

John A. Logan College — 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>John A. Logan College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
MAT 131	Calculus I	5	MATH 1214	Calculus I	4
MAT 201	Calculus II	5	MATH 1215	Calculus II	4
MAT 205	Differential Equations	3	MATH 3304	Elementary Differential Equations	3
PHY 205	University Physics I	5	PHYSICS 1135	Engineering Physics I	4
PHY 206	University Physics II	5	PHYSICS 2135	Engineering Physics II	4
CHM 151	Chemical Principles	5	CHEM 1310, 1319	General Chemistry I and Lab	5
ENG 101	English Composition	3	ENGLISH 1120	Exposition and Argumentation	3
ECO 202 or	Principles of Microeconomics or	3	ECON 1100 or	Principles of Microeconomics or	3
ECO 201	Principles of Macroeconomics		ECON 1200	Principles of Macroeconomics	3
Total Hours		34	Total Hours		30

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/Biomanufacturing 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 with questions. See Missouri S&T online catalog at <https://catalog.mst.edu/undergraduate/degreeprogramsandcourses/> for more information.

Aerospace Engineering Group 2 Major Requirements

<u>John A. Logan College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 101	Engineering Graphics	3	MECH ENG 1720	Intro to Engineering Design	3
HIS 201 or HIS 202 or HIS 102 or PSC 131	US History I or US History II or Western Civilization or American Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
ENG 102 or SPE 115	English Composition or Speech	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
PHY 214	Intro to Circuit Analysis	4	EE 2800	Electrical Circuits	3
PHY 201	Statics	4	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 203	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	3
MAT 221	Intro to Linear Algebra	3	MATH 3108	Linear Algebra I <small>Will satisfy the Advanced Math/Comp Sci elective requirement.</small>	3
	Literature Elective	3		Literature Elective	3
Ethics	Ethics Elective <small>Engineering, business, bio, social or other ethics approved by advisor.</small>	3	Ethics	Ethics Elective <small>Engineering, business, bio, social or other ethics approved by advisor.</small>	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	29		Group 2 Major Requirements	27
	Group 1 Core Requirements	34		Group 1 Core Requirements	30
	Total Hours	63		Total Hours*	57

*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>John A. Logan College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 101	Engineering Graphics	3	MECH ENG 1720	Intro to Engineering Design	3
HIS 102 (or HIS 201 or HIS 202)	Western Civilization (or US History I or US History 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
PHY 201	Statics	4	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 202	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
PHY 203	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	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: ENG 102, SPE 115, ENG 113.	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.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	19		Group 2 Major Requirements	17
	Group 1 Core Requirements	34		Group 1 Core Requirements	30
	Total Hours	53		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>John A. Logan College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
SPE 115	Speech	3	SP&MS 1185	Principles of Speech	3
HIS 201 or HIS 202 or HIS 102 or PSC 131	US History I or US History II or Western Civilization or American Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
CHM 152	Chemical Principles with Qualitative Analysis	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&T degree requirement. Will transfer as general credit.</small>	3
CHM 201	Organic Chemistry I	5	CHEM 2210, 2219	Organic Chemistry I and Lab	4
CHM 202 or BIO 101	Organic Chemistry II (5) or Biological Science for Science Majors I (4)	4	CHEM 2220, 2229 or BIO SCI 1113, 1219	Organic Chemistry II and Lab or General Biology and Lab <small>Applies to degree as Track Elective.</small>	4
CPS 215	Computer Science II	3	CS 1500	Computational Problem Solving	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	26		Group 2 Major Requirements	23
	Group 1 Core Requirements	34		Group 1 Core Requirements	30
	Total Hours	60		Total Hours*	53

