

# Missouri Baptist University — 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>Missouri Baptist University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
MAT 164	Calculus I	4	MATH 1214	Calculus for Engineers I <small>Grade of C or better is required.</small>	4
MAT 254	Calculus II	4	MATH 1215	Calculus for Engineers II <small>Grade of C or better is required.</small>	4
MAT 264	Calculus III	4	MATH 2222	Calculus with Analytic Geometry III <small>Grade of C or better is required.</small>	4
MAT 363	Differential Equations	3	MATH 3304	Elementary Differential Equations	3
PHY 213, 211	General Physics I and Lab	4	PHYSICS 1135	Engineering Physics I <small>Grade of C or better is required.</small>	4
PHY 223, 221	General Physics II and Lab	4	PHYSICS 2135	Engineering Physics II <small>Grade of C or better is required.</small>	4
CHEM 132,133	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
ECO 123 or ECO 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](http://ugs.mst.edu). Your campus may have additional acceptable options. Consult with your advisor or email [transfer@mst.edu](mailto:transfer@mst.edu) with questions.

## Aerospace Engineering Group 2 Major Requirements

<u>Missouri Baptist University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>	
HIS 213 or	US History I or		HISTORY 1300 or	American History to 1877 or
HIS 223 or	US History II or	3	HISTORY 1310 or	American History since 1877 or
HIS 123 or	Western Civilization II or		HISTORY 1200 or	Modern Western Civilization or
POLS 133	Federal Government		POL SCI 1200	American Government
ENG 123 or	College Composition II or	3	ENGLISH 1160 or	Writing and Research or
COM 103	Speech Communications		SPMS 1185	Principles of Speech
BCSC 253	C++ Programming for Science and Mathematics	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)
MATH 353	Linear Algebra	3	MATH 3108	Linear Algebra I
				(Will satisfy the Advanced Math/Comp Sci elective requirement.)
<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		12	Group 2 Major Requirements	
Group 1 Core Requirements		34	Group 1 Core Requirements	
Total Hours		46	Total Hours*	
			18	
			34	
			52	

\*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>Missouri Baptist University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>	
HIS 123 or	Western Civilization II or		HISTORY 1200*	Modern Western Civilization*
HIS 213 or	US History I or	3	(or HISTORY 1300 or	(or American History to 1877 or
HIS 223	US History II		HISTORY 1310)	American History since 1877)
				*HISTORY 1200 is preferred; 1300 or 1310 will also be accepted.
			ENGLISH 1160 or	Writing and Research or
			SPMS 1185 or	Public Speaking or
ENG 123 or	College Composition II or	3	HSS Elective	Humanities/Social Science Elective: history, economics,
COM 103	Speech Communications			political science, sociology, psychology, philosophy, fine
				art, literature, foreign language
<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		34	Group 1 Core Requirements	
Total Hours		40	Total Hours*	
			6	
			34	
			40	

\*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>Missouri Baptist University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
HIS 213 or HIS 223 or HIS 123 or POLS 133	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 313,312	Organic Chemistry I and Lab	5	CHEM 2210/2219	Organic Chemistry I and Lab (Not a specific requirement. Will satisfy technical elective requirement.)	5
CHEM 143,142	General Chemistry II and Lab	5	CHEM 1320	General Chemistry II	3
ENG 123 or COM 103	College Composition II or Speech Communications	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	34
	Group 1 Core Requirements	34		<b>Total Hours*</b>	<b>51</b>
	<b>Total Hours</b>	<b>50</b>			

\*S&T advisor permission is required to transfer more than 60 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&amp;T</u>		
ENG 123	College Composition II	3	ENGLISH 1160	Writing and Research	3
HIS 213 or HIS 223 or HIS 123 or POLS 133	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 143,142	General Chemistry II and Lab	5	CHEM 1320	General Chemistry II	5
CHEM 313,312	Organic Chemistry I and Lab	5	CHEM 2210	Organic Chemistry I	3
CHEM 323,322	Organic Chemistry II and Lab	5	CHEM 2220	Organic Chemistry II (Will satisfy science elective requirement.)	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>				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	24		Group 2 Major Requirements	26
	Group 1 Core Requirements	34		Group 1 Core Requirements	34
	<b>Total Hours</b>	<b>58</b>		<b>Total Hours*</b>	<b>60</b>

