

# Baker University — Missouri S&T

## General Engineering

Transfer Guide Effective as of Fall 2024

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>Baker University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
MA 171 and MA 172	Calculus I (4) and Calculus II (4) <small>The combination of BU MA 171 and 172 is equivalent to the combination of S&amp;TMATH 1214 and 1215. Both courses must be taken to receive credit.</small>	8	MATH 1214 and MATH 1215	Calculus I and Calculus II <small>Grade of C or better is required.</small> <small>The combination of BU MA 171 and 172 is equivalent to the combination of S&amp;TMATH 1214 and 1215. Both courses must be taken to receive credit.</small>	4
MA 271	Calculus III	4	MATH 2222	Calculus III <small>Grade of C or better is required.</small>	4
MA 372	Differential Equations	3	MATH 3304	Elementary Differential Equations	3
PC 225 and PC 226 and PC 325	General Physics I (4) and General Physics II (4) and General Physics III (4) <small>The combination of BU PC 225, 226, and 325 is equivalent to the combination of S&amp;T PHYSICS 1135 and 2135. All three courses must be taken to receive credit.</small>	12	PHYSICS 1135 and PHYSICS 2135	Engineering Physics I and Engineering Physics II <small>Grade of C or better is required.</small> <small>The combination of BU PC 225, 226, and 325 is equivalent to the combination of S&amp;T PHYSICS 1135 and 2135. All three courses must be taken to receive credit.</small>	8
CH 137, 137L	General Chemistry I and Lab	4	CHEM 1310, 1319	General Chemistry I and Lab	5
EN 365	Advanced Composition	3	ENGLISH 1120	Exposition and Argumentation	3
EC 242 or EC 243	Principles of Economics: Micro or Principles of Economics: Macro	3	ECON 1100 or ECON 1200	Principles of Microeconomics or Principles of Macroeconomics	3
<b>Total Hours</b>					<b>37</b>
			<b>Total Hours</b>		<b>30</b>

### 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**  
**Biomedical Engineering/Biomaterials or Biomaterials**  
**Ceramic Engineering**  
**Chemical Engineering and 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](mailto: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

Baker University		Semester	Missouri S&T	
HI 143 or HI 127 or HI 128 or PS 115	World Civ. IV: The Rise of Globalism, 1870 - Present or History of the United States to 1877 or History of the United since 1877 or Intro to American Politics	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
CO 115	Intro to Communication Studies	3	SPMS 1185	Principles of Speech
CS 180	C++	2	CS 1570, 1580	Intro to Programming and Lab (C++)
PC 381	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics
PC 361	Thermodynamics	3	MECH ENG 2519	Thermodynamics
MA 281 or MA 355 or MA 472	Intro to Linear Algebra or Statistics and Modeling or Advanced Applied Statistics	3	MATH 3108 or STAT 3113	Linear Algebra I or Applied Engineering Statistics or Intro to Numerical Methods <small>Will satisfy the Advanced Math/Comp Sci elective requirement.</small>
PH 120 or PH 360 or PH 370	Literature Elective Ethics or Biomedical Ethics and Religion or Ethics in Business <small>or other engineering, business, bio, social ethics approved by advisor</small>	3	PHILOS 1130 or PHILOS 3223 or PHILOS 3235	Literature Elective How Should I Live? An Introduction to Ethics or Bioethics or Business Ethics <small>or other engineering, business, bio, social ethics approved by advisor</small>
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives
	Group 2 Major Requirements	23		Group 2 Major Requirements
	Group 1 Core Requirements	37		Group 1 Core Requirements
	Total Hours	60		Total Hours*
				55

