

Cotley College — Missouri S&T

General Engineering Transfer Guide

Effective as of Fall 2023

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 210	Calculus I	4	MATH 1214	Calculus I Grade of C or better is required. 4
MAT 220	Calculus II	4	MATH 1215	Calculus II Grade of C or better is required. 4
MAT 230	Calculus III	4	MATH 2222	Calculus III Grade of C or better is required. 4
MAT 240	Differential Equations	3	MATH 3304	Elementary Differential Equations 3
PHY 205	General Physics I and Lab	4	PHYSICS 1135	Engineering Physics I Grade of C or better is required. 4
PHY 206	General Physics II and Lab	4	PHYSICS 2135	Engineering Physics II Grade of C or better is required. 4
CHE 210, 211	General Chemistry 1 and Lab	4	CHEM 1310, 1319	General Chemistry I and Lab 5
FWS 101	First-Year Writing Seminar	3	ENGLISH 1120	Exposition and Argumentation 3
ECO 202 or	Principles of Economics II: Microeconomics or	3	ECON 1100 or	Principles of Microeconomics or 3
ECO 201	Principles of Economics I: Macroeconomics		ECON 1200	Principles of Macroeconomics 3
Total Hours		33	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 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>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 Since 1500 or United States 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
WRI 102 or SPE 101 or WRI 292	College Writing or Fundamentals of Speech or Professional Writing	3		ENGLISH 1160 or SPMS 1185 or ENGLISH 3560 Writing and Research or Principles of Speech or Technical Writing	3
ENG 205	American Literature I (or other literature elective)	3		ENGLISH 1221 American Literature: 1600 to 1865 (or other literature elective)	3
	Ethics Elective	3		Ethics Elective Engineering, business, bio, social or other ethics approved by advisor.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	12		Group 2 Major Requirements	12
	Group 1 Core Requirements	33		Group 1 Core Requirements	34
	Total Hours	45		Total Hours*	46

*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>Cottey College</u>	<u>Semester</u>		<u>Missouri S&T</u>	
HIS 102 (or HIS 111 or HIS 112)	History of Western Civilization Since 1500 (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) <small>*HISTORY 1200 is preferred; 1300 or 1310 will also be accepted.</small>	3
HSS Elective	Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3		HSS Elective Humanities/Social Science Elective: 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	6		Group 2 Major Requirements	6
	Group 1 Core Requirements	33		Group 1 Core Requirements	34
	Total Hours	39		Total Hours*	40

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

Ceramic Engineering Group 2 Major Requirements

<u>Cotley 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 Since 1500 or United States 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
CHE 212	General Chemistry 2	4	CHEM 1320	General Chemistry II
CHE 221	Organic Chemistry I	3	CHEM 2210	Organic Chemistry I
WRI 102 or SPE 101 or HSS Elective	College Writing or Fundamentals of Speech or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3	ENGLISH 1160 or SPMS 1185 or HSS Elective	Writing and Research or Public Speaking or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language
	Humanities/Social Science Elective	3		Humanities/Social Science Elective
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives
	Group 2 Major Requirements	16		Group 2 Major Requirements
	Group 1 Core Requirements	33		Group 1 Core Requirements
	Total Hours	49		Total Hours*
				49

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

Chemical Engineering Group 2 Major Requirements

<u>Cotley College</u>		<u>Semester</u>	<u>Missouri S&T</u>	
WRI 292	Professional Writing	3	ENGLISH 3560	Technical Writing
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 Since 1500 or United States 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
CHE 212	General Chemistry II	4	CHEM 1320	General Chemistry II
CHE 221, 221L	Organic Chemistry I and Lab	5	CHEM 2210, 2219	Organic Chemistry I and Lab
CHE 222	Organic Chemistry II	3	CHEM 2220	Organic Chemistry II <small>Will transfer as 3 of 9 hours of required science electives.</small>
CSC 212	Data Structures	3	CS 1500	Computational Problem Solving
SPE 101	Fundamentals of Speech	3	SP&MS 1185	Principles of Speech
	Humanities/Social Science Elective	3		Humanities/Social Science Elective
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives
	Group 2 Major Requirements	27		Group 2 Major Requirements
	Group 1 Core Requirements	33		Group 1 Core Requirements
	Total Hours	60		Total Hours*
				59

