John A. Logan College — Missouri S&T

General Engineering

Transfer Guide Effective as of Fall 2025

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.

	<u>John A. Logan College</u>	<u>Sen</u>	<u>nester</u>	<u>Missouri S&T</u>		
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 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 26			Total Hours	22

Group 2 - Major Requirements: Take All Courses for Major of Choice

Engineering students take all Group 1 - Core Requirements (above) and Group 2 - Major Requirements for chosen major from list below. See course requirements on following pages.

Aerospace Engineering

Architectural Engineering

Biomedical Engineering/Biomanufacturing or Biomaterials

Ceramic Engineering

Chemical Engineering and Biochemistry Emphasis

Civil Engineering

Computer Engineering

Electrical Engineering

Engineering Management
Environmental Engineering

Geological Engineering

Mechanical Engineering

Metallurgical Engineering

Mining Engineering

Nuclear Engineering

Petroleum Engineering

Engineering Major Requirements are detailed on the following pages.

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

This transfer guide is published by Missouri University of Science and Technology and is in effect as of Fall 2025.
Further information or updates are available from Missouri S&T Transfer Admissions at transfer.mst.edu, transfer@mst.edu, or 800-522-0938

	Aerospace En	gineerin	g Grou	p 2 Major Re	equirements	
	John A. Logan College		Semester		Missouri S&T	
EGR 101	Engineering Graphics			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
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
	From t 6 hours 6 hours l	he options listed in Humanities and Fin Behavioral and Socia	each group be e Arts from at le al Sciences fron	eneral Education Require elow, select 15 hours to incle east two specific disciplines at two specific disciplines	ements ude and ines.	
	*At least one course must be selected from I			•	tate of Missouri government requirement.	
			anities and F om at least two	ine Arts o specific disciplines.		
HIS 201* or	United States History I* or			HISTORY 1300* or	American History to 1877* or	
HIS 202* or ART 111 or MUS 105	United States History II* or Art Appreciation or Music Appreciation *Satisfies the State of Missouri government requirement.	6		HISTORY 1310* or ART 1180 or MUSIC 1150	American History Since 1877* or Art Appreciation or Music Understanding and Appreciation *Satisfies the State of Missouri government requirement.	6
			oral and Socia			
1110 404	Markow Obits Atom Lon	Select 6 hours fro	om at least two	specific disciplines.	Fort Western Obility House	
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	s, Arts, and Se Select 3 hou	ocial Sciences		
HASS Elective	Humanities, Arts, Social Sciences Elective: Any music, theater, English and technical communica philosophy, political science, psychology, econometymology, or foreign language.	tion, 3	23,000 0 7,000	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 Group 1 Core Requirements	39 26 Total Hours 65			Group 2 Major Requirements Group 1 Core Requirements Total Hours' *S&T advisor permission is required to transfer more than 68 credits toward the S&T Aerospace Engineering degree.	41 22 * 63

	Architectural En	ıgineerinç	g Group 2 Major	Requirements	
	John A. Logan College		<u>Semester</u>	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
	6 hours H	unanities and Fine Ar havioral and Social So TORY 1200, 1300, 13	th group below, select 12 hours to in ts from at least two specific discipline beiences from at least two specific disc 110, or POL SCI 1200 to satisfy the ties and Fine Arts	s and iplines.	
			at least two specific disciplines.		
HIS 201* or HIS 202* or ART 111 or MUS 105	United States History I* or United States History II* or Art Appreciation or Music Appreciation *Satisfies the State of Missouri government requirement.	6	HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150	American History to 1877* or American History Since 1877* or Art Appreciation or Music Understanding and Appreciation *Satisfies the State of Missouri government requirement.	6
			and Social Sciences		
		s from at least two s _l	pecific disciplines to include HISTO		
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
	No free electives applied to the degree.	0		Maximum Free Electives	0
	Group 2 Major Requirements Group 1 Core Requirements	33 26 Total Hours 59		Group 2 Major Requirements Group 1 Core Requirements T *S&T advisor permission is required to transfer more than 69 credits toward Architectural Engineering degree.	31 22 otal Hours* 53 the S&T

