of Missouri government requirement.</small>	6	
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.							
GEOG 101 or PHIL 101 or PHIL 210 or POSC 111* or PSYC 101 or ECON 294 or ECON 293 or Foreign Language	Intro to Geography or Intro to Philosophy or Logic and Critical Thinking or American National Government* or General Psychology or Microeconomics or Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	6		HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	6	
Humanities, Arts, and Social Sciences Select 3 hours.							
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3		HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3	
		<i>No free electives applied to the degree.</i>	0			0	
		Group 2 Major Requirements	31			29	
		Group 1 Core Requirements	28			26	
		Total Hours	59			Total Hours*	55
<small>*S&T advisor permission is required to transfer more than 68 credits toward the S&T Ceramic Engineering degree.</small>							

*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

Columbia College		Semester	Missouri S&T		
COMM 110	Intro to Speech	3	SP&MS 1185	Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHEM 110, 111L	Chemistry I and Lab	5	CHEM 1310, 1319	General Chemistry I and Lab	5
CHEM 112, 112L	Chemistry II (3) and Lab (2)	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis* (2) *CHEM 1510 is not a degree requirement, transfers as general elective credit.	3
CISS 241	C++ Programming I	3	COMP SCI 1971,1981*	Intro to Programming Methodology and Lab*(C++) *Will be substituted for COMP SCI 1500.	3
MATH 338	Mathematical Statistics and Probability	3	STAT 3115	Engineering Statistics* *Will be substituted for STAT 3113.	3
Humanities, Arts, and Social Sciences General Education Requirements					
From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines.					
*At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.					
Humanities and Fine Arts					
Select 6 hours from at least two specific disciplines.					
ENGL 231W or ENGL 232W or ENGL 241W or ENGL 242W or ENGL 263W or HIST 121* or HIST 122* or ARTS 105 or MUSI 120 or	British Literature I or British Literature II or American Literature I or American Literature II or World Literature I American History to 1877* or American History since 1877* or Art Appreciation or Music and the Human Experience or *Satisfies the State of Missouri government requirement.	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Art Appreciation or Music Understanding and Appreciation *Satisfies the State of Missouri government requirement.	6
Behavioral and Social Sciences					
Select 6 hours from at least two specific disciplines.					
GEOG 101 or PHIL 101 or PHIL 210 or POSC 111* or PSYC 101 or ECON 294 or ECON 293 or Foreign Language	Intro to Geography or Intro to Philosophy or Logic and Critical Thinking or American National Government* or General Psychology or Microeconomics or Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	6	HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government*or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	6
Humanities, Arts, and Social Sciences					
ENGLISH 3560 required.					
ENGL 204W	Technical Writing	3	ENGLISH 3560	Technical Writing	3
No free electives applied to the degree.		0	Maximum Free Electives		0
Group 2 Major Requirements		34	Group 2 Major Requirements		32
Group 1 Core Requirements		28	Group 1 Core Requirements		26
Total Hours		62			Total Hours*
					58
*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

Columbia College		Semester	Missouri S&T		
COMM 110 or ENGL 204W	Intro to Speech or Technical Writing	3	ENGLISH 3560 or SPMS 1185	Technical Writing or Principles of Speech <small>Applies to degree as Gen Ed Communication requirement.</small>	3
CHEM 110, 111L	Chemistry I and Lab	5	CHEM 1310, 1319	General Chemistry I and Lab	5
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* <small>*Will be substituted for STAT 3113.</small>	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. *At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
ENGL 231W or ENGL 232W or ENGL 241W or ENGL 242W or ENGL 263W or HIST 121* or HIST 122* or ARTS 105 or MUSI 120 or	British Literature I or British Literature II or American Literature I or American Literature II or World Literature I American History to 1877* or American History since 1877* or Art Appreciation or Music and the Human Experience or <small>*Satisfies the State of Missouri government requirement.</small>	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Art Appreciation or Music Understanding and Appreciation <small>*Satisfies the State of Missouri government requirement.</small>	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
GEOG 101 or PHIL 101 or PHIL 210 or POSC 111* or PSYC 101 or ECON 294 or ECON 293 or Foreign Language	Intro to Geography or Intro to Philosophy or Logic and Critical Thinking or American National Government* or General Psychology or Microeconomics or Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	6	HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	6
Humanities, Arts, and Social Sciences Select 3 hours.					
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3	HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3
No free electives applied to the degree.		0	Maximum Free Electives		0
Group 2 Major Requirements		29	Group 2 Major Requirements		29
Group 1 Core Requirements		28	Group 1 Core Requirements		26
Total Hours		57	Total Hours*		55
<small>*S&T advisor permission is required to transfer more than 69 credits toward the S&T Civil Engineering degree.</small>					

