

Cotley College — Missouri S&T
General Engineering Transfer Guide
 Effective as of Fall 2017

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>Cotley College</u>			<u>Semester</u>	<u>Missouri S&T</u>		
MAT 201	Calculus I	4	MATH 1214	Calculus for Engineers I	Grade of C or better is required.	4
MAT 202	Calculus II	4	MATH 1215	Calculus for Engineers II	Grade of C or better is required.	4
MAT 203	Calculus III	4	MATH 2222	Calculus with Analytic Geometry III	Grade of C or better is required.	4
MAT 204	Differential Equations	3	MATH 3304	Elementary Differential Equations		3
PHY 201, 201L	General Physics I and Lab	5	PHYSICS 1135	Engineering Physics I	Grade of C or better is required.	4
PHY 202, 202L	General Physics II and Lab	5	PHYSICS 2135	Engineering Physics II	Grade of C or better is required.	4
CHE 103, 103L	General Chemistry I and Lab	4	CHEM 1310, 1319	General Chemistry I and Lab		5
ENG 101	English Composition I	3	ENGLISH 1120	Exposition and Argumentation		3
ECO 202 or ECO 201	Principles of Economics II: Microeconomics or Principles of Economics I: Macroeconomics	3	ECON 1100 or ECON 1200	Principles of Microeconomics or Principles of Macroeconomics		3
Total Hours			35	Total Hours		34

Group 2 - Major Requirements: Take All Courses for Major of Choice

Engineering students take all Group 1 - Core Requirements (above) and Group 2 - Major Requirements for chosen major from list below. See course requirements on following pages.

Aerospace Engineering
Architectural Engineering
Ceramic Engineering
Chemical Engineering
**Chemical Engineering/Biochemistry
 Emphasis**
Civil Engineering
Computer Engineering
Electrical Engineering

Engineering Management
Environmental Engineering
Geological Engineering
Mechanical Engineering
Metallurgical Engineering
Mining Engineering
Nuclear Engineering
Petroleum Engineering

Engineering Major Requirements are detailed on the following pages.

Free Electives: Some programs allow Free Electives as indicated within each major. Free Electives should be selected in consultation with your advisor and may not include remedial/deficiency courses, algebra, trigonometry, pre-calculus, or extra credits in required courses.

Humanities/Social Science (HSS) Electives: HSS electives may include any history, economics, political science, sociology, psychology, philosophy, fine art, literature, or foreign language. Missouri S&T approved HSS courses are listed at ugs.mst.edu. Your campus may have additional acceptable options. Consult with your advisor or email transfer@mst.edu with questions.

Aerospace Engineering Group 2 Major Requirements

<u>Cottey College</u>		<u>Semester</u>	<u>Missouri S&T</u>	
HIS 111 or HIS 112 or HIS 102 or POL 101	US History to 1877 or US History Since 1877 or History of Western Civilization or United States Government	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government
ENG 102 or SPE 101	English Composition II or Fundamentals of Speech	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech
<i>See your advisor for course options.</i>				Literature Elective
<i>See your advisor for course options.</i>				Ethics Elective
<i>No free electives applied to the degree.</i>				Maximum Free Electives
Group 2 Major Requirements		6	Group 2 Major Requirements	
Group 1 Core Requirements		35	Group 1 Core Requirements	
Total Hours		41	Total Hours*	
			46	

*S&T advisor permission is required to transfer more than 60 credits toward the S&T Aerospace Engineering degree.

Architectural Engineering Group 2 Major Requirements

<u>Cottey College</u>		<u>Semester</u>	<u>Missouri S&T</u>	
HIS 102 or HIS 111 or HIS 112	History of Western Civilization or US History to 1877 or US 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)
ENG 102 or SPE 101	English Composition II or Fundamentals of Speech	3	ENGLISH 1160 or SPMS 1185 or HSS Elective	Writing and Research or Public Speaking or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language
AST 101	Intro to Astronomy	3	PHYSICS 1505	Introductory Astronomy (or other chemistry, geology, biology, physics, or astronomy course that is not otherwise required for the degree) Applies to
<i>No free electives applied to the degree.</i>				the degree as a basic science elective
Group 2 Major Requirements		9	Maximum Free Electives	
Group 1 Core Requirements		35	Group 2 Major Requirements	
Total Hours		44	Group 1 Core Requirements	
			Total Hours*	
			43	

*S&T advisor permission is required to transfer more than 60 credits toward the S&T Architectural Engineering degree.

