

# THE DEGREE OF BACHELOR OF SCIENCE WITH A COMPREHENSIVE MAJOR IN BIOLOGY

A student must complete the core requirements, an option, and the Essential Studies requirements. Students pursuing a comprehensive major in biology should take MATH 138 APPLIED CALCULUS or MATH 232 APPLIED STATISTICS as their Essential Studies Math requirement.

NOTE: Students may earn only one option within the Biology Major, although they are encouraged to take additional courses to expand their scientific knowledge and abilities. Some courses require successful completion of prerequisite courses prior to enrollment, as articulated in the catalog course descriptions. Successful completion means earning a "C" or better in the prerequisite course(s).

Code	Title	Credits
Essential Studies ( <a href="http://catalog.csc.edu/undergraduate/essential-studies-program">http://catalog.csc.edu/undergraduate/essential-studies-program</a> )		
Core Requirements		
BIOL 138 & 138L	GENERAL BIOLOGY: BOTANY and GENERAL BIOLOGY: BOTANY LABORATORY	4
BIOL 139 & 139L	GENERAL BIOLOGY: ZOOLOGY and GENERAL BIOLOGY: ZOOLOGY LABORATORY	4
BIOL 332 & 332L	GENETICS and GENETICS LABORATORY	4
BIOL 241 & 241L	MICROBIOLOGY and MICROBIOLOGY LABORATORY	4
BIOL 499	BIOLOGY CAPSTONE	3
BIOL 458	BIOLOGICAL EVOLUTION	3
Select one of the following options:		4
Option 1		
CHEM 132 & 132L	COLLEGE CHEMISTRY II and COLLEGE CHEMISTRY II LABORATORY <sup>1</sup>	
Option 2		
CHEM 140 & 140L	SURVEY OF CHEMISTRY and SURVEY OF CHEMISTRY LABORATORY <sup>1</sup>	
Select one of the following:		4
CHEM 335 & 335L	BIOCHEMISTRY and BIOCHEMISTRY LABORATORY <sup>1</sup>	
CHEM 433 & 433L	ENVIRONMENTAL CHEMISTRY and ENVIRONMENTAL CHEMISTRY LABORATORY	
Select one of the following options:		25-31
Biological Resources (p. 1)		
General Biology (p. 2)		
Human Biology (p. 2)		
Molecular Biology (p. 2)		
Organismal Biology (p. 2)		
Total Credits		55-61

<sup>1</sup> Specified in options. Students should look at option requirements and career expectations/graduate program entrance requirements and discuss with faculty advisor whether CHEM 140 SURVEY OF CHEMISTRY/CHEM 140L SURVEY OF CHEMISTRY LABORATORY or CHEM 132 COLLEGE CHEMISTRY II/CHEM 132L COLLEGE CHEMISTRY II LABORATORY is appropriate.

## Biological Resources Option

Code	Title	Credits
Core Requirements <sup>2</sup>		30
BIOL 336 & 336L	GENERAL ECOLOGY and GENERAL ECOLOGY LABORATORY	3
BIOL 337	ENVIRONMENTAL MANAGEMENT	3
BIOL 431 & 431L	ENTOMOLOGY and ENTOMOLOGY LABORATORY	3
Select one of the following:		3-4
BIOL 435 & 435L	MAMMALOLOGY and MAMMALOLOGY LABORATORY	
BIOL 220 & 220L	COMPARATIVE ANATOMY AND PHYSIOLOGY and COMPARATIVE ANATOMY AND PHYSIOLOGY LABORATORY	
BIOL 438 & 438L	TAXONOMY OF PLANTS and TAXONOMY OF PLANTS LABORATORY	3
BIOL 444 & 444L	LIMNOLOGY and LIMNOLOGY LABORATORY	3
BIOL 390 or BIOL 409	INTERNSHIP IN BIOLOGY or SENIOR BIOLOGY RESEARCH	1
BIOL 439 & 439L	PLANT PHYSIOLOGY and PLANT PHYSIOLOGY LABORATORY	3
Elective		
Select one of the following:		3-4
BIOL 347 & 347L	CRYPTOGAMIC BOTANY and CRYPTOGRAMIC BOTANY LABORATORY	
BIOL 239 & 239L	ANIMAL CLASSIFICATION and ANIMAL CLASSIFICATION LABORATORY	
BIOL/CHEM 314	BIOTECHNOLOGY	
BIOL 401 & 401L	ORNITHOLOGY and ORNITHOLOGY LABORATORY	
BIOL 427	BIOLOGY OF POPULATIONS	
BIOL 447 & 447L	PLANT PHYLOGENY and PLANT PHYLOGENY LABORATORY	
Total Credits		55-57

