



Washkewicz College
of Engineering

MECHANICAL ENGINEERING DEGREE CHARTS

(Prerequisites Included)

Select your Mathematics entry course:

1. [Calculus Entry 4-Year Plan](#)
2. [Precalculus Entry 4-Year Plan](#)
3. [Precalculus Entry 5-Year Plan](#)

Bachelor of MECHANICAL ENGINEERING (MCE) - Fall 2022
4-Year Recommended Course Sequence with *Calculus Entry*

Fall Semester 1	Spring Semester 2	Fall Semester 3	Spring Semester 4	Fall Semester 5	Spring Semester 6	Fall Semester 7	Spring Semester 8
ESC 120 [2] Intro to Engineering Design	MCE 181 [2] CAE Lab II (MCE 180)	ESC 201 [3] Statics (PHY 241)	ESC 202 [3] Dynamics (ESC 201)	ESC 321 [3] Thermodynamics (MTH 182)	MCE/ESC 315 [3] Electrical Engineering Concepts (ESC 152, ESC 250 And PHY 242)	MCE 450 [2] Design Project I (WAC)	MCE 451 [3] Design Project II (MCE 450) & (WAC)
ESC 100 [1] New Student Orientation	ESC 152 [3] Programming with MATLAB	MCE 276 [3] Materials & Manufacturing Processes (MCE 181 & *MCE 286)	ESC 301 [3] Fluid Mechanics (ESC 250)	MCE 260 [3] Kinematics (MTH 281 and ESC 152)	MCE 365 [3] Machine Design I (MCE 362)	MCE 441 [3] Intro to Linear Controls (ESC 350 and MCE 371)	MCE Elective [3] 300-400 Level
MCE 180 [2] CAE Lab I	PHY 241 [5] Physics I (MTH 181)	MCE 286 [1] Manufacturing Processes Lab (MCE 181 & *MCE 276)	ESC 211 [3] Strength of Materials (ESC 201)	MCE 371 [3] Vibrations (ESC 202 and ESC 250)	MCE 324 [3] Intro to Heat Transfer (ESC 301 and ESC 321)	MCE 470 [3] Engr. Measurements (ESC 211, ESC/MCE 315, MCE 324, and MCE 371) (*MCE 480)	MCE Lab Elective [3] 300-400 Level
CHM 261 [3] Gen. Chem. I CHM 266 [1] Gen. Chem. I Lab	ESC 102 [3] Technical Writing (Preferred)	**ESC 130 [1] Engineering Co-op Orientation	PHY 242 [5] Physics II (PHY 241 And MTH 182)	MCE 362 [3] Machine Analysis (ESC 211 and MCE 181 and MCE 276)	MCE 421 [3] Applied Thermodynamics (ESC 321 and *MCE 481)	MCE 480 [1] Engineering Measurements Lab (*MCE 470)	PHL 215 [3] A&H Engineering Ethics (ENG 102 or ESC 102) (WAC)
ENG 100 [3] Intensive Writing or ENG 101 [3] College Writing I	MTH 182 [4] Calculus II (MTH 181)	ESC 250 [3] Diff EQ for Eng. (MTH 182)	General Ed. Elective [3]	ESC 350 [3] Linear Algebra for Engineers (MTH 182 and ESC 152)	MCE 481 [1] Thermodynamics Lab (*MCE 421)	MCE Elective [3] 300-400 Level	General Ed. Elective [3]
MTH 181 [4] Calculus I		MTH 281 [4] Multivariable Calculus (MTH 182)			General Ed. Elective [3]	ESC 282 [3] SS Engineering Economy (MTH 182)	General Ed. Elective [3]
16 Total Credit Hours	17 Total Credit Hours	14 or 15 Total Credit Hours	17 Total Credit Hours	15 Total Credit Hours	16 Total Credit Hours	15 Total Credit Hours	18 Total Credit Hours
Total Credits for MCE Degree: 128 or 129 including ESC 130 Engineering Co-op Orientation							

(Prerequisites) • (*Pre/co-requisite) • [# of Course Credits] • MCE XXX = Only Offered That Fall/Spring Semester

	Required MCE Courses **Highly recommended, yet optional.
	Required Science Courses
	Required English Courses (ESC 102 is preferred. However, can be substituted with ENG 102.)
	Required Writing Across the Curriculum (WAC) Courses

	Required MCE 300-400 Level Electives
	Required Math Courses + STA 323 to earn the Math Minor
	General Ed. Electives (2 A&Hs, 2 SSs, 1 ALAAME, & 2 DIVs)
EASILY EARN A MATH MINOR AS A MCE MAJOR! CLICK HERE TO LEARN HOW	

↓ Scroll Down to View the Precalculus Entry 4-Year Plan Degree Chart ↓

Bachelor of MECHANICAL ENGINEERING (MCE)- Fall 2022
4-Year Recommended Course Sequence with *Precalculus Entry*

