# MILLERSVILLE UNIVERSITY

Student Name:		Student I.D. #:			
DEGREE:	BSE	MAJOR REQUIREMENTS FOR A BSE DEGREE IN			
MAJOR: OPTION:	CHEM	CHEMISTRY Total credit hours required: 126 minimum			
REQUIRI	EMENTS AN	D POLICIES FOR THE BSE CHEMISTRY MAJOR			
1. Nev major 2. Ad appro 3. No	by the Office mission into the val of the chai n-degree and c	to the Major eshmen and transfers) must be admitted to the Chemistry of Admissions upon admission to the University. he Chemistry major from other departments is upon reperson of the Chemistry Department. continuing education students must be admitted to the the Office of Admissions.			
	or Retention i				
<ol> <li>University requirements for retention.</li> <li>The student is required to have a 2.00 grade point average in the major courses by the end of the of 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.</li> <li>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 new course for which it is a prerequisite. (Currently, these courses include: CHEM 111,112, 231, 232, 251, and 265).</li> </ol>					
	-	n of the Major I University curricular requirements.			
All students enro Professional Stu requirements pri course. Students certified. A listin	olled in teache dies and meet or to being en must meet ad ng of Advance department o	d Professional Studies and Certification (Ed. Majors) er preparation programs must be admitted to Advanced Pennsylvania State requirements and university rolled in their initial Advanced Professional Studies ditional Pennsylvania State requirements in order to be ed Professional Studies courses and requirements is office, the Early Field Experience office, and on the Early			
		ed as a guide. It is your responsibility to consult regularly with your culum details which are not incorporated on this form.			
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## MAJOR SEQUENCE AND DEGREE REQUIREMENTS

#### Major: BSE CHEMISTRY

Option: Major Field Requirements: **41.0 Credits** Other Requirements: **55.0 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 (41.0 Credits)					RE	OUIRI	ED RELATED (22.0 credits)		
						<b>X</b> 0111			
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						
CHEM	251	Inorganic Chem I	3.0			Physic	cs (10.0 credits)		
CHEM	265	Quant Analysis	4.0		PHYS	231	Physics I with Calc	5.0	
CHEM	326	Biochemistry I	4.0		PHYS	232	Physics II with Calc	5.0	
CHEM	341	Physical Chem I	4.0						
CHEM	342	Physical Chem II	4.0			Biolog	gy		
CHEM	375	Environmental Chem	4.0			Demon	strate competency in Biology 100*		
CHEM	487	Seminar in Chem I	0.5						
CHEM	488	Seminar in Chem II	0.5		*Compe	tency n	nay be demonstrated by one of the		
					followin	-			
						-	le of "A" or "B" in AP Biology		
					·		or better in the national AP exam		
					·		score on the CLEP exam		
PRO	FFSSI	ONAL EDUCATION (33.0 Credit	e)		4) a pass	ing gra	de for General Biology (BIOL 100)		
IKU	r Looi	ONAL EDUCATION (55.0 CIEUN	5)						
EDFN	211	Found. Modern. Ed.	3.0		General	Educat	ion Perspectives requirement not		
EDFN	241	Psyc. Found. Teach.	3.0				E majors declared as of Fall 2006		
EDSE	321	Issues in Sec. Educ.	3.0		•		·		
EDFN	330	Instr. Techn. Design	3.0						
EDSE	340	Cntnt. Area Litrcy Divers. Class	3.0						
SPED	346	Sec. Stdns. w. Disab. Inclu. Sttgs.	3.0						
EDSE	435	Teaching Science	3.0						
EDSE	461	Student Teaching	9.0						
EDSE	471	Different Instr. in Class	3.0				General Electives (as necessary)		
							<u> </u>		