Ceramic Engineering Group 2 Major Requirements

<u>Cottey College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIS 111 or HIS 112 or HIS 102 or POL 101	US History to 1877 or US History Since 1877 or History of Western Civilization or United States Government	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government	3
CHE 221, 221L	Organic Chemistry I and Lab	5	CHEM 2210/2219	Organic Chemistry I and Lab (Not a specific requirement. Will satisfy technical elective requirement.)	5
CHE 104, 104L	General Chemistry II and Lab	5	CHEM 1320	General Chemistry II	3
ENG 102 or SPE 101	English Composition II or Fundamentals of Speech	3	ENGLISH 1160 or SPMS 1185 or HSS Elective	Writing and Research or Public Speaking or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine Humanities/Social Science Elective	3
<i>See your advisor for course options.</i>				Maximum Free Electives	0
<i>No free electives applied to the degree.</i>				Group 2 Major Requirements	17
Group 2 Major Requirements		16	Group 1 Core Requirements		17
Group 1 Core Requirements		35	Total Hours*		51
Total Hours		51			

*S&T advisor permission is required to transfer more than 66 credits toward the S&T Ceramic Engineering degree.

Chemical Engineering Group 2 Major Requirements

<u>Cottey College</u>		<u>Semester</u>	<u>Missouri S&T</u>			
ENG 102	English Composition II	3	ENGLISH 1160	Writing and Research	3	
HIS 111 or HIS 112 or HIS 102 or POL 101	US History to 1877 or US History Since 1877 or History of Western Civilization or United States Government	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government	3	
CHE 104, 104L	General Chemistry II and Lab	5	CHEM 1320	General Chemistry II	5	
CHE 221, 221L	Organic Chemistry I and Lab	5	CHEM 2210	Organic Chemistry I	3	
CHE 222, 222L	Organic Chemistry II and Lab	5	CHEM 2220	Organic Chemistry II (Will satisfy science elective requirement.)	3	
<i>See your advisor for course options.</i>				Humanities/Social Science Elective	3	
<i>See your advisor for course options.</i>				Humanities/Social Science Elective	3	
<i>No free electives applied to the degree.</i>				Maximum Free Electives	0	
Group 2 Major Requirements		21	Group 2 Major Requirements		23	
Group 1 Core Requirements		35	Group 1 Core Requirements		34	
Total Hours		56	Total Hours*			57

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

Chemical Engineering - Biochemical Engineering Emphasis Group 2 Major Requirements

<u>Cottey College</u>		<u>Semester</u>	<u>Missouri S&T</u>			
ENG 102	English Composition II	3	ENGLISH 1160	Writing and Research	3	
HIS 111 or HIS 112 or HIS 102 or POL 101	US History to 1877 or US History Since 1877 or History of Western Civilization or United States Government	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government	3	
CHE 104, 104L	General Chemistry II and Lab	5	CHEM 1320	General Chemistry II	5	
CHE 221, 221L	Organic Chemistry I and Lab	5	CHEM 2210	Organic Chemistry I	3	
CHE 222, 222L	Organic Chemistry II and Lab	5	CHEM 2220	Organic Chemistry II (Will satisfy science elective requirement.)	3	
<i>See your advisor for course options.</i>				Humanities/Social Science Elective	3	
<i>See your advisor for course options.</i>				Humanities/Social Science Elective	3	
<i>No free electives applied to the degree.</i>				Maximum Free Electives	0	
Group 2 Major Requirements		21	Group 2 Major Requirements		23	
Group 1 Core Requirements		35	Group 1 Core Requirements		34	
Total Hours		56	Total Hours*			57

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

Civil Engineering Group 2 Major Requirements

<u>Cotley College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 102 or SPE 101 HIS 111 or HIS 112 or HIS 102 or POL 101	English Composition II or Fundamentals of Speech US History to 1877 or US History Since 1877 or History of Western Civilization or United States Government	3 3	ENGLISH 1160 or SPMS 1185 HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200	Writing and Research or Principles of Speech American History to 1877 or American History since 1877 or Modern Western Civilization or American Government Humanities/Social Science Elective Maximum Free Electives	3 3 3 0
<i>See your advisor for course options.</i>					
<i>No free electives applied to the degree.</i>					
	Group 2 Major Requirements	6		Group 2 Major Requirements	9
	Group 1 Core Requirements	35		Group 1 Core Requirements	34
	Total Hours	41		Total Hours*	43

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

Computer Engineering Group 2 Major Requirements

<u>Cotley College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
SPE 101 ENG 102 HIS 111 or HIS 112 or HIS 102 or POL 101 CSC 212	Fundamentals of Speech English Composition II US History to 1877 or US History Since 1877 or History of Western Civilization or United States Government Data Structures	3 3 3 3	SPMS 1185 ENGLISH 1160 HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200 CS 1575	Public Speaking Writing and Research American History to 1877 or American History since 1877 or Modern Western Civilization or American Government Data Structures Humanities/Social Science Elective Maximum Free Electives	3 3 3 3 3 3
<i>See your advisor for course options.</i>					
<i>See your advisor for course options.</i>					
	Group 2 Major Requirements	12		Group 2 Major Requirements	18
	Group 1 Core Requirements	35		Group 1 Core Requirements	34
	Total Hours	47		Total Hours*	52

