

# Hannibal-LaGrange 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>Hannibal-LaGrange University</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>			
MTH 185	Analytic Geometry and Calculus I	5	MATH 1214	Calculus for Engineers I <small>Grade of C or better is required.</small>	4	
MTH 186	Calculus II	5	MATH 1215	Calculus for Engineers II <small>Grade of C or better is required.</small>	4	
MTH 215	Calculus III	5	MATH 2222	Calculus with Analytic Geometry III <small>Grade of C or better is required.</small>	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 ECO 213	Principles of Economics II (Micro) or Principles of Economics I (Macro)	3	ECON 1100 or ECON 1200	Principles of Microeconomics or 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 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](http://ugs.mst.edu). Your campus may have additional acceptable options. Consult with your advisor or email [transfer@mst.edu](mailto:transfer@mst.edu) with questions.

## Aerospace Engineering Group 2 Major Requirements

	<u>Hannibal-LaGrange University</u>	<u>Semester</u>		<u>Missouri S&amp;T</u>
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
PLSC 113	Intro to Government		POL SCI 1200	American Government
ENG 106 or	English Composition II or	3	ENGLISH 1160 or	Writing and Research or
CAS 101	Intro to Speech Communication		SPMS 1185	Principles of Speech
MTH 354	Linear Algebra	3	MATH 3108	Linear Algebra I
	Literature Elective	3		(Will satisfy the Advanced Math/Comp Sci elective requirement.)
	Ethics Elective	3		Literature Elective
	<i>No free electives applied to the degree.</i>	0		Ethics Elective
	Group 2 Major Requirements	15		Maximum Free Electives
	Group 1 Core Requirements	29		Group 2 Major Requirements
	Total Hours	44		Group 1 Core Requirements
				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&amp;T</u>
HST 213 or	US History I or		HISTORY 1200*	Modern Western Civilization*
HST 223	US History II	3	(or HISTORY 1300 or	(or American History to 1877 or
	No HLGU equivalency to S&T HISTORY 1200*		HISTORY 1310)	American History since 1877)
				*HISTORY 1200 is preferred; 1300 or 1310 will also be accepted.
ENG 106 or	English Composition II or		ENGLISH 1160 or	Writing and Research or
CAS 101 or	Intro to Speech Communication or		SPMS 1185 or	Public Speaking or
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
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives
	Group 2 Major Requirements	6		Group 2 Major Requirements
	Group 1 Core Requirements	29		Group 1 Core Requirements
	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&amp;T</u>
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
PLSC 113	Intro to Government		POL SCI 1200	American Government
CHM 335	Organic Chemistry I	5	CHEM 2210	Organic Chemistry I (4)
CHM 145	College Chemistry II	5		(Not a specific requirement. Will satisfy the advanced chemistry elective requirement.)
			CHEM 1320	General Chemistry II
			PHYS 2305	Intro to Modern Physics
ENG 106 or	English Composition II or		ENGLISH 1160 or	Writing and Research or
CAS 101 or	Intro to Speech Communication or		SPMS 1185 or	Public Speaking or
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
	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*
				44

\*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&amp;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
CHM 145	College Chemistry II	5	CHEM 1320	General Chemistry II	3
CHM 335	Organic Chemistry I	5	CHEM 2210, 2219	Organic Chemistry I and Lab	4
CHM 345	Organic Chemistry II	5	CHEM 2220	Organic Chemistry II (3 (Will satisfy science elective requirement. Select up to 8 hours from these options.)	8
CSC 326	Programming in C++	3	CS 1500	Computational Problem Solving	3
CAS 101	Intro to Speech Communication	3	SP&MS 1185	Principles of Speech	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	30		Group 2 Major Requirements	30
	Group 1 Core Requirements	29		Group 1 Core Requirements	26
	Total Hours	59		Total Hours*	56