\*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

Baker University		Semester	Missouri S&T	
HI 143* (or HI 127 or HI 128)	World Civ. IV: The Rise of Globalism, 1870 - Present* (or History of the United States to 1877 or History of the United since 1877) <small>*HI 143 is preferred; 127 or 128 will also be accepted.</small>	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>
PC 381	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics
PC 480	Advanced Mechanics	3	MECH ENG 2350	Engineering Mechanics-Dynamics
PC 361	Thermodynamics	3	MECH ENG 2519	Thermodynamics <small>Will be substituted for MECH ENG 2527.</small>
MA 355 MA 472	Statistics and Modeling or Advanced Applied Statistics	3	STAT 3113	Applied Engineering Statistics
Humanities or Social Science or Communication	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language or one communication course from this list: EN 152, CO 115	3	Humanities or Social Science or Communication	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language or one communication course from this list: ENGLISH 1160, 1600, 3560 or SPMS 1185.
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives
	Group 2 Major Requirements	18		Group 2 Major Requirements
	Group 1 Core Requirements	37		Group 1 Core Requirements
	Total Hours	55		Total Hours*
				47

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

## Biomedical Engineering-Biomanufacturing Group 2 Major Requirements

<u>Baker University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
CO 115	Intro to Communication Studies	3	SP&MS 1185	Principles of Speech	3
HI 143 or HI 127 or HI 128 or PS 115	World Civ. IV: The Rise of Globalism, 1870 - Present or History of the United States to 1877 or History of the United since 1877 or Intro to American Politics	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
CH 138, 138L	General Chemistry II and Lab	4	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&amp;T degree requirement. Will transfer as general credit.</small>	3
CH 251, 251L	Organic Chemistry I and Lab	4	CHEM 2210, 2219	Organic Chemistry I and Lab	4
CH 252, 252L or BI151, 151L or BI 152	Organic Chemistry II and Lab (4) or Molecular and Cellular Biology and Lab (4) or Genetics (4)	4	CHEM 2220, 2229 or BIO SCI 1113, 1219 or BIO SCI 2223	Organic Chemistry II and Lab or General Biology and Lab or General Genetics <small>Applies to degree as Track Elective.</small>	4
CS 175 or CS 180	Intro to Computer Science (4) or C++ (2)	4	CS 1500 or CS 1570, 1580*	Computational Problem Solving or Intro to Programming and Lab* (C++) (4) <small>*Will be substituted for CS 1500.</small>	3
PC 361	Thermodynamics	3	MECH ENG 2519*	Thermodynamics* <small>*The combination of MECH ENG 2519 AND CHEM ENG 4000 (an independent study, online S&amp;T course) will be substituted for CHEM ENG 2110 by the biomedical engineering department. Students must complete both courses to receive credit.</small>	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any 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	25		Group 2 Major Requirements	26
	Group 1 Core Requirements	37		Group 1 Core Requirements	30
	Total Hours	62		Total Hours*	56

\*S&T advisor permission is required to transfer more than 68 credit hours toward the degree.

## Biomedical Engineering-Biomaterials Group 2 Major Requirements

<u>Baker University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
CO 115	Intro to Communication Studies	3	SP&MS 1185	Principles of Speech	3
HI 143 or HI 127 or HI 128 or PS 115	World Civ. IV: The Rise of Globalism, 1870 - Present or History of the United States to 1877 or History of the United since 1877 or Intro to American Politics	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
CH 138, 138L	General Chemistry II and Lab	4	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&amp;T degree requirement. Will transfer as general credit.</small>	3
CH 251, 251L	Organic Chemistry I and Lab	4	CHEM 2210, 2219*	Organic Chemistry I and Lab* <small>*CHEM 2219 Lab applies to the degree as a Track Elective (non-engineering).</small>	4
CH 252, 252L	Organic Chemistry II and Lab	4	CHEM 2220, 2229*	Organic Chemistry II and Lab* <small>CHEM 2229 Lab applies to the degree as a Track Elective (non-engineering).</small>	4
BI 151, 151L	Molecular and Cellular Biology and Lab	4	BIO SCI 1113*, 1219*	General General Biology* and Lab* <small>*Applies to degree as Track Elective (Non-engineering).</small>	4
CS 175 or CS 180	Intro to Computer Science (4) or C++ (2)	4	CS 1500 or CS 1570, 1580*	Computational Problem Solving or Intro to Programming and Lab* (C++) (4) <small>*Will be substituted for CS 1500.</small>	3
PC 381	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PH 360	Biomedical Ethics and Religion	3	PHILOS 3223	Bioethics	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	32		Group 2 Major Requirements	30
	Group 1 Core Requirements	37		Group 1 Core Requirements	30
	Total Hours	69		Total Hours*	60

\*S&T advisor permission is required to transfer more than 65 credits toward the S&T Biomedical Engineering degree.

