John A Logan College — Missouri S&T

General Engineering

Transfer Guide Effective as of Fall 2026

Complete Group 1 - Core Requirements and Group 2 - Major Requirements for major of choice.

Students are not required to complete all courses on this guide before transferring to Missouri S&T.

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.

John A Logan College			Semester	Missouri S&T		
MAT 131	Calculus I	5		MATH 1214	Calculus I Grade of C or better is required.	4
MAT 201	Calculus II	5		MATH 1215	Calculus II Grade of C or better is required.	4
MAT 202	Calculus III	4		MATH 2222	Calculus III Grade of C or better is required.	4
MAT 205	Differential Equations	3		MATH 3304	Elementary Differential Equations	3
PHY 205	University Physics I	5		PHYSICS 1135	Engineering Physics I Grade of C or better is required.	4
PHY 206	University Physics II	5		PHYSICS 2135	Engineering Physics II Grade of C or better is required.	4
ENG 101	English Composition	3		ENGLISH 1120	Exposition and Argumentation	3
	Total Hours	30			Total Hours	26

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
Biomedical Engineering - 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
Semiconductor 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.

This transfer guide is published by Missouri University of Science and Technology and is in effect as of Fall 2026.
Further information or updates are available from Missouri S&T Transfer Admissions at transfer.mst.edu, transfer@mst.edu, or 800-522-0938.

Aerospace Engineering Group 2 Major Requirements

John A Logan College		Semester	Missouri S&T		
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 Applies to degree as Gen Ed Communication requirement.	3
CHM 151	Chemical Principles	5	CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5
PHY 214 or PHY 224	Intro to Circuit Analysis (3) or Electric Circuit Analysis with Lab (4)	3	ELEC ENG 2800 or ELEC ENG 2800, 2101*	Electrical Circuits or Electrical Circuits (3) and Circuit Analysis Lab* (1) *ELEC ENG 2101 is not an S&T degree requirement, will transfer as general elective credit.	3
PHY 201	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 203	Mechanics of Materials	4	CIV ENG 2210	Mechanics of Materials	3
PHY 202	Dynamics	3	MECH ENG 2360	Dynamics	3
MAT 221	Intro to Linear Algebra	3	MATH 3108	Linear Algebra I Satisfies the Advanced Math/Comp Sci elective requirement.	3
Ethics	Ethics Elective Engineering, business, bio, social or other ethics approved by advisor.	3	Ethics	Ethics Elective Engineering, business, bio, social or other ethics approved by advisor.	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
HIS 201* or **HIS 202*** or ART 111 or MUS 105 or THE 113 or Literature	**United States History I*** or **United States History II*** or Art Appreciation or Music Appreciation or Theater Appreciation or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	**HISTORY 1300*** or **HISTORY 1310*** or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	**American History to 1877*** or **American History Since 1877*** or Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
HIS 101 or **HIS 102*** or GEO 112 or PHL 131 or PHL 121 or **PSC 131*** or PSY 132 or ECO 202 or ECO 201 or Foreign Language	Western Civilization I or **Western Civilization II*** or World Regional Geography or Intro to Philosophy or Intro to Logic or **American Government*** or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6	HISTORY 1100 or **HISTORY 1200*** or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or **POL SCI 1200*** or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or **Modern Western Civilization*** or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or **American Government***or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6
Humanities, Arts, and Social Sciences Select 3 hours.					
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3	HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3
	No free electives applied to the degree.	0		Maximum Free Electives	0
	Group 2 Major Requirements	45		Group 2 Major Requirements	44
	Group 1 Core Requirements	30		Group 1 Core Requirements	26
	Total Hours	75		Total Hours*	70
				*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

John A Logan College			Semester	Missouri S&T		
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 Applies to degree as Gen Ed Communication requirement.	3
CHM 151	Chemical Principles	5		CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5
PHY 201	Statics	3		CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 202	Dynamics	3		MECH ENG 2350	Engineering Mechanics-Dynamics	2
PHY 203	Mechanics of Materials	4		CIV ENG 2210	Mechanics of Materials	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 12 hours to include 3 hours Humanities and Fine Arts and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**						
Humanities and Fine Arts Select 3 hours.						
HIS 201* or **HIS 202*** or MUS 105 or THE 113 or Literature	**United States History I*** or **United States History II*** or Music Appreciation or Theater Appreciation or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	3		**HISTORY 1300*** or **HISTORY 1310*** or MUSIC 1150 or THEATRE 1190 or Literature	**American History to 1877*** or **American History Since 1877*** or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	3
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines to include HISTORY 1200.						
HIS 102*	**Western Civilization II*** ***Satisfies the State of Missouri Government requirement.**	3		**HISTORY 1200***	**Modern Western Civilization*** ***Satisfies the State of Missouri Government requirement.**	3
PHL 131 or PHL 121 or **PSC 131*** or PSY 132 or ECO 202 or ECO 201 or Foreign Language	Intro to Philosophy or Intro to Logic or **American Government*** or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	3		PHILOS 1105 or PHILOS 1115 or **POL SCI 1200*** or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or **American Government*** or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	3
Humanities, Arts, and Social Sciences Select 3 hours.						
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3		HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3
	No free electives applied to the degree.	0			Maximum Free Electives	0
	Group 2 Major Requirements	33			Group 2 Major Requirements	31
	Group 1 Core Requirements	30			Group 1 Core Requirements	26
	Total Hours	63			Total Hours*	57
					*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

