

Biology

Biology Degrees and Certificates

THE BIOLOGY MAJOR (BA OR BS)

P
r
o
f
e
s
s
o
r
:
D
a
v
i
d
T
h
o
m
a
s
A
s
s
o
c
i
a
t
e
P
r
o
f
e
s
s
o
r
:

C
a
s
s
i
a
C
·
O
l
i
v
e
i
r
a
A
s
s
i
s
t
a
n
t
P
r
o
f
e
s
s
o
r
s
:
A
l
e
x
a
n
d
e

r
B
e
e
s
e
r
,
M
a
r
y
l
i
n
e
J
o
n
e
s
,
a
n
d
E
r
i
c
S
o
u
t
h
B
i
o
l
o
g
y
i
s
t
h
e
s

t
u
d
y
o
f
l
i
f
e
i
n
a
l
l
o
f
i
t
s
a
b
u
n
d
a
n
c
e
,
v
a
r
i
e
t
y
,
a
n
d
c
o
m
p
l
e
x
i
t
y
. S
t
u
d
e
n
t
s

i
n
t
h
e
b
i
o
l
o
g
y
m
a
j
o
r
g
a
i
n
a
b
r
o
a
d
k
n
o
w
l
e
d
g
e
o
f
b
i
o
l
o
g
i
c
a
l
f
a
c
t
a
n
d
t
h
e
o
r

y , f r o m t h e m o l e c u l a r t o t h e e c o s y s t e m l e v e l . T h e y d e v e l o p t h e i r a b i l i t

i
e
s
t
o
o
b
s
e
r
v
e
,
a
n
a
l
y
z
e
,
a
n
d
s
o
l
v
e
p
r
o
b
l
e
m
s
i
n
v
o
l
v
i
n
g
l
i
v
i
n
g
s
y
s
t
e
m
s
.

B
o
t
h
B
a
c
h
e
l
o
r
o
f
S
c
i
e
n
c
e
a
n
d
B
a
c
h
e
l
o
r
o
f
A
r
t
s
d
e
g
r
e
e
s
a
r
e
a
v
a
i
l
a
b
l
e
i
n
b

i
o
l
o
g
y
·
T
h
e
B
·
S
·
d
e
g
r
e
e
i
s
d
e
s
i
g
n
e
d
p
r
i
m
a
r
i
l
y
f
o
r
s
t
u
d
e
n
t
s
i
n
t
e
r
e
s
t
e
d

i
n
t
h
e
h
e
a
l
t
h
p
r
o
f
e
s
s
i
o
n
s
,
a
g
r
a
d
u
a
t
e
d
e
g
r
e
,
o
r
e
m
p
l
o
y
m
e
n
t
i
n
b
i
o
l
o
g
y

r
e
l
a
t
e
d
f
i
e
l
d
s
.

**N
O
T
E
S**

*
S
t
u
d
e
n
t
s
m
a
y
u
s
e
B
I
O
1
1
0
,
C
H
M
1
0
5
,
C
H
M
1
1
0
,
M

TH 110 , PHY 210 / 211 , and PHY 240 / 241 to satisfy core requirements . * CH

M
1
0
5
i
s
n
o
t
r
e
q
u
i
r
e
d
f
o
r
s
t
u
d
e
n
t
s
w
h
o
e
n
t
e
r
L
y
o
n
C
o
l
l
e
g
e
w
i
t
h
a
s
c
o
r
e
o
f
2

5
o
r
b
e
t
t
e
r
o
n
t
h
e
A
C
T
m
a
t
h
e
m
a
t
i
c
s
s
e
c
t
i
o
n
(
o
r
e
q
u
i
v
a
l
e
n
t
S
A
T
s
c
o
r
e
)
a
n
d

a
g
r
a
d
e
o
f
"C
"o
r
b
e
t
t
e
r
i
n
h
i
g
h
s
c
h
o
o
l
c
h
e
m
i
s
t
r
y
.

**N
O
T
E
:
T
o
g
r
a
d
u
a
t
e
w
i
t
h**

a Bachelor of Arts or Bachelor of Science degree from Lyon College, student

ntsmustsuccessfullycompleteaminimumof120semestercredithoursco

imprised of our required Core Curriculum (44-48 hours), the requirement

s
o
f
a
t
l
e
a
s
t
o
n
e
m
a
j
o
r
(
c
r
e
d
i
t
h
o
u
r
s
v
a
r
y
p
e
r
m
a
j
o
r
)
,
a
n
d
a
s
e
l
e
c
t
i
o
n
o
f
o
u

r
L
i
b
e
r
a
l
A
r
t
s
e
l
e
c
t
i
v
e
s
·
T
h
e
y
m
u
s
t
a
l
s
o
e
a
r
n
a
t
l
e
a
s
t
a
2
·
0
0
c
u
m
u
l
a
t
i
v
e
g

r
a
d
e
p
o
i
n
t
a
v
e
r
a
g
e
f
o
r
a
l
l
w
o
r
k
t
a
k
e
n
a
t
L
y
o
n
C
o
l
l
e
g
e
a
n
d
a
2
.
0
0
c
u
m
u
l
a
t
i
v

e
g
r
a
d
e
p
o
i
n
t
a
v
e
r
a
g
e
i
n
P
h
i
l
o
s
o
p
h
y

SUMMARY OF REQUIREMENTS FOR A MAJOR IN BIOLOGY LEADING TO A BACHELOR OF SCIENCE DEGREE

Item #	Title	Credits
BIO 110	Principles of Biology I	4
BIO 112	Principles of Biology II	4
BIO 250	Cell Biology	4
BIO 252	Genetics	4
BIO 340	Ecology	4
	Biology Electives (11-12 Credits)	11 - 12
BIO 495	Senior Evaluation	0
CHM 105	Introduction to Chemistry	4
CHM 110	General Chemistry I	4
CHM 120	General Chemistry II	4
CHM 210	Organic Chemistry I	4
CHM 220	Organic Chemistry II	4
MTH 110	Elementary Functions	3
	Physics Electives (8 credits)	8

Core Curriculum Requirements	44 - 48
Sub-Total Credits	102-106

SUMMARY OF REQUIREMENTS FOR A MAJOR IN BIOLOGY LEADING TO A BACHELOR OF ARTS DEGREE

Item #	Title	Credits
BIO 110	Principles of Biology I	4
BIO 112	Principles of Biology II	4
BIO 250	Cell Biology	4
BIO 252	Genetics	4
BIO 340	Ecology	4
	Biology Electives (11-12 Credits)	11 - 12
BIO 495	Senior Evaluation	0
CHM 105	Introduction to Chemistry	4
CHM 110	General Chemistry I	4
CHM 120	General Chemistry II	4
MTH 110	Elementary Functions	3
	Physics Electives (8 credits)	8
	Core Curriculum Requirements	44 - 48
	Sub-Total Credits	94-98

CATEGORY DESCRIPTIONS

Biology Electives (11-12 Credits)

Choose 3 upper division biology courses in the 300-400 level. At least 2 chosen electives must be 4-credit courses; one may be a 3-credit course. BIO 480 may not be used.