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

Biomedical Engineering-Biomaterials Group 2 Major Requirements

<u>John A. Logan College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
SPE 115	Speech	3	SP&MS 1185	Principles of Speech	3
HIS 201 or HIS 202 or HIS 102 or PSC 131	US History I or US History II or Western Civilization or American Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
CHM 152	Chemical Principles with Qualitative Analysis	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&T degree requirement. Will transfer as general credit.</small>	3
CHM 201	Organic Chemistry I	5	CHEM 2210, 2219*	Organic Chemistry I and Lab* <small>*CHEM 2219 Lab applies to the degree as a Track Elective (non-engineering).</small>	4
CHM 202	Organic Chemistry II	5	CHEM 2220, 2229*	Organic Chemistry II and Lab* <small>CHEM 2229 Lab applies to the degree as a Track Elective (non-engineering).</small>	4
BIO 101	Biological Science for Science Majors I	4	BIO SCI 1113*, 1219*	General General Biology* and Lab* <small>*Applies to degree as Track Elective (Non-engineering).</small>	4
CPS 215	Computer Science II	3	CS 1500	Computational Problem Solving	3
PHY 201	Statics	4	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 214	Intro to Circuit Analysis	4	EE 2100*	Circuits I <small>*A passing grade on the Missouri S&T EE Advancement Exam I is required to receive credit for EE 2100. Applies to the degree as a Track Elective (Engineering).</small>	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	36		Group 2 Major Requirements	30
	Group 1 Core Requirements	34		Group 1 Core Requirements	30
	Total Hours	70		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>John A. Logan College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 101	Engineering Graphics	3	MECH ENG 1720	Intro to Engineering Design	3
HIS 201 or HIS 202 or HIS 102 or PSC 131	US History I or US History II or Western Civilization or American Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
PHY 201	Statics	4	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 203	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	3
CHM 201	Organic Chemistry I	5	CHEM 2210	Organic Chemistry I <small>Will satisfy the advanced chemistry elective requirement.</small>	3
CHM 152	Chemical Principles with Qualitative Analysis	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&T degree requirement. Will transfer as general credit.</small>	3
ENG 102 or SPE 115 or HSS Elective	English Composition or Speech or Any 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 Principles of Speech or 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	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	32		Group 2 Major Requirements	27
	Group 1 Core Requirements	34		Group 1 Core Requirements	30
	Total Hours	66		Total Hours*	57

*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>John A. Logan College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 101	Engineering Graphics	3	MECH ENG 1720	Intro to Engineering Design	3
SPE 115	Speech	3	SP&MS 1185	Principles of Speech	3
HIS 201 or HIS 202 or HIS 102 or PSC 131	US History I or US History II or Western Civilization or American Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
CHM 152	Chemical Principles with Qualitative Analysis	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&T degree requirement. Will transfer as general credit.</small>	3
CHM 201	Organic Chemistry I	5	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>	4
CHM 202	Organic Chemistry II	5	CHEM 2220	Organic Chemistry II <small>Will partially satisfy the 9-hour science elective requirement.</small>	3
CPS 215	Computer Science II	3	CS 1500	Computational Problem Solving	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	30		Group 2 Major Requirements	25
	Group 1 Core Requirements	34		Group 1 Core Requirements	30
	Total Hours	64		Total Hours*	55

*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>John A. Logan College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 101	Engineering Graphics	3	MECH ENG 1720	Intro to Engineering Design	3
ENG 102 or SPE 115	English Composition or Speech	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
HIS 201 or HIS 202 or HIS 102 or PSC 131	US History I or US History II or Western Civilization or American Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
PHY 201	Statics	4	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 202	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
PHY 203	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	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	22		Group 2 Major Requirements	20
	Group 1 Core Requirements	34		Group 1 Core Requirements	30
	Total Hours	56		Total Hours*	50