John A Logan College			Semester	Missouri S&T		
SPE 115	Speech	3		SP&MS 1185	Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHM 151	Chemical Principles	5		CHEM 1310, 1319	General Chemistry I and Lab	5
CHM 152	Chemical Principles with Qualitative Analysis	5		CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) *CHEM 1510 is not a degree requirement, transfers as general elective credit.	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 Applies to degree as Track Elective.	4
CPS 215	Computer Science II	3		COMP SCI 1500	Computational Problem Solving	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 9 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 3 hours Behavioral and Social Sciences. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**						
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.						
HIS 201* or **HIS 202*** or ART 111 or MUS 105 or THE 113 or Literature	**United States History I*** or **United States History II*** or Art Appreciation or Music Appreciation or Theater Appreciation or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6		**HISTORY 1300*** or **HISTORY 1310*** or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	**American History to 1877*** or **American History Since 1877*** or Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 3 hours.						
HIS 101 or **HIS 102*** or GEO 112 or **PSC 131*** or PSY 132 or ECO 202 or ECO 201 or Foreign Language	Western Civilization I or **Western Civilization II*** or World Regional Geography or **American Government*** or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	3		HISTORY 1100 or **HISTORY 1200*** or HISTORY 2110 or **POL SCI 1200*** or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or **Modern Western Civilization*** or World Regional Geography or **American Government*** or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	3
	No free electives applied to the degree.	0			Maximum Free Electives	0
	Group 2 Major Requirements	34			Group 2 Major Requirements	31
	Group 1 Core Requirements	30			Group 1 Core Requirements	26
	Total Hours	64			Total Hours*	57
					*S&T advisor permission is required to transfer more than 69 credit hours toward the degree.	

Biomedical Engineering-Biomaterials
Group 2 Major Requirements

John A Logan College		Semester	Missouri S&T		
SPE 115	Speech	3	SP&MS 1185	Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHM 151	Chemical Principles	5	CHEM 1310, 1319	General Chemistry I and Lab	5
CHM 152	Chemical Principles with Qualitative Analysis	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) *CHEM 1510 is not a degree requirement, transfers as general elective credit.	3
CHM 201	Organic Chemistry I	5	CHEM 2210, 2219*	Organic Chemistry I and Lab* *CHEM 2219 Lab applies to the degree as a Track Elective (non-engineering).	4
CHM 202	Organic Chemistry II	5	CHEM 2220, 2229*	Organic Chemistry II and Lab* CHEM 2229 Lab applies to the degree as a Track Elective (non-engineering).	4
BIO 101	Biological Science for Science Majors I	4	BIO SCI 1113*, 1219*	General Biology* and Lab* *Applies to degree as Track Elective (Non-engineering).	4
CPS 215	Computer Science II	3	COMP SCI 1500	Computational Problem Solving	3
PHY 201	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 224	Electric Circuit Analysis with Lab	4	ELEC ENG 2100*, 2101	Circuits I* (3) and Circuit Analysis Lab (1) *A passing grade on the Missouri S&T EE Advancement Exam I is required to receive credit for ELEC ENG 2100. Applies to the degree as a Track Elective (Engineering).	4
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 9 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 3 hours Behavioral and Social Sciences. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
HIS 201* or **HIS 202*** or ART 111 or MUS 105 or THE 113 or Literature	**United States History I*** or **United States History II*** or Art Appreciation or Music Appreciation or Theater Appreciation or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	**HISTORY 1300*** or **HISTORY 1310*** or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	**American History to 1877*** or **American History Since 1877*** or Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 3 hours.					
HIS 101 or **HIS 102*** or GEO 112 or **PSC 131*** or PSY 132 or ECO 202 or ECO 201 or Foreign Language	Western Civilization I or **Western Civilization II*** or World Regional Geography or **American Government*** or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	3	HISTORY 1100 or **HISTORY 1200*** or HISTORY 2110 or **POL SCI 1200*** or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or **Modern Western Civilization*** or World Regional Geography or **American Government*** or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	3
	No free electives applied to the degree.	0		Maximum Free Electives	0
	Group 2 Major Requirements	46		Group 2 Major Requirements	42
	Group 1 Core Requirements	30		Group 1 Core Requirements	26
	Total Hours	76		Total Hours*	68
				*S&T advisor permission is required to transfer more than 69 credits toward the S&T Biomedical Engineering degree.	

