

# MECHANICAL ENGINEERING MAJOR SHEET

This guide is provided for student use only. It does not represent an official documentation of a student's progress towards completion of their degree program. The ME program requires a minimum of 129 credit hours to complete. Students must have a minimum 2.0 GPA in all MAE course work taken, and a minimum 2.0 GPA in all cumulative course work. Students must also complete an Exit Interview with the MAE Department to graduate.

## MECHANICAL ENGINEERING CORE COURSES – All courses in this section must be completed.

<input checked="" type="checkbox"/>	COURSE NUMBER & TITLE	HRS	PREREQUISITES/COREQUISITES
	MAE 1502 Principles of Engineering	3	None
	MAE 1503 Introduction to Engineering Design	3	None
	MAE 2055 MechEtronics I	3	MATH 1360, Coreq: PES1120
	MAE 2103 Engineering Mechanics I	3	MAE 1502, PES 1110, Coreq Math 2350, Mechanical Engineering Majors only
	MAE 2104 Engineering Mechanics II	3	MAE 2103, Coreq. MATH 3400
	MAE 2301 Engineering Thermodynamics I	3	MATH 1350, PES1110
	MAE 2200 Materials Engineering	3	MATH 1350, PES 1110, CHEM 1030
	MAE 3005 Engineering Measurement Lab	3	MATH 3400, MAE 3055, MATH 3810 or ECE 3610
	MAE 3055 MechEtronics II	3	MATH 2350, MAE 2055
	MAE 3130 Fluid Mechanics	3	MAE 2104, MAE 2301, ENGL 2090
	MAE 3131 Fluid Mechanics Lab	1	MAE 3005, Concurrent with MAE 3130
	MAE 3201 Strength of Materials	3	MAE 2103, MATH 1360, MAE 2200
	MAE 3302 Engineering Thermodynamics II	3	MAE 2301
	MAE 3310 Heat & Mass Transfer	3	MAE 3130, MATH 3130, MATH 3400, MAE 3005
	MAE 3311 Heat & Mass Transfer Lab	1	Concurrent with MAE 3310
	MAE 3401 Modeling & Simulation of Dynamic Systems	3	MAE 1503, MAE 2104, MATH 3400, MATH3810 or ECE3610, CS 1090
	MAE 3501 Machine Design I	3	MAE 3201, MAE 2104
	MAE 4120 Machine Design II	3	MAE 3501, MATH 3130
	MAE 4421 Auto Control of Aero/Mech Systems	3	MAE 3401, MATH3130, MATH 3400
	MAE 4510 Engineering Design I	3	ENGL 2090, Senior Standing
	MAE 4511 Engineering Design II	3	MAE 4510, instructor's consent
	<b>TOTAL</b>	<b>59</b>	

**TECHNICAL ELECTIVES – 12 credit hours of technical electives must be completed. All courses need to be numbered 3000 or higher and at least 6 hours must be completed from courses numbered 4000 or higher. At least 6 hours of the Technical Electives must be taken from MAE courses. The remaining Technical Electives should be chosen from CS, EE, MAE, MATH and PES. PES2130 General Physics III may be taken as a technical elective. MAE 3342 Engineering Economy can count either as a business or a technical elective.**

<input checked="" type="checkbox"/>	COURSE NUMBER & TITLE	HRS	PREREQUISITES/COREQUISITES
	<b>TOTAL</b>	<b>12</b>	

## COMPUTING REQUIREMENT – All requirements in this section must be completed.

<input checked="" type="checkbox"/>	COURSE NUMBER & TITLE	HRS	PREREQUISITES/COREQUISITES
	C S 1090 Introduction to Programming in Matlab	3	HS Algebra, knowledge of basic programming concepts
	<b>TOTAL</b>	<b>3</b>	

**MATHEMATICS – All courses in this section must be completed.**

<input checked="" type="checkbox"/>	<b>COURSE NUMBER &amp; TITLE</b>	<b>HRS</b>	<b>PREREQUISITES/COREQUISITES</b>
	MATH 1350 Calculus I (or Math 1310 and Math 1320)	4	MATH1050
	MATH 1360 Calculus II	4	MATH1350
	MATH 2350 Calculus III	4	MATH1360
	MATH 3130 Intro. to Linear Algebra	3	MATH2350
	MATH 3400 Intro. to Differential Equations	3	MATH2350
	MATH 3810 Intro. to Probability & Statistics <b>OR</b> ECE 3610 Engineering Probability & Statistics	3	MATH2350
	<b>TOTAL</b>	<b>21</b>	

**BASIC SCIENCE – All courses in this section must be completed.**

<input checked="" type="checkbox"/>	<b>COURSE NUMBER &amp; TITLE</b>	<b>HRS</b>	<b>PREREQUISITES/COREQUISITES</b>
	PES 1110 General Physics I	4	Coreq. MATH1350
	PES 1120 General Physics II	4	PES1110, Coreq. MATH1360
	CHEM 1030 General Chemistry I	5	1 year HS Chemistry, 2 years HS Algebra
	<b>TOTAL</b>	<b>13</b>	

**WRITING SKILLS – All courses in this section must be completed. Please note that ENGL 1410 can replace ENGL 1310 if the student desires a more challenging writing course. Students may take both ENGL 1300 and ENGL 1305 to receive credit for ENGL 1310.**