Physics Electives (8 credits)

Choose either Group A or Group B to fulfill the Physics requirement.

Students may use General Physics I or Fundamentals of Physics I to satisfy core requirements.

GROUP A

Item #	Title	Credits
PHY 210	General Physics I	3
PHY 211	General Physics I Laboratory	1
PHY 220	General Physics II	3
PHY 221	General Physics II Laboratory	1

GROUP B

Item #	Title	Credits
PHY 240	Fundamentals of Physics I	3
PHY 241	Fundamentals of Physics I Laboratory	1
PHY 250	Fundamentals of Physics II	3
PHY 251	Fundamentals of Physics II Laboratory	1

Core Curriculum Requirements

Developmental requirements (up to 6 credits):

Taken in the first semester, if placed into it:

- ENG 001 College English

Taken in the first year, if placed into it:

- MTH 001 Intermediate Algebra

Proficiency requirements (15 credits):

Taken in the first two years, if not placed out of it:

- MTH 101 College Algebra **or**
- MTH 103 College Algebra w/Lab **or**
- MTH 105 Mathematics for Liberal Arts

Taken in the first year (depending on placement):

- ENG 101 English Composition I (taken immediately if placed into it or immediately following completion of ENG 001 with a grade of 'C' or better)
- ENG 102 English Composition II (taken immediately following successful completion of ENG 101 with a grade of 'C' or better)

Recommended but not required in the first year:

- First-year of a foreign language

Common Core requirements (13-14 credits):

Taken in the first year (or within one year of completing any pre-requisite coursework):

- COR 100 Year One
- COR 101 Year One OH ONE

Taken anytime in the first TWO years:

- ENG 105 World Literature
- POL 105 The American Experience

Taken anytime prior to graduation:

- HIS 110 World Civilization
- HIS 112 World Civilization II

Distribution requirements:

One fine arts course (3 credits)

Select from the following:

- ART 101 Introduction to Visual Arts
- ART 201, 202 World Art I and II
- MUS 105 Language of Music
- MUS 110 Music Theory
- THE 101 Introduction to Theatre

One social science course (3 credits)

Select from the following:

- ANT 101 Introduction to Cultural Anthropology
- ECO 101 Principles of Economics I
- PSY 101 Introduction to Psychology

One mathematics course (3-4 credits)

Select from the following:

- MTH 105 Mathematics for Liberal Arts
- MTH 110 Elementary Functions
- MTH 115 Discrete Mathematics **or** MTH 290 Foundations of Modern Mathematics
- ECO 208 Quantitative Methods in Business, Economics, and Decision Science
- MTH 210 Calculus I
- BUS 323 Statistical Applications to Business Decision Making
- PSY 235 Statistics for the Behavioral Sciences

One lab science course (4 credits)

Select from the following:

- BIO 100, 100L Biology in Context
- BIO 110, 110L Principles of Biology I
- CHM 105, 105L Introduction to Chemistry
- CHM 110, 110L General Chemistry I
- PHY 210, 211 General Physics
- PHY 240, 241 Fundamentals of Physics
- SCI 100, 100L Physical Science for Liberal Arts

One religion/philosophy course (3 credits)

Select from the following:

- RPH 110 Old Testament
- RPH 120 New Testament
- RPH 130 Introduction to Christian Theology
- RPH 140 Introduction to World Philosophies
- RPH 150 World Religions
- RPH 205 Introduction to Ethics

Two physical education courses (0-2 credits)

Select from the following:

- PED courses with designations from 101 to 130
- OLP courses with designations from 120 to 130

NOTE: Only one activity (specified PED/OLP) course can be taken per semester. Additionally, only seven activity credits can be counted toward the graduation requirement.

THE BIOLOGY MINOR

The biology minor is a course of study designed as a second field of study

e
n
t
s
w
h
o
w
i
s
h
t
o
d
e
v
e
l
o
p
a
n
u
n
d
e
r
s
t
a
n
d
i
n
g
o
f
t
h
e
s
c
i
e
n
t
i
f
i
c
s
t
u
d
y
o
f
l
i
v

i
n
g
s
y
s
t
e
m
s
a
n
d
o
r
g
a
n
i
s
m
s
.

**N
O
T
E
S**

*
S
t
u
d
e
n
t
s
m
a
y
u
s
e
B
I
O
1
1
0
,
C
H
M
1
0
5

a
n
d
C
H
M
1
1
0
t
o
s
a
t
i
s
f
y
c
o
r
r
e
r
e
q
u
i
r
e
m
e
n
t
s
.
*
C
H
M
1
0
5
i
s
n
o
t
r
e
q
u
i
r
e
d
f
o
r
s
t

u
d
e
n
t
s
w
h
o
e
n
t
e
r
L
y
o
n
C
o
l
l
e
g
e
w
i
t
h
a
s
c
o
r
e
o
f
2
5
o
r
b
e
t
t
e
r
o
n
t
h
e
A
C
T
m
a
t
h
e
m

a
t
i
c
s
s
e
c
t
i
o
n
(
o
r
e
q
u
i
v
a
l
e
n
t
S
A
T
s
c
o
r
e
)
a
n
d
a
g
r
a
d
e
o
f
"C"
o
r
b
e
t
t
e
r
i
n
h
i
g

SUMMARY OF REQUIREMENTS FOR A MINOR IN BIOLOGY

Item #	Title	Credits
BIO 110	Principles of Biology I	4
BIO 112	Principles of Biology II	4
BIO 250	Cell Biology	4
BIO 252	Genetics	4
BIO 340	Ecology	4
CHM 105	Introduction to Chemistry	4
CHM 110	General Chemistry I	4
CHM 120	General Chemistry II	4
MTH 110	Elementary Functions	3
	Sub-Total Credits	35
Total credits:		35

Biology (BIO) Classes

BIO 100: Biology in Context

l
a
c
e
d
o
n
h
o
w
b
i
o
l
o
g
y
i
n
c
r
e
a
s
i
n
g
l
y
p
l
a
y
s
a
r
o
l
e
i
n
o
u
r
e
v
e
r
y
d
a
y
l
i
v
e
s
.
T
o
p
i
c
s
i

n
c
l
u
d
e
o
r
g
a
n
i
z
a
t
i
o
n
o
f
l
i
v
i
n
g
m
a
t
t
e
r
,
m
e
t
a
b
o
l
i
s
m
,
r
e
p
r
o
d
u
c
t
i
o
n
,
g
e
n
e
t
i
c
s