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

Chemical Engineering - Biochemical Engineering Emphasis Group 2 Major Requirements

<u>Cotley College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
WRI 292	Professional Writing	3	ENGLISH 3560	Technical Writing	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 Since 1500 or United States 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
CHE 212	General Chemistry 2	4	CHEM 1320	General Chemistry II	3
CHE 221, 221L	Organic Chemistry I and Lab	5	CHEM 2210, 2219	Organic Chemistry I and Lab	4
CHE 222	Organic Chemistry II	3	CHEM 2220	Organic Chemistry II <small>Will transfer as 3 of 9 hours of required science electives.</small>	3
CSC 212	Data Structures	3	CS 1500	Computational Problem Solving	3
SPE 101	Fundamentals of Speech	3	SP&MS 1185	Principles of Speech	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	27		Group 2 Major Requirements	25
	Group 1 Core Requirements	33		Group 1 Core Requirements	34
	Total Hours	60		Total Hours*	59

*S&T advisor permission is required to transfer more than 70 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>		
WRI 102 or SPE 101 or WRI 292	College Writing or Fundamentals of Speech or Professional Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	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 Since 1500 or United States 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
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	9		Group 2 Major Requirements	9
	Group 1 Core Requirements	33		Group 1 Core Requirements	34
	Total Hours	42		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>Cottey College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
SPE 101	Fundamentals of Speech	3	SPMS 1185	Principles of Speech	3
WRI 102 or WRI 292	College Writing or Professional Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	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 Since 1500 or United States 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
CSC 212	Data Structures	3	CS 1500	Computational Problem Solving	3
CHE 221	Organic Chemistry I	3	CHEM 2210	Organic Chemistry I <small>Transfers as an engineering/science required elective.</small>	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	Maximum Free Electives	3		Maximum Free Electives	3
	Group 2 Major Requirements	21		Group 2 Major Requirements	21
	Group 1 Core Requirements	33		Group 1 Core Requirements	34
	Total Hours	54		Total Hours*	55

*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>Cottey College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
SPE 101	Fundamentals of Speech	3	SPMS 1185	Principles of Speech	3
WRI 102 or WRI 292	College Writing or Professional Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	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 Since 1500 or United States 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
CSC 212	Data Structures	3	CS 1500	Computational Problem Solving	3
CHE 221	Organic Chemistry I	3	CHEM 2210	Organic Chemistry I <small>Transfers as an engineering/science required elective.</small>	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	Maximum Free Electives	3		Maximum Free Electives	3
	Group 2 Major Requirements	21		Group 2 Major Requirements	21
	Group 1 Core Requirements	33		Group 1 Core Requirements	34
	Total Hours	54		Total Hours*	55

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

Engineering Management Group 2 Major Requirements

<u>Cottey College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
PSY 101	General Psychology	3	PSYCH 1101	General Psychology	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 Since 1500 or United States 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
SPE 101	Fundamentals of Speech	3	SPMS 1185	Principles of Speech	3
WRI 102 or WRI 292	College Writing or Professional Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	Maximum Free Electives	3		Maximum Free Electives	3
	Group 2 Major Requirements	18		Group 2 Major Requirements	18
	Group 1 Core Requirements	33		Group 1 Core Requirements	34
	Total Hours	51		Total Hours*	52

*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>Cottey College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
WRI 102 or SPE 101 or WRI 292	College Writing or Fundamentals of Speech or Professional Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
HIS 111 or HIS 112 or HIS 102	US History to 1877 or US History Since 1877 or History of Western Civilization Since 1500	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310	Modern Western Civilization or American History to 1877 or American History since 1877	3
CHE 212	General Chemistry 2	4	CHEM 1320	General Chemistry II	3
BIO 101	Introductory Biology	3	BIO SCI 1113	General Biology	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	16		Group 2 Major Requirements	15
	Group 1 Core Requirements	33		Group 1 Core Requirements	34
	Total Hours	49		Total Hours*	49

