

Clark Atlanta University — Missouri S&T

General Engineering Transfer Guide

Effective as of Fall 2020

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

Group 1 - Core Requirements: All Majors Take All Courses

Engineering students take all Group 1 - Core Requirements and Group 2 - Major Requirements for major of choice. Math prerequisites: While they are not part of Missouri S&T engineering degree requirements, algebra and trigonometry skills are critical to success in calculus. To prepare for entry into calculus, students should follow math placement testing and advising recommendations at their college.

<u>Clark Atlanta University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
MAT 111	Calculus I	4	MATH 1214	Calculus for Engineers I <small>Grade of C or better is required.</small>	4
MAT 112	Calculus II	4	MATH 1215	Calculus for Engineers II <small>Grade of C or better is required.</small>	4
MAT 211	Calculus III	4	MATH 2222	Calculus with Analytic Geometry III <small>Grade of C or better is required.</small>	4
MAT 212	Differential Equations	3	MATH 3304	Elementary Differential Equations	3
PHY 121, 121L and PHY 122, 122L and PHY 123, 123L	Physics I: Mechanics and Lab and Physics II: Elec, Magnet Lab and Physics III: Optics, Mod Phys and Lab	12	PHYSICS 1135 and PHYSICS 2135	Engineering Physics I and Engineering Physics II <small>Grade of C or better is required.</small>	8
CHE 111	General Chemistry I	4	CHEM 1310, 1319	General Chemistry I and Lab	5
EGR 101** and EGR 110**	Intro to Engineering (3) and Engineering Computer Graphics (3)	6	FR ENG 1100 and MECH ENG 1720**	StudyCareers in Engineering and Computing (1) and Engineering Design with Computer Applications (3)	4
<small>**EGR 101 and 110 must be taken in combination to receive credit for both S&T FR ENG 1100 and MECH ENG 1720. MECH ENG 1720 is not an S&T degree requirement for Computer Engineering majors.</small>			<small>**EGR 101 and 110 must be taken in combination to receive credit for both S&T FR ENG 1100 and MECH ENG 1720. MECH ENG 1720 is not an S&T degree requirement for Computer Engineering majors.</small>		
ENG 105	College Composition I	3	ENGLISH 1120	Exposition and Argumentation	3
ECO 252 or ECO 251	Principles of Microeconomics or Principles of Macroeconomics	4	ECON 1100 or ECON 1200	Principles of Microeconomics or Principles of Macroeconomics	3
Total Hours					38
Total Hours					44

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

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

Aerospace Engineering
Architectural Engineering
Ceramic Engineering
Chemical Engineering
Chemical Engineering/Biochemistry Emphasis
Civil Engineering
Computer Engineering
Electrical Engineering

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

Engineering Major Requirements are detailed on the following pages.

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

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

Aerospace Engineering Group 2 Major Requirements					
Clark Atlanta University			Semester	Missouri S&T	
HIS 211 or HIS 212 or PSC 219	History of the US Before 1865 or History of the United States Since 1865 or American Government and Politics	3		HISTORY 1300 or HISTORY 1310 or POL SCI 1200	3
ENG 106 or STA 101 or ENG 350	College Composition II or Fundamentals of Speech or Technical Writing	3		ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	3
CIS 105 , 105L	Programming Principles I and Lab	4		CS 1971, 1981	3
EGR 201	Electrical Circuit Analysis	4		EE 2800	3
EGR 211	Engineering Statics	3		CIV ENG 2200	3
MAT 214 or MAT 321	Linear Algebra or Mathematical Probability and Statistics I	3		MATH 3108 or STAT 3115	3
	Literature Elective	3			3
	<i>See your advisor for course options.</i>	3			3
	<i>No free electives applied to the degree.</i>	0			0
	Group 2 Major Requirements	26			24
	Group 1 Core Requirements	44			38
	Total Hours	70			Total Hours*
					62

*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					
Clark Atlanta University			Semester	Missouri S&T	
HIS 211 or HIS 212	History of the US Before 1865 or History of the United States Since 1865	3		HISTORY 1300 or HISTORY 1310	3
EGR 211	Engineering Statics	3		CIV ENG 2200	3
EGR 311	Engineering Dynamics	3		MECH ENG 2350	3
MAT 321	Mathematical Probability and Statistics I	3		STAT 3115	3
ENG 106 or STA 101 or HSS Elective	College Composition II or Fundamentals of Speech or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3		ENGLISH 1160 or SPMS 1185 or HSS Elective	3
	<i>No free electives applied to the degree.</i>	0			0
	Group 2 Major Requirements	15			15
	Group 1 Core Requirements	44			38
	Total Hours	59			Total Hours*
					53

