

Maryville 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>Maryville University</u>		<u>Semester</u>	<u>Missouri S&T</u>	
MATH 151	Calculus I	4	MATH 1214	Calculus I <small>Grade of C or better is required.</small>
MATH 152	Calculus II	4	MATH 1215	Calculus II <small>Grade of C or better is required.</small>
MATH 251	Calculus III	4	MATH 2222	Calculus III <small>Grade of C or better is required.</small>
MATH 320	Applied Differential Equations	3	MATH 3304	Elementary Differential Equations
PHYS 153	Calculus-Based Physics I	4	PHYSICS 1135	Engineering Physics I <small>Grade of C or better is required.</small>
PHYS 154	Calculus-Based Physics II	4	PHYSICS 2135	Engineering Physics II <small>Grade of C or better is required.</small>
CHEM 103, 103L	General Chemistry I and Lab	4	CHEM 1310, 1319	General Chemistry I and Lab
COMP 101	Writing Across the Disciplines I: Rhetorical Situations	3	ENGLISH 1120	Exposition and Argumentation
Total Hours		30	Total Hours	
			31	

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 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>Maryville University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIST 132 or HIST 121 or HIST 122 or PSCI 101	World History since 1500 or U.S. History to 1877 or U.S. History since 1877 or American Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
COMP 104 or COMM 110	Writing Across the Disciplines II: Research & Argument or Public Speaking	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
COSC 151 or COSC 152	Computer Science I (C++) or Computer Science II (C++ OOP)	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
MATH 316	Applied 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
Ethics	Ethics Elective <small>Engineering, business, bio, social ethics approved by advisor .</small>	3	Ethics	Ethics Elective <small>Engineering, business, bio, social ethics approved by advisor</small>	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	30		Group 1 Core Requirements	31
	Total Hours	48		Total Hours*	49

*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>Maryville University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIST 132 * (HIST 121 or HIST 122)	World History since 1500* (U.S. History to 1877 or U.S. History since 1877) <small>*HIST 132 is preferred; 121 or 122 will also be accepted.</small>	3	HISTORY 1200* (or HISTORY 1300 or HISTORY 1310)	Modern Western Civilization* (or American History to 1877 or American History since 1877) <small>*HISTORY 1200 is preferred; 1300 or 1310 will also be accepted.</small>	3
MTH 370 and MTH 372	Probability I (3) and Probability II (3) <small>Both courses must be taken to receive full credit.</small>	6	STAT 3117*	Intro to Probability and Statistics* <small>*W will be substituted for the STAT 3113. The combination of Maryville Univ MTH 370 and 372 is equivalent to S&T STAT 3117. Both courses must be taken to receive credit for STAT 3117.</small>	3
ADAH 302	Modern Art and Architecture	3	ART 3203	Architectural Design I	3
SCI 309	Geology	4	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	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: COMP 104 or COMM 110.	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.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	19		Group 2 Major Requirements	15
	Group 1 Core Requirements	30		Group 1 Core Requirements	31
	Total Hours	49		Total Hours*	46

*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>Maryville University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
COMM 110	Public Speaking	3	SP&MS 1185	Principles of Speech	3
HIST 132 or HIST 121 or HIST 122 or PSCI 101	World History since 1500 or U.S. History to 1877 or U.S. History since 1877 or American Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
CHEM 104, 104L	General Chemistry II and Lab	4	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&T degree requirement. Will transfer as general credit.</small>	3
CHEM 203, 203L	Organic Chemistry I and Lab	4	CHEM 2210, 2219	Organic Chemistry I and Lab	4
CHEM 204, 204L or BIOL 103, 103L or BIOL 117, 117L or BIOL 260, 260L	Organic Chemistry II and Lab or Intro to Biology and Lab or General Biology and Lab or General Genetics	4	CHEM 2220, 2229 or BIO SCI 1113, 1219 or BIO SCI 2223	Organic Chemistry II and Lab or General Biology and Lab or General Genetics <small>Applies to degree as Track Elective.</small>	4
BIOL 351, 351L	Cell Biology and Lab	4	BIO SCI 2213, 2219	Cell Biology and Lab	4
COSC 151 or COSC 152	Computer Science I (C++) or Computer Science II (C++ OOP)	3	CS 1971,1981*	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	25		Group 2 Major Requirements	27
	Group 1 Core Requirements	30		Group 1 Core Requirements	31
	Total Hours	55		Total Hours*	58