Fall Semester 1	Spring Semester 2	Summer Semester	Fall Semester 3	Spring Semester 4	Summer Semester	Fall Semester 5	Spring Semester 6	Fall Semester 7	Spring Semester 8
MCE 180 [2] CAE Lab I	MCE 181 [2] CAE Lab II (MCE 180)	• OPSTEM MTH 180 SUMMER CALCULUS I (Average B- or better in MTH 167&168) [4]	MCE 276 [3] Materials & Manufacturing Processes (MCE 181 & *MCE 286)	ESC 201 [3] Statics (PHY 241)	• ESC 350 [3] Linear Alg. for Eng. (MTH 182 and ESC 152) ESC 202 [3] Dynamics (ESC 201)	MCE 371 [3] Vibrations (ESC 202 and ESC 250)	MCE 362 [3] Machine Analysis (ESC 211, MCE 181 and MCE 276)	MCE 450 [2] Design Project I (WAC)	MCE 451 [3] Design Project II (MCE 450) & (WAC)
ESC 100 [1] New Student Orientation	General Ed. Elective [3]		MCE 286 [1] Materials & Man. Processes Lab (MCE 181 and *MCE 276)	PHY 242 [5] Physics II (MTH 182)		ESC 321 [3] Thermodynamics (MTH 182)	MCE 324 [3] Intro to Heat Transfer (ESC 301 & ESC 321)	MCE 441 [3] Intro to Linear Controls (ESC 350 and MCE 371)	MCE 470 [3] Eng. Measurements (ESC 315 and MCE 324 and MCE 371)
ESC 120 [2] Intro to Engineering Design	General Ed. Elective [3]		PHY 241 [5] Physics I (MTH 181)	MTH 281 [4] Multivariable Calculus (MTH 182)		MCE 260 [3] Kinematics (MTH 281 and ESC 152)	MCE 421 [3] Applied Thermodynamics (ESC 321 and *MCE 481)	MCE 365 [3] Machine Design I (MCE 362)	MCE 480 [1] Eng. Measurements Lab (*MCE 470)
MTH 165 [3] Intensive Precalc I OR MTH 167 [3] Precalculus I	MTH 168 [3] Precalculus II (MTH 165 or MTH 167)		MTH 182 [4] Calculus II (MTH 181)	ESC 250 [3] Diff EQ for Eng. (MTH 182)		ESC 211 [3] Strength of Materials (ESC 201)	MCE 481 [1] Thermodynamics Lab (*MCE 421)	MCE Elective [3] 300-400 Level	ESC 282 [3] Engineering Economy (MTH 182) SS
General Ed. Elective [3]	ESC 102 [3] Technical Writing (Preferred)		ESC 152 [3] Programming with MATLAB (MTH 181)			ESC 301 [3] Fluid Mechanics (ESC 250)	CHM 261 [3] Gen. Chem. I CHM 266 [1] Gen. Chem I Lab (MTH 168)	MCE Elective [3] 300-400 Level	MCE Lab Elective [3] 300-400 Level
ENG 100 [3] Intensive Writing or ENG 101 [3] College Writing I			**ESC 130 [1] Engineering Co-op Orientation			MCE/ESC 315 [3] Electrical Engineering Concepts (ESC 152, ESC 250 & PHY 242)		PHL 215 [3] A&H Engineering Ethics (ENG 102 or ESC 102) (WAC)	General Ed. Elective [3]
14 Total Credit Hours	14 Total Credit Hours		15 or 16 Total Credit Hours	15 Total Credit Hours		18 Total Credit Hours	16 Total Credit Hours	17 Total Credit Hours	16 Total Credit Hours
Total Credits for CHE Degree: 130 or 131 including ESC 130 Engineering Co-op Orientation									

(Prerequisites) • (*Pre/co-requisite) • [# of Course Credits] •

MCE XXX = Only Offered That Fall/Spring Semester

	Required MCE Courses **Highly recommended, yet optional.
	Required Science Courses
	Required English Courses (ESC 102 is preferred. However, can be substituted with ENG 102.)
	Required Writing Across the Curriculum (WAC) Courses

	Required MCE 300-400 Level Electives
	Required Math Courses + STA 323 to earn the Math Minor
	General Ed. Electives (2 A&Hs, 2 SSs, 1 ALAAME, & 2 DIVs)
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↓ Scroll Down to View the Precalculus Entry 5-Year Plan Degree Chart ↓

Bachelor of MECHANICAL ENGINEERING (MCE)- Fall 2022
5-Year Recommended Course Sequence with *Precalculus Entry*