Computer Engineering Group 2 Major Requirements

Columbia College			Semester	Missouri S&T		
COMM 110	Intro to Speech	3	SPMS 1185	Principles of Speech	3	
CHEM 110, 111L	Chemistry I and Lab	5	CHEM 1310, 1319	General Chemistry I and Lab	5	
			COMP SCI 1200	Discrete Math for Computer Science	3	
CISS 241	C++ Programming I	3	COMP SCI 1971,1981*	Intro to Programming Methodology and Lab*	3	
MATH 303 or MATH 380	Linear Algebra or Advanced Calculus I	3	MATH 3108 or MATH 3109	Linear Algebra or Foundations of Mathematics	3	
MATH 338	Mathematical Statistics and Probability	3	STAT 3115*	Engineering Statistics*	3	
*Will be substituted for STAT 3113.						
Humanities, Arts, and Social Sciences General Education Requirements						
From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines.						
*At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.						
Humanities and Fine Arts						
Select 6 hours from at least two specific disciplines.						
ENGL 231W or ENGL 232W or ENGL 241W or ENGL 242W or ENGL 263W or HIST 121* or HIST 122* or ARTS 105 or MUSI 120 or	British Literature I or British Literature II or American Literature I or American Literature II or World Literature I American History to 1877* or American History since 1877* or Art Appreciation or Music and the Human Experience or *Satisfies the State of Missouri government requirement.	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Art Appreciation or Music Understanding and Appreciation *Satisfies the State of Missouri government requirement.	6	
Behavioral and Social Sciences						
Select 6 hours from at least two specific disciplines.						
GEOG 101 or PHIL 101 or PHIL 210 or POSC 111* or PSYC 101 or ECON 294 or ECON 293 or Foreign Language	Intro to Geography or Intro to Philosophy or Logic and Critical Thinking or American National Government* or General Psychology or Microeconomics or Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	6	HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	6	
Humanities, Arts, and Social Sciences						
Select 3 hours.						
ENGL 204W	Technical Writing	3	ENGLISH 3560	Technical Writing	3	
Electives	Maximum Free Electives	3	Electives	Maximum Free Electives	3	
	Group 2 Major Requirements	35		Group 2 Major Requirements	38	
	Group 1 Core Requirements	28		Group 1 Core Requirements	26	
	Total Hours	63		Total Hours*	64	
*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