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

Biomedical Engineering-Biomaterials Group 2 Major Requirements

<u>Maryville University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
COMM 110	Public Speaking	3	SP&MS 1185	Principles of Speech	3
HIST 132 or HIST 121 or HIST 122 or PSCI 101	World History since 1500 or U.S. History to 1877 or U.S. History since 1877 or American Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
CHEM 104, 104L	General Chemistry II and Lab	4	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&T degree requirement. Will transfer as general credit.</small>	3
CHEM 203, 203L	Organic Chemistry I 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
CHEM 204, 204L	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
BIOL 103, 103L or BIOL 117, 117L	Intro to Biology and Lab or General Biology and Lab	4	BIO SCI 1113*, 1219*	General General Biology* and Lab* <small>*Applies to degree as Track Elective (Non-engineering).</small>	4
BIOL 351, 351L	Cell Biology and Lab	4	BIO SCI 2213, 2219	Cell Biology and Lab	4
COSC 151 or COSC 152	Computer Science I (C++) or Computer Science II (C++ OOP)	3	CS 1971,1981*	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	29		Group 2 Major Requirements	28
	Group 1 Core Requirements	30		Group 1 Core Requirements	31
	Total Hours	59		Total Hours*	59

*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>Maryville University</u>		<u>Semester</u>	<u>Missouri S&T</u>	
HIST 132 or HIST 121 or HIST 122 or PSCI 101	World History since 1500 or U.S. History to 1877 or U.S. History since 1877 or American Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government
CHEM 203, 203L	Organic Chemistry I and Lab	4	CHEM 2210, 2219*	Organic Chemistry I (3) and Lab* (1) CHEM 2210 will satisfy the advanced chemistry elective requirement. CHEM 2219 is not an S&T degree requirement, will transfer as general elective credit.
CHEM 104, 104L	General Chemistry II and Lab	4	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) *CHEM 1510 is not an S&T degree requirement. Will transfer as general credit.
MTH 370 and MTH 372	Probability I (3) and Probability II (3) Both courses must be taken to receive full credit.	6	STAT 3117	Intro to Probability and Statistics or any statistics course 3000-level or higher. Satisfies statistics elective requirement.
COMP 104 or COMM 110 or HSS Elective	Writing Across the Disciplines II: Research & Argument or Public Speaking or Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	ENGLISH 1160 or SPMS 1185 or HSS Elective	Writing and Research or Principles of Speech or Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.
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.
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.
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives
	Group 2 Major Requirements	26		Group 2 Major Requirements
	Group 1 Core Requirements	30		Group 1 Core Requirements
	Total Hours	56		Total Hours*
				0
				21
				31
				52

*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>Maryville University</u>		<u>Semester</u>	<u>Missouri S&T</u>	
COMM 110	Public Speaking	3	SP&MS 1185	Principles of Speech
HIST 132 or HIST 121 or HIST 122 or PSCI 101	World History since 1500 or U.S. History to 1877 or U.S. History since 1877 or American Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government
CHEM 104, 104L	General Chemistry II and Lab	4	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) *CHEM 1510 is not an S&T degree requirement. Will transfer as general credit.
CHEM 203, 203L	Organic Chemistry I and Lab	4	CHEM 2210, 2219*	Organic Chemistry I and Lab* *The lab will apply to the degree as 1 of 9 required science elective credits (below) .
CHEM 204, 204L or BIOL 351, 351L or BIOL 316, 316L	Organic Chemistry II and Lab (4) or Cell Biology and Lab (4) or General Microbiology and Lab (4) Select up to 8 hours from these options.	8	CHEM 2220 or BIO SCI 2213, 2219 or BIO SCI 3313, 3319	Organic Chemistry II (3) or Cell Biology and Lab (4) or Microbiology and Lab (5) Will apply to the degree as a maximum of 8 of the 9 required science elective credits. Select up to 8 hours from these options.
COSC 151 or COSC 152	Computer Science I (C++) or Computer Science II (C++ OOP)	3	CS 1971,1981*	Intro to Programming Methodology and Lab* C++ *Will be substituted for CS 1500.
MTH 370 and MTH 372	Probability I (3) and Probability II (3) Both courses must be taken to receive full credit.	6	STAT 3117*	Intro to Probability and Statistics* *Will be substituted for the STAT 3113. The combination of Maryville Univ MTH 370 and 372 is equivalent to S&T STAT 3117. Both courses must be taken to receive credit for STAT 3117.
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.
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives
	Group 2 Major Requirements	34		Group 2 Major Requirements
	Group 1 Core Requirements	30		Group 1 Core Requirements
	Total Hours	64		Total Hours*
				0
				30
				31
				61

