Nanotechnology Sample Schedule
Physics/Materials Emphasis

Title	Course	Units
First Term		
General Chemistry for Engineering 1	CHEM 0960	3
Introduction to Engineering Analysis	ENGR 0011	3
Analytical Geometry & Calculus 1	MATH 0220	4
Physics for Science & Engineering 1	PHYS 0174	4
*Humanities/Social Sciences Elective**	*H/SS Elective 1*	3
Freshman Seminar	ENGR 0081	0
Term Units		17
Second Term		
General Chemistry for Engineering 2	CHEM 0970	3
Engineering Computing	ENGR 0012	3
Analytical Geometry & Calculus 2	MATH 0230	4
Physics for Science & Engineering 2	PHYS 0175	4
*Humanities/Social Sciences Elective**	*H/SS Elective 2*	3
Freshman Seminar	ENGR 0082	0
Term Units		17
Third Term		
Linear Circuits & Systems	ECE 0101	4
Problem Solving in C++	ECE 0301	3
Statics & Mechanics of Materials 1	ENGR 0135	3
Matrices & Linear Algebra	MATH 0280	3
Principles of Modern Physics 1	PHYS 0477	4
Engineering Science Seminar	ENGSCI 1085	0

Term Units		17
Fourth Term		
Materials Structures & Properties	ENGR 0022	3
Analytical Geometry & Calculus 3	MATH 0240	4
Differential Equations	MATH 0290	3
Introduction Thermodynamics	MEMS 0051	3
Lab Physics for Science &	PHYS 0219	2
Engineering Science Seminar	ENGSCI 1085	0
Term Units		15
Fifth Term		
Introduction to Nanotechnology & Nanoengineering	ENGR 0240	3
Experimental Methods in MSE	MEMS 1010	3
Structures of Crystals	MEMS 1053	3
Phase Equilibria	MEMS 1059	3
*Humanities/Social Sciences Elective**	*H/SS Elective 3*	3
Program Elective 1		3
Engineering Science Seminar	ENGSCI 1085	0
Term Units		18
Sixth Term		
Engineering Microelectronic Circuits & Lab	ECE 0102	4
Fabrication & Design in Nanotechnology or Foundations of Nanoscience	PHYS 1375 or CHEM 1630 or ECE 1251	3
Phase Transformations	MEMS 1063	3
Principles of Modern Physics 2	PHYS 0481	3
Program Elective 2		3
Engineering Science Seminar	ENGSCI 1085	0

Term Units		16
Seventh Term		
Micro/Nano Manufacturing	MEMS 1057	3
Physics Elective 1	*PHYS*	3
Program Elective 3		3
Senior Design 1		3
*Social Sciences Elective**	*H/SS Elective 4*	3
Engineering Science Seminar	ENGSCI 1085	0
Term Units		15
Eighth Term		
Probability & Statistics	ENGR 0021	3
Physics Elective 2	*PHYS*	3
Senior Design 2		3
*Humanities/Social Sciences Elective * ‡*	*H/SS Elective 5*	3
*Humanities Elective**	*H/SS Elective 6*	3
Engineering Science Seminar	ENGSCI 1085	0
Term Units		15
Total Units		130
50 Minimum Engineering Units, 45 Minimum Math/Science Units		

Upper-Level Physics: Physics courses with course numbers > 1000

[+] A senior design course offered by one of the other SSOE engineering programs is required. Alternatively, may be ENGR 1050 Product Realization, or with preapproval, a senior design project arranged with a faculty mentor and taken as ENGSCI 1801.
[++] A semester-long research experience under the supervision of a faculty advisor at Pitt, not necessarily within the Swanson School of Engineering. Note that this requirement may also be fulfilled by participation in an undergraduate research program like the MCSI URP or the SURI during the summer semester.

‡A University designated writing intensive course

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