

John A Logan College — Missouri S&T
General Engineering Transfer Guide
 Effective as of Fall 2021

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 for Engineers I <small>Grade of C or better is required.</small>	4
MAT 201	Calculus II	5	MATH 1215	Calculus for Engineers II <small>Grade of C or better is required.</small>	4
MAT 205	Differential Equations	3	MATH 3304	Elementary Differential Equations	3
PHY 205	University Physics	5	PHYSICS 1135	Engineering Physics I <small>Grade of C or better is required.</small>	4
PHY 206	University Physics II	5	PHYSICS 2135	Engineering Physics II <small>Grade of C or better is required.</small>	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		ECON 1100 or	Principles of Microeconomics or	
ECO 201	Principles of Macroeconomics	3	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
Ceramic Engineering
Chemical Engineering
Chemical Engineering/Biochemistry Emphasis
Civil Engineering
Computer Engineering
Electrical Engineering

Engineering Management
Environmental Engineering
Geological Engineering
Mechanical Engineering
Metallurgical Engineering
Mining Engineering
Nuclear Engineering
Petroleum Engineering

Engineering Major Requirements are detailed on the following pages.

Free Electives: Some programs allow Free Electives as indicated within each major. Free Electives should be selected in consultation with your advisor and may not include remedial/deficiency courses, algebra, trigonometry, pre-calculus, or extra credits in required courses.

Humanities/Social Science (HSS) Electives: HSS electives may include any history, economics, political science, sociology, psychology, philosophy, fine art, literature, or foreign language. Missouri S&T approved HSS courses are listed at ugs.mst.edu. Your campus may have additional acceptable options. Consult with your advisor or email transfer@mst.edu with questions.

Aerospace Engineering Group 2 Major Requirements

<u>John A Logan College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 101	Engineering Graphics	3	MECH ENG 1720	Engineering Design with Computer Appl	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 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
ENG 102 or SPE 115	English Composition or Speech	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
CPS 203	Intro to Scientific Programming	3	CS 1971, 1981	Intro to Programming Method and Lab (C++) (3)	3
PHY 215	Intro to Circuit Analysis	4	EE 2800	Circuit Analysis I	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 or <small>(Will satisfy the Advanced Math/Comp Sci elective requirement.)</small>	3
<i>See your advisor for course options.</i>			ENGLISH 1211 or ENGLISH 1221 or ENGLISH 1231 or ENGLISH 2242 or ENGLISH 2245 or	British Literature I: The Beginnings to 1800 or American Literature: 1600 to 1865 or World Literature I or Literature by Women or African American Literature <small>(or other literature elective)</small>	3
<i>See your advisor for course options.</i>		3		Ethics Elective	3
<i>No free electives applied to the degree.</i>		0		Maximum Free Electives	0
Group 2 Major Requirements		29	Group 2 Major Requirements		30
Group 1 Core Requirements		34	Group 1 Core Requirements		30
Total Hours		63	Total Hours*		60

*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	Engineering Design with Computer Appl	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	3
PHY 203	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	3
ENG 102 or SPE 115	English Composition or Speech	3	ENGLISH 1160 or SPMS 1185 or HSS Elective	Writing and Research or Public Speaking or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3
PHS 102	Astronomy	3	PHYSICS 1505	Introductory Astronomy (or other chemistry, geology, biology, physics, or astronomy course that is not otherwise required for the degree) <small>Applies to the degree as a basic science elective</small>	3
<i>No free electives applied to the degree.</i>		0	Maximum Free Electives		0
Group 2 Major Requirements		22	Group 2 Major Requirements		21
Group 1 Core Requirements		34	Group 1 Core Requirements		30
Total Hours		56	Total Hours*		51

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

Ceramic Engineering Group 2 Major Requirements

<u>John A Logan College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 101	Engineering Graphics	3	MECH ENG 1720	Engineering Design with Computer Appl	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 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
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, 2219	Organic Chemistry I (4) and Lab (Not a specific requirement. Will satisfy the advanced chemistry elective requirement.)	3
CHM 152	Chemical Principles with Qualitative Analysis	5	CHEM 1320	General Chemistry II	3
ENG 102 or SPE 115 or HSS Elective	English Composition or Speech or HSS Elective	3	ENGLISH 1160 or SPMS 1185 or HSS Elective	Writing and Research or Public Speaking or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	29		Group 2 Major Requirements	24
	Group 1 Core Requirements	34		Group 1 Core Requirements	30
	Total Hours	63		Total Hours*	54