*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>Maryville University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
COMP 104 or COMM 110	Writing Across the Disciplines II: Research & Argument or Public Speaking	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
HIST 132 or HIST 121 or HIST 122 or PSCI 101	World History since 1500 or U.S. History to 1877 or U.S. History since 1877 or American Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
SCI 309	Geology	4	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
MTH 370 and MTH 372	Probability I (3) and Probability II (3) <small>Both courses must be taken to receive full credit.</small>	6	STAT 3117*	Intro to Probability and Statistics* <small>*Will be substituted for the STAT 3113. The combination of Maryville Univ MTH 370 and 372 is equivalent to S&T STAT 3117. Both courses must be taken to receive credit for STAT 3117.</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	19		Group 2 Major Requirements	15
	Group 1 Core Requirements	30		Group 1 Core Requirements	31
	Total Hours	49		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

Maryville University		Semester	Missouri S&T		
COMM 110	Public Speaking	3	SPMS 1185	Principles of Speech	3
COMP 104	Writing Across the Disciplines II: Research & Argument	3	ENGLISH 1160	Writing and Research	3
HIST 132 or HIST 121 or HIST 122 or PSCI 101	World History since 1500 or U.S. History to 1877 or U.S. History since 1877 or American Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
COSC 151 or COSC 152	Computer Science I (C++) or Computer Science II (C++ OOP)	3	CS 1971,1981*	Intro to Programming Methodology and Lab* C++ <small>*Will be substituted for CS 1500.</small>	3
CHEM 203, 203L or BIOL 351, 351L or BIOL 260	Organic Chemistry I and Lab or Cell Biology and Lab or General Genetics	4	CHEM 2210 or BIO SCI 2213 or BIO SCI 2223	Organic Chemistry I (3) or Cell Biology (3) or General Genetics (3) <small>Satisfies a required engineering/science elective.</small>	3
MATH 316	Applied Linear Algebra	3	MATH 3108	Linear Algebra <small>Will satisfy a required math elective.</small>	3
MTH 370 and MTH 372	Probability I (3) and Probability II (3) <small>Both courses must be taken to receive full credit.</small>	6	STAT 3117	Intro to Probability and Statistics <small>The combination of Maryville Univ MTH 370 and 372 is equivalent to S&T STAT 3117. Both courses must be taken to receive credit for STAT 3117.</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	31		Group 2 Major Requirements	27
	Group 1 Core Requirements	30		Group 1 Core Requirements	31
	Total Hours	61		Total Hours*	58

*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

Maryville University		Semester	Missouri S&T		
COMM 110	Public Speaking	3	SPMS 1185	Principles of Speech	3
COMP 104	Writing Across the Disciplines II: Research & Argument	3	ENGLISH 1160	Writing and Research	3
HIST 132 or HIST 121 or HIST 122 or PSCI 101	World History since 1500 or U.S. History to 1877 or U.S. History since 1877 or American Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
COSC 151 or COSC 152	Computer Science I (C++) or Computer Science II (C++ OOP)	3	CS 1971,1981*	Intro to Programming Methodology and Lab* C++ <small>*Will be substituted for CS 1500.</small>	3
CHEM 203, 203L or BIOL 351, 351L or BIOL 260	Organic Chemistry I and Lab or Cell Biology and Lab or General Genetics	4	CHEM 2210 or BIO SCI 2213 or BIO SCI 2223	Organic Chemistry I or Cell Biology or General Genetics	3
MATH 316	Applied Linear Algebra	3	MATH 3108	Linear Algebra	3
MTH 370 and MTH 372	Probability I (3) and Probability II (3) <small>Both courses must be taken to receive full credit.</small>	6	STAT 3117	Intro to Probability and Statistics <small>The combination of Maryville Univ MTH 370 and 372 is equivalent to S&T STAT 3117. Both courses must be taken to receive credit for STAT 3117.</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	31		Group 2 Major Requirements	27
	Group 1 Core Requirements	30		Group 1 Core Requirements	31
	Total Hours	61		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