					omanufactirements	turing	
	John A. Logan College			Semester		Missouri S&T	
SPE 115	Speech		3		MS 1185	Principles of Speech Applies to degree as Gen Ed Communication requirement.	3
CHM 151	Chemical Principles		5	CHE	M 1310, 1319	General Chemistry I and Lab	5
CHM 152	Chemical Principles with Qualitative Analysis		5	CHE	M 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	CHE	M 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		M 2220, 2229 or 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	COM	P SCI 1500	Computational Problem Solving	3
	From th	ne options listed Humanities and I 3 hours	d in ea Fine A Beha	ach group below, s arts from at least two vioral and Social So		d	
				ities and Fine Ar at least two speci			
HIS 201* or HIS 202* or ART 111 or MUS 105	United States History I* or United States History II* or Art Appreciation or Music Appreciation *Satisfies the State of Missouri government requirement.		6	HIST ART	ORY 1300* or ORY 1310* or 1180 or IC 1150	American History to 1877* or American History Since 1877* or Art Appreciation or Music Understanding and Appreciation *Satisfies the State of Missouri government requirement.	6
		Beha	viora	I and Social Scie	ences	• • • • • • • • • • • • • • • • • • • •	
			S	elect 3 hours.			
HIS 102° 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	HIST POL PSYC ECOI ECOI	ORY 1100 or ORY 2100° or ORY 2110 or SCI 1200° or CH 1101 or N 1100 or N 1200 or gn 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 Group 1 Core Requirements	:	34 26 60			Group 2 Major Requirements Group 1 Core Requirements Total Hours* *S&T advisor permission is required to transfer more than 69 credit hours toward the degree.	31 22 53

			eering-Biomate or Requirements		
	John A. Logan College	Se	mester	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
	6 hours Huma	anities and Fine Arts 3 hours Behavior RY 1200, 1300, 1310 Humanitie	es and Fine Arts	and	
		ect 6 hours from at	least two specific disciplines.		
HIS 201* or HIS 202* or ART 111 or MUS 105	United States History I* or United States History II* or Art Appreciation or Music Appreciation *Satisfies the State of Missouri government requirement.	6	HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150	American History to 1877* or American History Since 1877* or Art Appreciation or Music Understanding and Appreciation 'Satisfies the State of Missouri government requirement.	6
			nd Social Sciences		
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.	Sele	ct 3 hours. 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 Group 1 Core Requirements Tot	46 26 al Hours 72		Group 2 Major Requirements Group 1 Core Requirements Total Hour: *S&T advisor permission is required to transfer more than 69 credits toward the S&T Biomedical Engineering degree.	42 22 s* 64

	Ceramic Engi	neering Gr	oup 2 Major Re	equirements	
	John A. Logan College		<u>nester</u>	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	Organic Chemistry I	5	CHEM 2210, 2219*	Organic Chemistry I (3) and Lab* (1) Satisfies the advanced chemistry elective requirement. *The lab is not a degree requirement, transfers as general elective credit.	3
	From the 6 hours Hu	options listed in each of the communities and Fine Arts footboard and Social Scient (FORY 1200, 1300, 1310)	•	clude s and iplines.	
			s and Fine Arts east two specific disciplines.		
HIS 201* or HIS 202* or ART 111 or MUS 105	United States History I* or United States History II* or Art Appreciation or Music Appreciation *Satisfies the State of Missouri government requirement.	6	HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150	American History to 1877* or American History Since 1877* or Art Appreciation or Music Understanding and Appreciation *Satisfies the State of Missouri government requirement.	6
	•		d Social Sciences		
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	east two specific disciplines. 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
			, and Social Sciences at 3 hours.		
HASS Elective	Humanities, Arts, Social Sciences Elective: Any hist 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. Group 2 Major Requirements Group 1 Core Requirements	0 43 26 Total Hours 69		Maximum Free Electives Group 2 Major Requirements Group 1 Core Requirements Total Hou. *S&T advisor permission is required to transfer more than 68 credits toward the S&T Ceramic Engineering degree.	0 38 22 urs* 60

