

MECHANICAL ENGINEERING CURRICULUM

4-Year Program (for students entering in Fall 2019)

Student: _____

ID: _____

Advisor: _____

1st Year – FALL (17 cr.)

ENG 101	College Composition (3 cr.)	_____
MAT 126	Calculus I (4 cr.)	_____
MEE 101	Intro to Mech. Eng. (1 cr.)	_____
MEE 120	Eng. Graphics & CAD (2 cr.)	_____
PHY 121	Physics for Eng. & Sci. I (4 cr.)	_____
_____	HVSC Elective	_____

1st Year – SPRING (17 cr.)

MAT 127	Calculus II (4 cr.)	_____
MEE 125*	Computational Tools for MEs (3 cr.)	_____
MEE 150**	Statics (3 cr.)	_____
PHY 122	Physics for Eng. & Sci. II (4 cr.)	_____
_____	HVSC Elective	_____

*COS 220 or ECE 177 may substitute for MEE 125

2nd Year – FALL (17 cr.)

CHY 121/3	General Chemistry I/Lab (4 cr.)	____/____
or CHY 131/3	Chemistry for Engineers/Lab	____/____
MAT 228	Calculus III (4 cr.)	_____
MEE 230**	Thermodynamics I (3 cr.)	_____
MEE 251**	Strength of Materials (3 cr.)	_____
_____	HVSC Elective	_____

2nd Year – SPRING (16 cr.)

ECE 209	Fund of Electric Circuits (3 cr.)	_____
ENG 320	Tech. Comm. for Engineering (3 cr.)	_____
MAT 258	Diff. Eq. & Lin. Algebra (4 cr.)	_____
MEE 231	Thermodynamics II (3 cr.)	_____
MEE 270**	Dynamics (3 cr.)	_____

3rd Year – FALL (15 cr.)

MEE 320	Materials (3 cr.)	_____
MEE 360	Fluid Mechanics (3 cr.)	_____
MEE 370	Controls (3 cr.)	_____
MEE 380	Design I (3 cr.)	_____
STS 332	Statistics for Engineers (3 cr.)	_____

3rd Year – SPRING (15 cr.)

MEE 330	Manufacturing Engineering (3 cr.)	_____
MEE 341	Mechanical Lab I (3 cr.)	_____
MEE 381	Design II (3 cr.)	_____
MEE 456	Intro to Finite Elements (3 cr.)	_____
_____	Engineering Elective (3 cr.)	_____

4th Year – FALL (15 cr.)

MEE 432	Heat Transfer (3 cr.)	_____
MEE 442	Mechanical Lab II (2 cr.)	_____
MEE 487	Capstone Design I (4 cr.)	_____
_____	MEE Technical Elective (3 cr.)	_____
_____	MEE Technical Elective (3 cr.)	_____

4th Year – SPRING (17 cr.)

MEE 443	Mech. Lab. III (2 cr.)	_____
MEE 471	Mechanical Vibrations (3 cr.)	_____
MEE 488	Capstone Design II (3 cr.)	_____
_____	MEE Technical Elective (3 cr.)	_____
_____	HVSC Elective	_____
_____	HVSC Elective	_____

Engineering Elective (3 cr.)	
Course	Grade

MEE Technical Electives (9 cr.)	
Course	Grade

	Course	HVSC credits	Grade	Human Values and Social Context (HVSC) areas (18 cr)					Ethics (not part of HVSC)
				Western Cultural Tradition	Social Contexts & Institutions	Cultural Diversity & International Perspectives	Population & Environment	Artistic & Creative Expression	
1.	ENG 320	3			x				
2.									
3.									
4.									
5.									
6.									
(if needed) 7.									
(if needed) 8.									

Students must complete 18 credits in the HVSC areas, and each of the five HVSC areas must be satisfied at least once. Students must also take a course that satisfies the Ethics requirement. Note that some courses satisfy more than one category (e.g. Ethics and one of the HVSC areas).