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

Electrical Engineering Group 2 Major Requirements

<u>Cotley College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
SPE 101 ENG 102 HIS 111 or HIS 112 or HIS 102 or POL 101	Fundamentals of Speech English Composition II US History to 1877 or US History Since 1877 or History of Western Civilization or United States Government	3 3 3	SPMS 1185 ENGLISH 1160 HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200	Public Speaking Writing and Research American History to 1877 or American History since 1877 or Modern Western Civilization or American Government Humanities/Social Science Elective Maximum Free Electives	3 3 3 3 3
<i>See your advisor for course options.</i>					
<i>See your advisor for course options.</i>					
	Group 2 Major Requirements	9		Group 2 Major Requirements	15
	Group 1 Core Requirements	35		Group 1 Core Requirements	34
	Total Hours	44		Total Hours*	49

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

Engineering Management Group 2 Major Requirements

<u>Cotley College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
PSY 101	General Psychology	3	PSYCH 1101	General Psychology	3
HIS 111 or	US History to 1877 or		HISTORY 1300 or	American History to 1877 or	
HIS 112 or	US History Since 1877 or	3	HISTORY 1310 or	American History since 1877 or	3
HIS 102 or	History of Western Civilization or		HISTORY 1200 or	Modern Western Civilization or	
POL 101	United States Government		POL SCI 1200	American Government	
ENG 102 or	English Composition II or	3	ENGLISH 1160 or	Writing and Research or	3
SPE 101	Fundamentals of Speech		SPMS 1185	Principles of Speech	3
<i>See your advisor for course options.</i>			Humanities/Social Science Elective		3
<i>See your advisor for course options.</i>			Maximum Free Electives		3
Group 2 Major Requirements		9	Group 2 Major Requirements		15
Group 1 Core Requirements		35	Group 1 Core Requirements		34
Total Hours		44	Total Hours*		49

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

Environmental Engineering Group 2 Major Requirements

<u>Cotley College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 102 or	English Composition II or	3	ENGLISH 1160 or	Writing and Research or	3
SPE 101	Fundamentals of Speech		SPMS 1185	Principles of Speech	3
HIS 111 or	US History to 1877 or		HISTORY 1300 or	American History to 1877 (preferred) or	
HIS 112 or	US History Since 1877 or	3	HISTORY 1310 or	American History since 1877 (preferred) or	3
HIS 102	History of Western Civilization		HISTORY 1200	Modern Western Civilization	
CHE 104, 104L	General Chemistry II and Lab	5	CHEM 1320	General Chemistry II	3
BIO 101	Intro to Biology and Lab	4	BIO SCI 1113	General Biology	4
<i>See your advisor for course options.</i>			Humanities/Social Science Elective		3
<i>No free electives applied to the degree.</i>			Maximum Free Electives		0
Group 2 Major Requirements		15	Group 2 Major Requirements		16
Group 1 Core Requirements		35	Group 1 Core Requirements		34
Total Hours		50	Total Hours*		50

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

Geological Engineering Group 2 Major Requirements

<u>Cotley College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 102 or	English Composition II or	3	ENGLISH 1160 or	Writing and Research or	3
SPE 101	Fundamentals of Speech		SPMS 1185	Principles of Speech	3
HIS 111 or	US History to 1877 or		HISTORY 1300 or	American History to 1877 or	
HIS 112 or	US History Since 1877 or	3	HISTORY 1310 or	American History since 1877 or	3
HIS 102 or	History of Western Civilization or		HISTORY 1200 or	Modern Western Civilization or	
POL 101	United States Government		POL SCI 1200	American Government	
BIO 101 or	Intro to Biology and Lab or	5	BIO SCI 1113 or	General Biology or	
CHE 104 104L	General Chemistry II and Lab or		CHEM 1320 or	General Chemistry II or	
or CHE 221, 221L	Organic Chemistry I and Lab		CHEM 2210	Organic Chemistry I	
<i>See your advisor for course options.</i>			<i>or any 3-hour course in chemistry, geochemistry, or biology</i>		
<i>See your advisor for course options.</i>			Humanities/Social Science Elective		3
<i>No free electives applied to the degree.</i>			Humanities/Social Science Elective		3
<i>No free electives applied to the degree.</i>			Maximum Free Electives		0
Group 2 Major Requirements		11	Group 2 Major Requirements		12
Group 1 Core Requirements		35	Group 1 Core Requirements		34
Total Hours		46	Total Hours*		46