	Chemical Engine	ering -	Bi	ochen			
	G	roup 2	Ma	ajor Re	equirements		
	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.	8
CPS 215	Computer Science II		3		COMP SCI 1500	Computational Problem Solving	3
	6 hours	Humanities and Behavioral and S HISTORY 1200,	Fine locial 1300,	Arts from at le Sciences from 1310, or POI	•	s and plines.	
				nities and F m at least two	ine Arts o specific disciplines.		
HIS 201* or HIS 202* or ART 111 or MUS 105	United States History I* or United States History II* or Art Appreciation or Music Appreciation *Satisfies the State of Missouri government requirement.		6		HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150	American History to 1877* or American History Since 1877* or Art Appreciation or Music Understanding and Appreciation *Satisfies the State of Missouri government requirement.	6
		Beh	avior	al and Socia	al Sciences		
		Select 6 hour	s fror	m at least two	specific disciplines.		
HIS 101 or HIS 102* or GEO 112 or PHL 131 or PHL 121 or PSC 131* or PSC 202 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 41			Maximum Free Electives	0
	Group 2 Major Requirements Group 1 Core Requirements	Total Hours	41 26 67			Group 2 Major Requirements Group 1 Core Requirements Total Hours* *S&T advisor permission is required to transfer more than 68 credits toward the S&T Chemical Engineering degree.	41 22 63

	Civil Engine	eering Group	o 2 Major Requ	uirements	
	John A. Logan College	Seme	ster	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
	From the 6 hours h	e options listed in each gro dumanities and Fine Arts fror chavioral and Social Science STORY 1200, 1300, 1310, o	-	iclude es and iplines.	
		Humanities a Select 6 hours from at least			
HIS 201* or HIS 202* or ART 111 or MUS 105	United States History I* or United States History II* or Art Appreciation or Music Appreciation *Satisfies the State of Missouri government requirement.	6	HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150	American History to 1877* or American History Since 1877* or Art Appreciation or Music Understanding and Appreciation *Satisfies the State of Missouri government requirement.	6
		Behavioral and Select 6 hours from at least			
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 Wostern 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, a Select 3			
HASS Elective	Humanities, Arts, Social Sciences Elective: Any hi music, theater, English and technical communication philosophy, political science, psychology, economic etymology, or foreign language.	on, 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	26 Total Hours 62		Group 1 Core Requirements Total Hours* *S&T advisor permission is required to transfer more than 69 credits toward the S&T Civil Engineering degree.	22 56

	Computer Engineer	ing	Group	o 2 Major I	Rec	quirements	
	John A. Logan College		Semester			Missouri S&T	
SPE 115	Speech	3		SPMS 1185		Principles of Speech	3
CHM 151	Chemical Principles	5		CHEM 1310, 1319		Applies to degree as Gen Ed Communication requirement. General Chemistry I and Lab	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 or PHY 202 or CHM 201	Statics (3) or Dynamics (3) 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 or ENG 2350 or CHEM 2210, 2219*	MECH	Engineering Mechanics-Statics (3) or Engineering Mechanics-Dynamics (2) or Organic Chemistry I (3) and Lab (1)* Satisfies a required engineering/science elective. "CHEM 2219 is not an S&T degree requirement, will transfer as general elective credit.	3
PHY 224	Electric Circuit Analysis with Lab	4		ELEC ENG 2100*, 21	101	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 Satisfies a required math elective.	3
HIS 201* or HIS 202* or ART 111 or MUS 105	*At least one course must be selected from HISTORY 1200 Select 6 ho United States History I* or United States History II* or Art Appreciation or Music Appreciation	, 1300 Huma	<mark>, 1310, or POL</mark> anities and Fi m at least two	SCI 1200 to satisfy the			6
1000 100	*Satisfies the State of Missouri government requirement.					*Satisfies the State of Missouri government requirement.	
			ral and Social	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
	Huma	nities	, Arts, and So Select 3 hours	ocial Sciences			
ENG 102	English Composition	3		ENGLISH 1160		Writing and Research	3
Electives	Maximum Free Electives Group 2 Major Requirements Group 1 Core Requirements Total Hours	3 42 26 6 68		Electives		Maximum Free Electives Group 2 Major Requirements Group 1 Core Requirements Total Hours* *S&T advisor permission is required to transfer more than 68 credits toward the S&T Computer Engineering degree.	3 42 22 64

