COURSE: Biology  
PREFIX NO.: BIO 211  
EFFECTIVE DATE: August 2012  
NEXT REVIEW DATE: Spring 2013

| TITLE: Anatomy and Physiology II | CREDITS: 4 | CONTACTS: CLASS - LAB - TOTAL: 3 3 4 |

PREREQUISITES: The student must have successfully completed BIO 210 with a grade of "C" or better.

DESCRIPTION: This class is a continuation of BIO 210 including intensive coverage of the body as an integrated whole. All body systems are studied.

TEXTBOOK(S) OR ALTERNATIVE: Hole's Anatomy & Physiology by Shier, Butler, and Lewis, 12th edition, 2010 (text)  
A & P Revealed 3.0 access code & workbook (packaged with text)

LAB MANUAL: Photomanual and Dissection Guide to the Cat by Bohensky, 2002

MATERIALS (specifying those to be purchased by student): Latex gloves are recommended for lab and should be furnished by the student. Students may bring a lab coat if they wish. Safety glasses and lab aprons are available in lab upon request (no purchase required)

COLLATERAL READING: Students may be asked to review periodical or online resources.

CLASS MANAGEMENT ACTIVITIES (Attendance, tardies, testing, etc.):
Academic Dishonesty: As stated in the college catalog, any student that plagiarizes or is caught cheating on any assignment in a course will receive a zero for that assignment. The documentation will be collected and reported to the Dean of Student Services.

Attendance: According to college policy, a student may miss 20% of the scheduled class periods. When a student exceeds this limit, he or she will be dropped for excessive absences. If the student initiates the withdrawal before midterm, a grade of “W” will be used. After midterm, the grade of “W” will only be used for students who are passing the course; if a student who is not passing initiates a drop after midterm, he or she will receive a grade of “WF”. If the instructor initiates the withdrawal due to excessive absenteeism, at any point during
the course, a grade of “F” will be used for students who are
dropped. If a student leaves class or lab early, the hours
missed will be counted as part of the hours absences.

Tardies: A student is considered tardy if he or she arrives for
class after the scheduled time. Three tardies constitute one
hour of absence.

General information: There is no eating, drinking, or smoking in
any science lab at NETC as indicated by posted signs. Students
should also familiarize themselves with emergency procedures
(tornado, fire, etc.) as posted in classrooms and/or discussed
in class. Each student must wear his or her student ID at all
times when on campus. Use of cell phones/beepers or cameras is
not permitted at any time during any class or lab. If needed,
calculators will be supplied by the instructor.

Classroom etiquette: An integral part of an education is developing
a sense of integrity and responsibility toward faculty and
other students. Arriving late to class, being unprepared,
inappropriate talking while class is in session, using cell
phones, etc., negatively reflects on you and your fellow
students. Please be considerate to them and mature in your
behavior.

Disabilities Statement: Students with disabilities are encouraged
to contact the Dean of Student Services to discuss needs or
concerns as they pursue an academic program and participate in
campus life. The Dean of Student Services will provide
guidance regarding official documentation of disabilities
and/or accommodation of needs. (See Catalog)

RESOURCES (A-V, persons, tools/equipment): The following equipment
may be used in lecture or lab settings: overhead projector,
TV/VCR/DVD, computer, XGA or LCD projector, microscopes,
various biological lab equipment as specified in individual
labs.

COURSE TOPICAL OUTLINE (List topics and sub-topics of course) and
Calendar or approximate length of time devoted to topic.
(Any necessary changes will be announced via Moodle or in class):

<table>
<thead>
<tr>
<th>CHAPTER</th>
<th>TOPICS</th>
</tr>
</thead>
<tbody>
<tr>
<td>19</td>
<td>Respiratory System</td>
</tr>
</tbody>
</table>

Test #1 on respiratory system

| 17      | Digestive System     |
Course Outline
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Test #2 on digestive system
4 Cellular Metabolism (selected topics)
18 Nutrition & Metabolism (selected topics)

Test #3 on metabolism
CHAPTER TOPICS
14 Blood
15 Cardiovascular System

Test #4 on cardiovascular system
16 Lymphatic System & Immunity
20 Urinary System
21 Water, Electrolyte, and Acid-Base Balance

Test #5 on lymphatic system, urinary system & fluids
13 Endocrine System (may be covered during lab times)
22 Reproductive Systems (may be covered during lab times)
23 Pregnancy, Growth, & Development (may be covered during lab times)

Test #6 on endocrine & reproductive systems

Comprehensive Final Exam (per exam schedule announcement)

TENTATIVE TOPICAL LAB SCHEDULE: Any necessary changes will be announced via Moodle or in class. Students should bring both their lab manuals and textbooks to lab each week unless told otherwise. For those labs with data collection, report due dates will be announced in class. Any extra lab time may be used for lecture.