<sup>2</sup> should complete CHEM 140 SURVEY OF CHEMISTRY/CHEM 140L SURVEY OF CHEMISTRY LABORATORY and CHEM 433 ENVIRONMENTAL CHEMISTRY/CHEM 433L ENVIRONMENTAL CHEMISTRY LABORATORY

Students entering the Environmental Resource Management field are encouraged to pursue a minor in Applied Statistics, Chemistry, Geoscience, Water Resource Management, or Wildlife Management.

## General Biology Option

Code	Title	Credits
Core Requirements <sup>3</sup>		30
Select one of the following:		3-4
BIOL 220 & 220L	COMPARATIVE ANATOMY AND PHYSIOLOGY and COMPARATIVE ANATOMY AND PHYSIOLOGY LABORATORY	
BIOL 435 & 435L	MAMMALOGY and MAMMALOGY LABORATORY	
Select one of the following:		3
BIOL 347 & 347L	CRYPTOGAMIC BOTANY and CRYPTOGRAMIC BOTANY LABORATORY	
BIOL 447 & 447L	PLANT PHYLOGENY and PLANT PHYLOGENY LABORATORY	
BIOL 239 & 239L	ANIMAL CLASSIFICATION and ANIMAL CLASSIFICATION LABORATORY	4
BIOL 336 & 336L	GENERAL ECOLOGY and GENERAL ECOLOGY LABORATORY	3
BIOL 432 & 432L	DEVELOPMENTAL BIOLOGY and DEVELOPMENTAL BIOL LABORATORY	3
or BIOL 430	IMMUNOLOGY	
BIOL 449	MOLECULAR BIOLOGY OF THE CELL	3
or BIOL 314	BIOTECHNOLOGY	
CHEM 231 & 231L	SURVEY OF ORGANIC CHEMISTRY and SURVEY OF ORGANIC CHEMISTRY LABORATORY	4
Upper Division Biology Elective		3
Total Credits		56-57

<sup>3</sup> should complete CHEM 140 SURVEY OF CHEMISTRY/CHEM 140L SURVEY OF CHEMISTRY LABORATORY

## Human Biology Option

Code	Title	Credits
Core Requirements <sup>4</sup>		30
BIOL 340 & 340L	HUMAN ANATOMY and GROSS HUMAN ANATOMY LABORATORY	4
BIOL 342 & 342L	HUMAN PHYSIOLOGY and HUMAN PHYSIOLOGY LABORATORY	4
BIOL 432 & 432L	DEVELOPMENTAL BIOLOGY and DEVELOPMENTAL BIOL LABORATORY	3
BIOL 449	MOLECULAR BIOLOGY OF THE CELL	3
CHEM 231 & 231L	SURVEY OF ORGANIC CHEMISTRY and SURVEY OF ORGANIC CHEMISTRY LABORATORY <sup>5</sup>	4
PSYC 131	INTRODUCTION TO PSYCHOLOGICAL SCIENCES	3
Select two of the following:		6
BIOL 343 & 343L	PARASITOLOGY and PARASITOLOGY LABORATORY	
BIOL 430	IMMUNOLOGY	
BIOL 433 & 433L	HUMAN BIOMECHANICS and HUMAN BIOMECHANICS LAB	