,
e
c
o
l
o
g
y
a
n
d
e
v
o
l
u
t
i
o
n
. C
o
u
r
s
e
c
o
n
s
i
s
t
s
o
f
b
o
t
h
l
e
c
t
u
r
e
a
n
d
l
a
b
o
r
a
t
o
r
y
c
o
m
p

o
n
e
n
t
s
.
C
a
n
n
o
t
b
e
c
o
u
n
t
e
d
t
o
w
a
r
d
b
i
o
l
o
g
y
m
a
j
o
r
.
C
o
n
t
e
n
t
s
:
4

BIO 101: Short Topics in Biology

S
t
u
d
y
o
f
c
u
r
r
e
n
t
t
o
p
i
c
s
i
n
b
i

o
l
o
g
y
a
p
p
r
o
p
r
i
a
t
e
f
o
r
a
l
l
s
t
u
d
e
n
t
s
. E
l
e
c
t
i
v
e
c
r
e
d
i
t
. M
a
y
b
e
t
a
k
e
n
m
o
r
e
t
h
a
n
o

n
c
e
f
o
r
c
r
e
d
i
t
w
i
t
h
p
e
r
m
i
s
s
i
o
n
o
f
i
n
s
t
r
u
c
t
o
r
e
d
t
s
:
1

BIO 105: Principles of Fermentation Sciences

P
r
i
n
c
i
p
l
e
s
o
f
F
e
r
m
e
n
t
a
t
i
o

n
S
c
i
e
n
c
e
s
w
i
l
l
c
o
v
e
r
t
h
e
f
u
n
d
a
m
e
n
t
a
l
s
c
i
e
n
c
e
o
f
t
h
e
f
e
r
m
e
n
t
a
t
i
o
n
p
r
o
c
e
s
s
e

s
,
i
,
t
,
s
h
i
s
t
o
r
y
a
n
d
c
u
l
t
u
r
e
a
n
d
a
p
p
l
i
c
a
t
i
o
n
t
o
b
a
s
i
c
f
o
o
d
s
c
i
e
n
c
e
,
m
i
c
r
o
b
i
o

l
o
g
y
,
c
h
e
m
i
s
t
r
y
,
b
i
o
l
o
g
y
a
n
d
n
u
t
r
i
t
i
o
n
. B
i
o
1
0
5
w
i
l
l
i
n
t
r
o
d
u
c
e
c
o
n
c
e
p
t
s
r
e

l
a
t
i
n
g
t
o
t
h
e
u
t
i
l
i
z
a
t
i
o
n
o
f
g
r
a
p
e
s
,
g
r
a
i
n
s
a
n
d
h
o
p
s
u
t
i
l
i
z
e
d
b
y
t
h
e
f
e
r
m
e
n
t

a
t
i
o
n
i
n
d
u
s
t
r
y
.
S
t
u
d
e
n
t
s
w
i
l
l
b
e
e
x
p
o
s
e
d
t
o
t
h
e
b
a
s
i
c
m
e
t
h
o
d
s
a
n
d
p
r
i
n
c
i
p
l
e

s
b
e
h
i
n
d
t
h
e
f
e
r
m
e
n
t
a
t
i
o
n
p
r
o
c
e
s
s
i
n
c
l
u
d
i
n
g
p
r
o
d
u
c
t
i
o
n
o
f
b
r
e
a
d
·
v
e
g
e
t
a
b
l

e
s
,
b
e
e
r
,
w
i
n
e
a
n
d

b
i
o
-
f
u
e
l
s
.

**S
t
u
d
e
n
t
s
m
u
s
t
b
e
2
1
y
e
a
r
s
o
f
a
g
e
o
r
o
l
d
e
r
b
y
t
h**

efc
s
4
s
q
i
s
i
t
e
s
:
B
I
O
1
0
0
o
r
B
I
O
1
1
0

BIO 110: Principles of Biology I

S
t
u
d
y
o
f
t
h
e
i
n
t
e
g
r
a
t
e
d
p
r
i
n
c
i
p
l
e
s
o
f
b
i
o
l
o
g
y
w
i
t
h
e
m
p
h
a
s
i
s
o
n
m
o
l
e

c
u
l
l
a
r
a
n
d
c
e
l
l
u
l
a
r
a
s
p
e
c
t
s
o
f
o
r
g
a
n
i
s
m
s
,
g
e
n
e
t
i
c
s
,
a
n
d
o
r
g
a
n
i
s
m
a
l
h
o
m
e
o
s
t
a

t
i
c
m
e
c
h
a
n
i
s
m
s
.
C
o
u
r
s
e
c
o
n
s
i
s
t
s
o
f
b
o
t
h
l
e
c
t
u
r
e
a
n
d
l
a
b
o
r
a
t
o
r
y
c
o
m
p
o
n
e
n
t
s
.
r

e
d
i
t
s
4
P
r
e
r
e
q
u
i
s
i
t
e
s
:
M
T
H
1
0
1
M
T
H
1
0
3
O
r
p
r
o
f
i
c
i
e
n
c
y

BIO 112: Principles of Biology II

S
t
u
d
y
o
f
t
h
e
i
n
t
e
g
r
a
t
e
d
p
r
i
n
c
i
p
l
e
s
o
f
b
i
o
l
o
g
y
w
i
t
h
e
m
p
h
a
s
i
s
o
n
t
h
e
d
i
v
e
r

s
i
t
y
o
f
o
r
g
a
n
i
s
m
s
i
n
t
h
e
w
o
r
l
d
,
t
h
e
i
r
e
v
o
l
u
t
i
o
n
,
a
n
d
t
h
e
i
r
i
n
t
e
r
a
c
t
i
o
n
s
w
i
t
h

each other and the environment. Course consists of both lecture and laboratory

r
y
c
o
m
p
o
n
e
n
t
C
r
e
d
i
t
s
:

BIO 182: Special Topics

P
r
e
r
e
q
u
i
s
i
t
e
s
:
B
I
O
1
1
0
a
n
d
M
T
H
1
0
1
o
r
B
I
O
1
1
0
a
n
d
M
T
H
1
0
3

S
t
u
d
y
i
n
a
s
p
e
c
i
f
i
c
a
r
e
a
o
f
b
i
o
l
o
g
y
n
o
t
c
o
v
e
r
e
d
b
y
r
e
g
u
l
a

r
l
y
l
i
s
t
e
d
c
o
u
r
s
e
s
. C
o
u
r
s
e
c
o
n
t
e
n
t
a
n
d
s
t
r
u
c
t
u
r
e
w
i
l
l
v
a
r
y
a
c
c
o
r
d
i
n
g
t
o
t
h
e
i

Interests of the instructor. Lecture, laboratory, and/or field work may be in

c
l
u
d
e
d
e
d
i
t
s
:
1
-
4
P
r
e
r
e
q
u
i
s
i
t
e
s
:
P
e
r
m
i
s
s
i
o
n
o
f
i
n
s
t
r
u
c
t
o
r
.

