

Student ID:

Date Admitted Into Major:\_

# BACHELOR OF ARTS BIOLOGY

### GENERAL EDUCATION REQUIREMENTS

Competencies

☐ ◆ Basic College Math

□ ◆ Reading Comprehension

#### ★General Education Categories (34-35 credits total)

♦FYS	First Year Se	First Year Seminar			3	
♦W-I	Written Comr	nunication - Level I			3	
+OC	Oral Commun	nication			3	
PGR	Personal Gro	wth & Responsibility			3	
CEA	Creative Exp	ession & Appreciation			3	
WC	World Culture			3		
HP	The Human Past				3	
CS	Contemporar	y Society			3	
SR	Scientific				3-4	
SK	Reasoning:				4	
QR	Quantitative F	Reasoning			3	
<b>‡ Written Communication (Level II and Level III)</b>						
W-II	Written Comr	nunication - Level II				]
W-III	Written Comr	Written Communication - Level III				]

### Foreign Language (0-12 Credits total)

#### ▶ ¶ Free Electives/Minor (15 credits minimum)

May be necessary to take additional credits to attain the minimum 120 credits required for graduation depending on choices made for general education or minor selection.

#### Required (35-37 credits) BIO 131 Introduction to Organisms 4 BIO 132 Introduction to Cells 4 BIO 3 208 **Environmental Problems** BIO 212 Cell Biology 4 Evolutionary Morphology 3 BIO 220 BIO 402 Genetics 4 BIO 415 Biology Seminar 3 †BIO Plant Biology or Animal Biology 3-4 elective BIO 4 Cell/Molecular Biology elective Structure/Function or †BIO 3-4 Ecology/Evolution elective

COURSES IN MAJOR (57-61credits total)

Electives (3-4 credits)					
¶ BIO		Biology Elective		3-4	

#### Required Support Courses (6-7 credits total)

MAT	110	Pre-calculus		
	or	or	3-4	
	220	Calculus I		

#### Required Minor: Chemistry (16 credits total)

CHE	130	General Chemistry I	4	
CHE	131	General Chemistry II	4	
CHE	212	Organic Chemistry I	4	
CHE	213	Organic Chemistry II	4	

• Students may choose to use support courses to satisfy general education categories, but may not be required to do so. Note: If a course is used to satisfy two or more requirements (for example, a support course and Scientific Reasoning requirement), the credits are counted in only one place. Using a course to satisfy more than one requirement does not reduce the credit total required for graduation.

Courses used to satisfy the general education requirements of the university must be taken from a minimum of six different academic disciplines. First Year Seminar and Level I Written Communications courses are exempt from this restriction. Courses may not be used to fulfill both major discipline and general education requirements.

# These Scientific Reasoning General Education Category courses do not have to be a sequence or be from the same discipline

Level II and Level III Written Communications Courses may be used to satisfy requirements anywhere else in a student's program of study where they may apply. The credits are counted only in one area.

+	At least two of the following must have a lab: the Plant or Animal elective, the Structure/Function elective or Ecology/Evolution elective, or the BIO elective.
	Electives within the major are to be chosen from 300 to 400 level courses, exclusive of BIO 304, 324, and 328. A maximum 4 credits from BIO 407, 416,
ſ	418, 420, or 422 may be used to fulfill one BIO Elective; additional credits will count as Free Electives. Secondary Education minors must select
	BIO320, and one course in Geological Sciences.
	B.A. Biology majors are strongly urged to elect a Computer Science course and one year of Physics.

COMPETENCIES - TO BE COMPLETED WITHIN THE FIRST 30 CREDITS
GENERAL EDUCATION CATEGORIES - TO BE COMPLETED WITHIN THE FIRST 30 CREDITS
Exceptions in the timing of courses will be made for transfer students

Total credits for graduation: 120



Name: Student ID:

Date Admitted Into Major:\_

# BACHELOR OF SCIENCE

# BIOLOGY

# GENERAL EDUCATION REQUIREMENTS

#### Competencies

] ◆ Basic College Math	
] ◆ Reading Comprehension	

## ★General Education Categories (34-35 credits total)

♦FYS	First Year Ser	minar			3	
♦W-I	Written Comm	Written Communication - Level I			3	
+OC	Oral Commun	nication			3	
PGR	Personal Gro	wth & Responsibility			3	
CEA	Creative Expr	ession & Appreciation			3	
WC	World Culture	s			3	
HP	The Human F	The Human Past			3	
CS	Contemporar	y Society			3	
SR	Scientific				3-4	
JK	Reasoning:				4	
QR	Quantitative F	Reasoning			3	
	<b>‡ Written Communication (Level II and Level III)</b>					
W-II	Written Comm	nunication - Level II				]
W-III	Written Comm	nunication - Level III				]

#### Free Electives (1 credit minimum total)

May be necessary to take additional credits to attain the minimum 120 credits required for graduation depending on choices made for general education or minor selection

minor selection.					

