

## Lyon College — 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>Lyon College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
MTH 210	Calculus I	4	MATH 1214	Calculus I Grade of C or better is required.	4
MTH 220	Calculus II	4	MATH 1215	Calculus II Grade of C or better is required.	4
MTH 230	Calculus III	4	MATH 2222	Calculus III Grade of C or better is required.	4
MTH 300	Differential Equations	3	MATH 3304	Elementary Differential Equations	3
PHY 240, 241	Fundamentals of Physics I and Lab	4	PHYSICS 1135	Engineering Physics I Grade of C or better is required.	4
PHY 250, 251	Fundamentals of Physics II and Lab	4	PHYSICS 2135	Engineering Physics II Grade of C or better is required.	4
CHM 110	General Chemistry I	4	CHEM 1310, 1319	General Chemistry I and Lab	5
ENG 101	English Composition I	3	ENGLISH 1120	Exposition and Argumentation	3
ECO 102 or ECO 101	Principles of Economics II or Principles of Economics I	3	ECON 1100 or ECON 1200	Principles of Microeconomics or Principles of Macroeconomics	3
Total Hours					33
					Total Hours
					34

### 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](mailto: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>Lyon College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
HIS 202 or PSL 101	Western Civilization II or US Government Perspectives	3	HISTORY 1200 or POL SCI 1200	Modern Western Civilization or American Government	3
ENG 102	English Composition II	3	ENGLISH 1160	Writing and Research	3
MTH 330	Linear Algebra	3	MATH 3108	Linear Algebra I <small>(Will satisfy the Advanced Math/Comp Sci elective requirement.)</small>	3
	Literature Elective	3		Literature Elective	3
	Ethics Elective	3		Ethics Elective <small>Engineering, business, bio, social or other ethics approved by advisor.</small>	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	33		Group 1 Core Requirements	34
	Total Hours	48		Total Hours*	49

\*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>Lyon College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
HIS 202	Western Civilization II	3	HISTORY 1200	Modern Western Civilization	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	33		Group 1 Core Requirements	34
	Total Hours	39		Total Hours*	40

\*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>Lyon College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
HIS 202 or PSL 101	Western Civilization II or US Government Perspectives	3	HISTORY 1200 or POL SCI 1200	Modern Western Civilization or American Government	3
CHM 210	Organic Chemistry I	4	CHEM 2210	Organic Chemistry I (Not a specific requirement. Will satisfy the advanced chemistry elective requirement.)	3
CHM 120	General Chemistry II	4	CHEM 1320	General Chemistry II	3
ENG 102 or HSS Elective	English Composition II or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	3	ENGLISH 1160 or HSS Elective	Writing and Research or Humanities/Social Science Elective: history, economics, political science, sociology, psychology, philosophy, fine art, literature, foreign language	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	33		Group 1 Core Requirements	34
	Total Hours	50		Total Hours*	49

\*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>Lyon College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
HIS 202 or PSL 101	Western Civilization II or US Government Perspectives	3	HISTORY 1200 or POL SCI 1200	Modern Western Civilization or American Government	3
CHM 120	General Chemistry II	4	CHEM 1320	General Chemistry II	3
CHM 210	Organic Chemistry I	4	CHEM 2210, 2219*	Organic Chemistry I and Lab* *The lab is not required for the degree, will transfer as 1 of the 9 science elective credits (below) .	4
CHM 220	Organic Chemistry II	4	CHEM 2220	Organic Chemistry II Will satisfy science elective requirement.	3
CSC 100	Intro to Programming in C++	3	CS 1500	Computational Problem Solving	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	21		Group 2 Major Requirements	19
	Group 1 Core Requirements	33		Group 1 Core Requirements	34
	Total Hours	54		Total Hours*	53

\*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>Lyon College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
HIS 202 or PSL 101	Western Civilization II or US Government Perspectives	3	HISTORY 1200 or POL SCI 1200	Modern Western Civilization or American Government	3
CHM 120	General Chemistry II	4	CHEM 1320	General Chemistry II	3
CHM 210	Organic Chemistry I	4	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>	4
CHM 220	Organic Chemistry II	4	CHEM 2220	Organic Chemistry II <small>Will satisfy science elective requirement.</small>	3
CSC 100	Intro to Programming in C++	3	CS 1500	Computational Problem Solving	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	21		Group 2 Major Requirements	19
	Group 1 Core Requirements	33		Group 1 Core Requirements	34
	Total Hours	54		Total Hours*	53

\*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>Lyon College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENG 102	English Composition II	3	ENGLISH 1160	Writing and Research	3
HIS 202 or PSL 101	Western Civilization II or US Government Perspectives	3	HISTORY 1200 or POL SCI 1200	Modern Western Civilization 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	33		Group 1 Core Requirements	34
	Total Hours	42		Total Hours*	43