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

Ceramic Engineering Group 2 Major Requirements

<u>Clark Atlanta University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIS 211 or HIS 212 or PSC 219	History of the US Before 1865 or History of the United States Since 1865 or American Government and Politics	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
EGR 211	Engineering Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
CHE 231 or CHE 421	Organic Chemistry I (4) or Inorganic Chemistry and Lab (3)	3-4	CHEM 2210 or CHEM 2310	Organic Chemistry I (4) or Inorganic Chemistry I (3) <small>(Not a specific requirement. Will satisfy the advanced chemistry elective requirement.)</small>	3
CHE 112	General Chemistry II	4	CHEM 1320	General Chemistry II	3
MAT 321	Mathematical Probability and Statistics I	3	STAT 3115	Engineering Statistics <small>(or any statistics course 3000-level or higher. Satisfies statistics elective requirement.)</small>	3
ENG 106 or STA 101 or HSS Elective	College Composition II or Fundamentals of Speech or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language <i>See your advisor for course options.</i>	3 3	ENGLISH 1160 or SPMS 1185 or HSS Elective	Writing and Research or Public Speaking or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3
	<i>No free electives applied to the degree.</i>	0		Humanities/Social Science Elective	3
	Group 2 Major Requirements	19		Maximum Free Electives	0
	Group 1 Core Requirements	44		Group 2 Major Requirements	21
	Total Hours	63		Group 1 Core Requirements	38
				Total Hours*	59

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

Chemical Engineering Group 2 Major Requirements

<u>Clark Atlanta University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 106 or ENG 350	College Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIS 211 or HIS 212 or PSC 219	History of the US Before 1865 or History of the United States Since 1865 or American Government and Politics	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
CHE 112	General Chemistry II	4	CHEM 1320	General Chemistry II	3
CHE 231	Organic Chemistry I	4	CHEM 2210, 2219	Organic Chemistry I and Lab	4
CHE 232 or CHE 211 or BIO 375 or BIO 233	Organic Chemistry II (4) or Analytical Chemistry I (4) or Cell and Molecular Biology (3) or Microbiology (4) <small>(Will satisfy science elective requirement. Select up to 9 hours from these options.)</small>	8	CHEM 2220 or CHEM 2510 or BIO SCI 2213, 2219 or BIO SCI 3313, 3319	Organic Chemistry II or Analytical Chemistry (4) or Cell Biology and Lab (4) or Microbiology and Lab (5) <small>(Will satisfy science elective requirement. Select up to 9 hours from these options.)</small>	8
CIS 105 or CIS 123 or CIS 105, 105L or CIS 106, 106L	Programming Principles I or Data Structures or Programming Principles I and Lab or Programming Principles II and Lab	3	CS 1971, 1981 or CS 1500	Intro to Programming Method and Lab (C++) or Computational Problem Solving	3
MAT 321	Mathematical Probability and Statistics I	3	STAT 3115	Engineering Statistics <small>(Will be substituted for STAT 3113.)</small>	3
STA 101	Fundamentals of Speech <i>See your advisor for course options.</i>	3 3	SP&MS 1185	Principles of Speech Humanities/Social Science Elective	3 3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	34		Group 2 Major Requirements	33
	Group 1 Core Requirements	44		Group 1 Core Requirements	38
	Total Hours	78		Total Hours*	71

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

Chemical Engineering - Biochemical Engineering Emphasis Group 2 Major Requirements

<u>Clark Atlanta University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 106 or ENG 350	College Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIS 211 or HIS 212 or PSC 219	History of the US Before 1865 or History of the United States Since 1865 or American Government and Politics	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
CHE 112	General Chemistry II	4	CHEM 1320	General Chemistry II	3
CHE 231	Organic Chemistry I	4	CHEM 2210, 2219	Organic Chemistry I and Lab	4
CHE 232 or CHE 211 or BIO 375 or BIO 233	Organic Chemistry II (4) or Analytical Chemistry I (4) or Cell and Molecular Biology (3) or Microbiology (4) <small>(Will satisfy science elective requirement. Select up to 9 hours from these options.)</small>	8	CHEM 2220 or CHEM 2510 or BIO SCI 2213, 2219 or BIO SCI 3313, 3319	Organic Chemistry II or Analytical Chemistry (4) or Cell Biology and Lab (4) or Microbiology and Lab (5) <small>(Will satisfy science elective requirement. Select up to 9 hours from these options.)</small>	8
CIS 105 or CIS 123 or CIS 105, 105L or CIS 106, 106L	Programming Principles I or Data Structures or Programming Principles I and Lab or Programming Principles II and Lab	3	CS 1971, 1981 or CS 1500	Intro to Programming Method and Lab (C++) or Computational Problem Solving	3
MAT 321	Mathematical Probability and Statistics I	3	STAT 3115	Engineering Statistics <small>(Will be substituted for STAT 3113.)</small>	3
STA 101	Fundamentals of Speech	3	SP&MS 1185	Principles of Speech	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	34		Group 2 Major Requirements	33
	Group 1 Core Requirements	44		Group 1 Core Requirements	38
	Total Hours	78		Total Hours*	71

*S&T advisor permission is required to transfer more than 71 credits toward the S&T Chemical/Biochemical Engineering degree.