Ceramic Engineering Group 2 Major Requirements

John A Logan College		Semester	Missouri S&T		
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 Applies to degree as Gen Ed Communication requirement.	3
PHY 201	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 203	Mechanics of Materials	4	CIV ENG 2210	Mechanics of Materials	3
CHM 151	Chemical Principles	5	CHEM 1310, 1319	General Chemistry I and Lab	5
CHM 152	Chemical Principles with Qualitative Analysis	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) *CHEM 1510 is not a degree requirement, transfers as general elective credit.	3
CPS 215	Computer Science II	3	COMP SCI 1500	Computational Problem Solving	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
HIS 201* or **HIS 202*** or ART 111 or MUS 105 or THE 113 or Literature	**United States History I*** or **United States History II*** or Art Appreciation or Music Appreciation or Theater Appreciation or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	**HISTORY 1300*** or **HISTORY 1310*** or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	**American History to 1877*** or **American History Since 1877*** or Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
HIS 101 or **HIS 102*** or GEO 112 or PHL 131 or PHL 121 or **PSC 131*** or PSY 132 or ECO 202 or ECO 201 or Foreign Language	Western Civilization I or **Western Civilization II*** or World Regional Geography or Intro to Philosophy or Intro to Logic or **American Government*** or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6	HISTORY 1100 or **HISTORY 1200*** or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or **POL SCI 1200*** or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or **Modern Western Civilization*** or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or **American Government***or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6
Humanities, Arts, and Social Sciences Select 3 hours.					
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3	HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3
	No free electives applied to the degree.	0		Maximum Free Electives	0
	Group 2 Major Requirements	41		Group 2 Major Requirements	38
	Group 1 Core Requirements	30		Group 1 Core Requirements	26
	Total Hours	71		Total Hours*	64
				*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

John A Logan College		Semester	Missouri S&T		
EGR 101	Engineering Graphics	3	MECH ENG 1720	Intro to Engineering Design	3
SPE 115	Speech	3	SP&MS 1185	Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHM 151	Chemical Principles	5	CHEM 1310, 1319	General Chemistry I and Lab	5
CHM 152	Chemical Principles with Qualitative Analysis	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis* (2) *CHEM 1510 is not a degree requirement, transfers as general elective credit.	3
CHM 201	Organic Chemistry I	5	CHEM 2210, 2219*	Organic Chemistry I and Lab* *CHEM 2210 is a degree requirement. CHEM 2219 applies to the degree as 1 of 9 required science elective credits See note below .	4
CHM 202	Organic Chemistry II	5	CHEM 2220, 2229*	Organic Chemistry II (3) and Lab* (1) CHEM 2220 applies to the degree as 3 or 9 required science elective credits. *CHEM 2229 is not a degree requirement; transfers as general elective credit.	3
CPS 215	Computer Science II	3	COMP SCI 1500	Computational Problem Solving	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 12 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
HIS 201* or **HIS 202*** or ART 111 or MUS 105 or THE 113 or Literature	**United States History I*** or **United States History II*** or Art Appreciation or Music Appreciation or Theater Appreciation or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	**HISTORY 1300*** or **HISTORY 1310*** or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	**American History to 1877*** or **American History Since 1877*** or Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
HIS 101 or **HIS 102*** or GEO 112 or PHL 131 or PHL 121 or **PSC 131*** or PSY 132 or ECO 202 or ECO 201 or Foreign Language	Western Civilization I or **Western Civilization II*** or World Regional Geography or Intro to Philosophy or Intro to Logic or **American Government*** or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6	HISTORY 1100 or **HISTORY 1200*** or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or **POL SCI 1200*** or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or **Modern Western Civilization*** or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or **American Government***or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6
	No free electives applied to the degree.	0		Maximum Free Electives	0
	Group 2 Major Requirements	41		Group 2 Major Requirements	36
	Group 1 Core Requirements	30		Group 1 Core Requirements	26
	Total Hours	71		Total Hours*	62

*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

John A Logan College		Semester	Missouri S&T		
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 Applies to degree as Gen Ed Communication requirement.	3
CHM 151	Chemical Principles	5	CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5
PHY 201	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 202	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
PHY 203	Mechanics of Materials	4	CIV ENG 2210	Mechanics of Materials	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
HIS 201* or **HIS 202*** or ART 111 or MUS 105 or THE 113 or Literature	**United States History I*** or **United States History II*** or Art Appreciation or Music Appreciation or Theater Appreciation or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	**HISTORY 1300*** or **HISTORY 1310*** or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	**American History to 1877*** or **American History Since 1877*** or Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
HIS 101 or **HIS 102*** or GEO 112 or PHL 131 or PHL 121 or **PSC 131*** or PSY 132 or ECO 202 or ECO 201 or Foreign Language	Western Civilization I or **Western Civilization II*** or World Regional Geography or Intro to Philosophy or Intro to Logic or **American Government*** or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6	HISTORY 1100 or **HISTORY 1200*** or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or **POL SCI 1200*** or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or **Modern Western Civilization*** or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or **American Government***or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6
Humanities, Arts, and Social Sciences Select 3 hours.					
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3	HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3
	No free electives applied to the degree.	0		Maximum Free Electives	0
	Group 2 Major Requirements	36		Group 2 Major Requirements	34
	Group 1 Core Requirements	30		Group 1 Core Requirements	26
	Total Hours	66		Total Hours*	70
				*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