*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>John A. Logan College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
SPE 115	Speech	3	SPMS 1185	Principles of Speech	3
ENG 102	English Composition	3	ENGLISH 1160	Writing and Research	3
HIS 201 or HIS 202 or HIS 102 or PSC 131	US History I or US History II or Western Civilization or American Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
MAT 125	Discrete Structures	3	CS 1200	Discrete Math for Computer Science	3
CPS 215	Computer Science II	3	CS 1500	Computational Problem Solving	3
Phy 201 or PHY 202 or CHM 201	Statics or Dynamics or Organic Chemistry I	3	CIV ENG 2200 or MECH ENG 2350 or CHEM 2210	Engineering Mechanics-Statics (3) or Engineering Mechanics-Dynamics (2) or Organic Chemistry I (4)	3
PHY 214	Intro to Circuit Analysis	4	EE 2100**	Circuits I **A passing grade on the Missouri S&T EE Advancement Exam I is required to receive credit for EE 2100.	3
MAT 221	Intro to Linear Algebra	3	MATH 3108	Linear Algebra Will satisfy a required math elective.	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	31		Group 2 Major Requirements	30
	Group 1 Core Requirements	34		Group 1 Core Requirements	30
	Total Hours	65		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>John A. Logan College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 101	Engineering Graphics	3	MECH ENG 1720	Intro to Engineering Design	3
SPE 115	Speech	3	SPMS 1185	Principles of Speech	3
ENG 102	English Composition	3	ENGLISH 1160	Writing and Research	3
HIS 201 or HIS 202 or HIS 102 or PSC 131	US History I or US History II or Western Civilization or American Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
CPS 215	Computer Science II	3	CS 1500	Computational Problem Solving	3
PHY 201 and PHY 202	Statics and Dynamics	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.	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.	3
OR CHM 201	OR Organic Chemistry I		OR CHEM 2210	OR Organic Chemistry I (3)	
PHY 214	Intro to Circuit Analysis	4	EE 2100**	Circuits I **A passing grade on the Missouri S&T EE Advancement Exam I is required to receive credit for EE 2100.	3
MAT 221	Intro to Linear Algebra	3	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	31		Group 2 Major Requirements	30
	Group 1 Core Requirements	34		Group 1 Core Requirements	30
	Total Hours	65		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>John A. Logan College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 101	Engineering Graphics	3	MECH ENG 1720	Intro to Engineering Design	3
PSY 132	General Psychology	3	PSYCH 1101	General Psychology	3
HIS 201 or HIS 202 or HIS 102 or PSC 131	US History I or US History II or Western Civilization or American Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
SPE 115	Speech	3	SPMS 1185	Principles of Speech	3
ENG 102	English Composition	3	ENGLISH 1160	Writing and Research	3
PHY 214	Intro to Circuit Analysis	4	EE 2800	Electrical Circuits	3
PHY 201	Statics	4	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 202	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
PHY 203	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	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	35		Group 2 Major Requirements	29
	Group 1 Core Requirements	34		Group 1 Core Requirements	30
	Total Hours	69		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>John A. Logan College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 101	Engineering Graphics	3	MECH ENG 1720	Intro to Engineering Design	3
ENG 102 or SPE 115	English Composition or Speech	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
HIS 201 or HIS 202 or HIS 102	US History I or US History II or Western Civilization	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310	Modern Western Civilization or American History to 1877 or American History since 1877	3
CHM 152	Chemical Principles with Qualitative Analysis	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&T degree requirement. Will transfer as general credit.</small>	3
BIO 101	Biological Science	3	BIO SCI 1113	General Biology	3
PHY 201	Statics	4	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 202	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
PHY 203	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	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	30		Group 2 Major Requirements	26
	Group 1 Core Requirements	34		Group 1 Core Requirements	30
	Total Hours	64		Total Hours*	56

*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>John A. Logan College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 101	Engineering Graphics	3	MECH ENG 1720	Intro to Engineering Design	3
HIS 201 or HIS 202 or HIS 102 or PSC 131	US History I or US History II or Western Civilization or American Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
CPS 215	Computer Science II	3	CS 1500	Computational Problem Solving	3
PHY 201	Statics	4	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 202	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
PHY 203	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	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	25		Group 2 Major Requirements	23
	Group 1 Core Requirements	34		Group 1 Core Requirements	30
	Total Hours	59		Total Hours*	53

*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>John A. Logan College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 101	Engineering Graphics	3	MECH ENG 1720	Intro to Engineering Design	3
HIS 201 or HIS 202 or HIS 102 or PSC 131	US History I or US History II or Western Civilization or American Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
ENG 102 or SPE 115	English Composition or Speech	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
PHY 214	Intro to Circuit Analysis	4	EE 2800	Electrical Circuits	3
PHY 201	Statics	4	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 203	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	3
MAT 221	Intro to Linear Algebra	3	MATH 3108	Linear Algebra I <small>Will satisfy the Advanced Math/Comp Sci elective requirement.</small>	3
	Literature Elective	3		Literature Elective	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	29		Group 2 Major Requirements	27
	Group 1 Core Requirements	34		Group 1 Core Requirements	30
	Total Hours	63		Total Hours*	57