Civil Engineering Group 2 Major Requirements

<u>Clark Atlanta University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 106 or STA 101 or ENG 350	College Composition II or Fundamentals of Speech or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Public Speaking or Technical Writing	3
HIS 211 or HIS 212 or PSC 219	History of the US Before 1865 or History of the United States Since 1865 or American Government and Politics	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
EGR 211	Engineering Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 311	Engineering Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	3
MAT 321	Mathematical Probability and Statistics I	3	STAT 3115	Engineering Statistics <small>(Will be substituted for STAT 3113.)</small>	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	18		Group 2 Major Requirements	18
	Group 1 Core Requirements	44		Group 1 Core Requirements	38
	Total Hours	62		Total Hours*	56

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

Computer Engineering Group 2 Major Requirements

<u>Clark Atlanta University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
STA 101	Fundamentals of Speech	3	SPMS 1185	Public Speaking	3
ENG 106 or ENG 350	College Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIS 211 or HIS 212 or PSC 219	History of the US Before 1865 or History of the United States Since 1865 or American Government and Politics	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
CIS 105 or CIS 123 or CIS 105, 105L or CIS 106, 106L	Programming Principles I or Data Structures or Programming Principles I and Lab or Programming Principles II and Lab	3	CS 1971, 1981 or CS 1500	Intro to Programming Method and Lab (C++) or Computational Problem Solving	3
EGR 211 and EGR 321 <small>(BOTH of the courses above or ONE of the courses below.)</small> OR	Engineering Statics (3) and Engineering Dynamics (3) <small>(Both courses above combined or any one of the following courses will satisfy a required engineering science elective.)</small> OR	3	CIV ENG 2200 and MECH ENG 2350 <small>(BOTH of the courses above or ONE of the courses below.)</small> OR	Engineering Mechanics-Statics (3) and Engineering Mechanics-Dynamics (3) <small>(Both courses above combined or any one of the following courses will satisfy a required engineering science elective.)</small> OR	3
PHY 211 or CHE 231 or BIO 375 or BIO 312	Modern Physics I (3) Organic Chemistry I (4) or Cell Biology (3) or Genetics I (3)	3	PHYSICS 2311 or CHEM 2210 or BIO SCI 2213 or BIO SCI 2223	Modern Physics I (3) Organic Chemistry I (4) or Cell Biology (3) or General Genetics (3)	3
EGR 201	Electrical Circuit Analysis	4	EE 2100**	Circuits I **A passing grade on the Missouri S&T EE Advancement Exam I is required to receive credit for EE 2100.	3
MAT 214	Linear Algebra	3	MATH 3108	Linear Algebra <small>(Will satisfy a required math elective.)</small>	3
MAT 321	Mathematical Probability and Statistics I	3	STAT 3115	Engineering Statistics <small>(Will be substituted for STAT 3117.)</small>	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Maximum Free Electives	3
	Group 2 Major Requirements	31		Group 2 Major Requirements	30
	Group 1 Core Requirements	44		Group 1 Core Requirements	38
	Total Hours	75		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