Required (42 – 45 credits)					
BIO	131	Introduction to Organisms	4		
BIO	132	Introduction to Cells	4		
BIO	208	Environmental Problems	3		
BIO	212	Cell Biology	4		
BIO	220	Evolutionary Morphology	3		
BIO	402	Genetics	4		
BIO	415	Biology Seminar	3		
BIO	406	Microbiology			
	or	or	4		
	409	Biochemistry			
† BIO		Plant Biology Elective	4		
† BIO		Animal Biology Elective	3-4		
† BIO		Structure/Function Elective	3-4		
† BIO		Ecology/Evolution Elective	3-4		

COURSES IN MAJOR (72-77 credits total)

#### Electives (3-4 credits)

¶ BIO	Biology elective	3-4	

#### Required Support Courses (11-12 credits total)

MAT	110	Pre-calculus		
	or	or	3-4	
	220	Calculus I		
◊ PHS	211A	College Physics I		
	or	or	4	
	221	General Physics I		
◊ PHS	212A	College Physics II		
	or	or	4	
	222	General Physics II		

#### Required Minor: Chemistry (16 credits total)

CHE	130	General Chemistry I	4	
CHE	131	General Chemistry II	4	
CHE	212	Organic Chemistry I	4	
CHE	213	Organic Chemistry II	4	

♦ GENERAL EDUCATION CATEGORIES - TO BE COMPLETED WITHIN THE FIRST 30 CREDITS

• Students may choose to use support courses to satisfy general education categories, but may not be required to do so. Note: If a course is used to satisfy two or more requirements (for example, a support course and Scientific Reasoning requirement), the credits are counted in only one place. Using a course to satisfy more than one requirement does not reduce the credit total required for graduation.

- Courses used to satisfy the general education requirements of the university must be taken from a minimum of six different academic disciplines. First Year Seminar and Level I Written Communications courses are exempt from this restriction. Courses may not be used to fulfill both major discipline and general education requirements.
- These Scientific Reasoning General Education Category courses do not have to be a sequence or be from the same discipline.

Level II and Level III Written Communications Courses may be used to satisfy requirements anywhere else in a student's program of study where they may apply. The credits are counted only in one area.

- Electives within the major are to be chosen from 300 to 400 level courses, exclusive of BIO 304, 324 and 328. A maximum 4 credits from BIO 407,408N, 416, 418, 420 or 422 may be used to fulfill one Biology Elective; additional credits will count as Free Electives. Secondary Education minors must select BIO 320, and one course in Geological Sciences.
- **†** Two of the three group electives MUST have a lab.

In the sequence can be either PHS 211A and 212A, or PHS 221 and 222.

♦ COMPETENCIES - TO BE COMPLETED WITHIN THE FIRST 30 CREDITS

Exceptions in the timing of courses will be made for transfer students

Total credits for graduation: 120

÷

Ħ



Student ID:

Date Admitted Into Major:

# **BACHELOR OF SCIENCE**

# BIOLOGY

## AQUACULTURE CONCENTRATION

## **GENERAL EDUCATION REQUIREMENTS**

COURSES IN MAJOR (75-78 credits total)

#### Poquirod (40

#### Competencies ☐ ◆ Basic College Math Reading Comprehension General Education Categories (34-35 credits total) First Year Seminar +FYS 3 ♦W-I Written Communication - Level I 3 ♦OC Oral Communication

100				5		
PGR	Personal Grov			3		
CEA	Creative Expr	ession & Appreciation			3	
WC	World Culture	S			3	
HP	The Human P	ast			3	
CS	Contemporary	/ Society			3	
SR	Scientific				3-4	
SK	Reasoning:	# SR Lab course			4	
QR	Quantitative Reasoning				3	
<b>‡ Written Communication (Level II and Level III)</b>						
W-II	Written Communication - Level II					l
W-III	Written Comm	nunication - Level III				

