MILLERSVILLE UNIVERSITY

MAJOR REQUIREMENTS FOR A BS DEGREE IN CHEMISTRY

REQUIREMENTS AND POLICIES FOR THE BS CHEMISTRY MAJOR

A. Policies for Admission to the Major

B. Policies for Retention in the Major

C. Policies for Completion of the Major

American Chemical Society Certification

Note to the Student:

MAJOR SEQUENCE AND DEGREE REQUIREMENTS

Major: BS CHEMISTRY
Option:
Major Field Requirements: 55.0-57.0 Credits
Other Requirements: 24.0-26.0 Credits

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

REQUIRED CHEMISTRY COURSES (47.0 Credits)

Course	No.	Short Title	C.H.	Grade
CHEM	111	Intro Chemistry I	4.0	
CHEM	112	Intro Chemistry II	4.0	
CHEM	188	Freshman Seminar	1.0	
CHEM	231	Organic Chem I	4.0	
CHEM	232	Organic Chem II	4.0	
CHEM	251	Inorganic Chem I	3.0	
CHEM	265	Quant Analysis	4.0	
CHEM	326	Biochemistry I	4.0	
CHEM	341	Physical Chem I	4.0	
CHEM	342	Physical Chem II	4.0	
CHEM	391	Advanced Lab I	1.0	
CHEM	392	Advanced Lab II	1.0	
CHEM	452	Inorganic Chem II	3.0	
CHEM	465*	Analytical Chem	4.0	
CHEM	487	Seminar in Chem I	0.5	
CHEM	488	Seminar in Chem II	0.5	
CHEM	498	Independent Study	1.0	

CHEMISTRY ELECTIVES (8.0-10.0 Credits)

CHEM	312	Chem in Nanotech	3.0	
CHEM	324	Plant Biochemistry	4.0	
CHEM	327	Biochemistry II	4.0	
CHEM	328	Analyt. Biochem Lab	1.0	
CHEM	375	Environmental Chem	4.0	
CHEM	381	Polymer Chem I	4.0	
CHEM	435	Advanced Organic Chem	3.0	
CHEM	476	Environmental Chem II	4.0	
CHEM	482	Polymer Chem II	4.0	
CHEM	486	Topics in Chemistry	1.0-4.0	
CHEM	498	Independent Study **	1.0-3.0	
CHEM	489	Dept. Honors	1.0-3.0	
CHEM	499	Dept. Honors	1.0-3.0	
CHEM	300	Cooperative Educ	3.0	
CHEM	400	Cooperative Educ	3.0	

*Students not seeking ACS certification may corequisite CHEM 342 and CHEM 465.
** Students seeking ACS certification must take a minimum of two hours credit of CHEM 498 under Chemistry Electives.

REQUIRED RELATED (24.0-26.0 credits)

Mathematics (12.0 credits)

MATH	161	Calculus I	4.0
MATH	211	Calculus II	4.0
MATH	311	Calculus III	4.0

Physics (10.0 credits)

PHYS	231	Physics I with Calc	5.0
PHYS	232	Physics II with Calc	5.0

Physics, Mathematices, and/or Computer Science Electives (Choose one course)

Physics-any course numbered 233 or higher, except perspectives courses. (2.0-3.0 credits)

CSCI	161	Intro to Programming I	4.0
CSCI	162	Intro to Programming II	4.0
MATH	235	Survey of Statistics	3.0
MATH	236	Elements of Stat. II	3.0
MATH	322	Linear Algebra	4.0
MATH	333	Intro to Prob. & Stats	4.0
MATH	335	Math Stat I	3.0
MATH	365	Differential Equations	3.0
MATH	435	Math Stat II	3.0

The total number of credits earned in both elective blocks must be 12 credits.

General Electives (as necessary)

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RECOMMENDED PROGRAM

FIRST SEMESTER				SECOND SEMESTER			
CHEM	111	Intro Chem I	4.0	CHEM	112	Intro Chem II	4.0
CHEM	188	Freshman Seminar	1.0	MATH	211	Calculus II	4.0
MATH	161	Calculus I	4.0	COMM	100	Fund. of Speech	3.0
ENGL	110	English Composition	3.0	CHEM	251	Inorganic I	3.0
_____	____	Social Sciences Course #1	3.0			*TOTAL S.H.*	14.0
		TOTAL S.H.	15.0				

THIRD SEMESTER				FOURTH SEMESTER			
CHEM	231	Organic I	4.0	CHEM	232	Organic II	4.0
PHYS	231	Physics I	5.0	PHYS	232	Physics II	5.0
MATH	311	Calculus III	4.0	CHEM	265	Quant. Analysis	4.0
WELL	175	Wellness	3.0	_____	____	Humanities Course #1	3.0
		TOTAL S.H.	16.0			*TOTAL S.H.*	16.0

FIFTH SEMESTER				SIXTH SEMESTER			
CHEM	341	Physical Chem I	4.0	CHEM	342	Physical Chem II	4.0
CHEM	391	Advanced Lab I	1.0	CHEM	392	Advanced Lab II	1.0
_____	____	Humanities Course #2	3.0	CHEM	____	Chemistry Elective	4.0
_____	____	Social Sciences Course #2	3.0	_____	____	Humanities Course #3	3.0
ENGL	3XX	Advanced Writing	3.0	_____	____	Math/Phys Elective	2-4.0
		TOTAL S.H.	14.0			*TOTAL S.H.*	14-16.0

SEVENTH SEMESTER				EIGHTH SEMESTER			
CHEM	326	Biochemistry I	4.0	CHEM	465	Analytical Chemistry	4.0
CHEM	452	Inorganic II	3.0	CHEM	488	Chemistry Seminar	0.5
CHEM	487	Chemistry Seminar	0.5	CHEM	____	Chemistry Elective	4.0
CHEM	498	Intro to Research	1.0			C&E Course #1	3.0
_____	____	[illegible]		_____	____	[illegible]	
_____	____	Social Sciences Course #3	3.0			*TOTAL S.H*	14.5
		TOTAL S.H.	14.5				

COMMENTS, NOTES OR RECOMMENDATIONS:

1. Connections & Exploration (C&E) courses #1 and #4 can be satisfied with any approved GenEd course.
2. Cultural Diversity & Community (D) course may be satisfied with approved courses from the GenEd requirements (including Perspectives), the major, the minor, the required related area or general electives.

The American Chemical Society (ACS) and the Chemistry Department strongly recommend an Introductory Economics course (ECON 100, for example) among the Social Sciences (G2) electives and Elementary Foreign Language (FORL 101 and 102) among the Humanities (G1) electives. ENGL 312 (Technical Writing) is highly recommended.

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BACHELOR OF SCIENCE IN CHEMISTRY
3-Year Plan

*This plan is for students matriculating with AP Chemistry (Chem 111) & Calculus AB (Math 161).

YEAR 1

First Semester				Second Semester			
CHEM	112	Intro Chem II	4.0	CHEM	251	Inorganic I	3.0
CHEM	188	Freshman Seminar	1.0	CHEM	265	Quant. Analysis	4.0
MATH	211	Calculus II	4.0	PHYS	232	Physics II	5.0
PHYS	231	Physics I	5.0	MATH	311	Calculus III	4.0
		TOTAL S.H.	14.0			TOTAL S.H.	16.0

Winter Session				
ENGL	110	English Composition	3.0
		TOTAL S.H.	3.0

Summer Sessions

Summer 1	CHEM	231	Organic I	4.0

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3-Year Plan

*This Program Sheet does not include all of the requirements