

East Central College — Missouri S&T

Applied Mathematics BS
Transfer Guide Effective as of Fall 2025

East Central College

Missouri S&T

English and Communication Skills

Take all courses.

ENG 101	English Composition I	3	ENGLISH 1120	Exposition and Argumentation	3		
ENG 102 or	English Composition II or	3	ENGLISH 1160 or	Writing and Research or	3		
ENG 104 or	Technical Writing or		ENGLISH 3560 or	Technical Writing or			
COM 110	Public Speaking		SPMS 1185	Principles of Speech			
		Total Hours	6			Total Hours	6

Mathematics, Statistics, and Computer Science

Take all courses.

MTH 190	Analytic Geometry & Calculus I	5	MATH 1214	Calculus I	4		
MTH 210	Analytic Geometry & Calculus II	5	MATH 1215	Calculus II	4		
MTH 220	Analytical Geometry & Calculus III	5	MATH 2222	Calculus III	4		
MTH 245	Differential Equations	3	MATH 3304	Elementary Differential Equations	3		
MTH 241	Linear Algebra	3	MATH 3108	Linear Algebra	3		
MTH 242	Engineering Statistics	3	STAT 3115	Engineering Statistics	3		
EGR 221,222 or EGR 251	C++ Program Engineers and Lab (4) or Data Structures (3)	3	COMP SCI 1500	Computational Problem Solving	3		
		Total Hours	27			Total Hours	24

Natural Sciences

Select PHYSICS 1135 and 1 additional course from the options below. A total of 7 hours will apply to this requirement.

PHY 211, 212	General Physics I and Lab required	5	PHYSICS 1135	Engineering Physics I required	4		
PHY 221, 222	General Physics II and Lab	5	PHYSICS 2135	Engineering Physics II	4		
CHM 111	General Chemistry I and Lab	5	CHEM 1310, 1319	General Chemistry I and Lab	5		
CHM 112	General Chemistry II and Lab	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 111 or BIO 121	General Biology and Lab or Principles of Biology and Lab	5	BIO SCI 1113, 1219 or BIO SCI 1213, 1219	General Biology and Lab or Principles of Biology and Lab	4		
GEO 101	Intro to Physical Geology	3	GEOLOGY 1110	Physical and Environmental Geology or higher geology	3		
		Total Hours	13			Total Hours	7

Humanities, Arts, and Social Sciences General Education Requirements

From the options listed in each group below, select 15 hours to include
6 hours Humanities and Fine Arts from at least two specific disciplines and
6 hours Behavioral and Social Sciences from at least two specific disciplines.

*At least one course must be selected from HISTORY 1200, 1300, 1310, or POL SCI 1200 to satisfy the State of Missouri government requirement.

Humanities and Fine Arts

Select 6 hours from at least two specific disciplines.

ENG 210 or ENG 211 or ENG 221 or ENG 222 or ENG 124 or HST 101* or HST 102* or ART 101 or MUS 101 or THE 101	Survey British Lit: Beginnings - 1784 or Survey British Lit: Romantic-Present or Survey American Lit: Beginnings - 1865 or Survey American Lit: 1865-Present or World Literature I or US History to 1877* or US History Since 1877* or Art Appreciation or Music Appreciation or Theatre Appreciation *Satisfies the State of Missouri government requirement.	6	ENGLISH 1211 or ENGLISH 1212 or ENGLISH 1221 or ENGLISH 1222 or ENGLISH 1231 or HISTORY 1300* or HISTORY 1310* or ART 1180 or MUSIC 1150 or THEATRE 1150	British Literature I: The Beginnings to 1800 or British Literature II: 1800 to Present American Literature: 1600 to 1865 or American Literature: 1865 to Present or World Literature I: Beginnings to the Renaissance or American History to 1877 or American History Since 1877 or Art Appreciation or Music Understanding and Appreciation or Theatre for Social Change *Satisfies the State of Missouri government requirement.	6
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Behavioral and Social Sciences

6 hours to include ECON 1100 or 1200 and from at least two specific disciplines.

Select

ECO 102* or ECO 101*	Principles of Microeconomics* or Principles of Macroeconomics* *Students pursuing the Actuarial Science emphasis take BOTH ECON 1100 and 1200 (6 hours econ for a total of 9 hours behavioral and social sciences).	3	ECON 1100 or ECON 1200	Principles of Microeconomics or Principles of Macroeconomics *Students pursuing the Actuarial Science emphasis take BOTH ECON 1100 and 1200 (6 hours econ for a total of 9 hours behavioral and social sciences).	3
CIV 201 or CIV 202* or GRY 101 or PHL 101 or PHL 111 or PSC 102* or PSY 101 or Foreign Language	Western Civilization I or Western Civilization II* or World Geography or Intro to Philosophy or Intro to Logic or US Government I: National and State* 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 1105 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 Social Sciences

Select 3 hours.

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	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
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Additional Degree Requirements

Select additional courses to total up to the maximum transfer credit hours shown below.

Technical Electives	Technical electives in biology, business, chemistry, computer science, economics, education, engineering, finance, geology, geophysics, information science and technology, marketing, mechanics, physics, or technical communication approved by advisor.	Technical Electives	Technical electives in biology, business, chemistry, computer science, economics, education, engineering, finance, geology, geophysics, information science and technology, marketing, mechanics, physics, or technical communication approved by advisor.
Electives	Free Electives	Electives	Free Electives

Maximum credit hours to be transferred to Missouri S&T degree requirements.

60

Missouri S&T residency requirements: The last 60 hours of any Missouri S&T degree must be completed at Missouri S&T.
Students must receive special permission from Missouri S&T to apply more than the maximum credit hours listed above toward the Missouri S&T degree.
Students are not required to complete all courses on this guide before transferring to Missouri S&T.