

A Major Academic Plan (MAP) is one way to complete a degree in a set number of semesters. The *example* below is an efficient strategy only. Actual plans for individual students will vary based on advisor recommendations and academic needs. Official Program Requirements including Major, General Education, Elective, and university requirements (see pg.2) are based on Catalog Year.

Course Subject and Title	Cr.	Min. Grade	*GE, UU or UM	**Sem. Offered	Prerequisite	Co Requisite
<b>Semester One</b>						
GE Objective 1: ENGL 1101 Writing and Rhetoric I	3	C-	GE	F, S, Su	Appropriate placement score	
GE Objective 3: MATH 1170 Calculus I	4	C-	GE	F,S, Su	MATH 1144 or 1147 or appropriate placement score	
GE Objective 5: Chemistry 1111 & 1111L General Chemistry I	5	C-	GE	F,S	MATH 1143 or 1147 or appropriate test score	
GE Objective 4:	3		GE	F,S, Su		
<b>Total</b>	<b>15</b>					
<b>Semester Two</b>						
GE Objective 1: ENGL 1102 Writing and Rhetoric II	3	C-	GE	F, S, Su	ENGL 1101 or equivalent	
MATH 1175: Calculus II	4			F,S, Su	MATH 1170	
CHEM 1112 & 1112L General Chemistry II	4	C-		F,S, Su	CHEM 1111 & 1111L and MATH 1143 or 1147	
BIOL 1101 Biology I	4	C-		F,S, Su	MATH 1108	MATH 1108
<b>Total</b>	<b>15</b>					
<b>Semester Three</b>						
GE Objective 2: COMM 1101 Principles of Speech	3		GE	F,S, Su		
CHEM 3301 & CHEM 3303 Organic Chemistry I & Lab	4	C-	UM	F	CHEM 1112 & 1112L or permission of instructor	
GE Objective 5: PHYS 2211 & 2213 Engineering Physics & Lab	5		GE	F,S		MATH 1175
GE Objective 6:	3		GE			
<b>Total</b>						
<b>Semester Four</b>						
GE Objective 7 or 8:	3		GE	F,S, Su		
CHEM 2232 & CHEM 2234 Quantitative Analysis and Lab	4	C-		S	CHEM 1112 & CHEM 1112L and MATH 1160 or 1170	
CHEM 3302 & CHEM 3304 Organic Chemistry II & Lab	4	C-	UM	S	CHEM 3301 or permission of instructor	
PHYS 2212 & PHYS 2214 Engineering Physics II & Lab	5			F,S	PHYS 2211	
<b>Total</b>	<b>16</b>					
<b>Semester Five</b>						
CHEM 3331 Instrumental Analysis	2		UM	F	CHEM 2232 & CHEM 2234 or permission of instructor	
CHEM 3351 Physical Chemistry	3	C-	UM	F	CHEM 1112, 1112L, MATH 1175, PHYS 2212 or instructor perm.	
CHEM 2211 and 2213 Inorganic Chemistry I & Lab	4	C-		F	CHEM 3301 & CHEM 3303 or permission of instructor	
CHEM 4451 Physical Chemistry Lab I	1		UM	F		CHEM 3351
CHEM 4481 Independent Problems in Chemistry	2	C-	UM	F		
GE Objective 4:	3		GE	F,S, Su		
<b>Total</b>	<b>15</b>					
<b>Semester Six</b>						
CHEM 3334 Instrumental Analysis Lab	2		UM	S	CHEM 2232, 2234, 3331 or permission of instructor	
CHEM 3352 Physical Chemistry	3	C-	UM	S	CHEM 3351	
CHEM 4452 Physical Chemistry Lab II	1	C-	UM	S	CHEM 3352	
CHEM 4482 Independent Problems in Chemistry	1		UM	S		
Free Electives	8					
<b>Total</b>	<b>15</b>					
<b>Semester Seven</b>						
BIOL 4432 Biochemistry OR CHEM/BIOL 4445 Biochemistry I	3		UM	F, S	BIOL 1101 & CHEM 3301	
CHEM 3365 Synthetic Methods	2	C-	UM	F	BIOL 1101 & CHEM 3302	
CHEM 3366 Synthetics Methods Lab	2	C-	UM	F	CHEM 2211, 3302, 3304	
GE Objectives 6:	3	C-	GE	F, S, Su	CHEM 3365	CHEM 3365
Free Electives	5					
<b>Total</b>	<b>15</b>					
<b>Semester Eight</b>						
Upper Division Free Electives OR CHEM/BIOL 4447 Biochemistry II	3		UU			
GE Objectives 9:	3		UM	S	CHEM 4445	
GE Objectives 9:	3		GE	F, S, Su		
CHEM 4491 Seminar	1		UM	F, S	CHEM 4481 or 4482 or 4485 or permission of instructor	
Free Electives	5					
Upper Division Free Electives	2		UU			
<b>Total</b>	<b>14</b>					
*GE=General Education Objective, UU=Upper Division University, UM= Upper Division Major						
**See Course Schedule section of Course Policies page in the e-catalog (or input F, S, Su, etc.)						