Columbia College		Semester	Missouri S&T		
COMM 110	Intro to Speech	3	SPMS 1185	Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHEM 110, 111L	Chemistry I and Lab	5	CHEM 1310, 1319	General Chemistry I and Lab	5
CISS 241	C++ Programming I	3	COMP SCI 1971,1981*	Intro to Programming Methodology and Lab* *Will be substituted for COMP SCI 1500.	3
MATH 303	Linear Algebra	3	MATH 3108	Linear Algebra	3
MATH 338	Mathematical Statistics and Probability	3	STAT 3115*	Engineering Statistics* *Will be substituted for STAT 3117.	3
Humanities, Arts, and Social Sciences General Education Requirements					
From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines.					
*At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.					
Humanities and Fine Arts					
Select 6 hours from at least two specific disciplines.					
ENGL 231W or ENGL 232W or ENGL 241W or ENGL 242W or ENGL 263W or HIST 121* or HIST 122* or ARTS 105 or MUSI 120 or	British Literature I or British Literature II or American Literature I or American Literature II or World Literature I American History to 1877* or American History since 1877* or Art Appreciation or Music and the Human Experience or *Satisfies the State of Missouri government requirement.	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Art Appreciation or Music Understanding and Appreciation *Satisfies the State of Missouri government requirement.	6
Behavioral and Social Sciences					
Select 6 hours from at least two specific disciplines.					
GEOG 101 or PHIL 101 or PHIL 210 or POSC 111* or PSYC 101 or ECON 294 or ECON 293 or Foreign Language	Intro to Geography or Intro to Philosophy or Logic and Critical Thinking or American National Government* or General Psychology or Microeconomics or Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	6	HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	6
Humanities, Arts, and Social Sciences					
Select 3 hours.					
ENGL 204W	Technical Writing	3	ENGLISH 3560	Technical Writing	3
Electives	Maximum Free Electives	6	Electives	Maximum Free Electives	6
	Group 2 Major Requirements	38		Group 2 Major Requirements	38
	Group 1 Core Requirements	28		Group 1 Core Requirements	26
	Total Hours	66		Total Hours*	64
*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

Columbia College		Semester	Missouri S&T			
COMM 110	Intro to Speech	3	SPMS 1185	Principles of Speech Applies to degree as Gen Ed Communication requirement.	3	
CHEM 110, 111L	Chemistry I and Lab	5	CHEM 1310, 1319	General Chemistry I and Lab	5	
CISS 241	C++ Programming I	3	COMP SCI 1971, 1981	Intro to Programming Method and Lab (C++)	3	
MATH 338	Mathematical Statistics and Probability	3	STAT 3115	Engineering Statistics	3	
Humanities, Arts, and Social Sciences General Education Requirements						
From the options listed in each group below, select 15 hours to include						
6 hours Humanities and Fine Arts from at least two specific disciplines and						
6 hours Behavioral and Social Sciences from at least two specific disciplines.						
*At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.						
Humanities and Fine Arts						
Select 6 hours from at least two specific disciplines.						
ENGL 231W or ENGL 232W or ENGL 241W or ENGL 242W or ENGL 263W or HIST 121* or HIST 122* or ARTS 105 or MUSI 120 or	British Literature I or British Literature II or American Literature I or American Literature II or World Literature I American History to 1877* or American History since 1877* or Art Appreciation or Music and the Human Experience or *Satisfies the State of Missouri government requirement.	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Art Appreciation or Music Understanding and Appreciation *Satisfies the State of Missouri government requirement.	6	
Behavioral and Social Sciences						
Select 6 hours from at least two specific disciplines to include PSYCH 1101.						
PSY 101	General Psychology	3	PSYCH 1101	General Psychology Required	3	
GEOG 101 or PHIL 101 or PHIL 210 or POSC 111* or ECON 294 or ECON 293 or Foreign Language	Intro to Geography or Intro to Philosophy or Logic and Critical Thinking or American National Government* or Microeconomics or Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	3	HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or POL SCI 1200* or ECON 1100 or ECON 1200 or Foreign Language	World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government* or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	3	
Humanities, Arts, and Social Sciences						
Select 3 hours.						
ENGL 204W	Technical Writing	3	ENGLISH 3560	Technical Writing	3	
No free electives applied to the degree.		0	Electives	Maximum Free Electives	0	
Group 2 Major Requirements		29	Group 2 Major Requirements		29	
Group 1 Core Requirements		28	Group 1 Core Requirements		26	
Total Hours		57			Total Hours*	61
*S&T advisor permission is required to transfer more than 61 credits toward the S&T Engineering Management degree.						