Engineering Management Group 2 Major Requirements					
Maryville University		Semester	Missouri S&T		
Psych 101	General Psychology	3	PSYCH 1101	General Psychology	3
HIST 132 or HIST 121 or HIST 122 or	World History since 1500 or U.S. History to 1877 or U.S. History since 1877 or	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or	Modern Western Civilization or American History to 1877 or American History since 1877 or	3
PSCI 101	American Government		POL SCI 1200	American Government	
COMM 110	Public Speaking	3	SPMS 1185	Principles of Speech	3
COMP 104	Writing Across the Disciplines II: Research & Argument	3	ENGLISH 1160	Writing and Research	3
COSC 151 or COSC 152	Computer Science I (C++) or Computer Science II (C++ OOP)	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
MTH 370 and MTH 372	Probability I (3) and Probability II (3) <small>Both courses must be taken to receive full credit.</small>	6	STAT 3117	Intro to Probability and Statistics <small>The combination of Maryville Univ MTH 370 and 372 is equivalent to S&T STAT 3117. Both courses must be taken to receive credit for STAT 3117.</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>	3	Electives	Maximum Free Electives	0
	Group 2 Major Requirements	27		Group 2 Major Requirements	21
	Group 1 Core Requirements	30		Group 1 Core Requirements	31
	Total Hours	57		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

Environmental Engineering Group 2 Major Requirements					
Maryville University		Semester	Missouri S&T		
COMP 104 or COMM 110	Writing Across the Disciplines II: Research & Argument or Public Speaking	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
HIST 132 or HIST 121 or HIST 122	World History since 1500 or U.S. History to 1877 or U.S. History since 1877	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310	Modern Western Civilization or American History to 1877 or American History since 1877	3
SCI 309	Geology	4	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
CHEM 104, 104L	General Chemistry II and Lab	4	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&T degree requirement. Will transfer as general credit.</small>	3
BIOL 103, 103L or BIOL 117, 117L	Intro to Biology and Lab or General Biology and Lab	4	BIO SCI 1113, 1219*	General Biology (3) and Lab* (1) <small>*BIO SCI 1219 is not an S&T degree requirement, will transfer as general elective credit.</small>	3
MTH 370 and MTH 372	Probability I (3) and Probability II (3) <small>Both courses must be taken to receive full credit.</small>	6	STAT 3117*	Intro to Probability and Statistics* <small>*Will be substituted for the STAT 3113. The combination of Maryville Univ MTH 370 and 372 is equivalent to S&T STAT 3117. Both courses must be taken to receive credit for STAT 3117.</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	21
	Group 1 Core Requirements	30		Group 1 Core Requirements	31
	Total Hours	57		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>Maryville University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIST 132 or HIST 121 or HIST 122 or PSCI 101	World History since 1500 or U.S. History to 1877 or U.S. History since 1877 or American Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
COSC 151 or COSC 152	Computer Science I (C++) or Computer Science II (C++ OOP)	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
SCI 309	Geology	4	GEO ENG 1150 (GEOLOGY 1110)	Physical and Environmental Geology	3
MTH 370 and MTH 372	Probability I (3) and Probability II (3) <small>Both courses must be taken to receive full credit.</small>	6	STAT 3117	Intro to Probability and Statistics <small>The combination of Maryville Univ MTH 370 and 372 is equivalent to S&T STAT 3117. Both courses must be taken to receive credit for STAT 3117.</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
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	22		Group 2 Major Requirements	18
	Group 1 Core Requirements	30		Group 1 Core Requirements	31
	Total Hours	52		Total Hours*	49

