

MILLERSVILLE UNIVERSITY

Student Name: _____ Student I.D.# _____

DEGREE:	BS	MAJOR REQUIREMENTS FOR A BS DEGREE IN CHEMISTRY
MAJOR:	CHEM	Total credit hours required: 120.0 minimum
OPTION:	Nanotechnology	

REQUIREMENTS AND POLICIES FOR THE BS CHEMISTRY MAJOR

A. Policies for Admission to the Major

1. New students (freshmen and transfers) must be admitted to the Chemistry major by the Office of Admissions upon admission to the University.
2. Admission into the Chemistry major from other departments is upon approval of the chairperson of the Chemistry Department.
3. Non-degree and continuing education students must be admitted to the Chemistry major by the Office of Admissions.

B. Policies for Retention in the Major

1. University requirements for retention.
2. The student is required to have a 2.00 grade point average in the major courses by the end of the sophomore year. If not, it is recommended that courses be repeated to achieve a 2.00 average in the major or that there be a change of major.
3. Chemistry majors are required to have a 2.00 grade or better in Chemistry courses required for the major at the 100 and 200 level before proceeding to a course for which it is a prerequisite. (Currently, these courses include: CHEM 111, 112, 231, 232, 251, and 265).

C. Policies for Completion of the Major

1. Completion of all University curricular requirements.

American Chemical Society Certification

A student opting for ACS certification should take all chemistry courses in the given sequence in the college catalog. The student must have successfully completed Physical Chemistry II (CHEM 342) **before** beginning either Advanced Inorganic (CHEM 452) or Analytical Chemistry (CHEM 465).

In compliance with the ACS Guidelines, the department highly recommends a modern foreign language (FORL 101-102; G1 Humanities elective) and an elementary economics course (Social Science: G3 elective) for ACS certification.

Note to the student: *This form is provided as a guide. It is your responsibility to consult regularly with your adviser to be aware of changes and curriculum details which are not incorporated on this form.*

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	Q.P.	Course No.	Short Title	C.H.	Grade	Q.P.
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	_____	_____	General Electives (as necessary)				
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 s.h.)									
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	1.0	_____	_____					
CHEM 392	Advanced Lab II	1.0	_____	_____					
CHEM 435	Adv. Organic Chem	3.0	_____	_____					
CHEM 452	Inorganic Chem	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	_____	_____					
PROFESSIONAL BLOCK PENN STATE COURSES (18 s.h.)									
Nanofabrication Manufacturing Technology (NFMT) Capstone Semester at Penn State University in the Nanofabrication Facility.									
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	_____	_____					