John A Logan College		Semester	Missouri S&T		Semester
SPE 115	Speech	3	SPMS 1185	Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHM 151	Chemical Principles	5	CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5
MAT 125	Discrete Structures	3	COMP SCI 1200	Discrete Math for Computer Science	3
CPS 215	Computer Science II	3	COMP SCI 1500	Computational Problem Solving	3
PHY 201 and PHY 202 BOTH of the courses above or ONE of the courses below.	Statics (3) and Dynamics (3) Both courses above combined or any one of the following courses will satisfy a required engineering science elective.		CIV ENG 2200 and MECH ENG 2350 BOTH of the courses above or ONE of the courses below.	Engineering Mechanics-Statics (3) and Engineering Mechanics-Dynamics (2) Both courses above combined or any one of the following courses will satisfy a required engineering science elective.	
OR CHM 201	OR Organic Chemistry I (5) Credit hours will transfer as shown above for each course and will apply to S&T degree requirements as shown at right. Any additional hours will transfer as general elective credit.	3	OR CHEM 2210	OR Organic Chemistry I (3) and Lab (1)* *CHEM 2219 is not an S&T degree requirement; transfers as general elective credit.	3
PHY 224	Electric Circuit Analysis with Lab	4	ELEC ENG 2100*, 2101	Circuits I* (3) and Circuit Analysis Lab (1) *A passing grade on the Missouri S&T EE Advancement Exam I is required to receive credit for ELEC ENG 2100.	4
MAT 221	Intro to Linear Algebra	3	MATH 3108	Linear Algebra	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
HIS 201* or **HIS 202*** or ART 111 or MUS 105 or THE 113 or Literature	**United States History I*** or **United States History II*** or Art Appreciation or Music Appreciation or Theater Appreciation or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	**HISTORY 1300*** or **HISTORY 1310*** or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	**American History to 1877*** or **American History Since 1877*** or Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
HIS 101 or **HIS 102*** or GEO 112 or PHL 131 or PHL 121 or **PSC 131*** or PSY 132 or ECO 202 or ECO 201 or Foreign Language	Western Civilization I or **Western Civilization II*** or World Regional Geography or Intro to Philosophy or Intro to Logic or **American Government*** or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6	HISTORY 1100 or **HISTORY 1200*** or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or **POL SCI 1200*** or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or **Modern Western Civilization*** or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or **American Government***or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6
Humanities, Arts, and Social Sciences Select 3 hours.					
ENG 102	English Composition	3	ENGLISH 1160	Writing and Research	3
Electives	Maximum Free Electives	3	Electives	Maximum Free Electives	3
	Group 2 Major Requirements	42		Group 2 Major Requirements	42
	Group 1 Core Requirements	30		Group 1 Core Requirements	26
	Total Hours	72		Total Hours*	68
				*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

John A Logan College		Semester	Missouri S&T		
EGR 101	Engineering Graphics	3	MECH ENG 1720	Intro to Engineering Design	3
SPE 115	Speech	3	SPMS 1185	Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHM 151	Chemical Principles	5	CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5
CPS 215	Computer Science II	3	COMP SCI 1500	Computational Problem Solving	3
PHY 201 and PHY 202 BOTH of the courses above or ONE of the courses below. OR CHM 201	Statics (3) and Dynamics (3) Both courses above combined or any one of the following courses will satisfy a required engineering science elective. OR Organic Chemistry I (5) Credit hours will transfer as shown above for each course and will apply to S&T degree requirements as shown at right. Any additional hours will transfer as general elective credit.	3	CIV ENG 2200 and MECH ENG 2350 BOTH of the courses above or ONE of the courses below. OR CHEM 2210	Engineering Mechanics-Statics (3) and Engineering Mechanics-Dynamics (2) Both courses above combined or any one of the following courses will satisfy a required engineering science elective. OR Organic Chemistry I (3) and Lab (1)* *CHEM 2219 is not an S&T degree requirement; transfers as general elective credit.	3
PHY 224	Electric Circuit Analysis with Lab	4	ELEC ENG 2100*, 2101	Circuits I* (3) and Circuit Analysis Lab (1) *A passing grade on the Missouri S&T EE Advancement Exam I is required to receive credit for ELEC ENG 2100.	4
MAT 221	Intro to Linear Algebra	3	MATH 3108	Linear Algebra	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
HIS 201* or **HIS 202*** or ART 111 or MUS 105 or THE 113 or Literature	**United States History I*** or **United States History II*** or Art Appreciation or Music Appreciation or Theater Appreciation or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	**HISTORY 1300*** or **HISTORY 1310*** or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	**American History to 1877*** or **American History Since 1877*** or Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
HIS 101 or **HIS 102*** or GEO 112 or PHL 131 or PHL 121 or **PSC 131*** or PSY 132 or ECO 202 or ECO 201 or Foreign Language	Western Civilization I or **Western Civilization II*** or World Regional Geography or Intro to Philosophy or Intro to Logic or **American Government*** or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6	HISTORY 1100 or **HISTORY 1200*** or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or **POL SCI 1200*** or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or **Modern Western Civilization*** or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or **American Government***or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6
Humanities, Arts, and Social Sciences Select 3 hours.					
ENG 102	English Composition	3	ENGLISH 1160	Writing and Research	3
Electives	Maximum Free Electives	6	Electives	Maximum Free Electives	6
	Group 2 Major Requirements	45		Group 2 Major Requirements	45
	Group 1 Core Requirements	30		Group 1 Core Requirements	26
	Total Hours	75		Total Hours*	71
				*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