## B.S., Chemistry

2019-2020 Major Requirements	CR	2018-2019 GENERAL EDUCATION OBJECTIVES Satisfy Objectives 1,2,3,4,5,6 (7 or 8) and 9		36 cr. min
<b>MAJOR REQUIREMENTS</b>	<b>56 or 59</b>			
CHEM 1111 & CHEM 1111L General Chemistry I (Counted in objective 5)		1. Written English (6 cr. min)	ENGL 1101	3
CHEM 1112 & CHEM 1112L General Chemistry II	4		ENGL 1102	3
CHEM 2211 & CHEM 2213 Inorganic Chemistry I & Lab	4	2. Oral Communication (3 cr. min)	COMM 1101	3
CHEM 2232 & CHEM 2234 Quantitative Analysis & Lab	4	3. Mathematics (3 cr. min)	MATH 1170	4
CHEM 3301 & CHEM 3301L Organic Chemistry I & Lab	4	4. Humanities, Fine Arts, Foreign Lang. (2 courses; 2 categories; 6 cr. min)		
CHEM 3302 & CHEM 3304 Organic Chemistry II & Lab	4			
CHEM 3331 & CHEM 3334 Instrumental Analysis & Lab	4	5. Natural Sciences (2 lectures-different course prefixes, 1 lab; 7 cr. min)		
CHEM 3351 Physical Chemistry I	3	CHEM 1111 & 1111L General Chemistry I & Lab		5
CHEM 3352 Physical Chemistry II	3	PHYS 2211 & 2213 Engineering Physics I & Lab		5
CHEM 3365 & 3366 Synthetic Methods & Lab	4			
CHEM 4451 Physical Chemistry Lab I	1	6. Behavioral and Social Science (2 courses-different prefixes; 6 cr. min)		
CHEM 4452 Physical Chemistry Lab II	1			
CHEM 4481 & 4482 Independent Problems in Chemistry	3			
CHEM 4491 Seminar	1	One Course from EITHER Objective 7 OR 8		(1course; 3 cr. min)
MATH 1170 Calculus I (Counted in objective 3)		7. Critical Thinking		
MATH 1175 Calculus II	4	8. Information Literacy		
PHYS 2211 & 2213 Engineering Physics I & Lab (Counted in objective 5)		9. Cultural Diversity (1 course; 3 cr. min)		
PHYS 2212 & 2214 Engineering Physics II & Lab	5			
BIOL 1101 & 1101L Biology I and Lab	4	General Education Elective to reach 36 cr. min. (if necessary)		
<b>Biochemistry Requirement (choose 1 sequence)</b>	<b>3 or 6</b>			
BIOL 4432 Biochemistry	3			
OR CHEM/BIOL 4445 and 4447 Biochemistry I & II	6	Total GE		41
Undergraduate Catalog and GE Objectives by <a href="http://coursecat.isu.edu/undergraduate/programs/">Catalog Year</a> <a href="http://coursecat.isu.edu/undergraduate/programs/">http://coursecat.isu.edu/undergraduate/programs/</a>				
<b>MAP Credit Summary</b>				<b>CR</b>
Major				56 or 59
General Education				41
Upper Division Free Electives to reach 36 credits				2 or 5
Free Electives to reach 120 credits				18
<b>TOTAL</b>				<b>120</b>
<b>Graduation Requirement Minimum Credit Checklist</b>				<b>Confirmed</b>
Minimum 36 cr. General Education Objectives (15 cr. AAS)				x
Minimum 15 cr. Upper Division in Major (0 cr. Associate)				x
Minimum 36 cr. Upper Division Overall (0 cr. Associate)				x
Minimum of 120 cr. Total (60 cr. Associate)				x
<b>MAP Completion Status (for internal use only)</b>				
<b>Advising Notes</b>		<i>Date</i>		
		<i>Department:</i>		
		<i>CAA or COT:</i>		
		<i>Registrar:</i>		
<b>Complete College American Momentum Year</b>				
<b>Math and English course in first year-Specific GE MATH course identified</b>				
<b>9 credits in the Major area in first year</b>				
<b>15 credits each semester (or 30 in academic year)</b>				
<b>Milestone courses</b>				

Form Revised 9.10.2019