

Associate of Science – Engineering

(Recommended Map for Students Starting in MTH202 Calculus II)

Name: _____ ID#: _____ Date: _____

The Associate of Science in Engineering (AS Engineering) degree is intended for students planning to transfer to a four-year institution to pursue a Bachelor of Science degree in engineering. The AS Engineering degree differs from the Associate of Arts (AA) degree in the level of mathematics and science coursework that is required. It is crucial that students begin the math sequence in the first semester of study in order to complete the degree in two years. Students entering MACC ready to enroll in MTH 201 their first semester can expect to complete the AS degree in four semesters. Students not meeting the entrance requirements for MTH 201 are encouraged to enroll in MTH 150 in the first semester of study. MTH 150 is specifically designed to provide AS Engineering students with the preparation needed to successfully complete the Calculus series. Students requiring additional math preparation prior to Precalculus will require additional semesters to complete the degree.

A grade of “C” or better is required for MTH 201, MTH 202, and PHY 201 to graduate. A grade of “C” or better is recommended for all courses to ensure transfer of credit. All AS students are encouraged to work with an advisor from both MACC and the planned transfer institution to create an individualized plan of study tailored to meet individual needs.

Prior Credits:

MTH201 Analytic Geometry & Calculus I (5)

Taken	Course	Semester	Hours
		First Semester	
	EGN101	Introduction to Engineering	1
	LAL101	^Composition I	3
	MTH202	^Analytic Geometry & Calculus II	5
	PHY121	^General Chemistry I	5
			14
		Second Semester	
	HST105 <u>or</u> HST106 <u>or</u> PSC105	American History to 1865 <u>or</u> American History from 1865 <u>or</u> Introduction to American Government	3
	LAL102	^Composition II	3
	MTH203	^Analytic Geometry & Calculus III	5
	PHY201	^Engineering Physics I	5
			16
		Third Semester	
	ECN101 <u>or</u> ECN102	Macroeconomics <u>or</u> Microeconomics	3
		<u>Engineering Elective</u>	3
		<u>Engineering Elective</u> (MTH250 Differential Equations – Recommended)	3
	PHY202	^Engineering Physics II	5
			14
		Fourth Semester	
		<u>Free Elective (General Education or Engineering)</u>	3
		<u>Free Elective (General Education or Engineering)</u>	3
		<u>General Education Elective</u>	3
		<u>General Education Elective</u>	3
			12
		Minimum Required Hours for Degree	61

****Shaded courses must be completed in the sequence indicated. Failure to complete these courses in the appropriate sequence will result in extension of time to complete the AS degree.**

^Please refer to the college catalog and course descriptions for pre/co-requisite and placement information. You can only register for these courses if you have met the prerequisite, placed into the course and/or enroll in the co-requisite course(s).

Additional Graduation Requirement - Missouri law, included in Senate Bill 807, requires every college student pursuing an associate's or bachelor's degree at a public institution to pass the Missouri Higher Education Civics Achievement Examination with at least a 70 percent to graduate. The rule will apply to the incoming class of first-time college students in the fall of 2019 and all students thereafter.

Associate of Science Engineering Course Equivalency Guide

This guide shows how courses taken at MACC will transfer to the University of Missouri and Missouri S&T. All courses listed will transfer, but all courses do not count toward the degree requirements for all engineering programs. See transfer guide for details. ^Please refer to the college catalog and course descriptions for pre/co-requisite and placement information. You can only register for these courses if you have met the prerequisite, placed into the course and/or enroll in the co-requisite course(s).

REQUIRED COURSES

General Education

MOTR	MACC Course	MU Equivalent Course	S&T Equivalent Course
MOTR	^LAL 101 Composition I (3)	ENGLISH 1010W MOTR Eq to Comp 1 (3)	ENGLISH 1120 Exposition & Argumnt (3)
MOTR	^LAL 102 Composition II (3)	ENGLISH 1000 Writing & Rhetoric (3)	ENGLISH 1160 Writing & Research (3)
MOTR	HST 105 American Hist to 1865 (3) <u>or</u>	HIST 1100 Sur Am Hist to 1865 (3) <u>or</u>	HISTORY 1300 American Hist to 1877 (3)
MOTR	HST 106 American Hist from 1865 (3) <u>or</u>	HIST 1200 Sur Am Hist since 1865 (3) <u>or</u>	HISTORY 1310 American Hist Snc 1877 (3)
MOTR	PSC 105 Intro to American Gov. (3)	POL_SC 1100 American Government (3)	POL SCI 1200 American Government (3)
MOTR	ECN 101 Macroeconomics (3) <u>or</u>	ECONOM 1015 Prncpl of Macro. (3) <u>or</u>	ECON 1200 Prin of Macroeconomics (3)
MOTR	ECN 102 Microeconomics (3)	ECONOM 1014 Prncpl of Micro. (3)	ECON 1100 Prin of Microeconomics (3)
	EGN 101 Intro to Engineering (1)	ENGINR 1000 INTRO TO ENGINEERING (1)	FR ENG 1100 Study & Careers (1)