	Electrical Enginee	ring	Group	2 Major Rec	quirements	
	John A. Logan College		Semester		Missouri S&T	
EGR 101	Engineering Graphics	3	<u>Ocmester</u>	MECH ENG 1720	Intro to Engineering Design	3
SPE 115	Speech	3		SPMS 1185	Principles of Speech	3
	· ·				Applies to degree as Gen Ed Communication requirement.	
CHM 151	Chemical Principles	5		CHEM 1310, 1319	General Chemistry I and Lab	5
CPS 215	Computer Science II	3		COMP SCI 1500	Computational Problem Solving	3
PHY 201 and PHY 202	Statics (3) and Dynamics (3)			CIV ENG 2200 and MECH ENG 2350	Engineering Mechanics-Statics (3) and Engineering Mechanics-Dynamics (2)	
BOTH of the courses above or ONE of	Both courses above combined or any one of the following courses will satisfy a required	1		BOTH of the courses above or ONE of	Both courses above combined or any one of the following courses will satisfy a required	
the courses below.	engineering science elective.	=		the courses below.	engineering science elective.	
OR	OR	3		OR	OR	3
CHM 201	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 or			CHEM 2210	Organic Chemistry I (3) and Lab (1)* *CHEM 2219 is not an S&T degree requirement; transfers as general elective credit.	
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, an	d Social	Sciences Ge	neral Education Requiren	nents	
HIS 201* or	6 hours Behavioral a *At least one course must be selected from HISTORY 12	and Social 200, 1300, Huma	Sciences from 1310, or POL anities and Fi		es.	
HIS 202* or ART 111 or MUS 105	United States History II* or Art Appreciation or Music Appreciation	6		HISTORY 1310* or ART 1180 or MUSIC 1150	American History Since 1877* or Art Appreciation or Music Understanding and Appreciation	6
	*Satisfies the State of Missouri government requirement.	B. b		10.1	*Satisfies the State of Missouri government requirement.	
			ral and Socia m 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.	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
	Hui	manities,	Arts, and So Select 3 hour	ocial Sciences		
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	26			Group 1 Core Requirements	22
	Total Ho	urs 71			*S&T advisor permission is required to transfer more than 68 credits toward the S&T Electrical Engineering degree.	67

	Engineering N	<i>l</i> lanagem	ıer	nt Gro	up 2 Major F	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	3
CHM 151	Chemical Principles		5		CHEM 1310, 1319	Applies to degree as Gen Ed Communication requirement. 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
	Humani	ties, Arts, and So	cial S	Sciences Ge	eneral Education Require	ements	
	6 ho	urs Humanities and l	Fine /	Arts from at le Sciences from	elow, select 15 hours to incleast two specific disciplines at least two specific disciplines. SCI 1200 to satisfy the SI	and lines.	
		•		nities and Fi	•	9	
					specific disciplines.		
HIS 201* or HIS 202* or ART 111 or MUS 105	United States History I* or United States History II* or Art Appreciation or Music Appreciation *Satisfies the State of Missouri government requirement.		6		HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150	American History to 1877* or American History Since 1877* or Art Appreciation or Music Understanding and Appreciation *Satisfies the State of Missouri government requirement.	6
				al and Socia			
	Select 6	hours from at leas	st two	specific dis	ciplines to include PSYCH	I 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
		Humanit		Arts, and So Select 3 hour	ocial Sciences		
ENG 102	English Composition		3	select s flour	s. ENGLISH 1160	Writing and Research	3
	No free electives applied to the degree. Group 2 Major Requirements Group 1 Core Requirements		0 39 26 65		Electives	Maximum Free Electives Group 2 Major Requirements Group 1 Core Requirements Total Hours' *S&T advisor permission is required to transfer more than 61 credits toward the S&T Engineering Management degree.	0 37 22