BIO 205: Biomedical Terminology

A
d
e
t
a
i
l
e
d
i
n
t
r
o
d
u
c
t
i
o
n
t
o
t
h
e
r
m
i
n
o
l
o
g
y
u
s
e
d
i
n
h
e
a
l
t
h
p
r
o
f
e
s

s
i
o
n
s
C
r
e
d
i
t
:
1

BIO 220: General Botany

A
n
i
n
t
r
o
d
u
c
t
i
o
n
t
o
t
h
e
s
t
r
u
c
t
u
r
e
a
n
d
l
i
f
e
p
r
o
c
e
s
s
e
s
o
f
p
l
a
n
t
s
;
i
n
c

I
u
d
i
n
g
p
l
a
n
t
g
e
n
e
t
i
c
s
,
d
e
v
e
l
o
p
m
e
n
t
,
p
h
y
s
i
o
l
o
g
y
,
e
v
o
l
u
t
i
o
n
,
a
n
d
d
i
s
t
r
i
b
u
t

i
o
n
.
C
o
u
r
s
e
c
o
n
s
i
s
t
s
o
f
b
o
t
h
l
e
c
t
u
r
e
a
n
d
l
a
b
o
r
a
t
o
r
y
c
o
m
p
o
n
e
n
t
s
r
e
d
i
t
s

BIO 222: Zoology

4
P
r
e

A
s
u
r
v

r
e
g
i
s
t
e
r
e
d
i
t
i
o
n
e
r
p
e
r
i
o
d
i
c
a
s
h
o
o
d
g
h
A
s
t
m
a
c
t
a
r
e
m
p
h
a
s
i
z
i
n
g
t
h
e
e
v
o
l
u
t
i
o
n
,
m

o
r
p
h
o
l
o
g
y
,
i
d
e
n
t
i
f
i
c
a
t
i
o
n
,
a
n
d
l
i
f
e
h
i
s
t
o
r
i
e
s
o
f
t
h
e
s
e
o
r
g
a
n
i
s
m
s
. C
o
u
r
s
e
c

o
n
s
i
s
t
s
o
f
b
o
t
h
l
e
c
t
u
r
e
a
n
d
l
a
b
o
r
a
t
o
r
y
c
o
m
p
o
n
e
n
t
s
:
C
r
e
d
i
t
s
:
P
r
e
r
e
q
u
i
s
i
t
e
s
:
B

BIO 250: Cell Biology

A
d
e
t
a
i
l
e
d
i
n
t
r
o
d
u

I
C
H
I
N
C
H
I
M
I
D
O
E
B
R
P
E
A
M
A
S
S
E
C
H
B
U
L
A
S
S
T
U
D
I
O
B
U
R
E
A
N
D
P
H
Y
S
I
O
L
O
G
Y
;
I
N
C
L
U
D
I
N
G
M
E
M
B

r
a
n
e
s
t
r
u
c
t
u
r
e
a
n
d
f
u
n
c
t
i
o
n
,
b
i
o
e
n
e
r
g
e
t
i
c
s
,
t
r
a
n
s
p
o
r
t
m
e
c
h
a
n
i
s
m
s
,
a
n
d
i
n
t

e
r
c
e
l
l
u
l
a
r
c
o
m
m
u
n
i
c
a
t
i
o
n
. C
o
u
r
s
e
c
o
n
s
i
s
t
s
o
f
b
o
t
h
l
e
c
t
u
r
e
a
n
d
l
a
b
o
r
a
t
o
r
y
c

o
m
p
o
n
e
n
t
e
d
i
t
:
4
P
r
e
r
e
q
u
i
s
i
t
e
s
:
B
I
O
1
1
0
a
n
d
C
H
M
1
1
0

BIO 252: Genetics

A
n
e
x
a
m
i
n
a
t
i
o
n
o
f
t
h
e
p
r
i
n
c
i
p
l
e
s
o
f
i
n
h
e
r
i
t
a
n
c
e
a
n
d
t
h
e
s
t
r
u
c
t

ure, function, and regulation of genetic material in prokaryotes and eukary

o
t
e
s
.
C
o
u
r
s
e
c
o
n
s
i
s
t
s
o
f
b
o
t
h
l
e
c
t
u
r
e
a
n
d
l
a
b
o
r
a
t
o
r
y
c
o
m
p
o
n
e
n
t
s
r
e
d
i
t
:
4
P
r

BIO 260: Human Anatomy and Physiology I

T
h
e
f
i

e
r
e
p
o
r
t
a
t
w
e
s
p
e
r
t
O
s
e
q
u
a
b
d
C
M

f
b
o
t
h
l
e
c
t
u
r
e
a
n
d
l
a
b
o
r
a
t
o
r
y
c
o
m
p
o
n
e
n
t
s
a
n
d
c
a
n
n
o
t
b
e
c
o
u
n
t
e
d
t
o
w
a
r
d
t
h
e
b
i
o

l
o
g
y
m
a
j
o
r
e
d
i
s
:
4
P
r
e
r
e
q
u
i
s
i
t
e
s
:
B
I
O
1
1
0

BIO 262: Human Anatomy and Physiology II

T
h
e
s
e
c
o
n
d
o
f
a
t
w
o
-
p
a
r
t
s
e
q
u
e
n
c
e
d
e
a
l
i
n
g
w
i
t
h
t
h
e
s
t
r
u
c
t
u
r
e
a
n

d
f
u
n
c
t
i
o
n
o
f
t
h
e
h
u
m
a
n
b
o
d
y
.
C
o
u
r
s
e
c
o
n
s
i
s
t
s
o
f
b
o
t
h
l
e
c
t
u
r
e
a
n
d
l
a
b
o
r
a
t
o
r
y
c

o
m
p
o
n
e
n
t
s
a
n
d
c
a
n
n
o
t
b
e
c
o
u
n
t
e
d
t
o
w
a
r
d
t
h
e
b
i
o
l
o
g
y
m
a
j
o
r
C
r
e
d
i
t
s
:
4
P
r
e
r
e
q
u
i
s

