

Missouri Baptist University — Missouri S&T

General Engineering Transfer Guide

Effective as of Fall 2020

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>Missouri Baptist University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
MATH 164	Calculus I	4	MATH 1214	Calculus for Engineers I	Grade of C or better is required. 4
MATH 254	Calculus II	4	MATH 1215	Calculus for Engineers II	Grade of C or better is required. 4
MATH 264	Calculus III	4	MATH 2222	Calculus with Analytic Geometry III	Grade of C or better is required. 4
MATH 363	Differential Equations	3	MATH 3304	Elementary Differential Equations	3
PHYS 213, 211	General Physics I and Lab	4	PHYSICS 1135	Engineering Physics I	Grade of C or better is required. 4
PHYS 223, 221	General Physics II and Lab	4	PHYSICS 2135	Engineering Physics II	Grade of C or better is required. 4
CHEM 133, 132	General Chemistry I and Lab	5	CHEM 1310, 1319	General Chemistry I and Lab	5
ENGL 113	College Composition I	3	ENGLISH 1120	Exposition and Argumentation	3
ECON 123 or ECON 113	Microeconomics or Macroeconomics	3	ECON 1100 or ECON 1200	Principles of Microeconomics or Principles of Macroeconomics	3
Total Hours		34	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>Missouri Baptist University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIST 213 or HIST 223 or HIST 123 or POLS 113	US History I or US History II or Western Civilization II or Federal 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
ENGL 123 or COMM 103	College Composition II or Speech Communications	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
BCSC 253	C++ Programming for Science and Mathematics	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
MATH 353	Linear Algebra	3	MATH 3108	Linear Algebra I (Will satisfy the Advanced Math/Comp Sci elective requirement.)	3
	Literature Elective	3		Literature Elective	3
	See your advisor for course options.	3		Ethics Elective	3
	No free electives applied to the degree.	0		Maximum Free Electives	0
	Group 2 Major Requirements	18		Group 2 Major Requirements	18
	Group 1 Core Requirements	34		Group 1 Core Requirements	34
	Total Hours	52		Total Hours*	52

*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>Missouri Baptist University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIST 213 (or HIST 223 or HIST 123)	US History I (or US History II or Western Civilization II)	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
ENGL 123 or COMM 103 or HSS Elective	College Composition II or Speech Communications 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	3
PHYS 123	Geology and Earth Science	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
	No free electives applied to the degree.	0		Maximum Free Electives	0
	Group 2 Major Requirements	9		Group 2 Major Requirements	9
	Group 1 Core Requirements	34		Group 1 Core Requirements	34
	Total Hours	43		Total Hours*	43

*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>Missouri Baptist University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIST 213 or HIST 223 or HIST 123 or POLS 113	US History I or US History II or Western Civilization II or Federal 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
CHEM 313	Organic Chemistry I	3	CHEM 2210	Organic Chemistry I (Not a specific requirement. Will satisfy the advanced chemistry elective requirement.)	4
CHEM 143	General Chemistry II	3	CHEM 1320	General Chemistry II	3
ENGL 123 or COMM 103 or HSS Elective	College Composition II or Speech Communications 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	3
	<i>See your advisor for course options.</i>	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	16
	Group 1 Core Requirements	34		Group 1 Core Requirements	34
	Total Hours	49		Total Hours*	50

*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>Missouri Baptist University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENGL 123	College Composition II	3	ENGLISH 1160	Writing and Research	3
HIST 213 or HIST 223 or HIST 123 or POLS 113	US History I or US History II or Western Civilization II or Federal 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
CHEM 143	General Chemistry II	3	CHEM 1320	General Chemistry II	3
CHEM 313, 312	Organic Chemistry I and Lab	5	CHEM 2210, 2219	Organic Chemistry I and Lab	5
CHEM 323	Organic Chemistry II	3	CHEM 2220	Organic Chemistry II (Will satisfy science elective requirement.)	4
BCSC 253	C++ Programming for Science and Mathematics	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
COMM 103	Speech Communications	3	SP&MS 1185	Principles of Speech	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	26		Group 2 Major Requirements	27
	Group 1 Core Requirements	34		Group 1 Core Requirements	34
	Total Hours	60		Total Hours*	61

