

Hannibal-LaGrange University — Missouri S&T

General Engineering Transfer Guide

Effective as of Fall 2023

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>Hannibal-LaGrange University</u>			<u>Semester</u>	<u>Missouri S&T</u>			
MTH 185	Analytic Geometry and Calculus I	5		MATH 1214	Calculus I	4	
MTH 186	Calculus II	5		MATH 1215	Calculus II	4	
MTH 215	Calculus III	5		MATH 2222	Calculus III	4	
MTH 223	Differential Equations	3		MATH 3304	Elementary Differential Equations	3	
CHM 135	College Chemistry I	5		CHEM 1310, 1319	General Chemistry I and Lab	5	
ENG 104	English Composition I	3		ENGLISH 1120	Exposition and Argumentation	3	
ECO 223 or	Principles of Economics II (Micro) or	3		ECON 1100 or	Principles of Microeconomics or	3	
ECO 213	Principles of Economics I (Macro)	3		ECON 1200	Principles of Macroeconomics	3	
Total Hours			29	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
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 art, English and technical communication, etymology, foreign language, music, philosophy, speech and media studies, or theatre. Your campus may have additional acceptable options. Consult with your advisor or email transfer@mst.edu with questions. See Missouri S&T online catalog at <https://catalog.mst.edu/undergraduate/degreeprogramsandcourses/> for more information.

Aerospace Engineering Group 2 Major Requirements

<u>Hannibal-LaGrange University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HST 213 or HST 223 or PLSC 113	US History I or US History II or Intro to Government	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 CAS 101	English Composition II or Intro to Speech Communication	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
MTH 354	Linear Algebra	3	MATH 3108	Linear Algebra I or (Will satisfy the Advanced Math/Comp Sci elective requirement.)	3
	Literature Elective	3		Literature Elective	3
	Ethics Elective	3		Ethics Elective Engineering, business, bio, social or other ethics approved by advisor.	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	15		Group 2 Major Requirements	15
	Group 1 Core Requirements	29		Group 1 Core Requirements	26
	Total Hours	44		Total Hours*	41

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

Architectural Engineering Group 2 Major Requirements

<u>Hannibal-LaGrange University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HST 213 or HST 223	US History I or US History II No HLGU equivalency to S&T HISTORY 1200*	3	HISTORY 1200* (or HISTORY 1300 or HISTORY 1310)	Modern Western Civilization* (or American History to 1877 or American History since 1877) *HISTORY 1200 is preferred; 1300 or 1310 will also be accepted.	3
HSS Elective	Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3	HSS Elective	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		Maximum Free Electives	0
	Group 2 Major Requirements	6		Group 2 Major Requirements	6
	Group 1 Core Requirements	29		Group 1 Core Requirements	26
	Total Hours	35		Total Hours*	32

*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>Hannibal-LaGrange University</u>		<u>Semester</u>	<u>Missouri S&T</u>	
HST 213 or HST 223 or PLSC 113	US History I or US History II or Intro to Government	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government
CHM 335	Organic Chemistry I	5	CHEM 2210	Organic Chemistry I <small>(Will satisfy the advanced chemistry elective requirement.)</small>
CHM 145	College Chemistry II	5	CHEM 1320	General Chemistry II
ENG 106 or CAS 101 or HSS Elective	English Composition II or Intro to Speech Communication 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	Writing and Research or Principles of Speech or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language
	Humanities/Social Science Elective	3		Humanities/Social Science Elective
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives
	Group 2 Major Requirements	19		Group 2 Major Requirements
	Group 1 Core Requirements	29		Group 1 Core Requirements
	Total Hours	48		Total Hours*
				41

*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>Hannibal-LaGrange University</u>		<u>Semester</u>	<u>Missouri S&T</u>	
HST 213 or HST 223 or PLSC 113	US History I or US History II or Intro to Government	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government
CHM 145	College Chemistry II	5	CHEM 1320	General Chemistry II
CHM 335	Organic Chemistry I	5	CHEM 2210, 2219*	Organic Chemistry I and Lab* <small>*The lab is not required for the degree, will transfer as 1 of the 9 science elective credits (below) .</small>
CHM 345	Organic Chemistry II	5	CHEM 2220	Organic Chemistry II <small>(Will satisfy science elective requirement. Select up to 9 hours from these options or CHEM 2219 Organic Chemistry Lab.)</small>
CSC 326	Programming in C++	3	CS 1500	Computational Problem Solving
CAS 101	Intro to Speech Communication	3	SP&MS 1185	Principles of Speech
	Humanities/Social Science Elective	3		Humanities/Social Science Elective
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives
	Group 2 Major Requirements	27		Group 2 Major Requirements
	Group 1 Core Requirements	29		Group 1 Core Requirements
	Total Hours	56		Total Hours*
				48