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

Chemical Engineering Group 2 Major Requirements

<u>John A Logan College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 101	Engineering Graphics	3	MECH ENG 1720	Engineering Design with Computer Appl	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 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
CHM 152	Chemical Principles with Qualitative Analysis	5	CHEM 1320	General Chemistry II	3
CHM 201	Organic Chemistry I	5	CHEM 2210, CHEM 2219	Organic Chemistry I and Lab	4
CHM 202	Organic Chemistry II	5	CHEM 2220, 2219	Organic Chemistry II and Lab (4) (Will satisfy science elective requirement. Select up to 9 hours from these options.)	9
CPS 215 or CPS 203	Computer Science II (4) or Intro to Scientific Programming	3	CS 1500 or CS 1971, 1981	Computational Problem Solving (3) or Intro to Programming Method and Lab (C++)	3
SPE 115	Speech	3	SP&MS 1185	Principles of Speech	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	33		Group 2 Major Requirements	34
	Group 1 Core Requirements	34		Group 1 Core Requirements	30
	Total Hours	67		Total Hours*	64

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

Chemical Engineering - Biochemical Engineering Emphasis Group 2 Major Requirements

<u>John A Logan College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 101	Engineering Graphics	3	MECH ENG 1720	Engineering Design with Computer Appl	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 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
CHM 152	Chemical Principles with Qualitative Analysis	5	CHEM 1320	General Chemistry II	3
CHM 201	Organic Chemistry I	5	CHEM 2210	Organic Chemistry I	4
CHM 202	Organic Chemistry II	5	CHEM 2220, 2219	Organic Chemistry II and Lab (4) (Will satisfy science elective requirement. Select up to 9 hours from these options.)	9
CPS 215 or CPS 203	Computer Science II (4) or Intro to Scientific Programming	3	CS 1500 or CS 1971, 1981	Computational Problem Solving (3) or Intro to Programming Method and Lab (C++)	3
SPE 115	Speech	3	SP&MS 1185	Principles of Speech	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	33		Group 2 Major Requirements	34
	Group 1 Core Requirements	34		Group 1 Core Requirements	30
	Total Hours	67		Total Hours*	64

*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>John A Logan College</u>		<u>Semester</u>	<u>Missouri S&T</u>		
EGR 101	Engineering Graphics	3	MECH ENG 1720	Engineering Design with Computer Appl	3
ENG 102 or SPE 115	English Composition or Speech	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Public Speaking	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 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
PHY 201	Statics	4	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 202	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	3
PHY 203	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	22		Group 2 Major Requirements	21
	Group 1 Core Requirements	34		Group 1 Core Requirements	30
	Total Hours	56		Total Hours*	51

*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	Public Speaking	3
ENG 102	English Composition	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	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 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
MAT 125	Discrete Structures	3	CS 1200	Discrete Math for Computer Science	3
CPS 215 or CPS 203	Computer Science II (4) or Intro to Scientific Programming	3	CS 1500 or CS 1971,1981	Computational Problem Solving or Intro to Programming Methodology and Lab	3
CPS 215	Data Structures	3	CS 1575	Data Structures	3
Phy 201 and PHY 202 or CHM 201 or	Statics and Dynamics or Organic Chemistry I (5) or	7	CIV ENG 2200 and MECH ENG 2350 (BOTH of the courses above or ONE of the courses below.) OR CHEM 2210 or BIO SCI 2223	Engineering Mechanics-Statics (3) and Engineering Mechanics-Dynamics (3) (Both courses above combined or any one of the following courses will satisfy a required engineering science elective.) OR Organic Chemistry I (4) or General Genetics (3)	3
PHY 215	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 (W#)	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	0		Maximum Free Electives	3
	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 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	Engineering Design with Computer Appl	3
SPE 115	Speech	3	SPMS 1185	Public Speaking	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 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
CPS 215	Computer Science II	4	CS 1500	Computational Problem Solving	3
Phy 201 and PHY 202 or CHM 201 or	Statics and Dynamics or Organic Chemistry I (5) or	7	CIV ENG 2200 and MECH ENG 2350 (BOTH of the courses above or ONE of the courses below.) OR CHEM 2210 or BIO SCI 2223	Engineering Mechanics-Statics (3) and Engineering Mechanics-Dynamics (3) (Both courses above combined or any one of the following courses will satisfy a required engineering science elective.) OR Organic Chemistry I (3) or General Genetics (3)	3
PHY 215	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
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	0		Maximum Free Electives	3
	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 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	Engineering Design with Computer Appl	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 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
ENG 102 or SPE 115	English Composition or Speech	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
CPS 203	Intro to Scientific Programming	3	CS 1971, 1981	Intro to Programming Method and Lab (C++) (3)	3
PHY 215	Intro to Circuit Analysis	4	EE 2800	Circuit Analysis I	3
PHY 201	Statics	4	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 202	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	3
PHY 203	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Maximum Free Electives	3
	Group 2 Major Requirements	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 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	Engineering Design with Computer Appl	3
ENG 102 or SPE 115	English Composition or Speech	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Public Speaking	3
HIS 201 or HIS 202 or HIS 102	US History I or US History II or Western Civilization	3	HISTORY 1300 or HISTORY 1310 or HISTORY 1200	American History to 1877 or American History since 1877 or Modern Western Civilization	3
CHM 152	Chemical Principles with Qualitative Analysis	5	CHEM 1320	General Chemistry II	3
BIO 101	Biological Science	3	BIO SCI 1113	General Biology	4
PHY 201	Statics	4	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 202	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	3
PHY 203	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	30		Group 2 Major Requirements	28
	Group 1 Core Requirements	34		Group 1 Core Requirements	30
	Total Hours	64		Total Hours*	58