#### Free Electives (2 credits minimum total)

May be necessary to take additional credits to attain the minimum 120 credits required for graduation depending on choices made for general education or minor selection

	minor selection.				
_					

Required (48 credits)						
BIO	131	Introduction to Organisms	4			
BIO	132	132 Introduction to Cells 4				
BIO	208	Environmental Problems	3			
BIO 212 Cell Biology 4						
BIO	220	Evolutionary Morphology	3			
BIO	310	Invertebrate Zoology	4			
BIO	320	General Ecology				
	or	or	4			
	322	Biological Oceanography				
BIO	323	Fish Biology	4			
BIO 326 Marine Botany 4						
BIO	345	Introduction to Aquaculture	4			
BIO	402	Genetics	4			
BIO	403	Advanced Aquaculture	3			
BIO	415	Biology Seminar	3			
*	Requi	red Support Courses (11-13 cred	lits total)			

### Required Support Courses (11-13 credits total)

MAT	110	Precalculus		
	or	or	3-4	
	220	Calculus I		
PHS	211A	College Physics I		
	or	or	4	
	221	General Physics I		
CHE	321	Quantitative Analysis	4	
-				

### Required Minor: Chemistry (16 credits total)

CHE	130	General Chemistry I	4	
CHE	131	General Chemistry II	4	
CHE	212	Organic Chemistry I	4	
CHE	213	Organic Chemistry II	4	

Students may choose to use support courses to satisfy general education categories, but may not be required to do so. Note: If a course is used to satisfy two or more requirements (for example, a support course and Scientific Reasoning requirement), the credits are counted in only one place. Using a course to satisfy more than one requirement does not reduce the credit total required for graduation.

Courses used to satisfy the general education requirements of the university must be taken from a minimum of six different academic disciplines. First Year Seminar and Level I Written Communications courses are exempt from this restriction. Courses may not be used to fulfill both major discipline and

general education requirements.

These Scientific Reasoning General Education Category courses do not have to be a sequence or be from the same discipline.

Level II and Level III Written Communications Courses may be used to satisfy requirements anywhere else in a student's program of study where they may ŧ apply. The credits are counted only in one area. Electives within the major are to be chosen from 300 to 400 level courses, exclusive of BIO 304, 324 and 328. A maximum 4 credits from BIO 407,408N,

416, 418, 420 or 422 may be used to fulfill one Biology Elective; additional credits will count as Free Electives. Secondary Education minors must select BIO ſ 320, and one course in Geological Science.

♦ COMPETENCIES - TO BE COMPLETED WITHIN THE FIRST 30 CREDITS

♦ GENERAL EDUCATION CATEGORIES - TO BE COMPLETED WITHIN THE FIRST 30 CREDITS

Exceptions in the timing of courses will be made for transfer students

Total credits for graduation: 120

٠

#



Student ID:

Date Admitted Into Major:

# **BACHELOR OF SCIENCE**

# BIOLOGY

## **BIOMEDICAL SCIENCES CONCENTRATION**

### GENERAL EDUCATION REQUIREMENTS

3

3

3

3

3

3

3

3

3-4

4

3

Π

# COURSES IN MAJOR (74-77 credits total)

|--|

General Education Categories (34-35 credits total)

☐ ◆ Basic College Math

♦FYS

♦W-I

+OC

PGR

CEA

WC

HP

CS

SR

QR

W-II

W-III

☐ ◆ Reading Comprehension

First Year Seminar

World Cultures

Scientific

Reasoning:

The Human Past

**Contemporary Society** 

Quantitative Reasoning

Written Communication - Level II

Written Communication - Level III

Oral Communication

Written Communication - Level I

Personal Growth & Responsibility

Creative Expression & Appreciation

**‡** Written Communication (Level II and Level III)

Free Electives (1 credit minimum total) May be necessary to take additional credits to attain the minimum 120 credits required for graduation depending on choices made for general education or minor selection.

