## BIOCHEMISTRY, BS, CERTIFIED BY THE AMERICAN CHEMICAL SOCIETY

CHEM 4400 Biochemistry of Nucleic Acids 2 CHEM 4948 Senior Seminar in Biochemistry ([Satisfies 3 Capstone])	Code		Units
Subject Area 1B: Critical Thinking  Subject Area 1C: Oral Communication  Subject Area 2: Mathematical Concepts & Quantitative Reasoning 1		•	0
Subject Area 1C: Oral Communication Subject Area 2: Mathematical Concepts & Quantitative Reasoning 1 Subject Area 3A: Arts Subject Area 3B: Humanities Upper Division 3 Arts or Humanities: (3UD) 3Ubject Area 4: Social and Behavioral Sciences Upper Division 4 Social and Behavioral Sciences Upper Division 4 Social and Behavioral Sciences: (4UD) 3ubject Area 5A: Physical Science 1 Subject Area 5B: Biological Sciences 1 Subject Area 5B: Biological Sciences 1 Subject Area 5C: Laboratory 1 Upper Division 5 Science: (5UD) 2 Subject Area 6: Ethnic Studies General Education Subtotal Campus Requirements First-Year Seminar (FYS) American Institutions: Government American Institutions: History Junior Year Diversity & Reflection (JYDR) Graduation Writing Assessment Requirement (GWAR) 1 Capstone 1 Campus Requirements Core Req	•	•	
Subject Area 2: Mathematical Concepts & Quantitative Reasoning 1 Subject Area 3A: Arts 3 Subject Area 3B: Humanities 3 Subject Area 3B: Humanities 3 Subject Area 4: Social and Behavioral Sciences 3 Subject Area 4: Social and Behavioral Sciences 3 Upper Division 4 Social and Behavioral Sciences 4 Subject Area 5A: Physical Science 1 Subject Area 5A: Physical Science 1 Subject Area 5B: Biological Sciences 1 Subject Area 5B: Biological Sciences 1 Subject Area 5C: Laboratory 1 Upper Division 5 Science: (5UD) 2 Subject Area 6: Ethnic Studies 3 General Education Subtotal 27 Campus Requirements First-Year Seminar (FYS) 2 American Institutions: Government 3 American Institutions: History 3 Junior Year Diversity & Reflection (JYDR) 3 Graduation Writing Assessment Requirement (GWAR) 1 Capstone 1 Campus Requirements Core R	,	•	
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Upper Division 4 Social and Behavioral Sciences: (4UD)  Subject Area 5A: Physical Sciences 1  Subject Area 5B: Biological Sciences 1  Subject Area 5B: Biological Sciences 1  Subject Area 5C: Laboratory 1  Upper Division 5 Science: (5UD) 2  Subject Area 6: Ethnic Studies  General Education Subtotal  Campus Requirements  First-Year Seminar (FYS)  American Institutions: Government  American Institutions: History  Junior Year Diversity & Reflection (JYDR)  Graduation Writing Assessment Requirement (GWAR) 1  Cappstone 1  Campus Requirements  Core Requirement  Co			
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Biology			
Complete 8 Units	Satisfies 5A and 5C	8	
BIOL 2010	Introductory Biology - Cells	4	
BIOL 2110	Introductory Biology - Animals	4	
or BIOL 2120	Introductory Biology - Plants		
Mathematics			
Completed 8 units	s Satisfies 2		
	Choose on of the following sequences:		
MATH 2010	Calculus for the Biological and Chemical Sciences		
& MATH 2020	I		
	and Calculus for Biological & Chemical Sciences II (OR)		
MATH 2310	Single Variable Calculus I for Engineers		
& MATH 2320	and Single Variable Calculus II for Engineers (OR)		
MATH 2510	Single Variable Calculus I		
	and Single Variable Calculus II		
Additional Require  American Chemica	ments for the B.S. in Biochemistry Certified by the		
Lower Division Co	· · · · · · · · · · · · · · · · · · ·		
CHEM 2110	Foundations of Quantitative Chemical Analysis	3	
CHEM 2110	Foundations of Bioinorganic Chemistry	3	
Upper Division Co	-	3	
CHEM 3310	Advanced Organic Chemistry	2	
CHEM 4100	Chemical Separations	1	
CHEM 4101	Chemical Separations  Chemical Separations Laboratory	1	
CHEM 4110	Spectroscopy	1	
CHEM 4120	Nuclear Magnetic Resonance	1	
CHEM 4121	Spectroscopy Laboratory	1	
CHEM 4401	Biochemistry Laboratory II	2	
CHEM 4800	Honors Research	3	
	selected from the following list:	3	
CHEM 3110	Advanced Quantitative Chemical Analysis		
CHEM 3311	Organic Chemistry Laboratory II		
CHEM 3500	Concepts of Food Analysis		
CHEM 3510	Food Science		
CHEM 3610	Physical Chemistry: Quantum and Statistical		
011514 4000	Mechanics		
CHEM 4200 CHEM 4410	Inorganic Chemistry Protein Chemistry		
CHEM 4500	-		
CHEM 4510	Food Chemistry Advanced Nutrition and Metabolism		
Major Subtotal	Auvanceu Nutintion and Metabolism	81	
-	Needed Towards Graduation	1	
	teeded Towards Graduation	100	
Total Units		120	

<sup>&</sup>lt;sup>1</sup> Satisfied in Major or cognate.

Students are waived from the Upper Division area of their program.

<sup>3</sup> American Institution - Government (American & Constitutional Ideals) satisfies one course of the two required in Subject Area 4.