\*S&T advisor permission is required to transfer more than 60 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&amp;T</u>		
ENG 123	College Composition II	3	ENGLISH 1160	Writing and Research	3
HIS 213 or HIS 223 or HIS 123 or POLS 133	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 143,142	General Chemistry II and Lab	5	CHEM 1320	General Chemistry II	5
CHEM 313,312	Organic Chemistry I and Lab	5	CHEM 2210	Organic Chemistry I	3
CHEM 323,322	Organic Chemistry II and Lab	5	CHEM 2220	Organic Chemistry II (Will satisfy science elective requirement.)	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>				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	24		Group 2 Major Requirements	26
	Group 1 Core Requirements	34		Group 1 Core Requirements	34
	<b>Total Hours</b>	<b>58</b>		<b>Total Hours*</b>	<b>60</b>

\*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&amp;T</u>		
ENG 123 or COM 103	College Composition II or Speech Communications	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
HIS 213 or HIS 223 or HIS 123 or POLS 133	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 122, 123	Geology/Earth Science	5	GEO 1110/GE 1150	Intro to Physical Geology	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
		11			12
Group 2 Major Requirements		34	Group 2 Major Requirements		34
Group 1 Core Requirements		45	Group 1 Core Requirements		46
Total Hours			Total Hours*		

\*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&amp;T</u>		
COM 103	Speech Communications	3	SPMS 1185	Public Speaking	3
ENG 123	College Composition II	3	ENGLISH 1160	Writing and Research	3
HIS 213 or HIS 223 or HIS 123 or POLS 133	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
BCIS 213	Program Data	3	CS 1575	Data Structures	3
MATH 353	Linear Algebra	3	MATH 3108	Linear Algebra (Will satisfy a required math 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	3
		15			21
Group 2 Major Requirements		34	Group 2 Major Requirements		34
Group 1 Core Requirements		49	Group 1 Core Requirements		55
Total Hours			Total Hours*		

\*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&amp;T</u>		
COM 103	Speech Communications	3	SPMS 1185	Public Speaking	3
ENG 123	College Composition II	3	ENGLISH 1160	Writing and Research	3
HIS 213 or HIS 223 or HIS 123 or POLS 133	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
<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
		12			18
Group 2 Major Requirements		34	Group 2 Major Requirements		34
Group 1 Core Requirements		46	Group 1 Core Requirements		52
Total Hours			Total Hours*		

\*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&amp;T</u>		
PSYC 133	General Psychology	3	PSYCH 1101	General Psychology	3
HIS 213 or	US History I or		HISTORY 1300 or	American History to 1877 or	
HIS 223 or	US History II or	3	HISTORY 1310 or	American History since 1877 or	3
HIS 123 or	Western Civilization II or		HISTORY 1200 or	Modern Western Civilization or	
POLS 133	Federal Government		POL SCI 1200	American Government	
ENG 123 or	College Composition II or	3	ENGLISH 1160 or	Writing and Research or	3
COM 103	Speech Communications		SPMS 1185	Principles of Speech	
	<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	34		Group 1 Core Requirements	34
	Total Hours	43		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>Missouri Baptist University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENG 123 or	College Composition II or	3	ENGLISH 1160 or	Writing and Research or	3
COM 103	Speech Communications		SPMS 1185	Principles of Speech	
HIS 213 or	US History I or		HISTORY 1300 or	American History to 1877 (preferred) or	
HIS 223 or	US History II or	3	HISTORY 1310 or	American History since 1877 (preferred) or	3
HIS 123	Western Civilization II		HISTORY 1200	Modern Western Civilization	
PHYS 122, 123	Geology/Earth Science	5	GEO 1110/GE 1150	Intro to Physical Geology	3
CHEM 143, 142	General Chemistry II and Lab	5	CHEM 1320	General Chemistry II	3
PHYS 122, 123	Geology/Earth Science	5	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	21		Group 2 Major Requirements	19
	Group 1 Core Requirements	34		Group 1 Core Requirements	34
	Total Hours	55		Total Hours*	53

\*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>Missouri Baptist University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENG 123 or	College Composition II or	3	ENGLISH 1160 or	Writing and Research or	3
COM 103	Speech Communications		SPMS 1185	Principles of Speech	
HIS 213 or	US History I or		HISTORY 1300 or	American History to 1877 or	
HIS 223 or	US History II or	3	HISTORY 1310 or	American History since 1877 or	3
HIS 123 or	Western Civilization II or		HISTORY 1200 or	Modern Western Civilization or	
POLS 133	Federal Government		POL SCI 1200	American Government	
PHYS 122, 123	Geology/Earth Science	5	GEO 1110/GE 1150	Physical and Environmental Geology	3
BIO 104 or	Intro to Biology and Lab or		BIO SCI 1113 or	General Biology or	
CHEM 143, 142	General Chemistry II or	4	CHEM 1320 or	General Chemistry II or	
or CHEM 313,	Organic Chemistry I		CHEM 2210	Organic Chemistry I	
312				<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>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	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 Geological Engineering degree.