#### Required (37 credits) BIO 131 Introduction to Organisms 4 Introduction to Cells 4 BIO 132 BIO 200 Anatomy and Physiology I 4 4 BIO 201 Anatomy and Physiology II **Environmental Problems** BIO 208 3 BIO 210 **Basic Nutrition** 3 4 BIO 212 Cell Biology BIO 402 4 Genetics BIO 406 Microbiology 4 or BIO 409 Biochemistry BIO 3 415 **Biology Seminar**

#### ∞ Electives (10-12 credits)

¶ BIO	Biology elective	4	
¶ BIO	Biology elective	3-4	
¶ BIO	Biology elective	3-4	

## • Required Support Courses (11-12 credits total)

MAT	110	Pre-calculus		
	or	or	3-4	
	220	Calculus I		
	2 s	semester Physics sequence		
◊ PHS	211A	College Physics I		
	or	or	4	
	221	General Physics I		
◊ PHS	212A	College Physics II		
	or	or	4	
	222	General Physics II		

#### Required Minor: Chemistry (16 credits total)

CHE	130	General Chemistry I	4
CHE	131	General Chemistry II	4
CHE	212	Organic Chemistry I	4
CHE	213	Organic Chemistry II	4

• Students may choose to use support courses to satisfy general education categories, but may not be required to do so. **Note:** If a course is used to satisfy two or more requirements (for example, a support course and Scientific Reasoning requirement), the credits are counted in only one place. Using a course to satisfy more than one requirement does **not** reduce the credit total required for graduation.

Courses used to satisfy the general education requirements of the university must be taken from a minimum of six different academic disciplines. First Year Seminar and Level I Written Communications courses are exempt from this restriction. Courses may not be used to fulfill both major discipline and

general education requirements.

# These Scientific Reasoning General Education Category courses do not have to be a sequence or be from the same discipline.

Level II and Level III Written Communications Courses may be used to satisfy requirements anywhere else in a student's program of study where they may apply. The credits are counted only in one area.

Two electives must be chosen from the following courses: BIO 311, 312, 313, 316, 340, 400, 406, 407, 408, 409, 411, 412, and 416. At least one of these must be a 400 level course, one elective is to be a general elective (any 300-400 course not otherwise restricted)

† This elective within the major is to be chosen from 300 to 400 level courses, exclusive of BIO 304, 324, and 328.

A maximum of 4 credits from BIO 407, 408, 416, 418, or 422 may be used to fulfill one Biology elective; additional credits will count as Free Electives.

The sequence can be either PHS 211A and 212A or PHS 221 and 222.
COMPETENCIES - TO BE COMPLETED WITHIN THE FIRST 30 CREDITS
GENERAL EDUCATION CATEGORIES - TO BE COMPLETED WITHIN THE FIRST 30 CREDITS

Exceptions in the timing of courses will be made for transfer students

Total credits for graduation: 120



Student ID:

Date Admitted Into Major:

# **BACHELOR OF SCIENCE**

BIOLOGY

## BIOTECHNOLOGY CONCENTRATION

#### **GENERAL EDUCATION REQUIREMENTS**

Competencies					
🔲 🔸 Ba	sic College M	lath			
A Re	ading Compr	ehension			
				P4 4 4 D	
	General Edu	ucation Categories	(34-35 cre	edits total)	
♦FYS	First Year Se	minar		3	
♦W-I	Written Comr	nunication - Level I		3	
+OC	Oral Commun	nication		3	
PGR	Personal Gro	wth & Responsibility		3	
CEA	Creative Expression & Appreciation			3	
WC	World Culture	S		3	
HP	The Human F	'ast		3	
CS	Contemporar	y Society		3	
SR	Scientific			3-4	
SK	Reasoning:			4	
QR	Quantitative F	Reasoning		3	
	the second se				
W-II	Written Comr	nunication - Level II			
W-III	Written Comr	nunication - Level III			

#### Free Electives (1 credit minimum total) May be necessary to take additional credits to attain the minimum 120 credits

required for graduation depending on choices made for general education or

#### COURSES IN MAJOR (75-77 credits total) (Required 41 credits) Introduction to Organisms BIO 131 4 BIO Introduction to Cells 4 132 Environmental Problems BIO 208 3 Cell Biology BIO 212 4 Evolutionary Morphology BIO 220 3 BIO 313 Molecular Biology 4 BIO 317 Methods in Biotechnology OR 4 Advanced Laboratory Elective BIO 402 Genetics 4 Microbiology BIO 406 4 4 BIO 409 **Biological Chemistry** BIO 411 4 Immunology BIO 415 **Biology Seminar** 3

† BIO	E	Biology Elective	3-4			
¥ R∉	equired	Support Courses (11-12 credit	ts total)			
MAT	110	Pre-calculus				
	or	or	3-4			
	220	Calculus I	0.			
◊ PHS	211A	College Physics I				
VEIIO		0,	4			
	or	or Oscillation I	4			
	221	General Physics I				
◊ PHS	212A	Physics II				
	or	or	4			
	222	General Physics II				

Required Minor: Chemistry (16 credits total)

CHE	130	General Chemistry I	4	
CHE	131	General Chemistry II	4	
CHE	212	Organic Chemistry I	4	
CHE	213	Organic Chemistry II	4	

Students may choose to use support courses to satisfy general education categories, but may not be required to do so. Note: If a course is used to satisfy two or more requirements (for example, a support course and Scientific Reasoning requirement), the credits are counted in only one place. Using a course to satisfy more than one requirement does not reduce the credit total required for graduation.