*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>Cottey College</u>	<u>Semester</u>	<u>Missouri S&T</u>
HIS 111 or HIS 112 or HIS 102 or POL 101	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200
US History to 1877 or US History Since 1877 or History of Western Civilization or United States Government		American History to 1877 or American History since 1877 or Modern Western Civilization or American Government
ENG 102 or SPE 101	3	ENGLISH 1160 or SPMS 1185
English Composition II or Fundamentals of Speech		Writing and Research or Principles of Speech
		Literature Elective
		Humanities/Social Science Elective
		Maximum Free Electives
<i>See your advisor for course options.</i>		
<i>No free electives applied to the degree.</i>		
Group 2 Major Requirements	0	Group 2 Major Requirements
Group 1 Core Requirements	35	Group 1 Core Requirements
Total Hours	35	Total Hours*
		40

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

Metallurgical Engineering Group 2 Major Requirements

<u>Cottey College</u>	<u>Semester</u>	<u>Missouri S&T</u>
ENG 102 or SPE 101	3	ENGLISH 1160 or SPMS 1185
English Composition II or Fundamentals of Speech		Writing and Research or Principles of Speech
HIS 111 or HIS 112 or HIS 102 or POL 101	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200
US History to 1877 or US History Since 1877 or History of Western Civilization or United States Government		American History to 1877 or American History since 1877 or Modern Western Civilization or American Government
CHE 104, 104L	5	CHEM 1320
General Chemistry II and Lab		General Chemistry II
CHE 221, 221L	5	CHEM 2210
Organic Chemistry I and Lab		Organic Chemistry I
		<i>Not specifically required for the degree but will satisfy Out-of-Department Technical Elective Requirement</i>
		Humanities/Social Science Elective
		Humanities/Social Science Elective
		Maximum Free Electives
<i>See your advisor for course options.</i>		
<i>See your advisor for course options.</i>		
<i>See your advisor for course options.</i>		
Group 2 Major Requirements	16	Group 2 Major Requirements
Group 1 Core Requirements	35	Group 1 Core Requirements
Total Hours	51	Total Hours*
		57

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

Mining Engineering Group 2 Major Requirements

<u>Cottey College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 102	English Composition II	3	ENGLISH 1160	Writing and Research	3
HIS 111 or	US History to 1877 or		HISTORY 1300 or	American History to 1877 or	
HIS 112 or	US History Since 1877 or		HISTORY 1310 or	American History since 1877 or	
HIS 102 or	History of Western Civilization or	3	HISTORY 1200 or	Modern Western Civilization or	3
POL 101	United States Government		POL SCI 1200	American Government	
<i>See your advisor for course options.</i>			Humanities/Social Science Elective		3
<i>See your advisor for course options.</i>			Humanities/Social Science Elective		3
<i>No free electives applied to the degree.</i>			Maximum Free Electives		0
Group 2 Major Requirements		6	Group 2 Major Requirements		12
Group 1 Core Requirements		35	Group 1 Core Requirements		34
Total Hours		41	Total Hours*		46

*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>Cottey College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 102	English Composition II	3	ENGLISH 1160	Writing and Research	3
HIS 111 or	US History to 1877 or		HISTORY 1300 or	American History to 1877 or	
HIS 112 or	US History Since 1877 or		HISTORY 1310 or	American History since 1877 or	
HIS 102 or	History of Western Civilization or	3	HISTORY 1200 or	Modern Western Civilization or	3
POL 101	United States Government		POL SCI 1200	American Government	
<i>See your advisor for course options.</i>			Humanities/Social Science Elective		3
<i>See your advisor for course options.</i>			Humanities/Social Science Elective		3
<i>See your advisor for course options.</i>			Maximum Free Electives		6
Group 2 Major Requirements		6	Group 2 Major Requirements		18
Group 1 Core Requirements		35	Group 1 Core Requirements		34
Total Hours		41	Total Hours*		52

*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>Cottey College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 102	English Composition II	3	ENGLISH 1160	Writing and Research	3
HIS 111 or	US History to 1877 or		HISTORY 1300 or	American History to 1877 or	
HIS 112 or	US History Since 1877 or		HISTORY 1310 or	American History since 1877 or	
HIS 102 or	History of Western Civilization or	3	HISTORY 1200 or	Modern Western Civilization or	3
POL 101	United States Government		POL SCI 1200	American Government	
<i>See your advisor for course options.</i>			Humanities/Social Science Elective		3
<i>See your advisor for course options.</i>			Humanities/Social Science Elective		3
<i>No free electives applied to the degree.</i>			Maximum Free Electives		0
Group 2 Major Requirements		0	Group 2 Major Requirements		6
Group 1 Core Requirements		35	Group 1 Core Requirements		34
Total Hours		35	Total Hours*		40

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