*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>Missouri Baptist University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENGL 123	College Composition II	3	ENGLISH 1160	Writing and Research	3
HIST 213 or HIST 223 or HIST 123 or POLS 113	US History I or US History II or Western Civilization II or Federal 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
CHEM 143	General Chemistry II	3	CHEM 1320	General Chemistry II	3
CHEM 313, 312	Organic Chemistry I and Lab	5	CHEM 2210, 2219	Organic Chemistry I and Lab	5
CHEM 323	Organic Chemistry II	3	CHEM 2220	Organic Chemistry II (Will satisfy science elective requirement.)	4
BCSC 253	C++ Programming for Science and Mathematics	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
COMM 103	Speech Communications	3	SP&MS 1185	Principles of Speech	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	26		Group 2 Major Requirements	27
	Group 1 Core Requirements	34		Group 1 Core Requirements	34
	Total Hours	60		Total Hours*	61

*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>Missouri Baptist University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENGL 123 or COMM 103	College Composition II or Speech Communications	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
HIST 213 or HIST 223 or HIST 123 or POLS 113	US History I or US History II or Western Civilization II or Federal 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 123	Geology and Earth Science	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
	<i>See your advisor for course options.</i>	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	34		Group 1 Core Requirements	34
	Total Hours	46		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

<u>Missouri Baptist University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
COMM 103	Speech Communications	3	SPMS 1185	Public Speaking	3
ENGL 123	College Composition II	3	ENGLISH 1160	Writing and Research	3
HIST 213 or HIST 223 or HIST 123 or POLS 113	US History I or US History II or Western Civilization II or Federal 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
BCSC 253	C++ Programming for Science and Mathematics	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
MATH 353	Linear Algebra	3	MATH 3108	Linear Algebra (Will satisfy a required math elective.)	3
	See your advisor for course options.	3		Humanities/Social Science Elective	3
	See your advisor for course options.	3		Maximum Free Electives	3
	Group 2 Major Requirements	21		Group 2 Major Requirements	21
	Group 1 Core Requirements	34		Group 1 Core Requirements	34
	Total Hours	55		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>Missouri Baptist University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
COMM 103	Speech Communications	3	SPMS 1185	Public Speaking	3
ENGL 123	College Composition II	3	ENGLISH 1160	Writing and Research	3
HIST 213 or HIST 223 or HIST 123 or POLS 113	US History I or US History II or Western Civilization II or Federal 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
MATH 353	Linear Algebra	3	MATH 3108	Linear Algebra	3
	See your advisor for course options.	3		Humanities/Social Science Elective	3
	See your advisor for course options.	3		Maximum Free Electives	3
	Group 2 Major Requirements	18		Group 2 Major Requirements	18
	Group 1 Core Requirements	34		Group 1 Core Requirements	34
	Total Hours	52		Total Hours*	52

*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>Missouri Baptist University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
PSYC 133	General Psychology	3	PSYCH 1101	General Psychology	3
HIST 213 or HIST 223 or HIST 123 or	US History I or US History II or Western Civilization II or	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or	American History to 1877 or American History since 1877 or Modern Western Civilization or	3
POLS 113	Federal Government		POL SCI 1200	American Government	
ENGL 123 or COMM 103	College Composition II or Speech Communications	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
BCSC 253	C++ Programming for Science and Mathematics	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Maximum Free Electives	3
	Group 2 Major Requirements	18		Group 2 Major Requirements	18
	Group 1 Core Requirements	34		Group 1 Core Requirements	34
	Total Hours	52		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>Missouri Baptist University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENGL 123 or COMM 103	College Composition II or Speech Communications	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
HIST 213 or HIST 223 or HIST 123	US History I or US History II or Western Civilization II	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200	American History to 1877 or American History since 1877 or Modern Western Civilization	3
PHYS 123	Geology and Earth Science	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
CHEM 143	General Chemistry II	3	CHEM 1320	General Chemistry II	3
BIOL 113	General Biology I	4	BIO SCI 1113	General Biology	4
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	19		Group 2 Major Requirements	19
	Group 1 Core Requirements	34		Group 1 Core Requirements	34
	Total Hours	53		Total Hours*	53