<u>Clark Atlanta University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
STA 101	Fundamentals of Speech	3	SPMS 1185	Public Speaking	3
ENG 106 or ENG 350	College Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIS 211 or HIS 212 or PSC 219	History of the US Before 1865 or History of the United States Since 1865 or American Government and Politics	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
EGR 211 and EGR 321 <small>(BOTH of the courses above or ONE of the courses below.)</small> OR	Engineering Statics (3) and Engineering Dynamics (3) <small>(Both courses above combined or any one of the following courses will satisfy a required engineering science elective.)</small> OR	3	CIV ENG 2200 and MECH ENG 2350 <small>(BOTH of the courses above or ONE of the courses below.)</small> OR	Engineering Mechanics-Statics (3) and Engineering Mechanics-Dynamics (3) <small>(Both courses above combined or any one of the following courses will satisfy a required engineering science elective.)</small> OR	3
PHY 211 or CHE 231 or BIO 375 or BIO 312	Modern Physics I (3) Organic Chemistry I (4) or Cell Biology (3) or Genetics I (3)	3	PHYSICS 2311 or CHEM 2210 or BIO SCI 2213 or BIO SCI 2223	Modern Physics I (3) Organic Chemistry I (4) or Cell Biology (3) or General Genetics (3)	3
CIS 123 or CIS 105, 105L or CIS 106, 106L	Programming Principles I or Data Structures or Programming Principles I and Lab or Programming Principles II and Lab	3	CS 1500	Computational Problem Solving	3
EGR 201	Electrical Circuit Analysis	4	EE 2100**	Circuits I **A passing grade on the Missouri S&T EE Advancement Exam I is required to receive credit for EE 2100.	3
MAT 214	Linear Algebra	3	MATH 3108	Linear Algebra	3
MAT 321	Mathematical Probability and Statistics I	3	STAT 3115	Engineering Statistics <small>(Will be substituted for STAT 3117.)</small>	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Maximum Free Electives	3
	Group 2 Major Requirements	31		Group 2 Major Requirements	30
	Group 1 Core Requirements	44		Group 1 Core Requirements	38
	Total Hours	75		Total Hours*	68

*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					
Clark Atlanta University		Semester	Missouri S&T		
PSY 211	General Psychology	3	PSYCH 1101	General Psychology	3
HIS 211 or HIS 212 or PSC 219	History of the US Before 1865 or History of the United States Since 1865 or American Government and Politics	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
ENG 106 or STA 101 or ENG 350	College Composition II or Fundamentals of Speech or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
CIS 105 , 105L	Programming principles I and Lab	4	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
EGR 201	Electrical Circuit Analysis	4	EE 2800	Circuit Analysis I	3
EGR 211	Engineering Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 311	Engineering Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	3
MAT 321	Mathematical Probability and Statistics I	3	STAT 3115	Engineering Statistics	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Maximum Free Electives	3
	Group 2 Major Requirements	32		Group 2 Major Requirements	30
	Group 1 Core Requirements	44		Group 1 Core Requirements	38
	Total Hours	76		Total Hours*	68

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

Environmental Engineering Group 2 Major Requirements					
Clark Atlanta University		Semester	Missouri S&T		
ENG 106 or STA 101 or ENG 350	College Composition II or Fundamentals of Speech or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Public Speaking or Technical Writing	3
HIS 211 or HIS 212	History of the US Before 1865 or History of the United States Since 1865	3	HISTORY 1300 or HISTORY 1310	American History to 1877 or American History since 1877	3
CHE 112	General Chemistry II	4	CHEM 1320	General Chemistry II	3
BIO 111	General Biology I	4	BIO SCI 1113	General Biology	4
EGR 211	Engineering Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 311	Engineering Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	3
MAT 321	Mathematical Probability and Statistics I	3	STAT 3115	Engineering Statistics (Will be substituted for STAT 3113.)	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	26		Group 2 Major Requirements	25
	Group 1 Core Requirements	44		Group 1 Core Requirements	38
	Total Hours	70		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

<u>Clark Atlanta University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 106 or STA 101 or ENG 350	College Composition II or Fundamentals of Speech or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Public Speaking or Technical Writing	3
HIS 211 or HIS 212 or PSC 219	History of the US Before 1865 or History of the United States Since 1865 or American Government and Politics	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
EGR 211	Engineering Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
EGR 311	Engineering Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	3
BIO 111 or CHE 112 or CHE 231	General Biology I or General Chemistry II or Organic Chemistry I <small>or any 3-hour course in chemistry, geochemistry, or biology. Satisfies chemistry/geochemistry elective requirement.</small>	4	BIO SCI 1113 or CHEM 1320 or CHEM 2210	General Biology or General Chemistry II or Organic Chemistry I <small>or any 3-hour course in chemistry, geochemistry, or biology. Satisfies chemistry/geochemistry elective requirement.</small>	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	22		Group 2 Major Requirements	21
	Group 1 Core Requirements	44		Group 1 Core Requirements	38
	Total Hours	66		Total Hours*	59