*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	Engineering Design with Computer Appl	3
ENG 102 or SPE 115	English Composition or Speech	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Public Speaking	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 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
PHY 201	Statics	4	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 202	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	3
PHY 203	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	3
BIO 101 or CHM 152 or CHM 201	Biological Science or Chemical Principles with Qualitative Analysis or Organic Chemistry I	3	BIO SCI 1113 or CHEM 1320 or CHEM 2210	General Biology or General Chemistry II or Organic Chemistry I	3
	<i>See your advisor for course options.</i>	3		or any 3-hour course in chemistry, geochemistry, or biology. Satisfies chemistry/geochemistry elective requirement.	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	28		Group 2 Major Requirements	27
	Group 1 Core Requirements	34		Group 1 Core Requirements	30
	Total Hours	62		Total Hours*	57

*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	Engineering Design with Computer Appl	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 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
ENG 102 or SPE 115	English Composition or Speech	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
CPS 203	Intro to Scientific Programming	3	CS 1971, 1981	Intro to Programming Method and Lab (C++) (3)	3
PHY 215	Intro to Circuit Analysis	4	EE 2800	Circuit Analysis I	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 (Will satisfy the Advanced Math/Computer Science elective requirement.)	3
LIT 230 or LIT 295	American Literature or Women in Literature	3	ENGLISH 1221 or ENGLISH 2242	American Literature: 1600 to 1865 or Literature by Women or (or other literature elective)	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	32		Group 2 Major Requirements	30
	Group 1 Core Requirements	34		Group 1 Core Requirements	30
	Total Hours	66		Total Hours*	60

*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	Engineering Design with Computer Appl	3
ENG 102 or SPE 115	English Composition or Speech	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Public Speaking	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 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
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	General Chemistry II	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)	3
	<i>See your advisor for course options.</i>	3		<i>Not specifically required for the degree but will satisfy Out-of-Department Technical Elective Requirement.</i>	
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	5		Humanities/Social Science Elective	3
	Group 2 Major Requirements	37		Maximum Free Electives	5
	Group 1 Core Requirements	34		Group 2 Major Requirements	32
	Total Hours	71		Group 1 Core Requirements	30
				Total Hours*	62

*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	Engineering Design with Computer Appl	3
ENG 102 or ENG 113	English Composition or Professional Technical Writing	3	ENGLISH 1160 or ENGLISH 1600	Writing and Research or Intro to Technical Communications	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 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
PHY 201	Statics	4	CIV ENG 2200*	Engineering Mechanics-Statics	3
PHY 202	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	3
PHY 203	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	25		Group 2 Major Requirements	24
	Group 1 Core Requirements	34		Group 1 Core Requirements	30
	Total Hours	59		Total Hours*	54

*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	Engineering Design with Computer Appl	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 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
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
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	6		Maximum Free Electives	6
	Group 2 Major Requirements	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 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	Engineering Design with Computer Appl	3
ENG 102 or ENG 113	English Composition or Professional Technical Writing	3	ENGLISH 1160 or ENGLISH 1600	Writing and Research or Intro to Technical Communications	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 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
PHY 201	Statics	4	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 202	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	3
PHY 203	Mechanics of Materials	3	CIV ENG 2210	Mechanics of Materials	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	25		Group 2 Major Requirements	24
	Group 1 Core Requirements	34		Group 1 Core Requirements	30
	Total Hours	59		Total Hours*	54

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