## Mechanical Engineering Group 2 Major Requirements

	<u>Missouri Baptist University</u>	<u>Semester</u>		<u>Missouri S&amp;T</u>	
HIS 213 or HIS 223 or HIS 123 or POLS 133 ENG 123 or COM 103	US History I or US History II or Western Civilization II or Federal Government College Composition II or Speech Communications	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200 or POL SCI 1200 ENGLISH 1160 or SPMS 1185	American History to 1877 or American History since 1877 or Modern Western Civilization or American Government Writing and Research or Principles of Speech	3
					3
BCSC 253	C++ Programming for Science and Mathematics	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	4
MATH 353	Linear Algebra	3	MATH 3108	Linear Algebra I <small>(Will satisfy the Advanced Math/Comp Sci elective requirement.)</small>	3
				Literature 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	3		Group 2 Major Requirements	9
	Group 1 Core Requirements	34		Group 1 Core Requirements	34
	Total Hours	37		Total Hours*	43

\*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&amp;T</u>	
ENG 123 or COM 103	College Composition II or Speech Communications	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
HIS 213 or HIS 223 or HIS 123 or POLS 133	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 143,142	General Chemistry II and Lab	5	CHEM 1320	General Chemistry II	3
CHEM 313,312	Organic Chemistry I and Lab	5	CHEM 2210	Organic Chemistry I <small>Not specifically required for the degree but will satisfy Out-of-Department Technical Elective Requirement</small>	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>See your advisor for course options.</i>			Maximum Free Electives	5
	Group 2 Major Requirements	16		Group 2 Major Requirements	23
	Group 1 Core Requirements	34		Group 1 Core Requirements	34
	Total Hours	50		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>Missouri Baptist University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENG 123	College Composition II	3	ENGLISH 1160	Writing and Research	3
HIS 213 or	US History I or		HISTORY 1300 or	American History to 1877 or	
HIS 223 or	US History II or		HISTORY 1310 or	American History since 1877 or	
HIS 123 or	Western Civilization II or	3	HISTORY 1200 or	Modern Western Civilization or	3
POLS 133	Federal Government		POL SCI 1200	American Government	
PHYS 122, 123	Geology/Earth Science	5	GEO 1110/GE 1150	Intro to Physical Geology	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	11		Group 2 Major Requirements	15
	Group 1 Core Requirements	34		Group 1 Core Requirements	34
	Total Hours	45		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>Missouri Baptist University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENG 123	College Composition II	3	ENGLISH 1160	Writing and Research	3
HIS 213 or	US History I or		HISTORY 1300 or	American History to 1877 or	
HIS 223 or	US History II or		HISTORY 1310 or	American History since 1877 or	
HIS 123 or	Western Civilization II or	3	HISTORY 1200 or	Modern Western Civilization or	3
POLS 133	Federal Government		POL SCI 1200	American Government	
					3
					3
BCSC 253	C++ Programming for Science and Mathematics	3	CS 1971, 1981	Intro to Programming Method and Lab (C++)	4
	<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	9		Group 2 Major Requirements	18
	Group 1 Core Requirements	34		Group 1 Core Requirements	34
	Total Hours	43		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>Missouri Baptist University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENG 123	College Composition II	3	ENGLISH 1160	Writing and Research	3
HIS 213 or	US History I or		HISTORY 1300 or	American History to 1877 or	
HIS 223 or	US History II or		HISTORY 1310 or	American History since 1877 or	
HIS 123 or	Western Civilization II or	3	HISTORY 1200 or	Modern Western Civilization or	3
POLS 133	Federal Government		POL SCI 1200	American Government	
PHYS 122, 123	Geology/Earth Science	5	GEO 1110/GE 1150	Physical and Environmental Geology	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	5		Group 2 Major Requirements	9
	Group 1 Core Requirements	34		Group 1 Core Requirements	34
	Total Hours	39		Total Hours*	43

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