\*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>Hannibal-LaGrange University</u>		<u>Semester</u>	<u>Missouri S&amp;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
CHM 145	College Chemistry II	5	CHEM 1320	General Chemistry II	3
CHM 335	Organic Chemistry I	5	CHEM 2210, 2219	Organic Chemistry I and Lab	4
CHM 345	Organic Chemistry II	5	CHEM 2220	Organic Chemistry II (3 (Will satisfy science elective requirement. Select up to 8 hours from these options.)	8
CSC 326	Programming in C++	3	CS 1500	Computational Problem Solving	3
CAS 101	Intro to Speech Communication	3	SP&MS 1185	Principles of Speech	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	30		Group 2 Major Requirements	30
	Group 1 Core Requirements	29		Group 1 Core Requirements	26
	Total Hours	59		Total Hours*	56

\*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>Hannibal-LaGrange University</u>		<u>Semester</u>	<u>Missouri S&amp;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	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
	<i>No free electives applied to the degree.</i>	0		Maximum Free Electives	0
	Group 2 Major Requirements	9		Group 2 Major Requirements	9
	Group 1 Core Requirements	29		Group 1 Core Requirements	26
	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&amp;T</u>		
CAS 101	Intro to Speech Communication	3	SPMS 1185	Public Speaking	3
ENG 106	English Composition II	3	ENGLISH 1160	Writing and Research	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	
CSC 326	Programming in C++	3	CS 1500	Computational Problem Solving	3
CHM 335	Organic Chemistry I	5	CHEM 2210	Organic Chemistry I (4) Satisfies a required engineering science elective.	3
MAT 354	Linear Algebra	3	MATH 3108	Linear Algebra (will satisfy a required math elective.)	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	See your advisor for course options.	0		Maximum Free Electives	3
	Group 2 Major Requirements	23		Group 2 Major Requirements	24
	Group 1 Core Requirements	29		Group 1 Core Requirements	26
	Total Hours	52		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&amp;T</u>		
CAS 101	Intro to Speech Communication	3	SPMS 1185	Public Speaking	3
ENG 106	English Composition II	3	ENGLISH 1160	Writing and Research	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	
CSC 326	Programming in C++	3	CS 1500	Computational Problem Solving	3
CHM 335	Organic Chemistry I	5	CHEM 2210	Organic Chemistry I Satisfies a required engineering science elective.	3
MAT 354	Linear Algebra	3	MATH 3108	Linear Algebra	3
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	See your advisor for course options.	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

<u>Hannibal-LaGrange University</u>		<u>Semester</u>	<u>Missouri S&amp;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	
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
	Humanities/Social Science Elective	3		Humanities/Social Science Elective	3
	See your advisor for course options.	3		Maximum Free Electives	3
	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 Engineering Management degree.

## Environmental Engineering Group 2 Major Requirements

<u>Hannibal-LaGrange University</u>		<u>Semester</u>	<u>Missouri S&amp;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	US History I or US History II	3	HISTORY 1300 or HISTORY 1310	American History to 1877 or 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	4
	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	16
	Group 1 Core Requirements	29		Group 1 Core Requirements	26
	Total Hours	46		Total Hours*	42

\*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&amp;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
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	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	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 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&amp;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 (Will satisfy the Advanced Math/Comp Sci elective requirement.)	3
	Literature Elective	3		Literature 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	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 Mechanical Engineering degree.

## Metallurgical Engineering Group 2 Major Requirements

Metallurgical Engineering Group 2 Major Requirements						
<u>Hannibal-LaGrange University</u>			<u>Semester</u>	<u>Missouri S&amp;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 (4) <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
	<i>See your advisor for course options.</i>	5			Maximum Free Electives	5
	Group 2 Major Requirements	27			Group 2 Major Requirements	23
	Group 1 Core Requirements	29			Group 1 Core Requirements	26
	Total Hours	56			Total Hours*	49

\*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

Mining Engineering Group 2 Major Requirements						
<u>Hannibal-LaGrange University</u>			<u>Semester</u>	<u>Missouri S&amp;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

Nuclear Engineering Group 2 Major Requirements						
<u>Hannibal-LaGrange University</u>			<u>Semester</u>	<u>Missouri S&amp;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
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
	<i>See your advisor for course options.</i>	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

Petroleum Engineering Group 2 Major Requirements						
<u>Hannibal-LaGrange University</u>			<u>Semester</u>	<u>Missouri S&amp;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 Petroleum Engineering degree.