John A Logan College		Semester	Missouri S&T		
EGR 101	Engineering Graphics	3	MECH ENG 1720	Intro to Engineering Design	3
SPE 115	Speech	3	SPMS 1185	Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHM 151	Chemical Principles	5	CHEM 1310, 1319	General Chemistry I and Lab	5
PHY 214 or PHY 224	Intro to Circuit Analysis (3) or Electric Circuit Analysis with Lab (4)	3	ELEC ENG 2800 or ELEC ENG 2800, 2101*	Electrical Circuits or Electrical Circuits (3) and Circuit Analysis Lab* (1) *ELEC ENG 2101 is not an S&T degree requirement, will transfer as general elective credit.	3
PHY 201	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 202	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
PHY 203	Mechanics of Materials	4	CIV ENG 2210	Mechanics of Materials	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
HIS 201* or **HIS 202*** or ART 111 or MUS 105 or THE 113 or Literature	**United States History I*** or **United States History II*** or Art Appreciation or Music Appreciation or Theater Appreciation or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	**HISTORY 1300*** or **HISTORY 1310*** or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	**American History to 1877*** or **American History Since 1877*** or Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines to include PSYCH 1101.					
PSY 132	General Psychology	3	PSYCH 1101	General Psychology Required	3
HIS 101 or **HIS 102*** or GEO 112 or PHL 131 or PHL 121 or **PSC 131*** or ECO 202 or ECO 201 or Foreign Language	Western Civilization I or **Western Civilization II*** or World Regional Geography or Intro to Philosophy or Intro to Logic or **American Government*** or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	3	HISTORY 1100 or **HISTORY 1200*** or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or **POL SCI 1200*** or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or **Modern Western Civilization*** or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or **American Government***or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	3
Humanities, Arts, and Social Sciences Select 3 hours.					
ENG 102	English Composition	3	ENGLISH 1160	Writing and Research	3
	No free electives applied to the degree.	0	Electives	Maximum Free Electives	0
	Group 2 Major Requirements	39		Group 2 Major Requirements	37
	Group 1 Core Requirements	30		Group 1 Core Requirements	26
	Total Hours	69		Total Hours*	61

*S&T advisor permission is required to transfer more than 61 credits toward the S&T Engineering Management degree.

Environmental Engineering Group 2 Major Requirements

John A Logan College		Semester	Missouri S&T		
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 Applies to degree as Gen Ed Communication requirement.	3
CHM 151	Chemical Principles	5	CHEM 1310, 1319	General Chemistry I and Lab	5
CHM 152	Chemical Principles with Qualitative Analysis	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) *CHEM 1510 is not a degree requirement, transfers as general elective credit.	3
BIO 101	Biological Science	4	BIO SCI 1113, 1219*	General Biology (3) and Lab* (1) *The lab is not a degree requirement, transfers as general elective credit.	3
PHY 201	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 202	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
PHY 203	Mechanics of Materials	4	CIV ENG 2210	Mechanics of Materials	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 12 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, or 1310 to satisfy the State of Missouri government requirement and a degree-specific gen ed requirement.**					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines. At least one course in either the HFA or the BSS (below) section must be selected from HISTORY 1200, 1300, or 1310.					
HIS 201* or **HIS 202*** or ART 111 or MUS 105 or THE 113 or Literature	**United States History I*** or **United States History II*** or Art Appreciation or Music Appreciation or Theater Appreciation or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	**HISTORY 1300*** or **HISTORY 1310*** or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	**American History to 1877*** or **American History Since 1877*** or Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.. At least one course in either the HFA (above) or the BSS section must be selected from HISTORY 1200, 1300, or 1310.					
HIS 102* or PHL 131 or PHL 121 or PSY 132 or ECO 202 or ECO 201 or Foreign Language	**Western Civilization II*** or Intro to Philosophy or Intro to Logic or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6	**HISTORY 1200*** or PHILOS 1105 or PHILOS 1115 or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	**Modern Western Civilization*** or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement and a degree-specific gen ed requirement.**	6
	No free electives applied to the degree.	0		Maximum Free Electives	0
	Group 2 Major Requirements	42		Group 2 Major Requirements	37
	Group 1 Core Requirements	30		Group 1 Core Requirements	26
	Total Hours	72		Total Hours*	63
				*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

John A Logan College		Semester	Missouri S&T		
EGR 101	Engineering Graphics	3	MECH ENG 1720	Intro to Engineering Design	3
CHM 151	Chemical Principles	5	CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5
PHY 201	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 202	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
PHY 203	Mechanics of Materials	4	CIV ENG 2210	Mechanics of Materials	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
HIS 201* or **HIS 202*** or ART 111 or MUS 105 or THE 113 or Literature	**United States History I*** or **United States History II*** or Art Appreciation or Music Appreciation or Theater Appreciation or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	**HISTORY 1300*** or **HISTORY 1310*** or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	**American History to 1877*** or **American History Since 1877*** or Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
HIS 101 or **HIS 102*** or GEO 112 or PHL 131 or PHL 121 or **PSC 131*** or PSY 132 or ECO 202 or ECO 201 or Foreign Language	Western Civilization I or **Western Civilization II*** or World Regional Geography or Intro to Philosophy or Intro to Logic or **American Government*** or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6	HISTORY 1100 or **HISTORY 1200*** or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or **POL SCI 1200*** or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or **Modern Western Civilization*** or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or **American Government***or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6
Humanities, Arts, and Social Sciences Select 3 hours.					
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3	HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3
	No free electives applied to the degree.	0		Maximum Free Electives	0
	Group 2 Major Requirements	33		Group 2 Major Requirements	31
	Group 1 Core Requirements	30		Group 1 Core Requirements	26
	Total Hours	63		Total Hours*	64
				*S&T advisor permission is required to transfer more than 65 credits toward the S&T Geological Engineering degree.	