	Environmental E	nginee	ring Gr	oup 2 Major	Requirements	
	John A. Logan College		Semester	[Missouri S&T	
EGR 101	Engineering Graphics	3	3	MECH ENG 1720	Intro to Engineering Design	3
ENG 102 or SPE 115	English Composition or Speech	3	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	:	3	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	3	CIV ENG 2200	Engineering Mechanics-Statics	3
PHY 202	Dynamics	3	3	MECH ENG 2350	Engineering Mechanics-Dynamics	2
PHY 203	Mechanics of Materials	4	ļ	CIV ENG 2210	Mechanics of Materials	3
	6 hours Ho	umanities and F havioral and Soc TORY 1200, 13	ine Arts from at locial Sciences from	•	s and plines.	
	Ç			o specific disciplines.		
HIS 201* or HIS 202* or ART 111 or MUS 105	United States History I* or United States History II* or Art Appreciation or Music Appreciation 'satisfies the State of Missouri government requirement.	(3	HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150	American History to 1877* or American History Since 1877* or Art Appreciation or Music Understanding and Appreciation *Satisfies the State of Missouri government requirement.	6
	Select 6 hours		ioral and Sociativo specific disc	al Sciences ciplines to include HISTO	RY 1200	
HIS 102*	Western Civilization II* *Satisfies the State of Missouri Government requirement.	:		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
	No free electives applied to the degree. Group 2 Major Requirements Group 1 Core Requirements	(4 2 Total Hours 6	1 6		Maximum Free Electives Group 2 Major Requirements Group 1 Core Requirements Total Hours* *S&T advisor permission is required to transfer more than 69 credits toward the S&T Environmental Engineering degree.	0 37 22 59

	Geological En	gineeri	ng Gr	oup 2 Major Re	equirements	
	John A. Logan College		Seme	ester	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	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	s, Arts, and So	cial Science	es General Education Require	ements	
				up below, select 15 hours to inclu		
				m at least two specific disciplines		
				s from at least two specific discipl		
	*At least one course must be selected from H	•		•	ate of Missouri government requirement.	
				Ind Fine Arts		
		Select 6 nours	s from at lea	st two specific disciplines.		
HIS 201* or HIS 202* or	United States History I* or			HISTORY 1300* or HISTORY 1310* or	American History to 1877* or	
ART 111 or	United States History II* or Art Appreciation or		6	ART 1180 or	American History Since 1877* or Art Appreciation or	6
MUS 105	Music Appreciation		Ü	MUSIC 1150	Music Understanding and Appreciation	Ü
WIGG 100	*Satisfies the State of Missouri government requirement.			Modic 1100	*Satisfies the State of Missouri government requirement.	
		Beha	avioral and	Social Sciences		
		Select 6 hours	s from at lea	st two specific disciplines.		
HIS 101 or HIS 102 * or	Western Civilization I or Western Civilization II* or			HISTORY 1100 or HISTORY 1200* or	Early Western Civilization or Modern Western Civilization* or	
GEO 112 or	World Regional Geography or			HISTORY 2110 or	World Regional Geography or	
PHL 131 or	Intro to Philosophy or			PHILOS 1105 or	Self and World: Intro to Philosophy or	
PHL 121 or	Intro to Logic or			PHILOS 1115 or	Logic and Reasoning: An Introduction or	
PSC 131* or	American Government* or		6	POL SCI 1200* or	American Government*or	6
PSY 132 or	General Psychology or			PSYCH 1101 or	General Psychology or	
ECO 202 or ECO 201 or	Principles of Microeconomics or Principles of Macroeconomics or			ECON 1100 or ECON 1200 or	Principles of Microeconomics or Principles of Macroeconomics or	
Foreign Language	Elementary or Intermediate Foreign Language			Foreign Language	Elementary or Intermediate Foreign Language	
l oreign Language	*Satisfies the State of Missouri government requirement.			i oreigii Lariguage	*Satisfies the State of Missouri government requirement.	
		Humani	ties, Arts, a Select 3	nd Social Sciences hours.		
HASS Elective	Humanities, Arts, Social Sciences Elective: Any h music, theater, English and technical communicat philosophy, political science, psychology, economi etymology, or foreign language.	ion,	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		26		Group 1 Core Requirements	22
	C. Sup . Ooro requiremente	Total Hours	62		Total Hours*	
					*S&T advisor permission is required to transfer more than 65 credits toward the S&T Geological Engineering degree.	