BIOL 456 & 456L	PATHOGENIC MICROBIOLOGY and PATHOGENIC MICROBIOLOGY LABORATORY	
Total Credits		57

<sup>4</sup> Must complete CHEM 335 BIOCHEMISTRY/CHEM 335L BIOCHEMISTRY LABORATORY should complete CHEM 132 COLLEGE CHEMISTRY II/CHEM 132L COLLEGE CHEMISTRY II LABORATORY

<sup>5</sup> Student should look at career/professional program entrance requirements and discuss with faculty advisor whether CHEM 231 SURVEY OF ORGANIC CHEMISTRY/CHEM 231L SURVEY OF ORGANIC CHEMISTRY LABORATORY or CHEM 334 ORGANIC CHEMISTRY II/CHEM 334L ORGANIC CHEMISTRY II LABORATORY is appropriate.

## Molecular Biology Option

Code	Title	Credits
Core Requirements <sup>6</sup>		30
BIOL 314	BIOTECHNOLOGY	3
BIOL 390	INTERNSHIP IN BIOLOGY	3
or BIOL 409	SENIOR BIOLOGY RESEARCH	
BIOL 432 & 432L	DEVELOPMENTAL BIOLOGY and DEVELOPMENTAL BIOL LABORATORY	3
or BIOL 430	IMMUNOLOGY	
BIOL 436B	INTRODUCTION TO SCIENTIFIC RESEARCH	2
BIOL 449	MOLECULAR BIOLOGY OF THE CELL	3
CHEM 231 & 231L	SURVEY OF ORGANIC CHEMISTRY and SURVEY OF ORGANIC CHEMISTRY LABORATORY	4
PHYS 151 & 151L	COLLEGE PHYSICS I and COLLEGE PHYSICS I LABORATORY	4
Biology Electives		5
Total Credits		57

<sup>6</sup> CHEM 132 COLLEGE CHEMISTRY II/CHEM 132L COLLEGE CHEMISTRY II LABORATORY recommended

## Organismal Biology Option

Code	Title	Credits
Core Requirements <sup>7</sup>		30
BIOL 239 & 239L	ANIMAL CLASSIFICATION and ANIMAL CLASSIFICATION LABORATORY	4
BIOL 435 & 435L	MAMMALOGY and MAMMALOGY LABORATORY	3
Select one of the following:		3
BIOL 347 & 347L	CRYPTOGAMIC BOTANY and CRYPTOGRAMIC BOTANY LABORATORY	
BIOL 439 & 439L	PLANT PHYSIOLOGY and PLANT PHYSIOLOGY LABORATORY	
BIOL 447 & 447L	PLANT PHYLOGENY and PLANT PHYLOGENY LABORATORY	
BIOL 336 & 336L	GENERAL ECOLOGY and GENERAL ECOLOGY LABORATORY	3
BIOL 337	ENVIRONMENTAL MANAGEMENT	3
Select one of the following:		3

BIOL 343 & 343L	PARASITOLOGY and PARASITOLOGY LABORATORY	
BIOL 431 & 431L	ENTOMOLOGY and ENTOMOLOGY LABORATORY	
BIOL 438 & 438L	TAXONOMY OF PLANTS and TAXONOMY OF PLANTS LABORATORY	3
BIOL 390 or BIOL 409	INTERNSHIP IN BIOLOGY SENIOR BIOLOGY RESEARCH	1
GEOS 322	INTRODUCTION TO GIS	3
Total Credits		56

<sup>7</sup> CHEM 335 BIOCHEMISTRY/CHEM 335L BIOCHEMISTRY  
LABORATORY recommended

To enhance employment potential it is recommended that the student complement this degree with a minor in Chemistry, Geoscience, Wildlife Management or Applied Statistics.