Mechanical Engineering Group 2 Major Requirements

John A Logan College		Semester	Missouri S&T		
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 Applies to degree as Gen Ed Communication requirement.	3
CHM 151	Chemical Principles	5	CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5
PHY 214 or PHY 224	Intro to Circuit Analysis (3) or Electric Circuit Analysis with Lab (4)	3	ELEC ENG 2800 or ELEC ENG 2800, 2101*	Electrical Circuits or Electrical Circuits (3) and Circuit Analysis Lab* (1) *ELEC ENG 2101 is not an S&T degree requirement, will transfer as general elective credit.	3
PHY 201	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 203	Mechanics of Materials	4	CIV ENG 2210	Mechanics of Materials	3
PHY 202	Dynamics	3	MECH ENG 2360	Dynamics	3
MAT 221	Intro to Linear Algebra	3	MATH 3108	Linear Algebra I Satisfies the Advanced Math/Statistics elective requirement.	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
HIS 201* or **HIS 202*** or ART 111 or MUS 105 or THE 113 or Literature	**United States History I*** or **United States History II*** or Art Appreciation or Music Appreciation or Theater Appreciation or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	**HISTORY 1300*** or **HISTORY 1310*** or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	**American History to 1877*** or **American History Since 1877*** or Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
HIS 101 or **HIS 102*** or GEO 112 or PHL 131 or PHL 121 or **PSC 131*** or PSY 132 or ECO 202 or ECO 201 or Foreign Language	Western Civilization I or **Western Civilization II*** or World Regional Geography or Intro to Philosophy or Intro to Logic or **American Government*** or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6	HISTORY 1100 or **HISTORY 1200*** or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or **POL SCI 1200*** or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or **Modern Western Civilization*** or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or **American Government*** or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6
Humanities, Arts, and Social Sciences Select 3 hours.					
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3	HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3
	No free electives applied to the degree.	0		Maximum Free Electives	0
	Group 2 Major Requirements	42		Group 2 Major Requirements	41
	Group 1 Core Requirements	30		Group 1 Core Requirements	26
	Total Hours	72		Total Hours*	67
				*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

John A Logan College		Semester	Missouri S&T		
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 Applies to degree as Gen Ed Communication requirement.	3
PHY 201	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 203	Mechanics of Materials	4	CIV ENG 2210	Mechanics of Materials	3
CHM 151	Chemical Principles	5	CHEM 1310, 1319	General Chemistry I and Lab	5
CHM 152	Chemical Principles with Qualitative Analysis	5	CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) *CHEM 1510 is not a degree requirement, transfers as general elective credit.	3
CHM 201 or PHY 214 or PHY 224	Organic Chemistry I (5) or Intro to Circuit Analysis (3) or Electric Circuit Analysis with Lab (4) Credit hours will transfer to S&T as shown above and will apply to the degree according to degree requirements as shown at right. Extra credit hours will transfer as general elective credit.	3	CHEM 2210 or ELEC ENG 2800 or ELEC ENG 2800, 2101*	Organic Chemistry I (4) or Electrical Circuits (3) or Electrical Circuits (3) and Circuit Analysis Lab* (1) Not specifically required for the degree. CHEM 2210 or ELEC 2280 will satisfy Out-of-Department Technical Elective Requirement. *ELEC ENG 2101 is not a degree requirement; transfers as general elective credit.	3
CPS 215	Computer Science II	3	COMP SCI 1500	Computational Problem Solving	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
HIS 201* or **HIS 202*** or ART 111 or MUS 105 or THE 113 or Literature	**United States History I*** or **United States History II*** or Art Appreciation or Music Appreciation or Theater Appreciation or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	**HISTORY 1300*** or **HISTORY 1310*** or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	**American History to 1877*** or **American History Since 1877*** or Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
HIS 101 or **HIS 102*** or GEO 112 or PHL 131 or PHL 121 or **PSC 131*** or PSY 132 or ECO 202 or ECO 201 or Foreign Language	Western Civilization I or **Western Civilization II*** or World Regional Geography or Intro to Philosophy or Intro to Logic or **American Government*** or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6	HISTORY 1100 or **HISTORY 1200*** or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or **POL SCI 1200*** or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or **Modern Western Civilization*** or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or **American Government***or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6
Humanities, Arts, and Social Sciences Select 3 hours.					
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3	HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3
	No free electives applied to the degree.	0		Maximum Free Electives	0
	Group 2 Major Requirements	44		Group 2 Major Requirements	41
	Group 1 Core Requirements	30		Group 1 Core Requirements	26
	Total Hours	74		Total Hours*	68
				*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

