

State Fair Community 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>State Fair Community College</u>			<u>Semester</u>	<u>Missouri S&T</u>		
MATH 130	Calculus and Analytical Geometry I	5	MATH 1214	Calculus for Engineers I	Grade of C or better is required.	4
MATH 131	Calculus and Analytical Geometry II	5	MATH 1215	Calculus for Engineers II	Grade of C or better is required.	4
MATH 132	Calculus and Analytical Geometry III	5	MATH 2222	Calculus with Analytic Geometry III	Grade of C or better is required.	4
MATH 134	Differential Equations	3	MATH 3304	Elementary Differential Equations		3
PHYS 118	General Physics I with Lab	5	PHYSICS 1135	Engineering Physics I	Grade of C or better is required.	4
PHYS 119	General Physics II with Lab	5	PHYSICS 2135	Engineering Physics II	Grade of C or better is required.	4
CHEM 123	General Chemistry I with Lab	5	CHEM 1310, 1319	General Chemistry I and Lab		5
DRF I 111 and MATH 131 and (CIS 102 or CIS 108)	Intro to Computer Drafting and Calculus and Analytical Geometry II and (Intro to Computers or Micros II)	11	MECH ENG 1720 and MATH 1215	Engineering Design with Computer Appl and Calculus for Engineers II		7
ENGL 101	English Composition I	3	ENGLISH 1120	Exposition and Argumentation		3
ECON 102 or ECON 101	Principles of Microeconomics or Principles of Macroeconomics	3	ECON 1100 or ECON 1200	Principles of Microeconomics or Principles of Macroeconomics		3
Total Hours			50			Total Hours 41

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.

Ceramic Engineering Group 2 Major Requirements

<u>State Fair Community College</u>		<u>Semester</u>	<u>Missouri S&T</u>	
HISI 101 or HIST 102 or HIST 109 or POLS 101	US History Before 1877 or History Since 1877 or Civilization Since 1500 or American/National Government	US World 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
PHYS 203	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics
CHEM 221	Organic Chemistry I with Lab	5	CHEM 2210/2219	Organic Chemistry I and Lab (Not a specific requirement. Will satisfy technical elective requirement.)
CHEM 124	General Chemistry II with Lab	5	CHEM 1320	General Chemistry II
ENGL 102 or SPTH 101	English Composition II or Public Speaking	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
<i>See your advisor for course options.</i>				Maximum Free Electives
<i>No free electives applied to the degree.</i>				0
Group 2 Major Requirements		19	Group 2 Major Requirements	
Group 1 Core Requirements		50	Group 1 Core Requirements	
Total Hours		69	Total Hours*	
			61	

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

Chemical Engineering Group 2 Major Requirements

<u>State Fair Community College</u>		<u>Semester</u>	<u>Missouri S&T</u>	
ENGL 102 or ENGL 112	English Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing
HISI 101 or HIST 102 or HIST 109 or POLS 101	US History Before 1877 or History Since 1877 or Civilization Since 1500 or American/National Government	US World 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
CHEM 124	General Chemistry II with Lab	5	CHEM 1320	General Chemistry II
CHEM 221	Organic Chemistry I with Lab	5	CHEM 2210	Organic Chemistry I
CHEM 222	Organic Chemistry II with Lab	5	CHEM 2220	Organic Chemistry II (Will satisfy science elective requirement.)
CIS 155	Programming in C	3	CS 1570	Intro to Programming (C++)
<i>See your advisor for course options.</i>				Humanities/Social Science Elective
<i>See your advisor for course options.</i>				Humanities/Social Science Elective
<i>No free electives applied to the degree.</i>				Maximum Free Electives
Group 2 Major Requirements		24	Group 2 Major Requirements	
Group 1 Core Requirements		50	Group 1 Core Requirements	
Total Hours		74	Total Hours*	
			67	

*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>State Fair Community College</u>		<u>Semester</u>	<u>Missouri S&T</u>	
ENGL 102 or ENGL 112	English Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing
HISI 101 or HIST 102 or HIST 109 or POLS 101	US History Before 1877 or History Since 1877 or Civilization Since 1500 or American/National Government	US World 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
CHEM 124	General Chemistry II with Lab	5	CHEM 1320	General Chemistry II
CHEM 221	Organic Chemistry I with Lab	5	CHEM 2210	Organic Chemistry I
CHEM 222	Organic Chemistry II with Lab	5	CHEM 2220	Organic Chemistry II (Will satisfy science elective requirement.)
CIS 155	Programming in C	3	CS 1570	Intro to Programming (C++)
<i>See your advisor for course options.</i>				Humanities/Social Science Elective
<i>See your advisor for course options.</i>				Humanities/Social Science Elective
<i>No free electives applied to the degree.</i>				Maximum Free Electives
Group 2 Major Requirements		24	Group 2 Major Requirements	
Group 1 Core Requirements		50	Group 1 Core Requirements	
Total Hours		74	Total Hours*	
			67	