*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>John A. Logan College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 101	Engineering Graphics	3	MECH ENG 1720	Intro to Engineering Design	3
ENG 102 or SPE 115	English Composition or Speech	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
HIS 201 or HIS 202 or HIS 102 or PSC 131	US History I or US History II or Western Civilization or American Government	3	HISTORY 1200 or HISTORY 1300 or HISTORY 1310 or POL SCI 1200	Modern Western Civilization or American History to 1877 or American History since 1877 or American Government	3
PHY 201	Statics	4	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 203	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	3
CHM 152	Chemical Principles with Qualitative Analysis	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) <small>*CHEM 1510 is not an S&T degree requirement. Will transfer as general credit.</small>	3
CHM 201 or PHY 215 or	Organic Chemistry I or Intro to Circuit Analysis	5	CHEM 2210 or EE 2800	Organic Chemistry I (4) or Electrical Circuits (3) <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	3	Electives	Maximum Free Electives	3
	Group 2 Major Requirements	35		Group 2 Major Requirements	30
	Group 1 Core Requirements	34		Group 1 Core Requirements	30
	Total Hours	69		Total Hours*	60

*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>John A. Logan College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 101	Engineering Graphics	3	MECH ENG 1720	Intro to Engineering Design	3
ENG 102 or	English Composition or	3	ENGLISH 1160 or	Writing and Research or	3
ENG 113	Professional Technical Writing		ENGLISH 1600	Intro to Technical Communications	
HIS 201 or	US History I or		HISTORY 1200 or	Modern Western Civilization or	
HIS 202 or	US History II or	3	HISTORY 1300 or	American History to 1877 or	3
HIS 102 or	Western Civilization or		HISTORY 1310 or	American History since 1877 or	
PSC 131	American Government		POL SCI 1200	American Government	
PHY 201	Statics	4	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 202	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
PHY 203	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	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	25		Group 2 Major Requirements	23
	Group 1 Core Requirements	34		Group 1 Core Requirements	30
	Total Hours	59		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

<u>John A. Logan College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 101	Engineering Graphics	3	MECH ENG 1720	Intro to Engineering Design	3
ENG 102 or	English Composition or	3	ENGLISH 1160 or	Writing and Research or	3
SPE 115	Speech		SPMS 1185	Principles of Speech	
HIS 201 or	US History I or		HISTORY 1200 or	Modern Western Civilization or	
HIS 202 or	US History II or	3	HISTORY 1300 or	American History to 1877 or	3
HIS 102 or	Western Civilization or		HISTORY 1310 or	American History since 1877 or	
PSC 131	American Government		POL SCI 1200	American Government	
MAT 221	Intro to Linear Algebra	3	MATH 3108	Linear Algebra	3
PHY 201	Statics	4	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 203	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	3
PHY 214	Intro to Circuit Analysis	4	EE 2800	Electrical Circuits	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	6	Electives	Maximum Free Electives	6
	Group 2 Major Requirements	35		Group 2 Major Requirements	33
	Group 1 Core Requirements	34		Group 1 Core Requirements	30
	Total Hours	69		Total Hours*	63

*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>John A. Logan College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 101	Engineering Graphics	3	MECH ENG 1720	Intro to Engineering Design	3
ENG 102 or	English Composition or	3	ENGLISH 1160 or	Writing and Research or	3
ENG 113	Professional Technical Writing		ENGLISH 1600	Intro to Technical Communications	
HIS 201 or	US History I or		HISTORY 1200 or	Modern Western Civilization or	
HIS 202 or	US History II or	3	HISTORY 1300 or	American History to 1877 or	3
HIS 102 or	Western Civilization or		HISTORY 1310 or	American History since 1877 or	
PSC 131	American Government		POL SCI 1200	American Government	
PHY 201	Statics	4	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 202	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
PHY 203	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	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	25		Group 2 Major Requirements	23
	Group 1 Core Requirements	34		Group 1 Core Requirements	30
	Total Hours	59		Total Hours*	53

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