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

Chemical Engineering - Biochemical Engineering Emphasis Group 2 Major Requirements

<u>Hannibal-LaGrange University</u>		<u>Semester</u>	<u>Missouri S&T</u>	
HST 213 or HST 223 or PLSC 113	US History I or US History II or Intro to Government	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government
CHM 145	College Chemistry II	5	CHEM 1320	General Chemistry II
CHM 335	Organic Chemistry I	5	CHEM 2210, 2219*	Organic Chemistry I (3) and Lab* (1) <small>*The lab is not required for the degree, will transfer as 1 of the 9 science elective credits (below) .</small>
CHM 345	Organic Chemistry II	5	CHEM 2220	Organic Chemistry II <small>(Will satisfy science elective requirement. Select up to 9 hours from these options or CHEM 2219 Organic Chemistry Lab.)</small>
CAS 101	Intro to Speech Communication	3	SP&MS 1185	Principles of Speech
	Humanities/Social Science Elective	3		Humanities/Social Science Elective
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives
	Group 2 Major Requirements	24		Group 2 Major Requirements
	Group 1 Core Requirements	29		Group 1 Core Requirements
	Total Hours	53		Total Hours*
				45

*S&T advisor permission is required to transfer more than 70 credits toward the S&T Chemical/Biochemical Engineering degree.

Civil Engineering Group 2 Major Requirements

<u>Hannibal-LaGrange University</u>		<u>Semester</u>	<u>Missouri S&T</u>	
ENG 106 or CAS 101	English Composition II or Intro to Speech Speech Communication	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech
HST 213 or HST 223 or PLSC 113	US History I or US History II or Intro to Government	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government
	Humanities/Social Science Elective	3		Humanities/Social Science Elective
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives
	Group 2 Major Requirements	9		Group 2 Major Requirements
	Group 1 Core Requirements	29		Group 1 Core Requirements
	Total Hours	38		Total Hours*
				35

*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>Hannibal-LaGrange University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
CAS 101	Intro to Speech Communication	3	SPMS 1185	Principles of Speech	3
ENG 106	English Composition II	3	ENGLISH 1160	Writing and Research	3
HST 213 or HST 223 or PLSC 113	US History I or US History II or Intro to Government	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
CSC 326	Programming in C++	3	CS 1500	Computational Problem Solving	3
CHM 335	Organic Chemistry I	5	CHEM 2210	Organic Chemistry I <small>Satisfies a required engineering/science elective.</small>	3
MAT 354	Linear Algebra	3	MATH 3108	Linear Algebra <small>(Will satisfy a required math elective.)</small>	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	Maximum Free Electives	3		Maximum Free Electives	3
	Group 2 Major Requirements	26		Group 2 Major Requirements	24
	Group 1 Core Requirements	29		Group 1 Core Requirements	26
	Total Hours	55		Total Hours*	50

*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>Hannibal-LaGrange University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
CAS 101	Intro to Speech Communication	3	SPMS 1185	Principles of Speech	3
ENG 106	English Composition II	3	ENGLISH 1160	Writing and Research	3
HST 213 or HST 223 or PLSC 113	US History I or US History II or Intro to Government	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
CSC 326	Programming in C++	3	CS 1500	Computational Problem Solving	3
CHM 335	Organic Chemistry I	5	CHEM 2210	Organic Chemistry I	3
MAT 354	Linear Algebra	3	MATH 3108	Linear Algebra	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	Maximum Free Electives	3		Maximum Free Electives	3
	Group 2 Major Requirements	26		Group 2 Major Requirements	24
	Group 1 Core Requirements	29		Group 1 Core Requirements	26
	Total Hours	55		Total Hours*	50

*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

Engineering Management Group 2 Major Requirements					
<u>Hannibal-LaGrange University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
PSY 113	General Psychology	3	PSYCH 1101	General Psychology	3
HST 213 or	US History I or		HISTORY 1300 or	American History to 1877 or	
HST 223 or	US History II or	3	HISTORY 1310 or	American History since 1877 or	3
PLSC 113	Intro to Government		POL SCI 1200	American Government	
CAS 101	Intro to Speech Communication	3	SPMS 1185	Principles of Speech	3
ENG 106	English Composition II	3	ENGLISH 1160	Writing and Research	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	Maximum Free Electives	3		Maximum Free Electives	3
	Group 2 Major Requirements	18		Group 2 Major Requirements	18
	Group 1 Core Requirements	29		Group 1 Core Requirements	26
	Total Hours	47		Total Hours*	44