*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>State Fair Community College</u>	<u>Semester</u>		<u>Missouri S&T</u>	
ENGL 102 or SPTH 101 or ENGL 112	English Composition II or Public Speaking or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Public Speaking or Technical Writing	3
HIST 101 or HIST 102 or HIST 109 or POLS 101	US History Before 1877 or History Since 1877 or Civilization Since 1500 or American/National 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
PHYS 203	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	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	9		Group 2 Major Requirements	12
	Group 1 Core Requirements	50		Group 1 Core Requirements	41
	Total Hours	59		Total Hours*	53

*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>State Fair Community College</u>	<u>Semester</u>		<u>Missouri S&T</u>	
SPTH 101	Public Speaking	3	SPMS 1185	Public Speaking	3
ENGL 102 or ENGL 112	English Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIST 101 or HIST 102 or HIST 109 or POLS 101	US History Before 1877 or History Since 1877 or Civilization Since 1500 or American/National 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
CIS 155	Programming in C	3	CS 1570	Intro to Programming (C++)	4
	<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	12		Group 2 Major Requirements	19
	Group 1 Core Requirements	50		Group 1 Core Requirements	41
	Total Hours	62		Total Hours*	60

*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>State Fair Community College</u>	<u>Semester</u>		<u>Missouri S&T</u>	
SPTH 101	Public Speaking	3	SPMS 1185	Public Speaking	3
ENGL 102 or ENGL 112	English Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIST 101 or HIST 102 or HIST 109 or POLS 101	US History Before 1877 or History Since 1877 or Civilization Since 1500 or American/National 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
CIS 155	Programming in C	3	CS 1570	Intro to Programming (C++)	4
	<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	12		Group 2 Major Requirements	19
	Group 1 Core Requirements	50		Group 1 Core Requirements	41
	Total Hours	62		Total Hours*	60

*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>State Fair Community College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
PSY 101	General Psychology	3	PSYCH 1101	General Psychology	3
HIS1 101 or	US History Before 1877 or		HISTORY 1300 or	American History to 1877 or	
HIST 102 or	History Since 1877 or	3	HISTORY 1310 or	American History since 1877 or	
HIST 109 or	Civilization Since 1500 or		HISTORY 1200 or	Modern Western Civilization or	3
POLS 101	American/National Government		POL SCI 1200	American Government	
ENGL 102 or	English Composition II or		ENGLISH 1160 or	Writing and Research or	
SPTH 101 or	Public Speaking or	3	SPMS 1185 or	Principles of Speech or	3
ENGL 112	Technical Writing		ENGLISH 3560	Technical Writing	
PHYS 203	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	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		12	Group 2 Major Requirements		18
Group 1 Core Requirements		50	Group 1 Core Requirements		41
Total Hours		62	Total Hours*		59

*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>State Fair Community College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENGL 102 or	English Composition II or		ENGLISH 1160 or	Writing and Research or	
SPTH 101 or	Public Speaking or	3	SPMS 1185 or	Public Speaking or	3
ENGL 112	Technical Writing		ENGLISH 3560	Technical Writing	
HIST 101 or	US History Before 1877 or		HISTORY 1300 or	American History to 1877 (preferred) or	
HIST 102 or	History Since 1877 or	3	HISTORY 1310 or	American History since 1877 (preferred) or	3
HIST 109	Civilization Since 1500		HISTORY 1200	Modern Western Civilization	
CHEM 124	General Chemistry II with Lab	5	CHEM 1320	General Chemistry II	3
BIO 125	Biology I with Lab	5	BIO SCI 1113	General Biology	4
PHYS 203	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	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		19	Group 2 Major Requirements		19
Group 1 Core Requirements		50	Group 1 Core Requirements		41
Total Hours		69	Total Hours*		60

*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>State Fair Community College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENGL 102 or	English Composition II or		ENGLISH 1160 or	Writing and Research or	
SPTH 101 or	Public Speaking or	3	SPMS 1185 or	Public Speaking or	3
ENGL 112	Technical Writing		ENGLISH 3560	Technical Writing	
HIS1 101 or	US History Before 1877 or		HISTORY 1300 or	American History to 1877 or	
HIST 102 or	History Since 1877 or	3	HISTORY 1310 or	American History since 1877 or	3
HIST 109 or	Civilization Since 1500 or		HISTORY 1200 or	Modern Western Civilization or	
POLS 101	American/National Government		POL SCI 1200	American Government	
PHYS 203	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
BIO 125 or	Biology I with Lab or		BIO SCI 1113 or	General Biology or	
CHEM 124 or	General Chemistry II with Lab or	5	CHEM 1320 or	General Chemistry II or	
CHEM 221	Organic Chemistry I with Lab		CHEM 2210	Organic Chemistry I	
<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		14	Group 2 Major Requirements		15
Group 1 Core Requirements		50	Group 1 Core Requirements		41
Total Hours		64	Total Hours*		56