** Students must earn a “C” or better in MEE 150, MEE 230, MEE 251 and MEE 270 to use them as prerequisites.

MEE Technical Electives		Prerequisites
MEE 433	Solar-Thermal Engineering	MEE 230
MEE 434	Thermodynamic Design of Engines	MEE 231
MEE 441	Manufacturing and Testing of Composites	MEE 251
MEE 444	Robot Dynamics and Control	MEE 270 ^c , MEE 380
MEE 445	Aeronautics	MAT 258, MEE 270 ^c , MEE 125/ECE 177/COS 220
MEE 446	Astronautics	MAT 258, MEE 270 ^c , MEE 125/ECE 177/COS 220
MEE 448	Fixed Wing Aircraft Design	MEE 120, MEE 251 ^c , MEE 270 ^c , MEE 360
MEE 450	Mechanics of Composite Materials	MEE 251 ^c
MEE 452	Aircraft and Automobile Structures	MEE 251 ^c
MEE 453	Experimental Mechanics	MEE 251 ^c
MEE 455	Advanced Strength of Materials	MEE 251 ^c
MEE 459	Engineering Optimization	MAT 228, MAT 258
MEE 462	Fluid Mechanics II	MEE 360
MEE 463	Applied Computational Fluid Dynamics	MEE 360
MEE 475	Fuel Cell Science and Technology	MEE 230 ^c , CHY 121
MEE 480	Wind Energy Engineering	MAT 258, MEE 251 ^c , Corequisite MEE 360
MEE 483	Turbomachine Design	MEE 230 ^c , MEE 360
MEE 484	Power Plant Design and Engineering	MEE 230 ^c , MEE 231
MEE 486	Refrig. and Air Cond. System Design	MEE 231
MEE 489	Offshore Floating System Design	MEE 360, MEE 380
MEE 490	Modern Control Theory and Applications	MEE 370

- 400 level courses offered by other engineering programs may, with MEE Department approval, be counted as a MEE Technical Elective.
- 500 level courses in MEE or other engineering programs may, with instructor and MEE Department approval, be counted as a MEE Technical Elective.

Engineering Elective

The “Engineering Elective” (3 credits) may consist of:

- Any 300 or 400 level MEE elective course, or
- Any 300 or 400 level course in College of Engineering (BEN, CHE, CIE, CET, ECE, EET, MET, SVT), or Innovation Engineering (INV), or Pulp and Paper (PPA), except courses that have significant overlap with a required course.

A list of recommended courses, and prohibited courses, is available at: <https://umaine.edu/mecheng/undergraduate-program/>
 A single course may not be counted as both the Engineering Elective and a MEE Technical Elective.

Prerequisites for Required Courses

(A prerequisite course must be taken before. A corequisite course must be taken either before or concurrently.)

Course	Prerequisites	Course	Prerequisites	Course	Prerequisites
MAT 127	MAT 126 ^c	MEE 125 COS 220 ECE 177	MAT 126 none MAT 126	MEE 370	MEE 270 ^c , MAT 258, ECE 209
MAT 228	MAT 127 ^c	MEE 150	MAT 126	MEE 380	MEE 270 ^c
MAT 258	MAT 127 ^c	MEE 230	MAT 127	MEE 381	MEE 120, MEE 251 ^c
STS 332	MAT 228 ^c	MEE 231	MEE 230 ^c	MEE 432	MEE 360, MAT 258
PHY 121	Corequisite MAT 126	MEE 251	MAT 127 ^c , MEE 150 ^c	MEE 442	MEE 341
PHY 122	MAT 126 ^c , PHY 121 ^c	MEE 270	MEE 150 ^c , corequisite MAT 228	MEE 443	MEE 442
CHY 121/3 CHY 131/3	MAT 126 ^c MAT 126	MEE 320	MEE 230 ^c , MEE 251 ^c	MEE 456	MEE 251 ^c , MAT 258
ECE 209	MAT 127, PHY 122	MEE 330	MEE 120	MEE 471	MEE 270 ^c , MAT 258
ENG 320	ENG 101	MEE 341 MEE 360	MEE 251 ^c , MEE 360, MAT 258 MEE 230 ^c , MEE 270 ^c , MAT 258	MEE 487 MEE 488	MEE 360, MEE 370, MEE 381 MEE 487

^c and ^{c-} indicate the minimum grade required in that course.