\*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>Lyon College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENG 102	English Composition II	3	ENGLISH 1160	Writing and Research	3
HIS 202 or PSL 101	Western Civilization II or US Government Perspectives	3	HISTORY 1200 or POL SCI 1200	Modern Western Civilization or American Government	3
CSC 100	Intro to Programming in C++	3	CS 1500	Computational Problem Solving	3
CHM 210	Organic Chemistry I	4	CHEM 2210	Organic Chemistry I <small>Will satisfy a required engineering science elective.</small>	3
MTH 330	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	22		Group 2 Major Requirements	21
	Group 1 Core Requirements	33		Group 1 Core Requirements	34
	Total Hours	55		Total Hours*	55

\*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>Lyon College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENG 102	English Composition II	3	ENGLISH 1160	Writing and Research	3
HIS 202 or PSL 101	Western Civilization II or US Government Perspectives	3	HISTORY 1200 or POL SCI 1200	Modern Western Civilization or American Government	3
CSC 100	Intro to Programming in C++	3	CS 1500	Computational Problem Solving	3
CHM 210	Organic Chemistry I	4	CHEM 2210	Organic Chemistry I <small>Will satisfy a required engineering science elective.</small>	3
MTH 330	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	22		Group 2 Major Requirements	21
	Group 1 Core Requirements	33		Group 1 Core Requirements	34
	Total Hours	55		Total Hours*	55

\*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>Lyon College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
PSY 101	Intro to Psychology	3	PSYCH 1101	General Psychology	3
HIS 202 or	Western Civilization II or	3	HISTORY 1200 or	Modern Western Civilization or	3
PSL 101	US Government Perspectives	3	POL SCI 1200	American Government	3
ENG 102	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	15		Group 2 Major Requirements	15
	Group 1 Core Requirements	33		Group 1 Core Requirements	34
	Total Hours	48		Total Hours*	49

\*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>Lyon College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENG 102	English Composition II	3	ENGLISH 1160	Writing and Research	3
HIS 202	Western Civilization II	3	HISTORY 1200	Modern Western Civilization	3
CHM 120	General Chemistry II	4	CHEM 1320	General Chemistry II	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	13		Group 2 Major Requirements	12
	Group 1 Core Requirements	33		Group 1 Core Requirements	34
	Total Hours	46		Total Hours*	46

\*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>Lyon College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
HIS 202 or PSL 101	Western Civilization II or US Government Perspectives	3	HISTORY 1200 or POL SCI 1200	Modern Western Civilization or American Government	3
CHM 120 or CHM 210	General Chemistry II or Organic Chemistry I	4	CHEM 1320 or CHEM 2210	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
	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	13		Group 2 Major Requirements	12
	Group 1 Core Requirements	33		Group 1 Core Requirements	34
	Total Hours	46		Total Hours*	46

\*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>Lyon College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
HIS 202 or PSL 101	Western Civilization II or US Government Perspectives	3	HISTORY 1200 or POL SCI 1200	Modern Western Civilization or American Government	3
ENG 102	English Composition II	3	ENGLISH 1160	Writing and Research	3
MTH 330	Linear Algebra	3	MATH 3108	Linear Algebra I <small>(Will satisfy the Advanced Math/Comp Sci elective requirement.)</small>	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	33		Group 1 Core Requirements	34
	Total Hours	48		Total Hours*	49

\*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>Lyon College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENG 102	English Composition II	3	ENGLISH 1160	Writing and Research	3
HIS 202 or PSL 101	Western Civilization II or US Government Perspectives	3	HISTORY 1200 or POL SCI 1200	Modern Western Civilization or American Government	3
CHM 120	General Chemistry II	4	CHEM 1320	General Chemistry II	3
CHM 210	Organic Chemistry I	4	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	25		Group 2 Major Requirements	21
	Group 1 Core Requirements	33		Group 1 Core Requirements	34
	Total Hours	58		Total Hours*	55

\*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>Lyon College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENG 102	English Composition II	3	ENGLISH 1160	Writing and Research	3
HIS 202 or PSL 101	Western Civilization II or US Government Perspectives	3	HISTORY 1200 or POL SCI 1200	Modern Western Civilization 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	33		Group 1 Core Requirements	34
	Total Hours	45		Total Hours*	46

\*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>Lyon College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENG 102	English Composition II	3	ENGLISH 1160	Writing and Research	3
HIS 202 or	Western Civilization II or	3	HISTORY 1200 or	Modern Western Civilization or	3
PSL 101	US Government Perspectives	3	POL SCI 1200	American Government	3
MTH 330	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	33		Group 1 Core Requirements	34
	Total Hours	54		Total Hours*	55

\*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>Lyon College</u>		<u>Semester</u>	<u>Missouri S&amp;T</u>		
ENG 102	English Composition II	3	ENGLISH 1160	Writing and Research	3
HIS 202 or	Western Civilization II or	3	HISTORY 1200 or	Modern Western Civilization or	3
PSL 101	US Government Perspectives	3	POL SCI 1200	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	33		Group 1 Core Requirements	34
	Total Hours	45		Total Hours*	46

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