

BS in Mechanical Engineering Curriculum¹

9/5/2014

FIRST YEAR

Fall Semester	Units	Spring Semester	Units
Math 132 Calculus II	3 ___	Math 233 Calculus III [Math 132] ⁷	3 ___
Phys 197 Physics I (or Phys 117A) [Math 132] ⁸	4 ___	Phys 198 Physics II (or Phys 118A)[Math 132, Phys 197] ⁷	4 ___
MEMS 202 CAD	3 ___	CSE 200 Eng and Scientific Computing [Math 132] ⁷	3 ___
_____ H&SS Elective ³ or MEMS Freshmen Engineering ² Elective	1-3 ___	_____ H&SS Elective ³ or MEMS Freshmen Engineering ² Elective	1-3 ___
_____ H&SS Elective ³	3 ___	_____ H&SS Elective ³	3 ___
Semester Total	14-16¹	Semester Total	14-16¹

SECOND YEAR

Fall Semester	Units	Spring Semester	Units
Math 217 Differential Equations [Math 233] ⁸	3 ___	ESE 318 Engineering Mathematics A [Math 233 & 217] ⁷	3 ___
MEMS 253 Mechanics I [Phys 197] ⁷ [Math 217] ⁸	3 ___	MEMS 255 Mechanics II [Math 217] ⁸	3 ___
Chem 111A Chemistry	3 ___	MEMS 350 Mechanics III [MEMS 253] ⁷ [ESE 318] ⁸	3 ___
Chem 151 Lab [Chem 111A] ⁸	2 ___	MEMS 3610 Materials Science [Chem 111A] ⁷	3 ___
ESE 230 Intro to Circuits [Phys 198] ⁷ [Math 217] ⁸	4 ___	MEMS 205 Mechanics and Materials Science Lab [MEMS 253 ⁷ & 3610 ⁸]	2 ___
		GenEng 4502 ⁶ Leadership and Team Building	1 ___
Semester Total	15	Semester Total	15

THIRD YEAR

Fall Semester	Units	Spring Semester	Units
ESE 319 Engineering Mathematics B [Math 233 & 217] ⁷	3 ___	ESE 326 Eng Probability and Statistics [Math 233] ⁷	3 ___
MEMS 301 Thermodynamics [Math 132, Phys 197, Chem 111A] ⁷	3 ___	MEMS 3110 Machine Elements [MEMS 253 & 3610] ⁷	3 ___
MEMS 3410 Fluid Mechanics [Math 233 & 217, MEMS 255] ⁷	3 ___	MEMS 3420 Heat Transfer [ESE 318 & 319, MEMS 3410] ⁷	3 ___
GenEng 310 Technical Writing [Junior] ⁸	3 ___	MEMS 412 Design of Thermal Systems [MEMS 301] ⁷	3 ___
_____ H&SS Elective ³	3 ___	MEMS 305 Fluid Mechanics and Heat Transfer Lab [MEMS 3410 ⁷ & 3420 ⁸]	2 ___
		GenEng 4501 ⁶ Ethics and Sustainability	1 ___
Semester Total	15	Semester Total	15

FOURTH YEAR

Fall Semester	Units	Spring Semester	Units
MEMS 4310 Dynamics and Vibrations [ESE 318 & 319, MEMS 255] ⁷	3 ___	MEMS 4301 Simulation and Control [ESE 318 & 319, MEMS 255] ⁷	3 ___
MEMS 411 ME Design Project [MEMS 3110] ⁷	3 ___	MEMS Elective ⁴ [Senior] ⁸	3 ___
MEMS Elective ⁴ [Senior] ⁸	3 ___	Physical or Life Science Elective ⁵	3 ___
MEMS Elective ⁴ [Senior] ⁸	3 ___	Free Elective ⁹	3 ___
MEMS 405 Vibrations and Machine Elements Lab [MEMS 3110 ⁷ & 4310 ⁸]	2 ___	_____ H&SS Elective ³	3 ___
GenEng 4503 ⁶ Management and Negotiation	1 ___		
Semester Total	15	Semester Total	15

¹ A minimum of 120 units (an average course load of 15 units per semester) are required for the BSME degree

² MEMS Freshmen Engineering Electives: MEMS 101 Intro to MEMS (2 units), MEMS 1001 Shop Practicum (1 unit) and MEMS 1003 ME Design and Build (1 Unit)

³ A minimum of 18 units of H&SS are required

⁴ 300 level or above from the approved list, 9 units are required

⁵ 200 level or above with NS attribute (natural science) in physical or life science in EPSc, EnSt, Physics, Chem, or Bio exception: Chem 112A satisfies requirement

⁶ Three one unit courses are required: GenEng 4501 Ethics, 4502 Leadership and 4503 Management (all are classified as SS)

⁷ Pre-requisite

⁸ Co-requisite

⁹ Free Elective: Any course from Engineering or other WU schools