Environmental Engineering Group 2 Major Requirements

Columbia College			Semester	Missouri S&T	
COMM 110 or ENGL 204W	Intro to Speech or Technical Writing	3	ENGLISH 3560 or SPMS 1185	Technical Writing or Principles of Speech <small>Applies to degree as Gen Ed Communication requirement.</small>	3
GEOL 110	Intro to Physical Geology	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
CHEM 110, 111L	Chemistry I and Lab	5	CHEM 1310, 1319	General Chemistry I and Lab	5
CHEM 112, 112L	Chemistry II (3) and Lab (2)	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not a degree requirement, transfers as general elective credit.</small>	3
BIOL 110, 110L	Principles of Biology and Lab	5	BIO SCI 1113, 1219*	General Biology (3) and Lab* (1) <small>*The lab is not a degree requirement, transfers as general elective credit.</small>	3
MATH 338	Mathematical Statistics and Probability	3	STAT 3115*	Engineering Statistics* <small>*Will be substituted for STAT 3113.</small>	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 9 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 3 hours Behavioral and Social Sciences. *At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
ENGL 231W or ENGL 232W or ENGL 241W or ENGL 242W or ENGL 263W or HIST 121* or HIST 122* or ARTS 105 or MUSI 120 or	British Literature I or British Literature II or American Literature I or American Literature II or World Literature I American History to 1877* or American History since 1877* or Art Appreciation or Music and the Human Experience or <small>*Satisfies the State of Missouri government requirement.</small>	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Art Appreciation or Music Understanding and Appreciation <small>*Satisfies the State of Missouri government requirement.</small>	6
Behavioral and Social Sciences Select 3 hours.					
PHIL 101 or PHIL 210 or POSC 111* or PSYC 101 or ECON 294 or ECON 293 or Foreign Language	Intro to Philosophy or Logic and Critical Thinking or American National Government* or General Psychology or Microeconomics or Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	3	PHILOS 1105 or PHILOS 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	3
<i>No free electives applied to the degree.</i>		0	Maximum Free Electives		0
Group 2 Major Requirements		33	Group 2 Major Requirements		29
Group 1 Core Requirements		28	Group 1 Core Requirements		26
Total Hours		61	Total Hours*		55
<small>*S&T advisor permission is required to transfer more than 69 credits toward the S&T Environmental Engineering degree.</small>					

Geological Engineering Group 2 Major Requirements

Columbia College		Semester	Missouri S&T		
ENGL 204W	Technical Writing	3	ENGLISH 3560	Technical Writing	3
CHEM 110, 111L	Chemistry I and Lab	5	CHEM 1310, 1319	General Chemistry I and Lab	5
CISS 241	C++ Programming I	3	COMP SCI 1971, 1981	Intro to Programming Method and Lab (C++)	3
GEOL 110	Intro to Physical Geology	3	GEO ENG 1150 (GEOLOGY 1110)	Physical and Environmental Geology	3
MATH 338	Mathematical Statistics and Probability	3	STAT 3115	Engineering Statistics	3
Humanities, Arts, and Social Sciences General Education Requirements					
From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines.					
*At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.					
Humanities and Fine Arts					
Select 6 hours from at least two specific disciplines.					
ENGL 231W or ENGL 232W or ENGL 241W or ENGL 242W or ENGL 263W or HIST 121* or HIST 122* or ARTS 105 or MUSI 120 or	British Literature I or British Literature II or American Literature I or American Literature II or World Literature I American History to 1877* or American History since 1877* or Art Appreciation or Music and the Human Experience or *Satisfies the State of Missouri government requirement.	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Art Appreciation or Music Understanding and Appreciation *Satisfies the State of Missouri government requirement.	6
Behavioral and Social Sciences					
Select 6 hours from at least two specific disciplines.					
GEOG 101 or PHIL 101 or PHIL 210 or POSC 111* or PSYC 101 or ECON 294 or ECON 293 or Foreign Language	Intro to Geography or Intro to Philosophy or Logic and Critical Thinking or American National Government* or General Psychology or Microeconomics or Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	6	HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	6
Humanities, Arts, and Social Sciences					
Select 3 hours.					
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3	HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3
No free electives applied to the degree.		0	Maximum Free Electives		0
Group 2 Major Requirements		32	Group 2 Major Requirements		32
Group 1 Core Requirements		28	Group 1 Core Requirements		26
Total Hours		60	Total Hours*		58
*S&T advisor permission is required to transfer more than 65 credits toward the S&T Geological Engineering degree.					