<input checked="" type="checkbox"/>	<b>COURSE NUMBER &amp; TITLE</b>	<b>HRS</b>	<b>PREREQUISITES/COREQUISITES</b>
	ENGL 1310 Rhetoric & Writing I	3	Score of 19+ on ACT Engl or 450+ on SAT Verb
	ENGL 2090 Technical Writing and Presentation	3	ENGL1310
	Writing Competency Portfolio	N/A	Complete one year prior to graduation
	<b>TOTAL</b>	<b>6</b>	

**HUMANITIES/SOCIAL SCIENCE ELECTIVES – Complete 9 hours of Humanities/Social Science Electives. You must complete the Humanities/Social Science electives from the following departments: AH, ANTH, COMM, ECON, ENGL (except ENGL99, 1310, 1350 & 1410), FILM, GRNT, GS 1980 only, HIST, ID 1010 Freshman Seminar, ID 4090, Languages, MUS (except choir or lessons) PHIL, PSC, PSY, SOC, VA and WEST. At least 3 hours must be taken at the 2000+ level.**

<input checked="" type="checkbox"/>	<b>COURSE NUMBER &amp; TITLE</b>	<b>HRS</b>	<b>PREREQUISITES/COREQUISITES</b>
	One course must be 2000+ level	3	
	<b>TOTAL</b>	<b>9</b>	

**BUSINESS ELECTIVES – Students need to complete 6 hours of Business Electives.**

<input checked="" type="checkbox"/>	<b>COURSE NUMBER &amp; TITLE</b>	<b>HRS</b>	<b>PREREQUISITES/COREQUISITES</b>
	<b>Choose 2 of these 6 courses</b>		
	BUAD 1000 Introduction to Business	3	Freshman or sophomore standing only
	ACCT 2010 Introduction to Financial Accounting	3	Sophomore or higher standing
	MKTG 3000 Principles of Marketing	3	ENGL1310, Junior or higher standing
	MAE 3040 Engineering Ethics	3	Sophomore or higher standing
	MGMT 3300 Intro. to Management & Organization	3	Junior or higher standing
	MAE 3342 Engineering Economy	3	Junior or higher standing or instructor consent
	<b>TOTAL</b>	<b>6</b>	

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# MECHANICAL ENGINEERING SAMPLE PROGRAM

The following document is intended for student use only. It represents the suggested order and semesters in which students should take courses to graduate within 4 years. Since each student is different this listing should only be considered a guide. *Please refer to the Mechanical Engineering Major Sheet for elective options and course prerequisites and co-requisites.*

**Courses marked with an \* are often available in the summer. Please note that ME students may want to offload some of the heavier semesters, making up the hours by taking courses during the summer semester, and still graduate in 4 years.**

## FRESHMAN YEAR

FALL SEMESTER (17 credit hours)	SPRING SEMESTER (16 credit hours)
*MATH 1350 Calculus I – 4	*MATH 1360 Calculus II – 4
*PES 1110 General Physics I – 4	*PES 1120 General Physics II – 4
MAE 1502 Principles of Engineering – 3	MAE 1503 – Introduction to Engineering Design – 3
*ENGL 1310 Writing & Rhetoric I – 3	*CHEM 1030 General Chemistry I – 5
*Humanities/Social Science Elective – 3	

## SOPHOMORE YEAR

FALL SEMESTER (16 credit hours)	SPRING SEMESTER (15 credit hours)
*MATH 2350 Calculus III – 4	*MATH 3400 Introduction to Differential Equations – 3
MAE 2103 Engineering Mechanics I – 3	MAE 3055 Mechatronics II – 3
MAE 2200 Materials Engineering – 3	MAE 2104 Engineering Mechanics II – 3
C S 1090 Introduction to Programming in MATLAB – 3	MAE 2301 Engineering Thermodynamics I – 3
MAE 2055 Mechatronics I – 3	MATH 3810 Probability & Statistics <b>OR</b> ECE 3610 Engineering Probability & Statistics – 3

## JUNIOR YEAR

FALL SEMESTER (18 credit hours)	SPRING SEMESTER (16 credit hours)
MAE 3302 Engineering Thermodynamics II – 3	MAE 3130 Fluid Mechanics – 3
MAE 3401 Modeling and Simulation Dynamic Systems - 3	MAE 3131 Fluid Mechanics Lab – 1
*ENGL 2090 Technical Writing & Presentation – 3	MAE 4421 Automatic Control of Aero/Mech systems – 3
MAE 3201 Strength of Materials – 3	MAE 3501 Machine Design I – 3
*MATH 3130 Introduction to Linear Algebra – 3	*Technical Elective Course – 3
MAE 3005 Engineering Measurement Lab – 3	*Humanities/Social Science elective – 3

## SENIOR YEAR

FALL SEMESTER (17 credit hours)	SPRING SEMESTER (15 credit hours)
MAE 4120 Machine Design II - 3	MAE 4511 Engineering Design II – 3
MAE 3310 Heat and Mass Transfer – 3	*Technical Elective Courses – 6
MAE 3311 Heat and Mass Transfer Lab - 1	*Business Elective – 3
MAE 4510 Engineering Design I – 3	*Humanities/Social Science elective – 3
*Technical Elective Course – 3	
*Business Elective – 3	