*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>Cottey College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
WRI 292	Professional Writing	3	ENGLISH 3560	Technical Writing	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 Since 1500 or United States 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
BIO 101 or CHE 212 or CHE 221	Introductory Biology (3) or General Chemistry II (4) or Organic Chemistry I (3)	3	BIO SCI 1113 or CHEM 1320 or CHEM 2210	General Biology or General Chemistry II or or any 3-hour course in chemistry, geochemistry, or biology. Satisfies chemistry/geochemistry elective requirement.	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	15		Group 2 Major Requirements	15
	Group 1 Core Requirements	33		Group 1 Core Requirements	34
	Total Hours	48		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>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 Since 1500 or United States 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
WRI 102 or SPE 101 or WRI 292	College Writing or Fundamentals of Speech or Professional Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
ENG 205	American Literature I (or other literature elective)	3	ENGLISH 1221	American Literature: 1600 to 1865 (or other literature elective)	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	12		Group 2 Major Requirements	12
	Group 1 Core Requirements	33		Group 1 Core Requirements	34
	Total Hours	45		Total Hours*	46

*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>Cotley College</u>		<u>Semester</u>	<u>Missouri S&T</u>	
WRI 102 or SPE 101 or WRI 292	College Writing or Fundamentals of Speech or Professional Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing
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 Since 1500 or United States 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
CHE 212	General Chemistry 2	4	CHEM 1320	General Chemistry II
CHE 221	Organic Chemistry I	3	CHEM 2210	Organic Chemistry I <small>Not specifically required for the degree but will satisfy Out-of-Department Technical Elective Requirement.</small>
	Humanities/Social Science Elective	3		Humanities/Social Science Elective
	Humanities/Social Science Elective	3		Humanities/Social Science Elective
	Maximum Free Electives	5		Maximum Free Electives
	Group 2 Major Requirements	24		Group 2 Major Requirements
	Group 1 Core Requirements	33		Group 1 Core Requirements
	Total Hours	57		Total Hours*
				55

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

Mining Engineering Group 2 Major Requirements

<u>Cotley College</u>		<u>Semester</u>	<u>Missouri S&T</u>	
WRI 102 or WRI 292	College Writing or Professional Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing
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 Since 1500 or United States 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
	Humanities/Social Science Elective	3		Humanities/Social Science Elective
	Humanities/Social Science Elective	3		Humanities/Social Science Elective
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives
	Group 2 Major Requirements	12		Group 2 Major Requirements
	Group 1 Core Requirements	33		Group 1 Core Requirements
	Total Hours	45		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>	
WRI 102 or SPE 101 or WRI 292	College Writing or Fundamentals of Speech or Professional Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing
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 Since 1500 or United States 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
	Humanities/Social Science Elective	3		Humanities/Social Science Elective
	Humanities/Social Science Elective	3		Humanities/Social Science Elective
	Maximum Free Electives	6		Maximum Free Electives
	Group 2 Major Requirements	18		Group 2 Major Requirements
	Group 1 Core Requirements	33		Group 1 Core Requirements
	Total Hours	51		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>	
WRI 102 or WRI 292	College Writing or Professional Writing	3	ENGLISH 3560 or ENGLISH 1160	Technical Writing (preferred) or Writing and Research
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 Since 1500 or United States 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
	Humanities/Social Science Elective	3		Humanities/Social Science Elective
	Humanities/Social Science Elective	3		Humanities/Social Science Elective
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives
	Group 2 Major Requirements	12		Group 2 Major Requirements
	Group 1 Core Requirements	33		Group 1 Core Requirements
	Total Hours	45		Total Hours*
				46

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