*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

Environmental Engineering Group 2 Major Requirements					
<u>Hannibal-LaGrange University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 106 or	English Composition II or		ENGLISH 1160 or	Writing and Research or	
CAS 101	Intro to Speech Communication	3	SPMS 1185	Principles of Speech	3
HST 213 or	US History I or		HISTORY 1300 or	American History to 1877 or	
HST 223	US History II	3	HISTORY 1310	American History since 1877	3
CHM 145	College Chemistry II	5	CHEM 1320	General Chemistry II	3
BIO 105	General Biology	3	BIO SCI 1113	General Biology	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	17		Group 2 Major Requirements	15
	Group 1 Core Requirements	29		Group 1 Core Requirements	26
	Total Hours	46		Total Hours*	41

*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>Hannibal-LaGrange University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HST 213 or HST 223 or PLSC 113	US History I or US History II or Intro to Government	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
BIO 105 or CHM 145 or CHM 335	General Biology or College Chemistry II or Organic Chemistry II	5	BIO SCI 1113 or CHEM 1320 or CHEM 2210	General Biology or General Chemistry II or Organic Chemistry I or any 3-hour course in chemistry, geochemistry, or biology. Satisfies chemistry/geochemistry elective requirement.	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	14		Group 2 Major Requirements	12
	Group 1 Core Requirements	29		Group 1 Core Requirements	26
	Total Hours	43		Total Hours*	38

*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>Hannibal-LaGrange University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
HST 213 or HST 223 or PLSC 113	US History I or US History II or Intro to Government	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 CAS 101	English Composition II or Intro to Speech Communication	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
MTH 354	Linear Algebra	3	MATH 3108	Linear Algebra I or (Will satisfy the Advanced Math/Computer Science elective requirement.)	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	12		Group 2 Major Requirements	12
	Group 1 Core Requirements	29		Group 1 Core Requirements	26
	Total Hours	41		Total Hours*	38

*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>Hannibal-LaGrange University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 106 or CAS 101	English Composition II or Intro to Speech Communication	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
HST 213 or HST 223 or PLSC 113	US History I or US History II or Intro to Government	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
CHM 145	College Chemistry II	5	CHEM 1320	General Chemistry II	3
CHM 335	Organic Chemistry I	5	CHEM 2210	Organic Chemistry I <i>Not specifically required for the degree but will satisfy Out-of-Department Technical Elective Requirement.</i>	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	Maximum Free Electives	5		Maximum Free Electives	3
	Group 2 Major Requirements	27		Group 2 Major Requirements	21
	Group 1 Core Requirements	29		Group 1 Core Requirements	26
	Total Hours	56		Total Hours*	47

*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>Hannibal-LaGrange University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 106	English Composition II	3	ENGLISH 1160	Writing and Research	3
HST 213 or HST 223 or PLSC 113	US History I or US History II or Intro to Government	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	12		Group 2 Major Requirements	12
	Group 1 Core Requirements	29		Group 1 Core Requirements	26
	Total Hours	41		Total Hours*	38

*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>Hannibal-LaGrange University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 106 or CAS 101	English Composition II or Intro to Speech Communication	3	ENGLISH 1160 or SPMS 1185	Writing and Research or Principles of Speech	3
HST 213 or HST 223 or PLSC 113	US History I or US History II or Intro to Government	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
MTH 354	Linear Algebra	3	MATH 3108	Linear Algebra	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	Maximum Free Electives	6		Maximum Free Electives	6
	Group 2 Major Requirements	21		Group 2 Major Requirements	21
	Group 1 Core Requirements	29		Group 1 Core Requirements	26
	Total Hours	50		Total Hours*	47

*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>Hannibal-LaGrange University</u>		<u>Semester</u>	<u>Missouri S&T</u>		
ENG 106	English Composition II	3	ENGLISH 1160	Writing and Research	3
HST 213 or HST 223 or PLSC 113	US History I or US History II or Intro to Government	3	HISTORY 1300 or HISTORY 1310 or POL SCI 1200	American History to 1877 or American History since 1877 or American Government	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	12		Group 2 Major Requirements	12
	Group 1 Core Requirements	29		Group 1 Core Requirements	26
	Total Hours	41		Total Hours*	38

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