## Ceramic Engineering Group 2 Major Requirements

<u>Baker University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>	
HI 143 or HI 127 or HI 128 or PS 115	World Civ. IV: The Rise of Globalism, 1870 - Present or History of the United States to 1877 or History of the United since 1877 or Intro to American Politics	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
PC 381	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics
CH 251, 251L	Organic Chemistry I and Lab	4	CHEM 2210, 2219*	Organic Chemistry I (3) and Lab* (1) <small>CHEM 2210 will satisfy the advanced chemistry elective requirement. *CHEM 2219 is not an S&amp;T degree requirement. Will transfer as general elective credit.</small>
CH 138, 138L	General Chemistry II and Lab	4	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&amp;T degree requirement. Will transfer as general credit.</small>
MA 355 MA 472	Statistics and Modeling or Advanced Applied Statistics	3	STAT 3113	Applied Engineering Statistics <small>or any statistics course 3000-level or higher. Satisfies statistics elective requirement.</small>
CO 115 or HSS Elective	Intro to Communication Studies or Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	SPMS 1185 or HSS Elective	Principles of Speech or Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives
	Group 2 Major Requirements	23		Group 2 Major Requirements
	Group 1 Core Requirements	37		Group 1 Core Requirements
	Total Hours	60		Total Hours*
				54

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

## Chemical Engineering or Chemical Engineering - Biochemical Engineering Emphasis Group 2 Major Requirements

<u>Baker University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>	
CO 115	Intro to Communication Studies	3	SP&MS 1185	Principles of Speech
HI 143 or HI 127 or HI 128 or PS 115	World Civ. IV: The Rise of Globalism, 1870 - Present or History of the United States to 1877 or History of the United since 1877 or Intro to American Politics	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
CH 138, 138L	General Chemistry II and Lab	4	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&amp;T degree requirement. Will transfer as general credit.</small>
CH 251, 251L	Organic Chemistry I and Lab	4	CHEM 2210, 2219*	Organic Chemistry I and Lab* <small>*The lab will apply to the degree as 1 of the 9 science elective credits (below).</small>
CH 252 or CH 340 or BI 262, 262L or CH 370	Organic Chemistry II Analytical Chemical Methods or Microbiology and Lab (4) or Biochemistry	4	CHEM 2220 or CHEM 2510 or BIO SCI 3313, 3319 or CHEM 4610	Organic Chemistry II (3) or Analytical Chemistry (4) or Microbiology and Lab (5) or General Biochemistry (3) <small>Will satisfy science elective requirement. Select up to 9 hours from these options or CHEM 2219 Organic Chemistry Lab.</small>
CS 175 or CS 180	Intro to Computer Science (4) or C++ (2)	4	CS 1500 or CS 1570, 1580*	Computational Problem Solving or Intro to Programming and Lab* (C++) (4) <small>*Will be substituted for CS 1500.</small>
MA 355 MA 472	Statistics and Modeling or Advanced Applied Statistics	3	STAT 3113	Applied Engineering Statistics
PC 361	Thermodynamics	3	MECH ENG 2519*	Thermodynamics* <small>*The combination of MECH ENG 2519 AND CHEM ENG 4000 (an independent study, online S&amp;T course) will be substituted for CHEM ENG 2110 by the chemical engineering department. Students must complete both courses to receive credit.</small>
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives
	Group 2 Major Requirements	31		Group 2 Major Requirements
	Group 1 Core Requirements	37		Group 1 Core Requirements
	Total Hours	68		Total Hours*
				63

