Engineering Physics Curriculum Checklist **Student:**

Engineering Science Program Area of Concentration: Engineering Physics					
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
Phys 0174	Phys. Sci. & Eng. 1	4			*Math 0220*
Phys 0175	Phys. Sci. & Eng. 2	4			Phys 0174, *Math 0230*
Phys 0219	Lab Phys. Sci. & Eng.	2			*Phys 0175*
Phys 0477	Thermal Phys, Rel.,&QM	4			Phys 0175, *Math 0240*
Phys 0481	Princ. Mod. Phys. 2	3			Phys 0477
(Phys 1351)	Upper Level Physics (Rec: Inter. Elect. & Mag.)	3			Phys 0175,Math 0240, *Math 0290*
Phys	Upper Level Physics	3			
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
Ece 0101	Lin. Circ. & Sys.	4			Phys 0175, Engr 0012 *Math 0280, 0290*
Ece 0201	Digital Cir. & Systems	4			Phys 0175
Ece 0102	Micro Circuits & Lab	4			Ece 0101
Ece 0301	Problem Solving C++	3			Engr 0012
Ece 1212	El. Circ. Des. Lab	3			Ece 0102, 0402
Ece 1247	Semicond. Dev. Theory	3			Ece 0102 Math 0280, 0290
Ece 1266	Appl. Fields & Waves	3			Phys 1351 Ece 0301 Alt; Physics 1372
Ece 0402	Sig. Sys. & Prob.	3			Math 0280, 0290

Mems 0051	Intro. Thermodynamics	3			Phys 0174, Chem 0960,
Mems 1053	Struct. of Crystals	3			Engr 0022
Ece 1895†	Jr. Design Fund.	3			
Mems 1059	Phase Equilibria	3			Engr 0022, Mems 0051
	Program Elective (Rec: Math 1470 PDE)	3			Math 0240, Math 0290
	Program Elective	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			

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).

† Writing intensive course

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

* or MEMS 1010, MEMS 1057

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).

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

Engineering Physics Curriculum Program Electives

There are two program electives in the Engineering Physics curriculum. It is recommended that students planning to pursue graduate studies in physics take the honors quantum mechanics sequence in the Physics department:

PHYS 1370: Introduction to Quantum Physics 1
PHYS 1371: Introduction to Quantum Physics 2

Students can also satisfy the program elective requirement by choosing a two-course sequence that creates in-depth exposure to a topic area. The Program Director can approve appropriate two-course sequences. Example sequences of courses include the following:

ECE 1232: Introduction to Lasers and Optical Electronics
ECE 1238: Digital Electronics

MEMS 1010: Experimental Methods in Materials Science and Engineering
MEMS 1101: Ferrous Physical Metallurgy

ENGR 0240 Nanotechnology and Nano-Engineering
ENGR 0241 Fabrication and Design in Nanotechnology#
(# or PHYS 1375/CHEM 1630 Foundations of Nanoscience)