BIO 290: Introduction to Biological Research

A
n
i
n
t
r
o
d
u
c
t
i
o

i
n
t
e
r
e
s
t
i
n
g
l
i
t
e
r
a
t
u
r
e
s
e
a
r
c
h
e
s
,
e
x
p
e
r
i
m
e
n
t
a
l
m
e
t
h
o
d
s
,
a
n
d
p
r
o

p
e
r
r
e
c
o
r
d
i
n
g
a
n
d
r
e
p
o
r
t
i
n
g
o
f
e
x
p
e
r
i
m
e
n
t
a
l
r
e
s
u
l
t
s
. M
a
y
b
e
r
e
p
e
a
t
e
d
f
o
r
c
r
e

d
C
t
e
d
i
t
s
:
1
4
P
r
e
r
e
q
u
i
s
i
t
e
s
:
B
I
O
1
1
0
,
C
H
M
1
1
0
,
a
n
d
p
e
r
m
i
s
i
o
n
o
f
i
n
s
t
r
u
c
t
o
r

BIO 300: Biostatistics

E
x
p
l
o
r
a
t
i
o
n
o
f
t
h
e
a
n
a
l
y
s
i
s
o
f
b
i
o
l
o
g
i
c
a
l
d
a
t
a
i
n
c
l
u
d
i
n
g
e
x
p
e
r
i

. m e n t a l d e s i g n , d a t a c o l l e c t i o n , d e s c r i b i n g a n d d i s p l a y i n g d a t a ; i n f e r e n t i

a
l
s
t
a
t
i
s
t
i
c
s
,
a
n
d
i
n
t
e
r
p
r
e
t
a
t
i
o
n
o
f
r
e
s
u
l
t
s
. S
t
u
d
e
n
t
s
w
i
l
l
g
a
i
n
p
r
o
f
i
c
i
e
n

c
y
i
n
t
h
e
u
s
e
o
f
s
t
a
t
i
s
t
i
c
a
l
c
o
m
p
u
t
i
n
g
s
o
f
t
w
a
r
e
. S
p
e
c
i
a
l
e
m
p
h
a
s
i
s
i
s
p
l
a
c
e
d
o

n
s
t
a
t
i
s
t
i
c
a
l
m
e
t
h
o
d
s
u
t
i
l
i
z
e
d
i
n
g
e
n
e
t
i
c
s
,
e
p
i
d
e
m
i
o
l
o
g
y
,
h
u
m
a
n
h
e
a
l
t
h
,
e
c

o
l
o
g
y
,
a
n
d
a
g
r
i
c
u
l
C
H
E
M
I
S
T
R
Y
:
3
P
r
e
r
e
q
u
i
s
i
t
e
s
:
M
T
H
1
1
0
B
I
O
1
1
0

BIO 304: Methods for Teaching Life Science in the Secondary School

T
h
i
s
c
o
u
r
s
e
i
s
d
e
s
i
g
n
e
d
t
o
p
r
e
p
a
r
e
s
t
u
d
e
n
t
s
m
a
j
o
r
i

ng
i
n
b
i
o
l
o
g
y
f
o
r
t
e
a
c
h
e
r
l
i
c
e
n
s
u
r
e
i
n
l
i
f
e
s
c
i
e
n
c
e
a
t
t
h
e
s
e
c
o
n
d
a
r
y
(
7
-
1
2
)
l
e

v
e
C
r
e
d
t
s
:
3

BIO 310: Health Coaching

A
n
i
n
t
r
o
d
u
c
t
i
o
n
t
o
a
w
i
d
e
a
r
r
a
y
o
f
t
o
p
i
c
s
o
n
h
e
a
l
t
h
c
a
r
e
a
n
d
h
e
a
l
t
h
c
a
r
e

s
y
s
t
e
m
s
i
n
p
r
e
p
a
r
a
t
i
o
n
f
o
r
a
p
r
a
c
t
i
c
u
m
a
s
a
h
e
a
l
t
h
c
o
a
c
h
.
T
o
p
i
c
s
i
n
c
l
u
d
e
b
u
t
a

r
e
n
o
t
l
i
m
i
t
e
d
t
o
d
i
a
b
e
t
e
s
,
c
a
r
d
i
o
v
a
s
c
u
l
a
r
d
i
s
e
a
s
e
,
d
e
m
e
n
t
i
a
,
o
r
g
a
n
i
z
a
t
i
o

n
o
f
h
e
a
l
t
h
c
a
r
e
s
y
s
t
e
m
s
,
e
t
h
i
c
a
l
c
o
n
s
i
d
e
r
a
t
i
o
n
s
,
a
n
d
s
t
r
a
t
e
g
i
e
s
f
o
r
p
r
o
m
o
t

i
n
g
h
e
a
l
t
h
y
l
i
f
e
s
t
y
l
e
s
.
T
h
e
c
o
u
r
s
e
i
s
d
i
s
c
u
s
s
i
o
n
-
b
a
s
e
d
a
n
d
r
e
q
u
i
r
e
s
a
c
t
i
v
e

s
t
u
d
e
n
t
e
n
g
g
a
g
e
r
e
q
u
i
r
e
d
:
1
P
r
e
r
e
q
u
i
s
i
t
e
s
:
J
u
n
i
o
r
s
t
a
n
d
i
n
g
w
i
t
h
f
o
c
u
s
o
n
a
c
a

BIO 311: Health Coaching Practicum

T
h
e
s
e
c
o
n
d
i
n
a
s
e
r
i
e
s
o
f
h
e
a
l
t
h
c
o
a
c
h
i
n

e
a
s
s
h
i
n
e
n
t
u
m
S
P
A
o
t
t
a
w
d
p
e
b
m
a
s
s
i
g
n
e
d
a
p
a
t
r
i
o
t
o
n
t
h
e
B
a
t
e
s
v
i
l
l
e
a
r
e
a

a
n
d
a
s
s
i
s
t
t
h
e
m
i
n
s
e
l
e
c
t
e
d
a
s
p
e
c
t
s
o
f
h
e
a
l
t
h
c
a
r
e
e
d
i
t
s
:
1
P
e
r
e
q
u
i
s
i
t
e
s
:
C
o