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

## Civil Engineering Group 2 Major Requirements

<u>Baker University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
CO 115	Intro to Communication Studies	3	SPMS 1185	Principles of Speech	3
HI 143 or HI 127 or HI 128 or PS 115	World Civ. IV: The Rise of Globalism, 1870 - Present or History of the United States to 1877 or History of the United since 1877 or Intro to American Politics	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
PC 381	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PC 480	Advanced Mechanics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
MA 355 MA 472	Statistics and Modeling or Advanced Applied Statistics	3	STAT 3113	Applied Engineering Statistics	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any 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	18		Group 2 Major Requirements	17
	Group 1 Core Requirements	37		Group 1 Core Requirements	30
	Total Hours	55		Total Hours*	47

\*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

Baker University		Semester	Missouri S&T		
CO 115	Intro to Communication Studies	3	SPMS 1185	Principles of Speech	3
HI 143 or HI 127 or HI 128 or PS 115	World Civ. IV: The Rise of Globalism, 1870 - Present or History of the United States to 1877 or History of the United since 1877 or Intro to American Politics	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
CS 175	Intro to Computer Science (4)	4	CS 1500	Computational Problem Solving	3
CS 180	C++ (2)	2	CS 1570, 1580	Intro to Programming and Lab (C++)	4
CS 185	Data Structures and Algorithms	4	CS 1575, 1585*	Data Structures and Lab* <small>*CS 1585 is not an S&amp;T degree requirement, will transfer as general elective credit.</small>	3
PC 371 or PC 480 or PC 361 or CH 251 or BI 152	Statics or Advanced Mechanics or Thermodynamics or Organic Chemistry I or Genetics (4)	3	CIV ENG 2200 or MECH ENG 2350 or MECH ENG 2519 or CHEM 2210 or BIO SCI 2223	Engineering Mechanics-Statics (3) or Engineering Mechanics-Dynamics (2) or Thermodynamics (3) or Organic Chemistry I (3) or General Genetics (3) <small>Satisfies a required engineering/science elective.</small>	3
MA 281 or MA 291	Intro to Linear Algebra (4) or Intro to Higher Mathematics (3)	3	MATH 3108 or MATH 3109	Linear Algebra or Foundations of Mathematics <small>Will satisfy a required math elective.</small>	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Electives	Maximum Free Electives	3	Electives	Maximum Free Electives	3
	Group 2 Major Requirements	25		Group 2 Major Requirements	28
	Group 1 Core Requirements	37		Group 1 Core Requirements	30
	Total Hours	62		Total Hours*	58

\*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

Baker University		Semester	Missouri S&T		
CO 115	Intro to Communication Studies	3	SPMS 1185	Principles of Speech	3
HI 143 or HI 127 or HI 128 or PS 115	World Civ. IV: The Rise of Globalism, 1870 - Present or History of the United States to 1877 or History of the United since 1877 or Intro to American Politics	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
CS 175	Intro to Computer Science (4)	4	CS 1500	Computational Problem Solving	3
PC 371 or PC 480	Statics or Advanced Mechanics or	3	CIV ENG 2200 and MECH ENG 2350	Engineering Mechanics-Statics (3) and Engineering Mechanics-Dynamics (2)	3
BOTH of the courses above or ONE of the courses below.	Both courses above combined or any one of the following courses will satisfy a required engineering science elective. OR	3	BOTH of the courses above or ONE of the courses below. OR	Both courses above combined or any one of the following courses will satisfy a required engineering science elective. OR	3
PC 361 or CH 251 or BI 152	Thermodynamics or Organic Chemistry I or Genetics (4)	3	MECH ENG 2519 or CHEM 2210 or BIO SCI 2223	Thermodynamics (3) or Organic Chemistry I (3) or General Genetics (3)	3
MA 281	Intro to Linear Algebra	4	MATH 3108	Linear Algebra	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Electives	Maximum Free Electives	3	Electives	Maximum Free Electives	3
	Group 2 Major Requirements	23		Group 2 Major Requirements	21
	Group 1 Core Requirements	37		Group 1 Core Requirements	30
	Total Hours	60		Total Hours*	51