Courses used to satisfy the general education requirements of the university must be taken from a minimum of six different academic disciplines. First Year
Seminar and Level I Written Communications courses are exempt from this restriction. Courses may not be used to fulfill both major discipline and general education requirements.

# These Scientific Reasoning General Education Category courses do not have to be a sequence or be from the same discipline

Level II and Level III Written Communications Courses may be used to satisfy requirements anywhere else in a student's program of study where they may apply. The credits are counted only in one area.

This elective must be chosen from the following courses: BIO 311, BIO 312, 314, 316, 400, 407, 408, 412, and 416. A maximum of 4 credits from BIO 407, 408, 416, 418, 420, or 422 may be used to fulfill one Biology elective; additional credits will count as Free Electives.

For the Advanced Laboratory Elective, students may choose from BIO 416, 312N, CHE 340, CHE 420. Students are strongly encouraged to complete a Biology internship (BIO 416). Internship placements are not made by the University. Interested students should speak with their academic advisor and Career Services for coaching in the internship search process, starting in fall of the sophomore year. Note: some internship programs have a minimum GPA requirement.

Intersequence can be either PHS 211A and 212A, or PHS 221 and 222.	
♦ COMPETENCIES - TO BE COMPLETED WITHIN THE FIRST 30 CREDITS	♦ GENERAL EDUCATION CATEGORIES - TO BE COMPLETED WITHIN THE FIRST 30 CREDITS

Exceptions in the timing of courses will be made for transfer students

Total credits for graduation: 120



♦FYS

♦W-I

+OC

PGR

CEA

WC

HP

CS

SR

QR

W-II

W-III

## Name:

Student ID:

Date Admitted Into Major:\_

# **BACHELOR OF SCIENCE**

## BIOLOGY

ENVIRONMENTAL BIOLOGY CONCENTRATION

#### **GENERAL EDUCATION REQUIREMENTS** COURSES IN 72-76 credits total) Competencies BIO 131 ☐ ◆ Basic College Math BIO 132 BIO 208 □ ◆ Reading Comprehension BIO 212 Cell Biology BIO 220 BIO ♣General Education Categories (34-35 credits total) BIO First Year Seminar 3 BIO 320 Written Communication - Level I 3 BIO 406 Microbiology Oral Communication 3 or Personal Growth & Responsibility 3 BIO 409 Biochemistry Creative Expression & Appreciation 3 BIO 402 Genetics 3 World Cultures 415 BIO The Human Past 3 Contemporary Society 3 # Any SR course Scientific 3-4 Reasoning: # SR Lab course 4 Quantitative Reasoning 3 ‡ Written Communication (Level II and Level III) Written Communication - Level II Written Communication - Level III

#### Required (40-41 credits) Introduction to Organisms 4 Introduction to Cells 4 Environmental Problems 3 4 Evolutionary Morphology 3 Plant Biology Elective 4 Animal Biology Elective 3-4 4 General Ecology 4 4 3 **Biology Seminar**

	Electives (3-4 credits)		
+BIO	Biology elective	3-4	

## † Required Support Courses (13-15 credits total)

MAT	110	Pre-calculus		
	or	or	3-4	
	220	Calculus I		
PHS	211A	College Physics I		
	or	or	4	
	221	General Physics I		
		Elective (GROUP A)	3-4	
		Elective (GROUP B)	3	

#### Required Minor: Chemistry (16 credits total)

CHE	130	General Chemistry I	4	
CHE	131	General Chemistry II	4	
CHE	212	Organic Chemistry I	4	
CHE	213	Organic Chemistry II	4	

Students may choose to use support courses to satisfy general education categories, but may not be required to do so. Note: If a course is used to satisfy two or more requirements (for example, a support course and Scientific Reasoning requirement), the credits are counted in only one place. Using a course to satisfy more than one requirement does not reduce the credit total required for graduation.

Courses used to satisfy the general education requirements of the university must be taken from a minimum of six different academic disciplines. First Year Seminar and Level I Written Communications courses are exempt from this restriction. Courses may not be used to fulfill both major discipline and

general education requirements.