Math/Science

MOTR	MACC Course	MU Equivalent Course	S&T Equivalent Course
	^MTH 201 Analyt Geom & Calc I (5)	MATH 1500 Analytic Geom & Calc I (5)	MATH 1214 Calculus I (5)
	^MTH 202 Analyt Geom & Calc II (5)	MATH 1700 Calculus II (5)	MATH 1215 Calculus II (5)
	^MTH 203 Analyt Geom & Calc III (5)	MATH 2300 Calculus III (3)	MATH 2222 Calculus III (5)
MOTR	^PHY 121 General Chemistry I (5)	CHEM 1320 College Chemistry I (4)	CHEM 1310/1319 Gen Chem I/Lab (5)
MOTR	^PHY 201 Engineering Physics I (5)	PHYSCS 2750 University Physics I (5)	PHYSICS 1135 Engineering Physics I (5)
	^PHY202 Engineering Physics II (5)	PHYSCS 2760 University Physics II (5)	PHYSICS 2135 Engineering Physics II (5)

ELECTIVE COURSES

Engineering Electives

The AS Engineering degree requires at least two courses from this group. See course transfer guides or meet with an advisor for help selecting the courses that will count toward your intended transfer degree program.

MOTR	MACC Course	MU Equivalent Course	S&T Equivalent Course
	AMT 112 Computer Aided Design I (3)	ENGR 1100 Graph Fund (2) + MISC ELEC 1	GRNR 1120 General Credit
	AMT211 Computer-Aided Design II (3)	ARCHST ELEC /MISC ELEC (3)	MECH ENG 1761 Intro to CAD (3)
	BIO 155 General Bio for Majors I (4)	BIO_SCI 1500 Intro to Bio Sys w/ Lab (4) - both BIO 155 + BIO 160 needed -	BIO SCI 1213/1219 Prin Bio/Gen Bio Lb (4)
	BIO 160 General Bio for Majors II (4)		BIO SCI 1223/1229 Biodiversity/Lab (4)
	^BIO 220 General Genetics (4)	BIO_SCI 220 General Genetics (3)	BIO SCI 2223 General Genetics (3)
	^BIO 206 Microbiology (4)	BIO_SCI BIOL Bio Sci Lab Trans Credit (4)	BIO SCI 3313/3319 Microbiology/Lab (4)
	^EGN 201 Statics (3)	ENGR 1200 Statics (3)	CIV ENG 2200 Statics (3)
	IND 105 Fluid Power Principles (3)	MISC_ELEC (3)	GNCR 1050 General Credit (3)
	^ITC 120 Programming I (3)	INFOTC ELECTIVE 1 (3)	COMP SCI 1971/1981 Intr Pgm Mthd/Lab
	^ITC 220 Programming II (3)	INFOTC ELECTIVE 1 (3)	COMP SCI 1971/1981 Intr Pgm Mthd/Lab
	^MTH 230 Discrete Mathematics (3)	MATH 2320 Discrete Mth Structures (3)	COMP SCI 1200 Discrete Mth Cmp Sci (3)
	^MTH 250 Differential Equations (3)	MTH 4100 Differential Equations (3)	MATH 3304 Elem Differen Equations (3)
	^PHY122 General Chemistry II (5)	CHEM 1330 College Chemistry 2 (4)	CHEM 1320/1510 Gen Chm II/Qual An (5)
MOTR	PHY163 Geology (4)	GEOL 1100 Intro Earth w/ Lab (4)	GEOLOGY 1111 Intro to Phys Geology (4)

General Education Electives

The AS Engineering degree requires at least two courses from this group. See course transfer guides or meet with an advisor for help selecting the courses that will count toward your intended transfer degree program.