BIO 320: Teaching in the Biology Laboratory

U
p
p
e
r
-
l
e
v
e
l
s
t
u
d

m
p
h
e
s
w
b
o
p
r
i
f
h
o
e
a
o
w
e
n
d
g
B
a
d
b
a
t
e
e
c
b
o
d
p
e
p
m
i
s
s
c
o
h
a
f
l
y
s
h
o
a
e
w
b
o
i
n
t
e
n
d
t
o
t
e
a

c
h
a
t
t
h
e
c
o
l
l
e
g
e
l
e
v
e
l
,
m
a
y
t
a
k
e
t
h
i
s
c
o
u
r
s
e
t
o
o
b
t
a
i
n
t
e
a
c
h
i
n
g
e
x
p
e
r
i
e
n
c
e
.
S

t
u
d
e
n
t
s
w
i
l
l
t
e
a
c
h
a
l
o
n
g
s
i
d
e
a
f
a
c
u
l
t
y
m
e
m
b
e
r
i
n
a
l
a
b
o
r
a
t
o
r
y
c
o
u
r
s
e
t
h
e
y
h
a
v

e
s
u
c
c
e
s
s
f
u
l
l
y
c
o
m
p
l
e
t
e
d
a
t
t
h
e
1
0
0
0
o
r
2
0
0
l
e
v
e
l
.
S
t
u
d
e
n
t
s
w
i
l
l
a
t
t
e
n
d
e
a
c
h
l
a

b
o
r
a
t
o
r
y
s
e
c
t
i
o
n
,
a
s
s
i
s
t
i
n
t
e
a
c
h
i
n
g
t
h
e
l
a
b
,
g
i
v
e
a
n
d
r
e
c
e
i
v
e
f
e
e
d
b
a
c
k
o
n
l
e

c
t
u
r
e
s
,
a
n
d
w
r
i
t
e
a
t
e
a
c
h
i
n
g
p
h
i
l
o
s
o
p
h
y

BIO 340: Ecology

t
s
:
1

A
n
i
n
t
r
o
d
u
c
t
i
o
n
t
o
t
h
e
r
e
l
a
t
i
o
n
s
h
i
p
s

b
e
t
w
e
e
n
b
i
o
t
a
a
n
d
t
h
e
i
r
e
n
v
i
r
o
n
m
e
n
t
w
i
t
h
e
m
p
h
a
s
i
s
o
n
l
i
m
i
t
i
n
g
f
a
c
t
o
r
s
,
c
o
m
p

e
t
i
t
i
o
n
,
c
o
e
v
o
l
u
t
i
o
n
,
e
n
e
r
g
y
f
l
o
w
,
a
n
d
p
o
p
u
l
a
t
i
o
n
d
y
n
a
m
i
c
s
. O
n
e
S
a
t
u
r
d
a
y
f

i
e
l
d
t
r
i
p
w
i
l
l
b
e
r
e
q
u
i
r
e
d
. C
o
u
r
s
e
c
o
n
s
i
s
t
s
o
f
b
o
t
h
l
e
c
t
u
r
e
a
n
d
l
a
b
o
r
a
t
o
r
y
c
o

m
p
o
n
e
C
t
e
d
i
t
s
:
4
r
e
r
e
q
u
i
s
i
t
e
s
:
B
I
O
1
1
2
.
C
H
M
1
2
0
.
M
T
H
1
1
0
o
r
p
e
r
m
i
s
s
i
o
n
o
f
i
n
s

BIO 345: Speleology

A
n
i
n
t
r
o
d
u
c
t
i
o
n
t
o
t
h
e
s
t
u
d
y
o
f
c
a
v
e
s
.
S
t
u
d
e
n
t
s
w
i
l
l
l
e
a
r
n

t
b
a
a
t
b
h
e
f
o
r
m
a
t
i
o
n
,
e
c
o
l
o
g
y
,
e
v
o
l
u
t
i
o
n
,
a
n
d
i
n
h
a
b
i
t
a
n
t
s
o
f
c
a
v
e
s
i
n
t
h
e
O
z
a

r
k
s
a
n
d
e
l
s
e
w
h
e
r
e
.

T
h
e
c
o
u
r
s
e
i
n
c
l
u
d
e
s
l
e
c
t
u
r
e
a
n
d
l
a
b
c
o
m
p
o
n
e
n
t
e
d
i
t

BIO 350: Microbiology

:
4
P
r

E
x
a
m
i

e
n
a
q
u
i
b
o
s
o
f
e
s
e
s
t
O
d
e
r
a
n
d
C
M
M
o
d
e
m
i
s
t
r
y
,
g
e
n
e
t
i
c
s
,
a
n
d
p
h
y
s
i
o
l
o
g
y
o
f
m
i
c
r
o
o
r

g
a
n
i
s
m
s
w
i
t
h
a
n
e
m
p
h
a
s
i
s
o
n
b
a
c
t
e
r
i
a
. C
o
u
r
s
e
c
o
n
s
i
s
t
s
o
f
b
o
t
h
l
e
c
t
u
r
e
a
n
d
l
a
b

o
r
a
t
o
r
y
c
o
m
p
o
n
e
n
t
s
e
d
i
t
:
4
P
r
e
r
e
q
u
i
s
i
t
e
s
:
B
I
O
2
5
0
a
n
d
C
H
M
1
2
0

BIO 352: Molecular Biology

I
n
-
d
e
p
t
h
s
t
u
d
y
o
f
t
h
e
s
t
r
u
c
t
u
r
e
a
n
d
r
e
g
u
l
a
t
i
o
n
o
f
p
r

o
k
a
r
y
o
t
i
c
a
n
d
e
u
k
a
r
y
o
t
i
c
g
e
n
e
s
w
i
t
h
a
n
e
m
p
h
a
s
i
s
o
n
r
e
c
o
m
b
i
n
a
n
t
D
N
A
t
e
c
h
n
i
q
u

e
s
a
n
d
a
p
p
l
i
c
a
t
i
o
n
s
. C
o
u
r
s
e
c
o
n
s
i
s
t
s
o
f
b
o
t
h
l
e
c
t
u
r
e
a
n
d
l
a
b
o
r
a
t
o
r
y
c
o
m
p
o
n
e

n
C
e
d
i
t
S
4
P
r
e
r
e
q
u
i
s
i
t
e
s
:
B
I
O
2
5
2
o
r
p
e
r
m
i
s
s
i
o
n
o
f
i
n
s
t
r
u
c
t
o
r
.

BIO 356: Biochemistry

S
t
u
d
y
o
f
t
h
e
c
h
e
m
i
c
a
l
b
a
s
i
s
o
f
l
i
f
e
. T
h
e
m
a
j
o
r
b
i
o
m
o
l
e
c
u
l
e
s
-
p
r
o
t
e
i

n
s
,
c
a
r
b
o
h
y
d
r
a
t
e
s
,
l
i
p
i
d
s
,
a
n
d
n
u
c
l
e
i
c
a
c
i
d
s
—
w
i
l
l
b
e
d
i
s
c
u
s
s
e
d
w
i
t
h
t
h
e
m
p
h
a
s

i
s
o
n
t
h
e
i
r
r
e
a
c
t
i
o
n
s
a
n
d
r
o
l
e
s
i
n
l
i
v
i
n
g
c
e
l
l
s
. C
o
u
r
s
e
c
o
n
s
i
s
t
s
o
f
b
o
t
h
l
e
c
t
u

r
e
a
n
d
l
a
b
o
r
a
t
o
r
y
c
o
m
p
o
n
e
n
t
C
e
d
i
t
s
:

4
BIO 360: Comparative Physiology

r
e
r
e
q
u
i
s
i
t
e
s
:
C
H
M
2
2
0
o
r
p
e
r
m
i
s
s
i
o
n
o

I
n
-
d
e
p
t
h
s
t
u
d
y
o
f
t
h
e
p
h
y
s
i
o
l
o
g
i
c
a
l
s
y

f
s
h
e
m
s
t
u
b
a
b
o
m
a
(
S
t
a
n
e
a
b
C
H
M
O
S
P
h
e
r
e
s
i
s
i
n
a
n
i
m
a
l
s
w
i
t
h
e
m
p
h
a
s
i
s
o
n
t
h
e
d
e
s
i
g
n
a
n
d
f
u

n
c
t
i
o
n
o
f
t
h
e
s
e
s
y
s
t
e
m
s
i
n
d
i
f
f
e
r
e
n
t
a
n
i
m
a
l
s
i
n
r
e
s
p
o
n
s
e
t
o
t
h
e
e
n
v
i
r
o
n
m
e
n
t
a

l
p
r
e
s
s
u
r
e
s
t
h
e
y
f
a
c
e
.
C
o
u
r
s
e
c
o
n
s
i
s
t
s
o
f
b
o
t
h
l
e
c
t
u
r
e
a
n
d
l
a
b
o
r
a
t
o
r
y
c
o
m
p
o
n

e
C
r
e
d
i
t
s
:
P
r
e
r
e
q
u
i
s
i
t
e
s
:
B
I
O
2
5
0
,
C
H
M
1
2
0
,
o
r
p
e
r
m
i
s
s
i
o
n
o
f
i
n
s
t
r
u
c
t
o
r
.

BIO 364: Developmental Biology

S
t
u
d
y
o
f
t
h
e
m
a
j
o
r
p
r
o
c
e
s
s
e
s
w
h
i
c
h
l
e
a
d
t
o
t
h
e
f
o
r
m
a
n
d
f
u
n
c
t
i
o
n
o
f
m

u
l
t
i
c
e
l
l
u
l
a
r
o
r
g
a
n
i
s
m
s
. C
o
u
r
s
e
c
o
n
s
i
s
t
s
o
f
b
o
t
h
l
e
c
t
u
r
e
a
n
d
l
a
b
o
r
a
t
o
r
y
c
o
m

p
o
n
e
n
t
s
r
e
d
i
t
s
:
P
r
e
r
e
q
u
i
s
i
t
e
s
:
B
I
O
2
5
0
a
n
d
B
I
O
2
5
2
O
r
p
e
r
m
i
s
s
i
o
n
o
f
i
n
s
t
r
u
c

BIO 366: Histology

S
t
u
d
y
o
f
t
h
e
m
i
c
r
o
s
c
o
p
i
c
s
t
r
u
c
t
u
r
e
a
n
d
f
u
n
c
t
i
o
n
o
f
a
n
i
m
a
l
t
i

t
e
s
u
e
s
a
n
d
o
r
g
a
n
s
.
C
o
u
r
s
e
c
o
n
s
i
s
t
s
o
f
b
o
t
h
l
e
c
t
u
r
e
a
n
d
l
a
b
o
r
a
t
o
r
y
c
o
m
p
o
n
e
n
t
s

C
r
e
d
i
s
:
4
P
r
e
r
e
q
u
i
s
i
t
e
s
:
B
I
O
2
5
0

BIO 370: Evolution

A
n
i
n
-
d
e
p
t
h
s
t
u
d
y
o
f
p
a
t
t
e
r
n
s
a
n
d
p
r
o
c
e
s
s
e
s
o
f
e
v
o
l
u
t
i
o
n
a
r
y
c
h
a
n
g
e
a
n
d
h

o
w
b
i
o
l
o
g
i
c
a
l
d
i
v
e
r
s
i
t
y
i
s
o
r
i
g
i
n
a
t
e
d
a
n
d
m
a
i
n
t
a
i
n
e
d
. E
m
p
h
a
s
i
s
o
n
h
o
w
e
v
o
l
u

t
i
o
n
a
r
y
p
r
i
n
c
i
p
l
e
s
a
r
e
t

r
d
i
s
c
i
p
l
i
n
e
s
.
T
o
p
i
c
s
i
n
c
l
u
d
e
m
e
c
h
a
n
i
s
m
s
o
f
e
v
o
l
u
t
i
o
n
a
r
y
c
h
a
n
g
e
,
f
o
s
s
i
l
r
e

c
o
r
d
,
m
i
c
r
o
e
v
o
l
u
t
i
o
n
,
m
a
c
r
o
e
v
o
l
u
t
i
o
n
,
p
o
p
u
l
a
t
i
o
n
g
e
n
e
t
i
c
s
,
s
p
e
c
i
a
t
i
o
n
,

a
n
d
h
u
m
a
n
e
v
o
l
u
t
i
o
n
C
i
t
i
e
d
i
t
s

BIO 382: Special Topics in Biology

3
P
r
e
r
e
q
u
i
s
i
t
e
s
:
B
I
O
1
1
2
,
p
r
e
-
/
c
o
-
r
e
q
u
i
s
i
t
e
:
B
I
O

S
t
u
d
y
i
n
a
s
p
e
c
i
f
i
c
a
r
e
a
o
f
b
i
o
l
o
g
y
n
o
t
c
o
v
e
r
e
d
b
y
r
e
g
u

2
5
a
r
l
y
l
i
s
t
e
d
c
o
u
r
s
e
s
.
C
o
u
r
s
e
c
o
n
t
e
n
t
a
n
d
s
t
r
u
c
t
u
r
e
w
i
l
l
v
a
r
y
a
c
c
o
r
d
i
n
g
t
o
t
h

e
i
n
t
e
r
e
s
t
s
o
f
t
h
e
i
n
s
t
r
u
c
t
o
r
:
L
e
c
t
u
r
e
,
l
a
b
o
r
a
t
o
r
y
,
a
n
d
f
i
e
l
d
w
o
r
k
m
a
y
b
e
i
n
c

I
u
d
e
d
e
d
i
t
:
3
-
4
P
r
e
r
e
q
u
i
s
i
t
e
s
:
P
e
r
m
i
s
s
i
o
n
o
f
i
n
s
t
r
u
c
t
o
r
.