## BACHELOR OF SECONDARY EDUCATION IN CHEMISTRY RECOMMENDED PROGRAM

FIRST SEMESTER				SECOND SEMESTER						
CHEM	111	Introductory Chem I	4.0	CHEM	112	Introductory Chem II	4.0			
CHEM	188	Freshman Seminar	1.0	CHEM	251	Inorganic Chem I	3.0			
MATH	161	Calculus I	4.0	MATH	211	Calculus II	4.0			
ENGL	110	English Composition	3.0	COMM	100	Fund. Of Speech	3.0			
WELL	175	Wellness	<u>3.0</u>			Humanities Course #1****	<u>3.0</u>			
		TOTAL S.H.	15.0			TOTAL S.H.	17.0			
	,	THIRD SEMESTER	FOURTH SEMESTER*							
CHEM	231	Organic Chem. I	4.0	CHEM	232	Organic Chem. II*	4.0			
MATH	311	Calculus III	4.0	CHEM	265	Quant. Analysis*	4.0			
PHYS	231	Physics I w/ Calculus	5.0	PHYS	232	Physics II w/ Calculus*	5.0			
		Soc. Science Course #1	<u>3.0</u>	EDFN	211	Foundations of Modern Educ.	3.0			
		TOTAL S.H.	16.0	EDFN	241	Psych. Foundations Teaching	<u>3.0</u>			
						TOTAL S.H.*	19.0*			
FIFTH SEMESTER						SIXTH SEMESTER				
CHEM	341	Physical Chem I	4.0	CHEM	326	Biochemistry I**	4.0			
CHEM	375	Environmental Chem (D)	4.0	CHEM	342	Physical Chem II	4.0			
CHEM	487	Chemistry Seminar I	0.5	CHEM	488	Chemistry Seminar II	0.5			
		Soc. Science Course #2	3.0			Humanities Course #2****	3.0			
WRIT	31X	Advanced Writing**	3.0			Humanities Course #3****	3.0			
BIOL	100	General Biology***	<u>3.0</u>			Soc. Science Course #3	<u>3.0</u>			
		TOTAL S.H.	17.5			TOTAL S.H.	17.5			
	SI	EVENTH SEMESTER		EIGHTH SEMESTER						
EDFN	321	Issues in Secondary Ed.	3.0	EDSE	461	Student Teaching	9.0			
EDFN	330	Instructional Technology	3.0	EDSE	471	Different Instr. In Class	<u>3.0</u>			
EDFN	435	Teaching of Science	3.0			TOTAL S.H.	12.0			
EDSE	340	Cntnt Area Litrcy Divers	3.0							
SPED	346	Sec Stdnts Disab Inclu Sttgs	<u>3.0</u>							
		TOTAL S.H.	15.0							

### COMMENTS, NOTES, OR RECOMMENDATIONS:

\* It is recommended that CHEM 232, CHEM 265, or PHYS 232 be taken during a summer session to reduce the total number of credits in the 4<sup>th</sup> semester.

\*\* WRIT 312 (Technical Writing) or WRIT 319 (Science Writing) are highly recommended.

\*\*\* Students may alternatively satisfy this requirement by one of the following: (1) a course grade of "A" or "B" in AP Biology, (2) a score of 3 or better in the national AP exam, (3) a successful score on the CLEP exam. \*\*\*\* One of the Humanities Courses MUST be an English Course with "Literature" in the title. The Pennsylvania Dept. of Education requires 6 credits of English; 3 in writing (ENGL 110) <u>AND</u> 3 in literature. Each BSE student MUST complete a 3-credit English literature course as one of their G1 courses to serve as a <u>prerequisite requirement</u> before entering Professional Block and Student Teaching.

<u>Note 1:</u> The BSE-Chemistry curriculum, as a whole. satisfies the Perspectives (P) requirement in the general education curriculum. This means that BSE-Chemistry majors do not take a separate Perspectives (P) course.

<u>Note 2:</u> The Professional Block Courses (7<sup>th</sup> Semester) are offered ONLY during Fall semesters. Students starting out in CHEM 110 and/or MATH 101 or 160 are advised to use summer courses as needed to have all prerequisites completed for enrolling in CHEM 341 in the 5<sup>th</sup> Semester. A student not able to take CHEM 341 in the 5<sup>th</sup> semester should instead take the Professional Block courses and adjust plans to facilitate graduating in nine total semesters.