<table>
<thead>
<tr>
<th>Week</th>
<th>Topics Covered</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Video on Respiratory System; Organs of the Thoracic and Oral Cavities (cat dissection)</td>
</tr>
<tr>
<td>2</td>
<td>Lab Test #1 on Thoracic &amp; Oral Cavities; watch video on Anatomy of Medical Emergencies; possible time for lecture notes</td>
</tr>
<tr>
<td>3</td>
<td>Organs of the Abdominal Cavity (cat dissection); Video on Digestive System; possible time for lecture notes</td>
</tr>
</tbody>
</table>
4 Lab Test #2 on Abdominal Cavity; perform experiment on Digestive Enzymes

5 discuss results of Digestive Enzymes lab; Health Assessment Data Collection

6 Lab Test #3 on Digestive Enzymes; Blood & Blood Typing

7 Lab Test #4 on Blood; The Heart (sheep heart & models)

Week Topics Covered
8 Lab Test #5 on Heart; begin Systemic & Fetal Circulation

9 watch video on Anatomy of Medical Emergencies; complete Systemic & Fetal Circulation

10 Lab Test #6 on Systemic & Fetal Circulation; begin Monitoring EKG lab

11 Finish Monitoring EKG lab (on laptops); begin Blood Pressure Collection Experiment (data collection on laptops)

12 finish Blood Pressure Collection Experiment; Coroner’s Reports lab

13 Urogenital System (hog kidney & cat dissection); Endocrine System notes

14 Lab Test #7 on Urogenital System of the Cat; finish Endocrine System; Miracle of Life video & Reproductive Physiology

15 possible administration of lecture test

**LEARNING OUTCOMES/COURSE OBJECTIVES:**

1. The student will be able to name and identify the major organs of the following systems:
   A. respiratory
   B. digestive
   C. cardiovascular
   D. lymphatic
   E. urinary
   F. endocrine
   G. reproductive

2. The student will be able to discuss the normal functions of each of the organs discussed above, and contrast these
functions with abnormalities.

3. The student will be able to discuss the processes of aerobic respiration and lactic acid fermentation, as well as the factors affecting each.

4. The student will be able to discuss how the body maintains homeostasis with regard to water, electrolyte, and acid-base balance.

5. The student will use basic biological lab equipment, such as scalpels, glassware, pipettes, etc. for various lab experiments.

**COLLEGE WIDE COMPETENCIES:** Upon successful completion of the course, the student should be able to:

1. Collect information needed for a given application.

2. Analyze information.

3. Evaluate information to determine usefulness.

4. Apply knowledge to make decisions and solve problems.

**INSTRUCTIONAL METHODS TO COMPLETE OBJECTIVES:**

**Homework, classwork, etc.:** Various assignments will be made throughout the semester possibly including a lab result analysis worksheet, a meal nutritional analysis, and online activities on Moodle with those activities based on the A & P Revealed website. Many assignments, announcements, and handouts will be made on the Moodle course management systems, which students can access at no charge through the NETC website. With the online activities, no credit will be issued for misspelled words or grammatical errors. It is the student’s responsibility to be aware of the due dates posted online, and students are expected to have printed the handouts in advance of lab or class, as needed.

**Lab:** Practical tests, objective tests, and lab reports are used in lab as assessments. The average will be based on the average of any lab reports and the scheduled lab tests, all counting equally. Missed lab work (reports, tests, etc.) may not be made up or submitted late so a zero is recorded for that test or lab report. However, the lowest lab grade will be dropped at the end of the term before final averages are calculated.
Makeup Work: Any lecture test taken late must have a “No Questions Asked” certificate attached to the assignment. The test must be made up prior to the student’s return to class or lab. Any work submitted electronically must be received by the instructor prior to the beginning of class. One lab test grade or report will be dropped, so missed lab tests or reports may not be made up or turned in late. Homework may not be submitted late, as the majority of homework assignments are completed online and have a window of time for completion. If the student is absent when any paper homework assignment is due, he or she should make arrangements to send it electronically by the due date and time or arrange for it to be delivered by another student, etc.

EVALUATIVE METHODS TO APPRAISE LEARNING OUTCOMES/OBJECTIVES: Course assessments – tests covering the assigned chapters of study will be given. No lecture test grades will be dropped. A comprehensive final exam will also be given. Lab tests may be given on the previous labs, and some labs may require that reports/data sheets be submitted. One lab grade will be dropped before final averaging. Outside assignments and reports will be evaluated as outlined in the syllabus or by handouts.

Extra Credit Information: Bonus questions may be offered on lecture tests.

Grading Policy: Points will be taken off for spelling/grammatical errors on all graded work, except bonus questions. The following represents the percentage of each category toward the final average:

<table>
<thead>
<tr>
<th>Category</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lecture average</td>
<td>50%</td>
</tr>
<tr>
<td>Lab average</td>
<td>25%</td>
</tr>
<tr>
<td>Comprehensive Final Exam</td>
<td>20%</td>
</tr>
<tr>
<td>Homework, etc.</td>
<td>5%</td>
</tr>
</tbody>
</table>

GRADING SCALE

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>92 - 100</td>
<td>A</td>
</tr>
<tr>
<td>83 - 91</td>
<td>B</td>
</tr>
<tr>
<td>74 - 82</td>
<td>C</td>
</tr>
<tr>
<td>65 - 73</td>
<td>D</td>
</tr>
<tr>
<td>BELOW 65</td>
<td>F</td>
</tr>
</tbody>
</table>