Free Electives (0 credits minimum total) May be necessary to take additional credits to attain the minimum 120 credits required for graduation depending on choices made for general education or minor selection.

# These Scientific Reasoning General Education Category courses do not have to be a sequence or be from the same discipline.

Level II and Level III Written Communications Courses may be used to satisfy requirements anywhere else in a student's program of study where they may ± apply. The credits are counted only in one area.

The Biology Elective must be chosen from 300 to 400 level courses, exclusive of BIO 304, 324 and 328. A maximum of 4 credits from BIO 407, 408, 416, 418, 420, or 422 may be used to fulfill one Biology Elective; additional credits will count as Free Electives. +

Electives within the major are to be chosen from the following (One course from Group A and a second course from either Group A or Group B): Group A - GLS210, GLS212, GLS221, GLS330, GLS334, GLS342, GLS362, GPH222, GPH245, GPH264, GPH282P, GPH285P, GPH301, GPH314, GPH371, GPH376P, GPH383P. +

Group B - ECO319, IDS220, IDS325, PHL224, PHL314, POL304, POL319	).
♦ COMPETENCIES - TO BE COMPLETED WITHIN THE FIRST 30 CREDITS	♦ GENERAL EDUCATION CATEGORIES - TO BE COMPLETED WITHIN THE FIRST 30 CREDITS
Exceptions in the timing of course	es will be made for transfer students

Total credits for graduation:

120-122



Student ID:

Date Admitted Into Major:

# **BACHELOR OF SCIENCE**

# BIOLOGY

# MARINE BIOLOGY CONCENTRATION

#### **GENERAL EDUCATION REQUIREMENTS**

Competencies

COURSES IN MAJOR (74-77 credits total)

Requir	ed (44	-45 cre	edits)

# ☐ ◆ Basic College Math ☐ ◆ Reading Comprehension

#### ★General Education Categories (34-35 credits total)

FYS	First Year Se	minar			3	
♦W-I	Written Comr	nunication - Level I			3	
+OC	Oral Commun	nication			3	
PGR	Personal Gro	wth & Responsibility			3	
CEA	Creative Exp	ression & Appreciation			3	
WC	World Culture			3		
HP	The Human F	The Human Past			3	
CS	Contemporar	y Society			3	
SR	Scientific				3-4	
SK	Reasoning:				4	
QR	Quantitative F	Reasoning			3	
	<b>‡</b> Written Communication (Level II and Level III)					
W-II	Written Comr				]	
W-III	Written Comr	nunication - Level III				]

#### Free Electives (1 credit minimum total)

May be necessary to take additional credits to attain the minimum 120 credits required for graduation depending on choices made for general education or or coloction

Required (44-45 creans)					
BIO	131	Introduction to Organisms	4		
BIO	132	Introduction to Cells	4		
BIO	208	Environmental Problems	3		
BIO	212	Cell Biology	4		
BIO	220	Evolutionary Morphology	3		
BIO	310	Invertebrate Zoology	4		
BIO	322	Biological Oceanography	4		
BIO	326	Marine Botany	4		
BIO	323	Fish Biology			
	or	or	3-4		
	341	Biology of Marine Mammals			
† BIO		Cell/Molecular or	4		
		Structure/Function elective			
BIO	402	Genetics	4		
BIO	415	Biology Seminar	3		

#### **Electives (3-4 credits)**

¶ BIO	Biology elective	3-4	

### **∇** Required Support Courses (11-12 credits total)

MAT	110	Pre-calculus		
	or	or	3-4	
	220	Calculus I		
◊ PHS	211A	College Physics I		
	or	or	4	
	221	General Physics I		
◊ PHS	212A	College Physics II		
	or	or	4	
	222	General Physics II		

#### Required Minor: Chemistry (16 credits total)

130 General Chemistry I CHE 4 CHF 131 General Chemistry II 4 4 CHE 212 Organic Chemistry I CHE 213 Organic Chemistry II 4

Students may choose to use support courses to satisfy general education categories, but may not be required to do so. Note: If a course is used to satisfy two or more requirements (for example, a support course and Scientific Reasoning requirement), the credits are counted in only one place. Using a course to satisfy more than one requirement does not reduce the credit total required for graduation.

Courses used to satisfy the general education requirements of the university must be taken from a minimum of six different academic disciplines. First Year Seminar and Level I Written Communications courses are exempt from this restriction. Courses may not be used to fulfill both major discipline and ٠ general education requirements.