\*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>Baker University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
PSY 111	General Psychology	3	PSYCH 1101	General Psychology	3
HI 143 or HI 127 or HI 128 or PS 115	World Civ. IV: The Rise of Globalism, 1870 - Present or History of the United States to 1877 or History of the United since 1877 or Intro to American Politics	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
CO 115	Intro to Communication Studies	3	SPMS 1185	Principles of Speech	3
CS 180	C++	2	CS 1570, 1580	Intro to Programming and Lab (C++)	4
PC 381	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PC 480	Advanced Mechanics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
PC 361	Thermodynamics	3	MECH ENG 2519	Thermodynamics <small>Will be substituted for MECH ENG 2527.</small>	3
MA 355 MA 472	Statistics and Modeling or Advanced Applied Statistics	3	STAT 3113	Applied Engineering Statistics <small>Will be substituted for the STAT 3115/3117 requirement.</small>	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
	<i>No free electives applied to the degree.</i>	3	Electives	Maximum Free Electives	0
	Group 2 Major Requirements	29		Group 2 Major Requirements	27
	Group 1 Core Requirements	37		Group 1 Core Requirements	30
	Total Hours	66		Total Hours*	61

\*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>Baker University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
CO 115	Intro to Communication Studies	3	SPMS 1185	Principles of Speech	3
HI 143 or HI 127 or HI 128	World Civ. IV: The Rise of Globalism, 1870 - Present or History of the United States to 1877 or History of the United since 1877	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310	Modern Western Civilization or American History to 1877 or American History since 1877	3
CH 138, 138L	General Chemistry II and Lab	4	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&amp;T degree requirement. Will transfer as general credit.</small>	3
BI 151, 151L	Molecular and Cellular Biology and Lab	3	BIO SCI 1113, 1219*	General Biology and Lab* <small>BIO SCI 1219 is not an S&amp;T degree requirement, will transfer as general elective credit.</small>	3
PC 381	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PC 480	Advanced Mechanics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
MA 355 MA 472	Statistics and Modeling or Advanced Applied Statistics	3	STAT 3113	Applied Engineering Statistics	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any 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	25		Group 2 Major Requirements	23
	Group 1 Core Requirements	37		Group 1 Core Requirements	30
	Total Hours	62		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>Baker University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>	
HI 143 or HI 127 or HI 128 or PS 115	World Civ. IV: The Rise of Globalism, 1870 - Present or History of the United States to 1877 or History of the United since 1877 or Intro to American Politics	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
CS 175	Intro to Computer Science	4	CS 1500	Computational Problem Solving
PC 381	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics
PC 480	Advanced Mechanics	3	MECH ENG 2350	Engineering Mechanics-Dynamics
MA 355 MA 472	Statistics and Modeling or Advanced Applied Statistics	3	STAT 3113	Applied Engineering Statistics
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives
	Group 2 Major Requirements	22		Group 2 Major Requirements
	Group 1 Core Requirements	37		Group 1 Core Requirements
	Total Hours	59		Total Hours*
				50

\*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>Baker University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>	
HI 143 or HI 127 or HI 128 or PS 115	World Civ. IV: The Rise of Globalism, 1870 - Present or History of the United States to 1877 or History of the United since 1877 or Intro to American Politics	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
CO 115	Intro to Communication Studies	3	SPMS 1185	Principles of Speech
CS 180	C++	2	CS 1570, 1580	Intro to Programming and Lab (C++)
PC 381	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics
PC 361	Thermodynamics	3	MECH ENG 2519	Thermodynamics
MA 281 or MA 355 or MA 472	Intro to Linear Algebra (4) or Statistics and Modeling Advanced Applied Statistics Literature Elective	3	MATH 3108 or STAT 3113	Linear Algebra I or Applied Engineering Statistics Will satisfy the Advanced Math/Statistics elective requirement.
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives
	Group 2 Major Requirements	23		Group 2 Major Requirements
	Group 1 Core Requirements	37		Group 1 Core Requirements
	Total Hours	60		Total Hours*
				55