Mechanical Engineering Group 2 Major Requirements

Columbia College		Semester	Missouri S&T		
COMM 110 or ENGL 204W	Intro to Speech or Technical Writing	3	ENGLISH 3560 or SPMS 1185	Technical Writing or Principles of Speech <small>Applies to degree as Gen Ed Communication requirement.</small>	3
CHEM 110, 111L	Chemistry I and Lab	5	CHEM 1310*, 1319	General Chemistry I and Lab <small>*CHEM 1310 will be substituted for CHEM 1305.</small>	5
CISS 241	C++ Programming I	3	COMP SCI 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/Statistics elective requirement.</small>	3
Humanities, Arts, and Social Sciences General Education Requirements					
From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines.					
*At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.					
Humanities and Fine Arts					
Select 6 hours from at least two specific disciplines.					
ENGL 231W or ENGL 232W or ENGL 241W or ENGL 242W or ENGL 263W or HIST 121* or HIST 122* or ARTS 105 or MUSI 120 or	British Literature I or British Literature II or American Literature I or American Literature II or World Literature I American History to 1877* or American History since 1877* or Art Appreciation or Music and the Human Experience or <small>*Satisfies the State of Missouri government requirement.</small>	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Art Appreciation or Music Understanding and Appreciation <small>*Satisfies the State of Missouri government requirement.</small>	6
Behavioral and Social Sciences					
Select 6 hours from at least two specific disciplines.					
GEOG 101 or PHIL 101 or PHIL 210 or POSC 111* or PSYC 101 or ECON 294 or ECON 293 or Foreign Language	Intro to Geography or Intro to Philosophy or Logic and Critical Thinking or American National Government* or General Psychology or Microeconomics or Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	6	HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	6
Humanities, Arts, and Social Sciences					
Select 3 hours.					
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3	HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3
<i>No free electives applied to the degree.</i>		0	Maximum Free Electives		0
Group 2 Major Requirements		29	Group 2 Major Requirements		29
Group 1 Core Requirements		28	Group 1 Core Requirements		26
Total Hours		57	Total Hours*		55
<small>*S&T advisor permission is required to transfer more than 68 credits toward the S&T Mechanical Engineering degree.</small>					

Metallurgical Engineering Group 2 Major Requirements

Columbia College		Semester	Missouri S&T			
COMM 110 or ENGL 204W	Intro to Speech or Technical Writing	3	ENGLISH 3560 or SPMS 1185	Technical Writing or Principles of Speech <small>Applies to degree as Gen Ed Communication requirement.</small>	3	
MATH 338	Mathematical Statistics and Probability	3	STAT 3115	Engineering Statistics	3	
CHEM 110, 111L	Chemistry I and Lab	5	CHEM 1310, 1319	General Chemistry I and Lab	5	
CHEM 112, 112L	Chemistry II (3) and Lab (2)	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not a degree requirement, transfers as general elective credit.</small>	3	
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. *At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.						
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.						
ENGL 231W or ENGL 232W or ENGL 241W or ENGL 242W or ENGL 263W or HIST 121* or HIST 122* or ARTS 105 or MUSI 120 or	British Literature I or British Literature II or American Literature I or American Literature II or World Literature I American History to 1877* or American History since 1877* or Art Appreciation or Music and the Human Experience or <small>*Satisfies the State of Missouri government requirement.</small>	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Art Appreciation or Music Understanding and Appreciation <small>*Satisfies the State of Missouri government requirement.</small>	6	
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.						
GEOG 101 or PHIL 101 or PHIL 210 or POSC 111* or PSYC 101 or ECON 294 or ECON 293 or Foreign Language	Intro to Geography or Intro to Philosophy or Logic and Critical Thinking or American National Government* or General Psychology or Microeconomics or Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	6	HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	6	
Humanities, Arts, and Social Sciences Select 3 hours.						
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3	HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3	
Maximum Free Electives		3	Maximum Free Electives		3	
Group 2 Major Requirements		34	Group 2 Major Requirements		32	
Group 1 Core Requirements		28	Group 1 Core Requirements		26	
Total Hours		62			Total Hours*	58
<small>*S&T advisor permission is required to transfer more than 68 credits toward the S&T Metallurgical Engineering degree.</small>						