These Scientific Reasoning General Education Category courses do not have to be a sequence or be from the same discipline. t

- Level II and Level III Written Communications Courses may be used to satisfy requirements anywhere else in a student's program of study where they may ‡ apply. The credits are counted only in one area.
- Electives within the major are to be chosen from 300 to 400 level courses, exclusive of BIO 304, 324, and 328. A maximum 4 credits from BIO 407, 408N, 416, 418, 420 or 422 may be used to fulfill one BIO Elective; additional credits will count as Free Electives. Secondary Education minors must select BIO ¶ 320, and one course in Geological Sciences.

The Cell/Molecular or Structure/Function elective must be chosen from 400-level courses AND have a laboratory.

The sequence can be either PHS 211A and 212A, or Physics 221 and 222.

	♦ COMPETENCIES - TO BE COMPLETED WITHIN THE FIRST 30 CREDITS	♦ GENERAL EDUCATION CATEGORIES - TO BE COMPLETED WITHIN THE FIRST 30 CREDITS
--	--	--

Exceptions in the timing of courses will be made for transfer students

Total credits for graduation: 120



Student ID:

Date Admitted Into Major:

# BACHELOR OF SCIENCE BIOLOGY

<sup>†</sup> MEDICAL TECHNOLOGY CONCENTRATION

#### GENERAL EDUCATION REQUIREMENTS

Competencies

Basic College Math

☐ ◆ Reading Comprehension

#### ♣General Education Categories (34-35 credits total)

		• •			,	
♦FYS	First Year Ser	minar			3	
♦W-I	Written Comn			3		
+OC	Oral Commun	nication			3	
PGR	Personal Gro	wth & Responsibility			3	
CEA	Creative Expr	ession & Appreciation			3	
WC	World Culture			3		
HP	The Human P	The Human Past			3	
CS	Contemporary	Contemporary Society			3	
SR	Scientific				3-4	
SK	Reasoning:				4	
QR	Quantitative F	Reasoning			3	
<b>‡ Written Communication (Level II and Level III)</b>						
W-II	Written Comn	Written Communication - Level II				]
W-III	Written Comm	nunication - Level III				]

y be nece	ree Electives/minor ( essary to take additional or graduation depending or minor	credits to attain the	minimum	120 cred	

		Required (46 credits)		
BIO	131	Introduction to Organisms	4	
BIO	132	Introduction to Cells	4	
BIO	200	Anatomy and Physiology I	4	
BIO	201	Anatomy and Physiology II	4	
BIO	208	Environmental Problems	3	
BIO	212	Cell Biology	4	
BIO	411	Immunology		
		OR		
BIO	313	Molecular Biology		
		OR	4	
BIO	316	Parasitology		
BIO	402	Genetics	4	
BIO	406	Microbiology	4	
BIO	409	Biological Chemistry	4	
BIO	415	Biology Seminar	3	

COURSES IN MAJOR (76-78 credits total)

	¶ Elective (3-4 credits)
BIO	Biology elective

## ▼ Required Support Courses (18-19 credits total)

3-4

MAT	110	Pre-calculus		
	or	or	3-4	
	220	Calculus I		
◊ PHS	211A	College Physics I		
	or	or	4	
	221	General Physics I		
◊ PHS	212A	College Physics II		
	or	or	4	
	222	General Physics II		
CHE	420	Instrumental Analysis	4	

#### Required minor Chemistry (16 credits total)

CHE	130	General Chemistry I	4	
CHE	131	General Chemistry II	4	
CHE	212	Organic Chemistry I	4	
CHE	213	Organic Chemistry II	4	

♦ GENERAL EDUCATION CATEGORIES - TO BE COMPLETED WITHIN THE FIRST 30 CREDITS

Students may choose to use support courses to satisfy general education categories, but may not be required to do so. Note: If a course is used to satisfy two or more requirements (for example, a support course and Scientific Reasoning requirement), the credits are counted in only one place. Using a course to satisfy more than one requirement does not reduce the credit total required for graduation.

Courses used to satisfy the general education requirements of the university must be taken from a minimum of six different academic disciplines. First Year Seminar and Level I Written Communications courses are exempt from this restriction. Courses may not be used to fulfill both major discipline and general education requirements.

# These Scientific Reasoning General Education Category courses do not have to be a sequence or be from the same discipline.