EGR 101	John A. Logan College					
			Semester		Missouri S&T	
	Engineering Graphics	3	<u>Goilloctol</u>	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
MAT 221	Intro to Linear Algebra	3		MATH 3108	Linear Algebra I Satisfies the Advanced Math/Statistics elective requirement.	3
	6 hours Behaviora *At least one course must be selected from HISTORY	l and Socia 1200, 130 Hum	al Sciences fron D, 1310, or POL nanities and F		ines.	
HIS 201* or		o nours ii	Jili at least two	HISTORY 1300* or	American History to 4077* or	
HIS 201* or HIS 202* or ART 111 or MUS 105	United States History I* or United States History II* or Art Appreciation or Music Appreciation	6		HISTORY 1310* or ART 1180 or MUSIC 1150	American History to 1877* or American History Since 1877* or Art Appreciation or Music Understanding and Appreciation	6
	*Satisfies the State of Missouri government requirement.		oral and Socia		*Satisfies the State of Missouri government requirement.	
		6 hours fr	om at least two	specific disciplines.		
HIS 101 or HIS 102* or GEO 112 or PHL 131 or PHL 121 or	Western Civilization I or Western Civilization II* or World Regional Geography or Intro to Philosophy or Intro to Logic or	0		HISTORY 1100 or HISTORY 1200* or HISTORY 2110 or PHILOS 1105 or PHILOS 1115 or	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	0
PSC 131* or PSY 132 or ECO 202 or ECO 201 or Foreign Language	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		POL SCI 1200* or PSYCH 1101 or ECON 1100 or ECON 1200 or Foreign Language	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
	н	umanitie	s, Arts , and Se Select 3 hou	ocial Sciences s.		
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, ar music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	t, 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 Group 1 Core Requirements Total I	39 26 Hours 65			Group 2 Major Requirements Group 1 Core Requirements Total Hours* *S&T advisor permission is required to transfer more than 68 credits toward the S&T	38 22 60

	Metallurgical Engir	neerii	ng Gro	oup 2 Major F	Requirements	
	John A. Logan College		Semeste		Missouri S&T	
EGR 101 ENG 102 or SPE 115	Engineering Graphics English Composition or Speech	3		MECH ENG 1720 ENGLISH 1160 or SPMS 1185	Intro to Engineering Design 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 accordegree requirements as shown at right. Extra credit hours will transfer as general ecredit.	3 ording to elective		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
	From the optio 6 hours Humani	ns listed in ities and Fir al and Soci	each group be ne Arts from at I al Sciences fror	eneral Education Require elow, select 15 hours to inclu- east two specific disciplines a n at least two specific discipli L SCI 1200 to satisfy the St	ude and ines.	
			nanities and F			
LUC 204*		t 6 hours fr	om at least tw	o specific disciplines.	American History to 4077*	
HIS 201* or HIS 202* or ART 111 or MUS 105	United States History I* or United States History II* or Art Appreciation or Music Appreciation *Satisfies the State of Missouri government requirement.	6		HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150	American History to 1877* or American History Since 1877* or Art Appreciation or Music Understanding and Appreciation *Satisfies the State of Missouri government requirement.	6
			oral and Soci			
		t 6 hours fr	om at least tw	o 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
	ŀ	Humanitie	s, Arts, and S Select 3 hou	ocial Sciences rs.		
HASS Elective	Humanities, Arts, Social Sciences Elective: Any history, a music, theater, English and technical communication, philosophy, political science, psychology, economics, etymology, or foreign language.	art, 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	44 26			Group 2 Major Requirements	41 22
	Group 1 Core Requirements Total	Hours 70			Group 1 Core Requirements Total Hours* *S&T advisor permission is required to transfer more than 68 credits toward the S&T Metallurgical Engineering degree.	63