John A Logan College		Semester	Missouri S&T		
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 Applies to degree as Gen Ed Communication requirement.	3
CHM 151	Chemical Principles	5	CHEM 1310, 1319	General Chemistry I and Lab	5
PHY 201	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 202	Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
PHY 203	Mechanics of Materials	4	CIV ENG 2210	Mechanics of Materials	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 12 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
HIS 201* or **HIS 202*** or ART 111 or MUS 105 or THE 113 or Literature	**United States History I*** or **United States History II*** or Art Appreciation or Music Appreciation or Theater Appreciation or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	**HISTORY 1300*** or **HISTORY 1310*** or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	**American History to 1877*** or **American History Since 1877*** or Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.					
HIS 101 or **HIS 102*** or GEO 112 or PHL 131 or PHL 121 or **PSC 131*** or PSY 132 or ECO 202 or ECO 201 or Foreign Language	Western Civilization I or **Western Civilization II*** or World Regional Geography or Intro to Philosophy or Intro to Logic or **American Government*** or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6	HISTORY 1100 or **HISTORY 1200*** or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or **POL SCI 1200*** or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or **Modern Western Civilization*** or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or **American Government***or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6
	No free electives applied to the degree.	0		Maximum Free Electives	0
	Group 2 Major Requirements	33		Group 2 Major Requirements	31
	Group 1 Core Requirements	30		Group 1 Core Requirements	26
	Total Hours	63		Total Hours*	57

*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

John A Logan College		Semester	Missouri S&T		
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 Applies to degree as Gen Ed Communication requirement.	3
CHM 151	Chemical Principles	5	CHEM 1310, 1319	General Chemistry I and Lab	5
MAT 221	Intro to Linear Algebra	3	MATH 3108	Linear Algebra	3
PHY 201	Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 203	Mechanics of Materials	4	CIV ENG 2210	Mechanics of Materials	3
PHY 214 or PHY 224	Intro to Circuit Analysis (3) or Electric Circuit Analysis with Lab (4)	3	ELEC ENG 2800 or ELEC ENG 2800, 2101*	Electrical Circuits or Electrical Circuits (3) and Circuit Analysis Lab* (1) *ELEC ENG 2101 is not an S&T degree requirement, will transfer as general elective credit.	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**					
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.					
HIS 201* or **HIS 202*** or ART 111 or MUS 105 or THE 113 or Literature	**United States History I*** or **United States History II*** or Art Appreciation or Music Appreciation or Theater Appreciation or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6	**HISTORY 1300*** or **HISTORY 1310*** or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	**American History to 1877*** or **American History Since 1877*** or Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines to include either ECON 1100 or 1200.					
ECO 202 or ECO 201	Principles of Microeconomics or Principles of Macroeconomics	3	ECON 1100 or ECON 1200	Principles of Microeconomics or Principles of Macroeconomics	3
HIS 101 or **HIS 102*** or GEO 112 or PHL 131 or PHL 121 or **PSC 131*** or PSY 132 or Foreign Language	Western Civilization I or **Western Civilization II*** or World Regional Geography or Intro to Philosophy or Intro to Logic or **American Government*** or General Psychology or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	3	HISTORY 1100 or **HISTORY 1200*** or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or **POL SCI 1200*** or PSYCH 1101 or Foreign Language	Early Western Civilization or **Modern Western Civilization*** or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or **American Government***or General Psychology or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	3
Humanities, Arts, and Social Sciences Select 3 hours.					
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3	HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3
	Maximum Free Electives	0		Maximum Free Electives	0
	Group 2 Major Requirements	39		Group 2 Major Requirements	38
	Group 1 Core Requirements	30		Group 1 Core Requirements	26
	Total Hours	69		Total Hours*	64
				*S&T advisor permission is required to transfer more than 69 credits toward the S&T Nuclear Engineering degree.	

Petroleum Engineering Group 2 Major Requirements

John A Logan College			Semester	Missouri S&T		
ENG 102	English Composition	3		ENGLISH 1160	Writing and Research Applies to degree as Gen Ed Communications requirement.	3
CHM 151	Chemical Principles	5		CHEM 1310*, 1319	General Chemistry I and Lab *CHEM 1310 will be substituted for CHEM 1305.	5
CPS 215	Computer Science II	3		COMP SCI 1500	Computational Problem Solving	3
PHY 201	Statics	3		CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 202	Dynamics	3		MECH ENG 2350	Engineering Mechanics-Dynamics	2
PHY 203	Mechanics of Materials	4		CIV ENG 2210	Mechanics of Materials	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**						
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.						
HIS 201* or **HIS 202*** or ART 111 or MUS 105 or THE 113 or Literature	**United States History I*** or **United States History II*** or Art Appreciation or Music Appreciation or Theater Appreciation or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6		**HISTORY 1300*** or **HISTORY 1310*** or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	**American History to 1877*** or **American History Since 1877*** or Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.						
HIS 101 or **HIS 102*** or GEO 112 or PHL 131 or PHL 121 or **PSC 131*** or PSY 132 or ECO 202 or ECO 201 or Foreign Language	Western Civilization I or **Western Civilization II*** or World Regional Geography or Intro to Philosophy or Intro to Logic or **American Government*** or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6		HISTORY 1100 or **HISTORY 1200*** or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or **POL SCI 1200*** or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or **Modern Western Civilization*** or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or **American Government***or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6
Humanities, Arts, and Social Sciences Select 3 hours.						
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3		HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3
	No free electives applied to the degree.	0			Maximum Free Electives	0
	Group 2 Major Requirements	36			Group 2 Major Requirements	34
	Group 1 Core Requirements	30			Group 1 Core Requirements	26
	Total Hours	66			Total Hours*	60
					*S&T advisor permission is required to transfer more than 69 credits toward the S&T Petroleum Engineering degree.	