\*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>Baker University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
CO 115	Intro to Communication Studies	3	SPMS 1185	Principles of Speech	3
HI 143 or HI 127 or HI 128 or PS 115	World Civ. IV: The Rise of Globalism, 1870 - Present or History of the United States to 1877 or History of the United since 1877 or Intro to American Politics	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
PC 381	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
MA 355 MA 472	Statistics and Modeling or Advanced Applied Statistics	3	STAT 3113	Applied Engineering Statistics	3
CH 138, 138L	General Chemistry II and Lab	4	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&amp;T degree requirement. Will transfer as general credit.</small>	3
CH 251	Organic Chemistry I	4	CHEM 2210	Organic Chemistry I <small>Not specifically required for the degree but will satisfy out-of-department technical elective requirement</small>	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Electives	Maximum Free Electives	5	Electives	Maximum Free Electives	3
	Group 2 Major Requirements	31		Group 2 Major Requirements	27
	Group 1 Core Requirements	37		Group 1 Core Requirements	30
	Total Hours	68		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>Baker University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
HI 143 or HI 127 or HI 128 or PS 115	World Civ. IV: The Rise of Globalism, 1870 - Present or History of the United States to 1877 or History of the United since 1877 or Intro to American Politics	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
MA 355 MA 472	Statistics and Modeling or Advanced Applied Statistics	3	STAT 3113	Applied Engineering Statistics	3
PC 381	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PC 480	Advanced Mechanics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
PC 361	Thermodynamics	3	MECH ENG 2527	Thermal Analysis	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any 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	21		Group 2 Major Requirements	20
	Group 1 Core Requirements	37		Group 1 Core Requirements	30
	Total Hours	58		Total Hours*	50

\*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>Baker University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
CO 115	Intro to Communication Studies	3	SPMS 1185	Principles of Speech	3
HI 143 or HI 127 or HI 128 or PS 115	World Civ. IV: The Rise of Globalism, 1870 - Present or History of the United States to 1877 or History of the United since 1877 or Intro to American Politics	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
CS 180	C++	2	CS 1570, 1580*	Intro to Programming and Lab (C++)* (4) <small>*CS 1570, 1580 will be substituted for CS 1971, 1981..</small>	4
MA 281 or MA 291	Intro to Linear Algebra (4) or Intro to Higher Mathematics (3)	3	MATH 3108 or MATH 3109	Linear Algebra or Foundations of Mathematics	3
PC 381	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
MA 355	Statistics and Modeling or	3	STAT 3113	Applied Engineering Statistics	3
MA 472	Advanced Applied Statistics	3	MECH ENG 2519	Thermodynamics	3
PC 361	Thermodynamics	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Electives	Maximum Free Electives	6	Electives	Maximum Free Electives	6
	Group 2 Major Requirements	32		Group 2 Major Requirements	34
	Group 1 Core Requirements	37		Group 1 Core Requirements	30
	Total Hours	69		Total Hours*	64

\*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>Baker University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
HI 143 or HI 127 or HI 128 or PS 115	World Civ. IV: The Rise of Globalism, 1870 - Present or History of the United States to 1877 or History of the United since 1877 or Intro to American Politics	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
PC 381	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PC 480	Advanced Mechanics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
PC 361	Thermodynamics	3	MECH ENG 2519	Thermodynamics <small>Will be substituted for MECH ENG 2527.</small>	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3
Humanities or Social Science	Any history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language.	3	Humanities or Social Science	Any 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	18		Group 2 Major Requirements	17
	Group 1 Core Requirements	37		Group 1 Core Requirements	30
	Total Hours	55		Total Hours*	47

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