Humanities/Fine Arts Options

MOTR	MACC Course	MU Equivalent Course	S&T Equivalent Course
MOTR	ART 101 Art Survey & Appreciation I (3)	ARH_VS 1110 Ancient & Medieval Art (3)	ART 1180 Art Appreciation (3)
MOTR	ART 102 Art Survey & Appreciation II (3)	ARH_VS 1120 Renaissance Thru Modern A (3)	ART 1180 Art Appreciation (3)
MOTR	DRM 120 Theatre Appreciation (3)	THEATR 1100 Theatre Now (3)	THEATRE 1190 Theatre via Video (3)
MOTR	LAL 120 Am Lit Survey to 1870 (3)	ENGLISH 2300 Studies in American Lit (3)	ENGLISH 1221 Amer Lit: 1600 to 1865 (3)
MOTR	LAL 121 Am Lit Survey 1870- Present (3)	ENGLISH 2309 Study Amer Lit, 1890-Present (3)	ENGLISH 1222 Amer Lit: 1865 to Present (3)
MOTR	LAL 125 African-American Literature (3)	ENGLISH 2400 Intro African Diaspora Lit (3)	ENGLISH 2245 African American Lit
MOTR	LAL 150 Eng Lit Survey to 1750 (3)	ENGLISH 2200 Studies in British Lit (3)	ENGLISH 1211 Brit Lit I: Begin/1800 (3)
MOTR	LAL 151 Eng Lit 1750-Present (3)		ENGLISH 1212 Brit Lit II: 1800/Present (3)
	LAL 251 Science Fiction (3)	ENGLISH LIT Literature Transfer Credit (3)	HUMU 2510 Humanities- Upper Level (3)
MOTR	LAL 255 Women's Literature (3)	ENGLISH 2180 Intro Women Literature (3)	ENGLISH 2242 Literature By Women (3)
MOTR	LAL 275 Classical Mythology (3)	AMS 1060 Classical Mythology (3)	LIT 2750 Literature (3)
MOTR	MUS 102 Music Appreciation	MUSIC_NM 1310 Masterpiece Western Music (3)	MUSIC 1150 Music Understanding & Appreciation (3)
MOTR	MUS 105 Music of America	MUSIC_NM HUM Humanities Transfer Credit (3)	HUM 1051 Humanities (3)
MOTR	MUS 205 World Music	MUSIC_NM 1313 Intro to World Music (3)	HUM 2050 Humanities (3)
MOTR	PHI 150 Intro to Philosophy (3)	PHIL 1000 Big Questions (3)	PHILOS 1105 Introduction to Philosophy (3)
MOTR	PHI 151 Intro to Logic (3)	PHIL 1200 How to Think (3)	PHILOS 1115 Introduction to Logic (3)
MOTR	PHI 152 Intro to Ethics (3)	PHIL 1100 Right & Wrong (3)	PHILOS 1130 Introduction to Ethics (3)
	PHI 153 Bioethics (3)	PHIL 1150 Introductory Bioethics (3)	HUM 1530 Humanities (3)
MOTR	PHI 251 Religions of World (3)	REL_ST 2100 Global Religions (3)	PHILOS 1175 Religion Diverse Perspectives (3)
	RXP 201 Reflective Exploration (1)	MISC SSC TRANSFER CREDIT (1)	N/A
MOTR	SPK 101 Public Speaking (3)	COMMUN 1200 Public Speaking (3)	SPMS 1185 Principles of Speech (3)

Social/Behavioral Science Options

MOTR	MACC Course	MU Equivalent Course	S&T Equivalent Course
	ACC 110 Personal Finance (3)	FINANC 1000 Principles of Finance (3)	GNCR 1100 General Credit (3)
MOTR	ECN 101 Macroeconomics (3)	ECONOM 1015 Principles of Macroeconomics (3)	ECON 1200 Principles of Macroeconomics (3)
MOTR	ECN 102 Microeconomics (3)	ECONOM 1014 Principles of Microeconomics (3)	ECON 1100 Principles of Microeconomics (3)
MOTR	GEO 101 World Geography I (3)	GEOG 1200 Regions & Nations World 1 (3)	HISTORY 2110 World Regional Geography (3)
MOTR	HIST 101 Western Civilization I (3)	HIST 1500 Origins of European History (3)	HISTORY 1100 Early Western Civilization (3)
MOTR	HST 105 American History to 1865 (3)	HIST 1100 Survey American History to 1865 (3)	HISTORY 1300 American History to 1877 (3)
MOTR	HST 106 American History from 1865 (3)	HIST 1200 Survey American History since 1865 (3)	HISTORY 1310 American History since 1877 (3)
MOTR	PSC 105 Intro to American Gov. (3)	POL_SC 1100 American Government (3)	POL SCI 1200 American Government (3)
MOTR	PSY 101 General Psychology (3)	PSYCH 1000 General Psychology (3)	PSYCH 1101 General Psychology (3)
MOTR	SOC 101 Sociology (3)	SOCIOL 1000 Intro to Sociology (3)	SOSC 1010 Social Science (3)