

Engineering Mechanics Curriculum Checklist

Student:

Course	Title	Cr.	Grade	Term	Pre/Co-Req
Chem 0960	Gen. Chem. Eng. 1	3			
Chem 0970	Gen. Chem. Eng. 2	3			Chem 0960
Math 0220	Anal. Geo. & Calc. 1	4			
Math 0230	Anal. Geo. & Calc. 2	4			Math 0220
Math 0240	Anal. Geo. & Calc. 3	4			Math 0230
Math 0280	Mat. & Lin. Alg.	3			Math 0220
Math 0290	Diff. Eq.	3			Math 0230
Stat 1000	Appl. Stat. Methods	4			
Math 1550	Vector Analysis	3			
Phys 0174	Phys. Sci. & Eng. 1	4			<i>Math 0220</i>
Phys 0175	Phys. Sci. & Eng. 2	4			Phys 0174, <i>Math 0230</i>
Phys 0477	Thermal Phys, Rel&QM	4			Phys 0175, <i>Math 0240</i>
Phys	Upper Level Physics	3			
Engr 0011	Int. Eng. Analysis	3			
Engr 0012	Eng. Computing	3			Engr 0011
Engr 0022	Mat. Str. & Prop.	3			Phys 0175, Math 0230
Engr 0135	Statics & Mech. Matls 1	3			Math 0230, PHYS 0174
Engr 0145	Statics & Mech. Matls 2	3			Engr 0135
Mems 0024	Intro to Design	3			Engr 0011
Mems 0031	Lin. Circ. & Sys. 1	3			Phys 0175, Math 0230
Mems 0051	Intro. Thermodynamics	3			Phys 0175, Chem 0960
Mems 1014	Dynamic Systems	3			Engr 0012, Mems 0031, Math 0280
Mems 1015	Rigid Body Dynamics	3			Engr 0135, Math 0240
Mems 1041	Mech. Measurements 1	3			Engr 0145, Mems 0031, Mems 1014 and Mems 1015
Mems 0071	Intro to Fluid Mech.	3			Phys 0175, Chem 0970, Math 0290
Mems 1028	Mech Design 1	3			Engr 0145
Mems 1047	Finite Element Anal	3			Mems 1028
Mems 1020	Vibrations	3			Mems 1014

Mems 1010	Exp. Meth. In MSE	3			Engr 0022
Mems 1053	Struct. of Crystals	3			Engr 0022
	Eng. Mech. Elect.	3			
	Eng. Mech. Elect.	3			
	Senior Design 1 ⁺	3			
	Senior Design 2 ⁺⁺	3			
	Hum. Elective*	3			
	Soc. Sci. Elective*	3			
	Hum./Soc. Sci. El.*	3			
	Hum./Soc. Sci. El.*	3			
	Hum./Soc. Sci. El.* †	3			
	Hum./Soc. Sci. El.*	3			
Total		127			

Upper Level Physics: Physics courses with course numbers > 1000

+ A senior design course offered by one of the other SSOE engineering programs is required.

++ May be ENGR 1050 Product Realization, or with preapproval a senior design project arranged with a faculty mentor and taken as ENGSCI 1801. Students wishing to complete a two-term project with a faculty mentor may request approval for the second term to count as a program elective (ENGSCI 1802)

*All humanities and Social Science electives must be from the SSOE approved list. Two courses need to be in single area (see SSOE guidelines).

†A University designated writing intensive course

Italicized courses indicate co-requisites; courses must be taken prior to or concurrently.

Engineering Mechanics Program Electives

The Engineering Mechanics curriculum requires two program elective courses. It is suggested that the two courses be selected to form an area of specialization. Possible elective courses are given below:

Bioengineering

BIOE 1061 Human Factors Engineering

BIOE 1063 Intro to Orthopaedic Biomech

BIOE 1064 Biomech of Organs, Tissues and Cells

BIOE 1630 Biomech 1: Mechanical Principles Biological

BIOE 1631 Biomech 2: Intro to Biodyn and Biosolid Mech
BIOE 1632 Biomech 3: Biodynamics of Movement
BIOE 1633 Biomech 4: Biomech of Organs, Tissues and Cells

Civil Engineering

CEE 1801 Principles of Soil Mechanics
CEE 1821 Foundation Engineering
CEE 1412 Introduction to Hydrology
CEE 1401 Open Channel Hydraulics
CEE 1330 Intro. to Structural Analysis
CEE 1341 Steel Structures

Physics

PHYS 1331 Mechanics
PHYS 1341 Thermo and Statistical Mechanics

Material Science

MEMS 0040 Materials and Manufacturing
MEMS 1011 Structure and Properties Lab
MEMS 1048 Analysis and Characterization at the Nano-Scale
MEMS 1053 Structures of Crystals
MEMS 1058 Electronic Properties of Materials
MEMS 1059 Phase Equilibria in Multi-Component Materials
MEMS 1063 Phase Transformations
MEMS 1070 Mechanical Behavior of Materials
MEMS 1111 Materials for Energy Generation and Storage

Mechanical Engineering

MEMS 1045 Automatic Controls

MEMS 1049 Mechatronics

MEMS 1051 Applied Thermodynamics

MEMS 1052 Heat and Mass Transfer

MEMS 1057 Micro/Nano Manufacturing

MEMS 1071 Applied Fluid Mechanics

MEMS 1072 Applied Fluid Dynamics

MEMS 1082 Electromechanical Sensors and Actuators