*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>State Fair Community College</u>	<u>Semester</u>		<u>Missouri S&T</u>	
HIST 101 or	US History Before 1877 or	US		HISTORY 1300 or	American History to 1877 or
HIST 102 or	History Since 1877 or	World		HISTORY 1310 or	American History since 1877 or
HIST 109 or	Civilization Since 1500 or		3	HISTORY 1200 or	Modern Western Civilization or
POLS 101	American/National Government			POL SCI 1200	American Government
ENGL 102 or	English Composition II or			ENGLISH 1160 or	Writing and Research or
SPTH 101 or	Public Speaking or		3	SPMS 1185 or	Principles of Speech or
ENGL 112	Technical Writing			ENGLISH 3560	Technical Writing
					3
CIS 155	Programming in C		3	CS 1570	Intro to Programming (C++)
					3
PHYS 203	Statics		3	CIV ENG 2200	Engineering Mechanics-Statics
					3
					4
					3
	<i>See your advisor for course options.</i>				3
	<i>No free electives applied to the degree.</i>				0
	Group 2 Major Requirements		3	Group 2 Major Requirements	9
	Group 1 Core Requirements		50	Group 1 Core Requirements	41
	Total Hours		53	Total Hours*	50

*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>State Fair Community College</u>	<u>Semester</u>		<u>Missouri S&T</u>	
ENGL 102 or	English Composition II or			ENGLISH 1160 or	Writing and Research or
SPTH 101 or	Public Speaking or		3	SPMS 1185 or	Public Speaking or
ENGL 112	Technical Writing			ENGLISH 3560	Technical Writing
HIST 101 or	US History Before 1877 or	US		HISTORY 1300 or	American History to 1877 or
HIST 102 or	History Since 1877 or	World		HISTORY 1310 or	American History since 1877 or
HIST 109 or	Civilization Since 1500 or		3	HISTORY 1200 or	Modern Western Civilization or
POLS 101	American/National Government			POL SCI 1200	American Government
PHYS 203	Statics		3	CIV ENG 2200	Engineering Mechanics-Statics
					3
CHEM 124	General Chemistry II with Lab		5	CHEM 1320	General Chemistry II
				CHEM 2210	Organic Chemistry I
CHEM 221	Organic Chemistry I with Lab		5		<i>Not specifically required for the degree but will satisfy Out-of-Department Technical Elective Requirement</i>
					3
	<i>See your advisor for course options.</i>				3
	<i>See your advisor for course options.</i>				3
	<i>See your advisor for course options.</i>				5
	Group 2 Major Requirements		19	Group 2 Major Requirements	26
	Group 1 Core Requirements		50	Group 1 Core Requirements	41
	Total Hours		69	Total Hours*	67

*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

State Fair Community College	Semester	Missouri S&T
ENGL 102 or ENGL 112 HISI 101 or HIST 102 or HIST 109 or POLS 101	English Composition II or Technical Writing US History Before 1877 or History Since 1877 or Civilization Since 1500 or American/National Government <i>See your advisor for course options.</i> <i>See your advisor for course options.</i> <i>No free electives applied to the degree.</i>	ENGLISH 1160 or ENGLISH 3560 HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200
	3 3	Writing and Research or Technical Writing American History to 1877 or American History since 1877 or Modern Western Civilization or American Government Humanities/Social Science Elective Humanities/Social Science Elective Maximum Free Electives
		3 3 3 0
	6 50 56	Group 2 Major Requirements Group 1 Core Requirements Total Hours
		12 41 53
		Total Hours*
		53

*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

State Fair Community College	Semester	Missouri S&T
ENGL 102 or ENGL 112 HISI 101 or HIST 102 or HIST 109 or POLS 101	English Composition II or Technical Writing US History Before 1877 or History Since 1877 or Civilization Since 1500 or American/National Government	ENGLISH 1160 or ENGLISH 3560 HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200
	3 3	Writing and Research or Technical Writing American History to 1877 or American History since 1877 or Modern Western Civilization or American Government
		3 3 3 3
CIS 155	Programming in C	CS 1570
	3	Intro to Programming (C++)
		3
PHYS 203	Statics	CIV ENG 2200
	3	Engineering Mechanics-Statics Humanities/Social Science Elective Humanities/Social Science Elective Maximum Free Electives
		3 3 3 6
	12 50 62	Group 2 Major Requirements Group 1 Core Requirements Total Hours
		21 41 62
		Total Hours*
		62

*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

State Fair Community College	Semester	Missouri S&T
ENGL 102 or ENGL 112 HISI 101 or HIST 102 or HIST 109 or POLS 101	English Composition II or Technical Writing US History Before 1877 or History Since 1877 or Civilization Since 1500 or American/National Government <i>See your advisor for course options.</i> <i>See your advisor for course options.</i> <i>No free electives applied to the degree.</i>	ENGLISH 1160 or ENGLISH 3560 HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200
	3 3	Writing and Research or Technical Writing American History to 1877 or American History since 1877 or Modern Western Civilization or American Government Humanities/Social Science Elective Humanities/Social Science Elective Maximum Free Electives
		3 3 3 0
	3 50 53	Group 2 Major Requirements Group 1 Core Requirements Total Hours
		9 41 50
		Total Hours*
		50

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