Mining Engineering Group 2 Major Requirements

Columbia College		Semester	Missouri S&T			
COMM 110 or ENGL 204W	Intro to Speech or Technical Writing	3	ENGLISH 3560 or SPMS 1185	Technical Writing or Principles of Speech <small>Applies to degree as Gen Ed Communication requirement.</small>	3	
MATH 338	Mathematical Statistics and Probability	3	STAT 3115	Engineering Statistics	3	
CHEM 110, 111L	Chemistry I and Lab	5	CHEM 1310, 1319	General Chemistry I and Lab	5	
GEOL 110	Intro to Physical Geology	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3	
Humanities, Arts, and Social Sciences General Education Requirements						
From the options listed in each group below, select 12 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines.						
*At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.						
Humanities and Fine Arts						
Select 6 hours from at least two specific disciplines.						
ENGL 231W or ENGL 232W or ENGL 241W or ENGL 242W or ENGL 263W or HIST 121* or HIST 122* or ARTS 105 or MUSI 120 or	British Literature I or British Literature II or American Literature I or American Literature II or World Literature I American History to 1877* or American History since 1877* or Art Appreciation or Music and the Human Experience or <small>*Satisfies the State of Missouri government requirement.</small>	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Art Appreciation or Music Understanding and Appreciation <small>*Satisfies the State of Missouri government requirement.</small>	6	
Behavioral and Social Sciences						
Select 6 hours from at least two specific disciplines.						
GEOG 101 or PHIL 101 or PHIL 210 or POSC 111* or PSYC 101 or ECON 294 or ECON 293 or Foreign Language	Intro to Geography or Intro to Philosophy or Logic and Critical Thinking or American National Government* or General Psychology or Microeconomics or Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	6	HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government* or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language <small>*Satisfies the State of Missouri government requirement.</small>	6	
No free electives applied to the degree.		0	Maximum Free Electives		0	
Group 2 Major Requirements		26	Group 2 Major Requirements		26	
Group 1 Core Requirements		28	Group 1 Core Requirements		26	
Total Hours		54			Total Hours*	52
<small>*S&T advisor permission is required to transfer more than 68 credits toward the S&T Minor Engineering degree.</small>						

