BS in Mechanical Engineering Curriculum[1]

11/13/2015

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 131 Computer Science I (with MATLAB extensions)	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	**14-16**[1]	Semester Total	**14-16**[1]

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][8]	3 ___
MEMS 3410 Fluid Mechanics [Math 233 & 217][7][MEMS 255][8]	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 satifies 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