Level II and Level III Written Communications Courses may be used to satisfy requirements anywhere else in a student's program of study where they may apply. The credits are counted only in one area.

 It is strongly recommended that students seek medical laboratory experience through entry-level work or an internship in the sophomore or junior year.
Internship placements are *not* made by the university. Interested students should speak to their Academic Advisor and Career Services for coaching. Note: some external internships require a GPA minimum for applicants.

Electives within the major are to be chosen from 300 to 400 level courses, exclusive of BIO 304, 324, and 328. A maximum 4 credits from BIO 407, 408 ¶ 416,418, 420, or 422 may be used to fulfill one Biology elective; additional credits will count as Free Electives. Secondary Education minors must elect BIO

320, and one course in Geological Science. ◊

 $^{\vee}$  The sequence can be either PHS 211A and 212A, or PHS 221 and 222.

♦ COMPETENCIES - TO BE COMPLETED WITHIN THE FIRST 30 CREDITS

Exceptions in the timing of courses will be made for transfer students



Student ID:

Date Admitted Into Major:

# **BACHELOR OF SCIENCE**

## BIOLOGY

NUCLEAR MEDICINE TECHNOLOGY CONCENTRATION

#### GENERAL EDUCATION REQUIREMENTS

COURSES IN MAJOR (93-94) credits total)

# 

## ★General Education Categories (34-35 credits total)

+FYS	First Year Seminar				3	
♦W-I	Written Comm			3		
+OC	Oral Commun	nication			3	
PGR	Personal Gro	wth & Responsibility			3	
CEA	Creative Expr	ession & Appreciation			3	
WC	World Cultures				3	
HP	The Human Past				3	
CS	Contemporary Society				3	
SR	Scientific				3-4	
SK	Reasoning:				4	
QR	Quantitative F	Reasoning			3	
<b>‡ Written Communication (Level II and Level III)</b>						
W-II	Written Communication - Level II			]		
W-III	Written Comm	nunication - Level III				]

Free Electives (0 credits minimum total) May be necessary to take additional credits to attain the minimum 120 credits required for graduation depending on choices made for general education or minor selection.

		Required (60 credits)	
BIO	105	Biological Systems	4
BIO	200	Anatomy & Physiology 1	4
BIO	201	Anatomy & Physiology 2	4
BIO	212	Cell Biology	4
NMT	200	Introduction To NMT	1
BIO	340	General Pathology	3
BIO	402	Genetics	4
BIO	409	Biological Chemistry	4
BIO	411	Immunology	4
NMT	401A	NMT Practicum I	3
NMT	402	NMT Practicum II	4
NMT	403	NMT Practicum III	4
NMT	405	Nuclear Medicine Tech I	4
NMT	411	Nuclear Medicine Tech II	4
NMT	415	NMT Seminar	1
NMT	420	Nuclear Instrumentation	4
NMT	435	Advanced Imaging &	4
		Therapeutics	

#### Required Support Courses (17-18 credits total)

◊PHS	211A	College Physics I	4	
◊PHS	212A	College Physics II	4	
MAT	110	Pre-calculus		
	or	or	3-4	
	220	Calculus I		
PHS	315	Introduction To Radiation	3	
		Physics		
PHL	218	Medical Ethics	3	

### Required Minor: <u>Chemistry</u> (16 credits total)

CHE	130	General Chemistry I	4	
CHE	131	General Chemistry II	4	
CHE	212	Organic Chemistry I	4	
CHE	213	Organic Chemistry II	4	

• Students may choose to use support courses to satisfy general education categories, but may not be required to do so. Note: If a course is used to satisfy two or more requirements (for example, a support course and Scientific Reasoning requirement), the credits are counted in only one place. Using a course to satisfy more than one requirement does not reduce the credit total required for graduation.

Courses used to satisfy the general education requirements of the university must be taken from a minimum of six different academic disciplines. First Year
Seminar and Level I Written Communications courses are exempt from this restriction. Courses may not be used to fulfill both major discipline and general education requirements.

# These Scientific Reasoning General Education Category courses do not have to be a sequence or be from the same discipline.

Level II and Level III Written Communications Courses may be used to satisfy requirements anywhere else in a student's program of study where they may apply. The credits are counted only in one area.

The sequence can be chosen from PHS211A and PHS212A, or PHS221 and PHS222.

COMPETENCIES - TO BE COMPLETED WITHIN THE FIRST 30 CREDITS SUCREDITS

Exceptions in the timing of courses will be made for transfer students

Total credits for graduation: 120 - 132