	Mining Engi	neering G	iroup 2 Major Re	equirements	
	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	s. Arts. and Social S	Sciences General Education Rec	quirements	
	6 hours 6 hours E	Humanities and Fine A Behavioral and Social S	ach group below, select 12 hours to Arts from at least two specific discipli Sciences from at least two specific di 1310, or POL SCI 1200 to satisfy th	ines and	
		Humar	nities and Fine Arts		
		Select 6 hours from	at least two specific disciplines.		
HIS 201* or HIS 202* or ART 111 or MUS 105	United States History I* or United States History II* or Art Appreciation or Music Appreciation *Satisfies the State of Missouri government requirement.	6	HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150	American History to 1877* or American History Since 1877* or Art Appreciation or Music Understanding and Appreciation *Satisfies the State of Missouri government requirement.	6
		Behaviora	al and Social Sciences	3	
		Select 6 hours from	at least two specific disciplines.		
HIS 101 or HIS 102* or GEO 112 or PHL 131 or PHL 131 or PSC 131* or PSC 131* or ECO 202 or ECO 202 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 Group 1 Core Requirements	33 26 Total Hours 59		Group 2 Major Requirements Group 1 Core Requirements Total Ho	31 22 urs* 53
				*S&T advisor permission is required to transfer more than 68 credits toward the S&T Mining Engineering degree.	

	Nuclear Engi	neering	Group	2 Major Red	_l uirements	
EGR 101	John A. Logan College Engineering Graphics	3	Semester	MECH ENG 1720	Missouri S&T 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 MAT 221	Chemical Principles Intro to Linear Algebra	5 3		CHEM 1310, 1319 MATH 3108	General Chemistry I and Lab Linear Algebra	5 3
PHY 201 PHY 203	Statics Mechanics of Materials	3		CIV ENG 2200 CIV ENG 2210	Engineering Mechanics-Statics 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
	6 hours H	lumanities and Fine havioral and Socia TORY 1200, 1300	Arts from at le Sciences from , 1310, or POL	•	and ines.	
			anities and Fi	ine Arts papecific disciplines.		
HIS 201* or HIS 202* or ART 111 or MUS 105	United States History I* or United States History II* or Art Appreciation or Music Appreciation *Satisfies the State of Missouri government requirement.	6		HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150	American History to 1877* or American History Since 1877* or Art Appreciation or Music Understanding and Appreciation *Satisfies the State of Missouri government requirement.	6
			ral and Socia	I Sciences specific disciplines.		
ECO 202 or ECO 201	Principles of Microeconomics or Principles of Macroeconomics	3	in at least two	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 11105 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 So Select 3 hour	ocial Sciences		
HASS Elective	Humanities, Arts, Social Sciences Elective: Any his music, theater, English and technical communication philosophy, political science, psychology, economic etymology, or foreign language.	n, 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 Group 2 Major Requirements Group 1 Core Requirements	0 39 26 Total Hours 65			Maximum Free Electives Group 2 Major Requirements Group 1 Core Requirements Total Hours *S&T advisor permission is required to transfer more than 69 credits toward the S&T Nuclear Engineering degree.	0 38 22 * 60

	Petroleum Eng	ineering Gr	oup 2 Major R	Requirements	
	John A. Logan College	Sem	ester	Missouri S&T	
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 CPS 215	Chemical Principles Computer Science II	5 3	CHEM 1310, 1319 COMP SCI 1500	General Chemistry I and Lab Computational Problem Solving	5 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
	From the 6 hours Hi	options listed in each groumanities and Fine Arts from avioral and Social Science TORY 1200, 1300, 1310, o	•	nclude es and ciplines.	
	\$		and Fine Arts ast two specific disciplines.		
HIS 201* or HIS 202* or ART 111 or MUS 105	United States History I* or United States History II* or Art Appreciation or Music Appreciation *Satisfies the State of Missouri government requirement.	6	HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150	American History to 1877* or American History Since 1877* or Art Appreciation or Music Understanding and Appreciation *Satisfies the State of Missouri government requirement.	6
			Social Sciences		
1110 404		Select 6 hours from at lea	ast two specific disciplines.	Factor Mantage Of the other an	
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
			and Social Sciences 3 hours.		
HASS Elective	Humanities, Arts, Social Sciences Elective: Any his music, theater, English and technical communicatior philosophy, political science, psychology, economics etymology, or foreign language.	1, 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 Group 1 Core Requirements	36 26 Total Hours 62		Group 2 Major Requirements Group 1 Core Requirements **Sat advisor permission is required to transfer more than 69 credits toward the Sat Petroleum Engineering degree.	34 22 56