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

Mechanical Engineering Group 2 Major Requirements

<u>Clark Atlanta University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HIS 211 or HIS 212 or PSC 219	History of the US Before 1865 or History of the United States Since 1865 or American Government and Politics	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
ENG 106 or STA 101 or ENG 350	College Composition II or Fundamentals of Speech or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Principles of Speech or Technical Writing	3
CIS 105 , 105L	Programming principles I and Lab	4	CS 1971, 1981	Intro to Programming Method and Lab (C++)	3
EGR 201	Electrical Circuit Analysis	4	EE 2800	Circuit Analysis I	3
EGR 211	Engineering Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
MAT 214 or MAT 321	Linear Algebra or Mathematical Probability and Statistics I	3	MATH 3108 or STAT 3115	Linear Algebra I or Engineering Statistics <small>(Will satisfy the Advanced Math/Comp Sci elective requirement.)</small>	3
	Literature Elective	3		Literature Elective	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	26		Group 2 Major Requirements	24
	Group 1 Core Requirements	44		Group 1 Core Requirements	38
	Total Hours	70		Total Hours*	62

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

Metallurgical Engineering Group 2 Major Requirements

<u>Clark Atlanta University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 106 or STA 101 or ENG 350	College Composition II or Fundamentals of Speech or Technical Writing	3	ENGLISH 1160 or SPMS 1185 or ENGLISH 3560	Writing and Research or Public Speaking or Technical Writing	3
HIS 211 or HIS 212 or PSC 219	History of the US Before 1865 or History of the United States Since 1865 or American Government and Politics	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
EGR 211	Engineering Statics	3	CIV ENG 2200	Engineering Mechanics-Statics	3
MAT 321	Mathematical Probability and Statistics I	3	STAT 3115	Engineering Statistics	3
CHE 112	General Chemistry II	4	CHEM 1320	General Chemistry II	3
CHE 231 or CHE 421 or EGR 201 or PHY 211	Organic Chemistry I (4) or <i>Inorganic Chemistry and Lab (3) or</i> Electrical Circuit Analysis (4) or Modern Physics (3)	3-4	CHEM 2210 or CHEM 2310 or EE 2800 or PHYSICS 2311	Organic Chemistry I (4) or Inorganic Chemistry I (3) or Electrical Circuits (3) or Modern Physics I (3)	3
				<i>Not specifically required for the degree but will satisfy Out-of-Department Technical Elective Requirement.</i>	
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	5		Maximum Free Electives	5
	Group 2 Major Requirements	27		Group 2 Major Requirements	29
	Group 1 Core Requirements	44		Group 1 Core Requirements	38
	Total Hours	71		Total Hours*	67

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

Mining Engineering Group 2 Major Requirements

<u>Clark Atlanta University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 106 or ENG 350	College Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing	3
HIS 211 or HIS 212 or PSC 219	History of the US Before 1865 or History of the United States Since 1865 or American Government and Politics	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
MAT 321	Mathematical Probability and Statistics I	3	STAT 3115	Engineering Statistics	3
EGR 211	Engineering Statics	3	CIV ENG 2200*	Engineering Mechanics-Statics	3
EGR 311	Engineering Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	21		Group 2 Major Requirements	21
	Group 1 Core Requirements	44		Group 1 Core Requirements	38
	Total Hours	65		Total Hours*	59

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

Nuclear Engineering Group 2 Major Requirements

<u>Clark Atlanta University</u>		<u>Semester</u>	<u>Missouri S&T</u>	
ENG 106 or ENG 350	College Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing
HIS 211 or HIS 212 or PSC 219	History of the US Before 1865 or History of the United States Since 1865 or American Government and Politics	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government
MAT 214	Linear Algebra	3	MATH 3108	Linear Algebra
EGR 211	Engineering Statics	3	CIV ENG 2200	Engineering Mechanics-Statics
MAT 321	Mathematical Probability and Statistics I	3	STAT 3115	Engineering Statistics
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective
	<i>See your advisor for course options.</i>	6		Maximum Free Electives
	Group 2 Major Requirements	27		Group 2 Major Requirements
	Group 1 Core Requirements	44		Group 1 Core Requirements
	Total Hours	71		Total Hours*

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

Petroleum Engineering Group 2 Major Requirements

<u>Clark Atlanta University</u>		<u>Semester</u>	<u>Missouri S&T</u>	
ENG 106 or ENG 350	College Composition II or Technical Writing	3	ENGLISH 1160 or ENGLISH 3560	Writing and Research or Technical Writing
HIS 211 or HIS 212 or PSC 219	History of the US Before 1865 or History of the United States Since 1865 or American Government and Politics	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government
EGR 211	Engineering Statics	3	CIV ENG 2200	Engineering Mechanics-Statics
EGR 311	Engineering Dynamics	3	MECH ENG 2350	Engineering Mechanics-Dynamics
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective
	<i>See your advisor for course options.</i>	3		Humanities/Social Science Elective
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives
	Group 2 Major Requirements	18		Group 2 Major Requirements
	Group 1 Core Requirements	44		Group 1 Core Requirements
	Total Hours	62		Total Hours*

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