*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>Maryville University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIST 132 or HIST 121 or HIST 122 or PSCI 101	World History since 1500 or U.S. History to 1877 or U.S. History since 1877 or American Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
COMP 104 or COMM 110	Writing Across the Disciplines II: Research & Argument or Public Speaking	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
COSC 151 or COSC 152	Computer Science I (C++) or Computer Science II (C++ OOP)	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
MATH 316	Applied 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	30		Group 1 Core Requirements	31
	Total Hours	48		Total Hours*	49

*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

Maryville University		Semester	Missouri S&T		
COMP 104 or COMM 110	Writing Across the Disciplines II: Research & Argument or Public Speaking	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
HIST 132 or HIST 121 or HIST 122 or PSCI 101	World History since 1500 or U.S. History to 1877 or U.S. History since 1877 or American Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
MTH 370 and MTH 372	Probability I (3) and Probability II (3) <small>Both courses must be taken to receive full credit.</small>	6	STAT 3117*	Intro to Probability and Statistics* <small>*W will be substituted for the STAT 3113/3115 requirement. The combination of Maryville Univ MTH 370 and 372 is equivalent to S&T STAT 3117. Both courses must be taken to receive credit for STAT 3117.</small>	3
CHEM 104, 104L	General Chemistry II and Lab	4	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&T degree requirement. Will transfer as general credit.</small>	3
CHEM 203, 203L	Organic Chemistry I and Lab	4	CHEM 2210, 2219*	Organic Chemistry I (3) and Lab* (1) <small>CHEM 2210 is not specifically required for the degree but will satisfy Out-of-Department Technical Elective Requirement. *CHEM 2219 is not an S&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	31		Group 2 Major Requirements	24
	Group 1 Core Requirements	30		Group 1 Core Requirements	31
	Total Hours	61		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

Maryville University		Semester	Missouri S&T		
COMP 104	Writing Across the Disciplines II: Research & Argument	3	ENGLISH 1160	Writing and Research	3
HIST 132 or HIST 121 or HIST 122 or PSCI 101	World History since 1500 or U.S. History to 1877 or U.S. History since 1877 or American Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
MTH 370 and MTH 372	Probability I (3) and Probability II (3) <small>Both courses must be taken to receive full credit.</small>	6	STAT 3117*	Intro to Probability and Statistics* <small>*W will be substituted for the STAT 3113/3115 requirement. The combination of Maryville Univ MTH 370 and 372 is equivalent to S&T STAT 3117. Both courses must be taken to receive credit for STAT 3117.</small>	3
SCI 309	Geology	4	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
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	22		Group 2 Major Requirements	18
	Group 1 Core Requirements	30		Group 1 Core Requirements	31
	Total Hours	52		Total Hours*	49

*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>Maryville University</u>		<u>Semester</u>	<u>Missouri S&T</u>	
COMP 104 or COMM 110	Writing Across the Disciplines II: Research & Argument or Public Speaking	3	ENGLISH 1160 or SPMS 1185	3
HIST 132 or HIST 121 or HIST 122 or PSCI 101	World History since 1500 or U.S. History to 1877 or U.S. History since 1877 or American Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	3
COSC 151 or COSC 152	Computer Science I (C++) or Computer Science II (C++ OOP)	3	CS 1971, 1981	3
MATH 316	Applied Linear Algebra	3	MATH 3108	3
MTH 370 and MTH 372	Probability I (3) and Probability II (3) <small>Both courses must be taken to receive full credit.</small>	6	STAT 3117	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	30		27
	Group 1 Core Requirements	30		31
	Total Hours	60		Total Hours*
				58

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

Petroleum Engineering Group 2 Major Requirements

<u>Maryville University</u>		<u>Semester</u>	<u>Missouri S&T</u>	
COMP 104	Writing Across the Disciplines II: Research & Argument	3	ENGLISH 1160	3
HIST 132 or HIST 121 or HIST 122 or PSCI 101	World History since 1500 or U.S. History to 1877 or U.S. History since 1877 or American Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	3
SCI 309	Geology	4	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	16		15
	Group 1 Core Requirements	30		31
	Total Hours	46		Total Hours*
				46

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