*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

Columbia College		Semester	Missouri S&T			
COMM 110 or ENGL 204W	Intro to Speech or Technical Writing	3	ENGLISH 3560 or SPMS 1185	Technical Writing or Principles of Speech <small>Applies to degree as Gen Ed Communication requirement.</small>	3	
CHEM 110, 111L	Chemistry I and Lab	5	CHEM 1310, 1319	General Chemistry I and Lab	5	
CISS 241	C++ Programming I	3	COMP SCI 1971, 1981	Intro to Programming Method and Lab (C++)	3	
MATH 303 or	Linear Algebra or	3	MATH 3108 or	Linear Algebra or	3	
MATH 380	Advanced Calculus I	3	MATH 3109	Foundations of Mathematics	3	
MATH 338	Mathematical Statistics and Probability	3	STAT 3115	Engineering Statistics	3	
Humanities, Arts, and Social Sciences General Education Requirements						
From the options listed in each group below, select 15 hours to include						
6 hours Humanities and Fine Arts from at least two specific disciplines and						
6 hours Behavioral and Social Sciences from at least two specific disciplines.						
*At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.						
Humanities and Fine Arts						
Select 6 hours from at least two specific disciplines.						
ENGL 231W or ENGL 232W or ENGL 241W or ENGL 242W or ENGL 263W or HIST 121* or HIST 122* or ARTS 105 or MUSI 120 or	British Literature I or British Literature II or American Literature I or American Literature II or World Literature I American History to 1877* or American History since 1877* or Art Appreciation or Music and the Human Experience or *Satisfies the State of Missouri government requirement.	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Art Appreciation or Music Understanding and Appreciation *Satisfies the State of Missouri government requirement.	6	
Behavioral and Social Sciences						
Select 6 hours from at least two specific disciplines.						
ECON 294 or ECON 293	Microeconomics or Macroeconomics	3	ECON 1100 or ECON 1200	Principles of Microeconomics or Principles of Macroeconomics	3	
GEOG 101 or PHIL 101 or PHIL 210 or POSC 111* or PSYC 101 or Foreign Language	Intro to Geography or Intro to Philosophy or Logic and Critical Thinking or American National Government* or General Psychology or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	3	HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or POL SCI 1200* or PSYCH 1101 or Foreign Language	World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government* or General Psychology or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	3	
Humanities, Arts, and Social Sciences						
Select 3 hours.						
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3	HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3	
Maximum Free Electives		0	Maximum Free Electives		0	
Group 2 Major Requirements		32	Group 2 Major Requirements		32	
Group 1 Core Requirements		28	Group 1 Core Requirements		26	
Total Hours		60			Total Hours*	58
*S&T advisor permission is required to transfer more than 69 credits toward the S&T Nuclear Engineering degree.						

Petroleum Engineering Group 2 Major Requirements

Columbia College		Semester	Missouri S&T		
COMM 110 or ENGL 204W	Intro to Speech or Technical Writing	3	ENGLISH 3560 or SPMS 1185	Technical Writing or Principles of Speech <small>Applies to degree as Gen Ed Communication requirement.</small>	3
CHEM 110, 111L	Chemistry I and Lab	5	CHEM 1310, 1319	General Chemistry I and Lab	5
GEOL 110	Intro to Physical Geology	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. *At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
ENGL 231W or ENGL 232W or ENGL 241W or ENGL 242W or ENGL 263W or HIST 121* or HIST 122* or ARTS 105 or MUSI 120 or	British Literature I or British Literature II or American Literature I or American Literature II or World Literature I American History to 1877* or American History since 1877* or Art Appreciation or Music and the Human Experience or *Satisfies the State of Missouri government requirement.	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877* or American History Since 1877* or Art Appreciation or Music Understanding and Appreciation *Satisfies the State of Missouri government requirement.	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
GEOG 101 or PHIL 101 or PHIL 210 or POSC 111* or PSYC 101 or ECON 294 or ECON 293 or Foreign Language	Intro to Geography or Intro to Philosophy or Logic and Critical Thinking or American National Government* or General Psychology or Microeconomics or Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	6	HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or American Government*or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language *Satisfies the State of Missouri government requirement.	6
Humanities, Arts, and Social Sciences Select 3 hours.					
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3	HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3
No free electives applied to the degree.		0	Maximum Free Electives		0
Group 2 Major Requirements		26	Group 2 Major Requirements		26
Group 1 Core Requirements		28	Group 1 Core Requirements		26
Total Hours		54			Total Hours* 52
<small>*S&T advisor permission is required to transfer more than 69 credits toward the S&T Petroleum Engineering degree.</small>					