Semiconductor Engineering-Device Engineering Emphasis
Group 2 Major Requirements

John A Logan College			Semester	Missouri S&T		
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 Applies to degree as Gen Ed Communication requirement.	3
CHM 151	Chemical Principles	5		CHEM 1310, 1319	General Chemistry I and Lab	5
CHM 152	Chemical Principles with Qualitative Analysis	5		CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) *CHEM 1510 is not a degree requirement, transfers as general elective credit.	3
PHY 224	Electric Circuit Analysis with Lab	4		ELEC ENG 2100*, 2101	Circuits I* (3) and Circuit Analysis Lab (1) *A passing grade on the Missouri S&T EE Advancement Exam I is required to receive credit for ELEC ENG 2100.	4
CPS 215	Computer Science II	3		COMP SCI 1500	Computational Problem Solving	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**						
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.						
HIS 201* or **HIS 202*** or ART 111 or MUS 105 or THE 113 or Literature	**United States History I*** or **United States History II*** or Art Appreciation or Music Appreciation or Theater Appreciation or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6		**HISTORY 1300*** or **HISTORY 1310*** or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	**American History to 1877*** or **American History Since 1877*** or Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.						
HIS 101 or **HIS 102*** or GEO 112 or PHL 131 or PHL 121 or **PSC 131*** or PSY 132 or ECO 202 or ECO 201 or Foreign Language	Western Civilization I or **Western Civilization II*** or World Regional Geography or Intro to Philosophy or Intro to Logic or **American Government*** or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6		HISTORY 1100 or **HISTORY 1200*** or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or **POL SCI 1200*** or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or **Modern Western Civilization*** or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or **American Government***or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6
Humanities, Arts, and Social Sciences Select 3 hours.						
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3		HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3
	Maximum Free Electives	3			Maximum Free Electives	3
	Group 2 Major Requirements	41			Group 2 Major Requirements	39
	Group 1 Core Requirements	30			Group 1 Core Requirements	26
	Total Hours	71			Total Hours*	65
					*S&T advisor permission is required to transfer more than 68 credits toward the S&T Ceramic Engineering degree.	

Semiconductor Engineering-Process Engineering Emphasis
Group 2 Major Requirements

John A Logan College			Semester	Missouri S&T		
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 Applies to degree as Gen Ed Communication requirement.	3
CHM 151	Chemical Principles	5		CHEM 1310, 1319	General Chemistry I and Lab	5
CHM 152	Chemical Principles with Qualitative Analysis	5		CHEM 1320, 1510*	General Chemistry II (3) and Qualitative Analysis (2) *CHEM 1510 is not a degree requirement, transfers as general elective credit.	3
PHY 224	Electric Circuit Analysis with Lab	4		ELEC ENG 2100*, 2101	Circuits I* (3) and Circuit Analysis Lab (1) *A passing grade on the Missouri S&T EE Advancement Exam I is required to receive credit for ELEC ENG 2100.	4
CPS 215	Computer Science II	3		COMP SCI 1500	Computational Problem Solving	3
Humanities, Arts, and Social Sciences General Education Requirements From the options listed in each group below, select 15 hours to include 6 hours Humanities and Fine Arts from at least two specific disciplines and 6 hours Behavioral and Social Sciences from at least two specific disciplines. ***At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.**						
Humanities and Fine Arts Select 6 hours from at least two specific disciplines.						
HIS 201* or **HIS 202*** or ART 111 or MUS 105 or THE 113 or Literature	**United States History I*** or **United States History II*** or Art Appreciation or Music Appreciation or Theater Appreciation or Any literature with prerequisite of no more than English Composition I. ***Satisfies the State of Missouri government requirement.**	6		**HISTORY 1300*** or **HISTORY 1310*** or ART 1180 or MUSIC 1150 or THEATRE 1190 or Literature	**American History to 1877*** or **American History Since 1877*** or Art Appreciation or Music Appreciation or Theatre via Video or Any literature with prerequisite of no more than ENGLISH 1120. ***Satisfies the State of Missouri government requirement.**	6
Behavioral and Social Sciences Select 6 hours from at least two specific disciplines.						
HIS 101 or **HIS 102*** or GEO 112 or PHL 131 or PHL 121 or **PSC 131*** or PSY 132 or ECO 202 or ECO 201 or Foreign Language	Western Civilization I or **Western Civilization II*** or World Regional Geography or Intro to Philosophy or Intro to Logic or **American Government*** or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6		HISTORY 1100 or **HISTORY 1200*** or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or **POL SCI 1200*** or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	Early Western Civilization or **Modern Western Civilization*** or World Regional Geography or Self and World: Intro to Philosophy or Logic and Reasoning: An Introduction or **American Government***or General Psychology or Principles of Microeconomics or Principles of Macroeconomics or Elementary or Intermediate Foreign Language ***Satisfies the State of Missouri government requirement.**	6
Humanities, Arts, and Social Sciences Select 3 hours.						
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3		HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, art, music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	3
	Maximum Free Electives	3			Maximum Free Electives	3
	Group 2 Major Requirements	41			Group 2 Major Requirements	39
	Group 1 Core Requirements	30			Group 1 Core Requirements	26
	Total Hours	71			Total Hours*	65
					*S&T advisor permission is required to transfer more than 68 credits toward the S&T Ceramic Engineering degree.	