

MAJOR SEQUENCE AND DEGREE REQUIREMENTS

Major: **BS CHEMISTRY**
 Option: **NANOTECHNOLOGY**
 Major Field Requirements: **41.0 Credits**
 Other Requirements: **40.0 Credits**

When applicable, up to six of the **REQUIRED RELATED** courses may be credited toward the Liberal Arts Core subject to normal distribution rules.

Course	No.	Short Title	C.H.	Grade	Course	No.	Short Title	C.H.	Grade
REQUIRED CHEMISTRY COURSES (37.0 Credits)					REQUIRED RELATED (22.0 credits)				
CHEM	111	Intro Chemistry I	4.0	_____	Mathematics (12.0 credits)				
CHEM	112	Intro Chemistry II	4.0	_____	MATH	161	Calculus I	4.0	_____
CHEM	188	Freshman Seminar	1.0	_____	MATH	211	Calculus II	4.0	_____
CHEM	231	Organic Chem I	4.0	_____	MATH	311	Calculus III	4.0	_____
CHEM	232	Organic Chem II	4.0	_____	Physics (10.0 credits)				
CHEM	251	Inorganic Chem I	3.0	_____	PHYS	231	Physics I with Calc	5.0	_____
CHEM	265	Quant Analysis	4.0	_____	PHYS	232	Physics II with Calc	5.0	_____
CHEM	312	Chem in Nanotech	3.0	_____					
CHEM	341	Physical Chem I	4.0	_____					
CHEM	342	Physical Chem II	4.0	_____					
CHEM	487	Seminar in Chem I	0.5	_____					
CHEM	488	Seminar in Chem II	0.5	_____					
CHEM	498	Research	1.0	_____					
Electives (4.0 credits)									
CHEM	300	Co-op in Chem	3.0	_____					
CHEM	326	Biochemistry I	4.0	_____					
CHEM	375	Environmental Chem	4.0	_____					
CHEM	381	Polymer Chem I	4.0	_____					
CHEM	391	Advanced Lab I	1.0	_____					
CHEM	392	Advanced Lab II	1.0	_____					
CHEM	435	Advanced Organic Chem	3.0	_____					
CHEM	452	Inorganic Chem II	3.0	_____					
CHEM	465	Analytical Chem	4.0	_____					
CHEM	486	Topics in Chem	1.0-4.0	_____					
CHEM	489	Dept. Honors	1.0-3.0	_____					
CHEM	498	Independent Study	1.0-3.0	_____					
CHEM	499	Dept. Honors	1.0-3.0	_____	General Electives (as necessary)				
PROFESSIONAL BLOCK									
PENN STATE COURSES (18.0 credits)									
NFMT	311	Matls, Safety & Equip	3.0	_____					
NFMT	312	Basic Nanofab Processes	3.0	_____					
NFMT	313	Thin Film Utilization	3.0	_____					
NFMT	314	Advanced Litho	3.0	_____					
NFMT	315	Matls Mod in Nano	3.0	_____					
NFMT	316	Charac, Pack & Test	3.0	_____					
Nanofabrication Manufacturing Technology (NFMT) Capstone Semester at Penn State University in the Nanofabrication Facility.									