BIO 399: Biology International Studies Course: Variable Topics

S
t
u
d
y
o
f
v
a
r
y
i
n
g
t
o
p
i
c
s
i
n
b
i
o
l
o
g
y
:
i
n
c
l
u
d
e
s
a
t
w
o
-
w
e
e
k
N
i
c
h
o
l
s
t
r

i
p
.
P
r
e
r
e
q
u
i
s
i
t
e
s
w
i
l
l
v
a
r
y
C
r
e
d

BIO 420: Advanced Topics in Biology

t
s
:
1

A
d
v
a
n
c
e
d
s
t
u
d
y
i
n
a
s
p
e
c
i
f
i
c
a
r
e
a
o
f
b
i
o
l
o
g
y

. Course content and structure will vary according to the interests of the students

t
r
u
c
t
o
r
.
L
e
c
t
u
r
e
.
l
a
b
o
r
a
t
o
r
y
.
a
n
d
f
i
e
l
d
w
o
r
k
m
a
y
b
e
i
n
c
l
u
d
e
d
i
n
t
h
e

BIO 425: Advanced Biochemistry

3
-
4
P
r
e

I
n
-
d
e
p
t
h

r
e
q
u
i
r
e
d
f
e
e
l
e
m
e
n
t
a
r
y
s
p
o
h
e
m
i
o
a
t
r
e
a
c
t
i
o
n
s
a
n
d
p
a
t
h
w
a
y
s
o
f
m
a
j
o
r
b
i
o
l
o
g
i
c
a
l
a
n

d
p
h
y
s
i
o
l
o
g
i
c
a
l
s
i
g
n
i
f
i
c
a
n
c
e
;
i
n
c
l
u
d
i
n
g
s
y
n
t
h
e
s
i
s
a
n
d
b
r
e
a
k
d
o
w
n
o
f
i
m
p
o
r
t

a
n
t
b
i
o
m
o
l
e
c
u
l
e
s
.
c
e
l
l
s
i
g
n
a
l
i
n
g
p
a
t
h
w
a
y
s
.
a
n
d
s
e
c
o
n
d
m
e
s
s
e
n
g
e
r
s
.
C
o
u
r
s
e
c

o
n
s
i
s
t
s
o
f
b
o
t
h
l
e
c
t
u
r
e
a
n
d
l
a
b
o
r
a
t
o
r
y
c
o
m
p
o
n
e
n
t
s
:
4
r
e
r
e
q
u
i
s
i
t
e
s
:
C
H

BIO 470: Directed Study

I
n
d
e
p
e
n
d
e
n
t
s
t
u
d
y

M
B
S
a
e
p
B
t
O
S
S
e
S
a
n
e
S
C
H
M
S
Y
n
d
e
r
t
h
e
d
i
r
e
c
t
i
o
n
o
f
t
h
e
f
a
c
u
l
t
y
C
r
e
d
i
t

BIO 480: Directed Research

:
1
-
4
P

I
n
d
e
p
e

r
e
d
e
q
u
i
r
e
s
e
a
s
c
r
i
p
t
i
o
n
p
r
o
p
o
s
i
t
i
o
n
o
f
t
e
c
h
n
o
l
o
g
y
.
U
n
d
e
r
d
i
r
e
c
t
i
o
n
o
f
f
a
c
u
l
t
y
,
t
h
e

s
t
u
d
e
n
t
w
i
l
l
d
e
f
i
n
e
,
d
e
s
i
g
n
a
n
d
c
o
m
p
l
e
t
e
a
n
o
r
i
g
i
n
a
l
r
e
s
e
a
r
c
h
p
r
o
j
e
c
t
a
n
d
/
o

r
t
a
k
e
p
a
r
t
i
n
a
l
a
r
g
e
r
,
o
n
g
o
i
n
g
r
e
s
e
a
r
c
h
p
r
o
g
r
a
m
. This course may be repeated

f
o
r
c
r
e
d
i
t
s
:
1
-
4
r
e
r
e
q
u
i
s
i
t
e
s
:
B
I
O
1
1
2
,
C
H
M
1
2
0
,
B
I
O
2
9
0
,
J
u
n
i
o
r
s
t
a
n
d
i
n

BIO 495: Senior Evaluation

T
h
i
s
c
o
u
r
s
e
p
r
o
v
i
d
e
s
g
r
a
d
u
a
t
i
n
g
s
e
n
i
o
r
s
t
h
e
o
p
p
o
r
t
u
n
i
t

g
y
h
d
p
e
s
s
s
h
e
n
o
k
n
o
w
t
e
d
g
e
o
f
b
i
o
l
o
g
y
,
a
n
d
t
o
a
s
s
e
s
s
t
h
e
e
f
f
e
c
t
i
v
e
n
e
s
s
o
f
t
h
e

b
i
o
l
o
g
y
p
r
o
g
r
a
m
.
I
n
s
t
e
a
d
o
f
r
e
g
u
l
a
r
c
l
a
s
s
m
e
e
t
i
n
g
s
,
s
t
u
d
e
n
t
s
w
i
l
l
t
a
k
e
a
c
o
m

p
r
e
h
e
n
s
i
v
e
e
x
a
m
,
w
h
i
c
h
w
i
l
l
a
s
s
e
s
s
f
i
v
e
m
a
j
o
r
a
r
e
a
s
:
c
e
l
l
b
i
o
l
o
g
y
,
m
o
l
e
c
u
l
a

r
b
i
o
l
o
g
y
&
g
e
n
e
t
i
c
s
,
o
r
g
a
n
i
s
m
a
l
b
i
o
l
o
g
y
,
e
c
o
l
o
g
y
&
e
v
o
l
u
t
i
o
n
,
a
n
d
a
n
a
l
y
t
i
c

a
l
r
e
a
s
o
n
i
n
g
.
T
h
e
s
e
n
i
o
r
a
s
s
e
s
s
m
e
n
t
a
l
s
o
a
l
l
o
w
s
s
t
u
d
e
n
t
s
t
o
p
p
r
o
v
i
d
e
f
e
e
d
b
a
c

k
c
o
n
c
e
r
n
i
n
g
t
h
e
i
r
i
n
d
i
v
i
d
u
a
l
l
e
a
r
n
i
n
g
e
x
p
e
r
i
e
n
c
e
s
. S
e
n
i
o
r
E
v
a
l
u
a
t
i
o
n
m
u
s

t
b
e
t
a
k
e
n
b
e
f
o
r
e
s
p
r
i
n
g
b
r
e
a
k
o
f
a
s
t
u
d
e
n
t
'
s
g
r
a
d
u
a
t
i
n
g
y
e
a
r
.
T
h
e
c
o
u
r
s
e
i
s
g
r

a
d
e
d
p
a
s
s
/
f
a
i
l
-
s
a
t
i
s
f
a
c
t
o
r
y
c
o
m
p
l
e
t
i
o
n
o
f
t
h
e
e
x
a
m
,
r
e
g
a
r
d
l
e
s
s
o
f
s
c
o
r
e
;
i

s
r
e
q
u
i
r
e
d
f
o
r
a
p
p
a
s
s
C
P
E
I
P
E
O
P
r
e
r
e
q
u
i
s
i
t
e
s
:
S
e
n
i
o
r
S
t
a
n
d
i
n
g