

Suggested Course Sequence for Bachelor of Sciences in Chemistry- Nanotechnology Option

YEAR	FALL	SPRING
1st	Chemistry for the Sciences I 52.115 Math 53.113/125 Group A (Humanities) 1 of 4 University Seminar 09.100 Group B (Social Sciences) 1 of 4/Diversity 1 of 2	Chemistry for the Sciences II 52.116 Math 53.125/126 Composition 1 20.101 Group A (Humanities) 2 of 4/ Diversity 2 of 2 Values/Ethics/Responsibility
	14	16
2nd	Organic Chemistry I 52.231 Math 53.126/225 Gen Physics I 54.211 Technical Writing 09.231	Organic Chemistry II 52.232 Inorganic Chemistry 52.251 Intro to Chemical Literature 52.281 Gen Physics II 54.212 Math 53.225 or elective
	14	15
3rd	Physical Chemistry I 52.361 Analytical Chemistry 52.321 Fitness 1 of 2 Communication Group B (Social Sciences) 2 of 4	89.403 Nanotechnology Practicum* at PSU E SC 211 Material Safety, & Equipment Overview E SC 212 Basic Nanotechnology Processes E SC 213 Materials in Nanotechnology E SC 214 Lithography for Nanotechnology E SC 215 Materials Modification in Nanotechnology E SC 216 Charact/Testing of Nano Struct. & Materi
	14	18
4th	Chemistry Elective** ^{1,2,3} 1 of 2 or Free Elective Chemistry Elective** ^{1,2,3} 2 of 2 or Free Elective Group A (Humanities) 3 of 4 Group B (Social Sciences) 3 of 4 Fitness 2 of 2	Chemistry Elective** ^{1,2,3} 1 of 2 or Free Elective Chemistry Elective** ^{1,2,3} 2 of 2 or Free Elective Group A (Humanities) 4 of 4 Group B (Social Sciences) 4 of 4 Free Elective
	14	15

Total credits = 120

*** Nanotechnology Practicum**

A 2.0 GPA in each of the following: 52.115, 52.116, 52.231, 52.232, 52.321, and 52.361 is required.

Though it is suggested that the one semester residence at PSU's Center for Nanotechnology Education and Utilization (CNEU) be taken the 6th semester, alternatively, it can be taken the summer between the 6th & 7th semesters or during the 7th or 8th semester. Taking the Nanotechnology Practicum during the summer allows for flexibility in graduation. Please discuss the options with your advisor.

**** Chemistry Electives**

¹ Spring Only: 52.332, 52.333, 52.362, 52.371, 52.482 ² Fall Only: 52.452 ³ Fall or Spring: 52.341, 52.492

Note- *Humanity, Social Sciences, Communication, Diversity, Values/Eth/Resp. electives may be interchanged with respect to when taken.*

All students must take the following:

12 credits	Humanities & the Arts (Group A)	9 credits	Communication
12 credits	Social & Behavioral Sciences (Group B)	3 credits	Quantitative Reasoning (Calc 1 applies to this)
12 credits	Natural Sciences & Mathematics (Group C)	3 credits	Values, Ethics & Responsible Decision Making

Chemistry majors fulfill the 12 credit Group C requirement and do not need to take any extra credits in this area unless they choose to as an elective

2 credits Fitness & Recreational Skills

6 credits Diversity (may double count in other groups)

**Bloomsburg University Department of Chemistry
Bachelor of Sciences in Chemistry- Nanotechnology Option**

Courses (prerequisites)	Sem. Taken	Cr	Courses	Sem. Taken	Cr
			¹ offered only in Spring ² offered only in Fall		
Chemistry Courses – 27 credits			General Education - 50 credits total		
52.115 Chemistry for the Sciences I		4	Communication - 9 credits		
52.116 Chemistry for the Sciences II (115)		4	20.101 Composition 1		3
52.231 Organic Chemistry I ² (116)		4	09.231 Technical Writing		3
52.232 Organic Chemistry II ¹ (231)		4	<u>Communications Course (25.103 Public Speaking)</u>		3
52.251 Inorganic Chemistry ¹		3			
52.281 Introduction to Chemical Literature ¹		1	Quantitative - 3 credits		
52.321 Analytical Chemistry ² (116)		3	(Requirement met with 53.125)		
52.361 Physical Chemistry I ² (116, 54.212, 53.225)		4	Values - 3 credits - may be met w/approp. Gr. A or B		3
Restricted Chemistry Electives - 6-8 Credits					
52.322 Instru. Analytical ¹ or 52.333 Adv. Organic ¹ or 52.341			Fitness - 2 credits		
Biochem 1 or 52.362 P. Chem II ¹ or 52.371 Intro Polymer ¹ or					
52.452 Adv. Inorg. ² or 52.482 Adv. Topics ¹ or 52.492 Research I					
Math Courses – 9 credits			Diversity - 6 credits - may be met w/approp. Gr. A or B		
53.125 Calculus 1					3
53.126 Calculus 2 (125)		3			3
53.225 Calculus 3 (126)		3			
		3	Group A (Humanities) - 12 credits		
Physics Courses – 8 credits			28.270 Logic (recommended)		3
54.211 Gen Physics I					3
54.212 Gen Physics II (211, 53.125 concurrent)		4			3
		4			3
Nanotechnology Courses - 18 credits			Group B (Social Sciences) - 12 credits		
89.403 Nanotechnology Practicum* which includes the following:					3
E SC 211 Material Safety, & Equipment Overview		3			3
E SC 212 Basic Nanotechnology Processes		3			3
E SC 213 Materials in Nanotechnology		3			3
E SC 214 Lithography for Nanotechnology		3			3
E SC 215 Materials Modification in Nanotechnology		3			
E SC 216 Characterization & Testing of Nanofabricated Struct. & Mat		3	Group C (Nat. Sci. & Math) - 12 credits		
			All requirements met with required science and math courses		

* at PSU Center for Nanotechnology Education & Utilization Facility