

B.S. in Mechanical Engineering – Sample Curriculum^{*1} 2015-16

First Year

Fall Semester			Spring Semester		
Course Title	Number	Units	Course Title	Number	Units
Calculus II	L24-Math-132	3	Calculus III	L24-Math-233	3
Physics I or Gen Physics I	L31-Phys-197/117A	4	Physics II or Gen Physics II	L31-Phys-198/118A	4
Computer-Aided Design	E37-MEMS-202	3	Engr & Scientific Computing ^{*4} (uses MATLAB)	E81-CSE-200	3
H/SS Elective ^{*3} or MEMS Freshmen elective ^{*2}		1-3	H/SS Elective ^{*3} or MEMS Freshmen elective ^{*2}		1-3
H/SS Elective ^{*3}		3	H/SS Elective ^{*3}		3
Total Units:		14-16	Total Units:		14-16

Second Year

Fall Semester			Spring Semester		
Course Title	Number	Units	Course Title	Number	Units
Differential Equations	L24-Math-217	3	Engineering Math "A" ^{*5}	E35-ESE-318	3
Mechanics I (Differential Equations is co-reg)	E37-MEMS-253	3	Mechanics II	E37-MEMS-255	3
Intro to Electrcal & Electric Circuits (Differential Equations is co-reg)	E35-ESE-230	4	Mechanics III (Mechanics II & III can be taken simultaneously)	E37-MEMS-350	3
General Chemistry I	L07-Chem-111A	3	Mechanics & Materials Sci Lab	E37-MEMS-205	2
Gen Chem LAB Class	L07-Chem-151	2	Materials Science	E37-MEMS-3610	3
			EN Leadership & Team Building	E60-GenEng-4502	1
Total Units:		15	Total Units:		15

Third Year

Fall Semester			Spring Semester		
Course Title	Number	Units	Course Title	Number	Units
Engineering Math "B" ^{*5}	E35-ESE-319	3	Fluid Mechanics and Heat Transfer Lab	E37-MEMS-305	2
Thermodynamics (prereq: Chem I)	E37-MEMS-301	3	Machine Elements	E37-MEMS-3110	3
Fluid Mechanics (prereq: Mechanics II)	E37-MEMS-3410	3	Heat Transfer	E37-MEMS-3420	3
Technical Writing	E60-GenEng-310	3	Engr Probability & Statistics (Math prereqs up through Calc III)	E35-ESE-326	3
H/SS or Free Elective ^{*3}		3	Design of Thermal Systems	E37-MEMS-412	3
			EN Ethics and Sustainability	E60-GenEng-4501	1
Total Units:		15	Total Units:		15

Fourth Year

Fall Semester			Spring Semester		
Course Title	Number	Units	Course Title	Number	Units
Dynamics & Vibrations	E37-MEMS-4310	3	Simulation & Control (Spring only)	E37-MEMS-4301	3
Mech E Design Project	E37-MEMS-411	3	MEMS Elective ^{*6}	E37-300+ (from list)	3
MEMS Elective ^{*6}	E37-300+ (from list)	3	Physical or Life Sci Elective with "NS" attribute	L07/L19/L31/L41/L82 200+ level	3
MEMS Elective ^{*6}	E37-300+ (from list)	3	H/SS Elective ^{*3}		3
Vibrations & Machine Elements Lab	E37-MEMS-405	2	Free Elective		3
Conflict Mgmt & Prob Solving in EN	E60-GenEng-4503	1			
Total Units:		15	Total Units:		15

^{*1} A minimum of 120 units are required for the BS in ME degree; this chart represents one example. Check all pre-regs and speak with adviser(s).

^{*2} The following are recommended but not required: Intro to MEMS 101 course (2 units) and/or MEMS-1001 Shop Practicum or MEMS-1003 Design & Build (each 1 unit, Pass/Fail only courses.) Sometimes students will need to use this space for L59-100 Writing I if they do not place out.

^{*3} Humanities & Social Science electives: 18 H/SS units required; all may be taken Pass/Fail, except required courses GenEng 4501, 4502, 4503. H/SS courses include: All Art courses from depts F10/F20, and any A&S, Arch, or Business courses tagged with an "EN: S" or "EN: H" attribute.

^{*4} CSE-131 (Comp Sci I, using JAVA) may be taken instead of CSE-200, provided the student later takes a 1 unit MATLAB course (E35-101).

^{*5} En Math "A"/318 and "B"/319 may be taken simultaneously OR in "any" order, provided student has completed Differential Equations.

^{*6} 300 level or above from approved list published on the MEMS department website; 9 such units are required.