Fall Semester 1	Spring Semester 2	Fall Semester 3	Spring Semester 4	Fall Semester 5	Spring Semester 6	Fall Semester 7	Spring Semester 8	Fall Semester 9	Spring Semester 10
ESC 120 [2] Intro to Engineering Design	MCE 181 [2] CAE Lab II (MCE 180)	**ESC 130 [1] Engineering Co-op Orientation	MCE 276 [3] Materials & Man. Processes (MCE 181 and *MCE 286)	ESC 201 [3] Statics (PHY 241)	ESC 211 [3] Strength of Materials (ESC 201)	MCE 362 [3] Machine Analysis (ESC 211 and MCE 181 and MCE 276)	MCE 324 [3] Intro to Heat Transfer (ESC 301 & ESC 321)	MCE 450 [2] Design Project I (WAC)	MCE 451 [3] Design Project II MCE 450 & (WAC)
ESC 100 [1] New Student Orientation	ESC 102 [3] Technical Writing (Preferred)	ESC 152 [3] Programming with Matlab (MTH 168)	MCE 286 [1] Materials & Manufacturing Processes Lab (MCE 181 and *MCE 276)	PHY 242 [5] Physics II (MTH 182)	MCE 260 [3] Kinematics (MTH 281 and ESC 152)	ESC 321 [3] Thermodynamics (MTH 182 and ESC 152)	MCE 371 [3] Vibrations (ESC 202 and ESC 250)	MCE 441 [3] Intro to Linear Controls (ESC 350 and MCE 371)	MCE 470 [3] Engineering Measurements (ESC 211, ESC/MCE 315, MCE 324, and MCE 371) (*MCE 480)
MCE 180 [2] CAE Lab I	General Ed. Elective [3]	CHM 261 [3] Gen. Chem. I CHM 266 [1] Gen. Chem. I Lab (MTH 168)	PHY 241 [5] Physics I (MTH 181)	ESC 250 [3] Diff EQ for Eng. (MTH 182)	ESC 350 [3] Linear Alg. for Eng. (MTH 182 & ESC 152)	ESC 301 [3] Fluid Mechanics (ESC 250)	MCE 421 [3] Applied Thermodynamics (ESC 321 and *MCE 481)	MCE 365 [3] Machine Design I (MCE 362)	MCE 480 [1] Engineering Measurements Lab (*MCE 470)
ENG 100 [3] Intensive Writing or ENG 101 [3] College Writing I	General Ed. Elective [3]	General Ed. Elective [3]	MTH 182 [4] Calculus II (MTH 181)	MTH 281 [4] Multivariable Calculus (MTH 182)	ESC 202 [3] Dynamics (ESC 201)	MCE/ESC 315 [3] Electrical Eng. Concepts (MCE 152, ESC 250 And PHY 242)	MCE 481 [1] Thermodynamics Lab (*MCE 421)	MCE Elective [3] 300-400 Level	ESC 282 [3] Engineering Economy (MTH 182) SS
MTH 165 [3] Intensive Precalc I OR MTH 167 [3] Precalculus I	MTH 168 [3] Precalculus II (MTH 165 or MTH 167)	MTH 181 [4] Calculus I (MTH 168)					PHL 215 [3] A&H Engineering Ethics (ENG 102 or ESC 102) (WAC)	MCE Elective [3] 300-400 Level	MCE Lab Elective [3] 300-400 Level
General Ed. Elective [3]									
14 Total Credit Hours	14 Total Credit Hours	15 Total Credit Hours	13 Total Credit Hours	15 Total Credit Hours	12 Total Credit Hours	12 Total Credit Hours	13 Total Credit Hours	14 Total Credit Hours	13 Total Credit Hours

Total Credits for CHE Degree: 130 or 131 including ESC 130 Engineering Co-op Orientation

(Prerequisites) • (*Pre/co-requisite) • [# of Course Credits] • **MCE XXX = Only Offered That Fall/Spring Semester**

	Required MCE Courses **Highly recommended, yet optional.
	Required Science Courses
	Required English Courses (ESC 102 is preferred. However, can be substituted with ENG 102.)
	Required Writing Across the Curriculum (WAC) Courses

	Required MCE 300-400 Level Electives
	Required Math Courses + STA 323 to earn the Math Minor
	General Ed. Electives (2 A&Hs, 2 SSs, 1 ALAAME, & 2 DIVs)
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↓ **Be Sure to Select a Course Listed Below that Qualifies for Two (2) General Ed. Electives** ↓

To eliminate one (1) of your General Education Requirements,
consider taking a course that qualifies as two (2) General Ed. Electives

Updated Fall 2022

Recommended Courses that Qualify as Two (2) General Ed. Electives

Course	Social Sciences (SS)	Arts & Humanities (AH)	Non-Western Social Sciences (ALAAME & NW-SS)
ANT 275 – Ancient Mysteries	X		X
COM 233 – Bollywood & Beyond	X		X
HIS 104 – Modern World History	X		X
SOC 210 – Dev. Societies in Changing World	X		X
UST 206 – Megacities of Asia	X		X
ANT 103 – Rise/Fall of Civilizations		X	X
ART 281 – Asian Art		X	X
MUS 263 – Black Music of Two Worlds		X	X
REL 101 – Understanding Religion		X	X

**Popular Introductory General Ed. Courses
for Engineering Students**

MUS 161 – Roots of Rock & Soul (AH)

UST 201 – Building Cleveland (NEW) (AH)

REL 101 – Understanding Religion (AH & ALAAME)

UST 200 – Intro to Urban Studies (SS)

ANT 275 – Ancient Mysteries (SS & ALAAME)

SWK 150 – The Black Experience

(African American DIV)

ANT 100 – Human Diversity (US DIV)

SOC 201 – Race/Class/Gender (US DIV)