*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>Missouri Baptist University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENGL 123 or COMM 103	College Composition II or Speech Communications	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
HIST 213 or HIST 223 or HIST 123 or POLS 113	US History I or US History II or Western Civilization II or Federal 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 123	Geology and Earth Science	3	GEO ENG 1150 (GEOLOGY 1110)	Physical and Environmental Geology	3
BIOL 113 or CHEM 143 or CHEM 313	General Biology I or General Chemistry II or Organic Chemistry I	3	BIO SCI 1113 or CHEM 1320 or CHEM 2210	General Biology or General Chemistry II or Organic Chemistry I or any 3-hour course in chemistry, geochemistry, or biology. Satisfies chemistry/geochemistry elective requirement.	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	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	34		Group 1 Core Requirements	34
	Total Hours	52		Total Hours*	52

*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>Missouri Baptist University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIST 213 or HIST 223 or HIST 123 or POLS 113	US History I or US History II or Western Civilization II or Federal 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
ENGL 123 or COMM 103	College Composition II or Speech Communications	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
BCSC 253	C++ Programming for Science and Mathematics	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
MATH 353	Linear Algebra	3	MATH 3108	Linear Algebra I (Will satisfy the Advanced Math/Computer Science elective requirement.)	3
	Literature Elective	3		Literature Elective	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	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	34		Group 1 Core Requirements	34
	Total Hours	52		Total Hours*	52

*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>Missouri Baptist University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENGL 123 or COMM 103	College Composition II or Speech Communications	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
HIST 213 or HIST 223 or HIST 123 or POLS 113	US History I or US History II or Western Civilization II or Federal 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
CHEM 143	General Chemistry II	3	CHEM 1320	General Chemistry II	3
CHEM 313	Organic Chemistry I	3	CHEM 2210	Organic Chemistry I <i>Not specifically required for the degree but will satisfy Out-of-Department Technical Elective Requirement.</i>	4
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	5		Maximum Free Electives	5
	Group 2 Major Requirements	23		Group 2 Major Requirements	24
	Group 1 Core Requirements	34		Group 1 Core Requirements	34
	Total Hours	57		Total Hours*	58

*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>Missouri Baptist University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENGL 123	College Composition II	3	ENGLISH 1160	Writing and Research	3
HIST 213 or HIST 223 or HIST 123 or POLS 113	US History I or US History II or Western Civilization II or Federal 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 123	Geology and Earth Science	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	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	34		Group 1 Core Requirements	34
	Total Hours	49		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

Nuclear Engineering Group 2 Major Requirements					
<u>Missouri Baptist University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENGL 123	College Composition II	3	ENGLISH 1160	Writing and Research	3
HIST 213 or	US History I or		HISTORY 1300 or	American History to 1877 or	
HIST 223 or	US History II or	3	HISTORY 1310 or	American History since 1877 or	
HIST 123 or	Western Civilization II or		HISTORY 1200 or	Modern Western Civilization or	3
POLS 113	Federal Government		POL SCI 1200	American Government	
MATH 353	Linear Algebra	3	MATH 3108	Linear Algebra	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	6		Maximum Free Electives	6
	Group 2 Major Requirements	21		Group 2 Major Requirements	21
	Group 1 Core Requirements	34		Group 1 Core Requirements	34
	Total Hours	55		Total Hours*	55

*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

Petroleum Engineering Group 2 Major Requirements					
<u>Missouri Baptist University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENGL 123	College Composition II	3	ENGLISH 1160	Writing and Research	3
HIST 213 or	US History I or		HISTORY 1300 or	American History to 1877 or	
HIST 223 or	US History II or	3	HISTORY 1310 or	American History since 1877 or	
HIST 123 or	Western Civilization II or		HISTORY 1200 or	Modern Western Civilization or	3
POLS 113	Federal Government		POL SCI 1200	American Government	
PHYS 123	Geology and Earth Science	3	GEOLOGY 1110 (GEO ENG 1150)	Physical and Environmental Geology	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	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	34		Group 1 Core Requirements	34
	Total Hours	49		Total Hours*	49

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