I. BASIC COURSE INFORMATION
A. Course Description (as stated in the bulletin, including necessary pre-requisite courses, credit hours)
BIOL 2402--Anatomy and Physiology II. Four hours credit. Anatomy and Physiology II is the second part of a two-course sequence. It is a study of the structure and function of the human body including the following systems: endocrine, cardiovascular, immune, lymphatic, respiratory, digestive (including nutrition), urinary (including fluid and electrolyte balance), and reproductive (including human development and genetics). Emphasis is on interrelationships among systems and regulation of physiological functions involved in maintaining homeostasis. The lab provides a hands-on learning experience for exploration of human system components and basic physiology. Three lecture and two lab hours each week. Prerequisite: TSIA Complete; Grade of C or better in BIOL 2401. Lab fee.

B. Intended Audience
This course is the second semester of the two-semester human anatomy and physiology course sequence, a continuation of BIOL 2401. It is a laboratory-based course designed for those pursuing a degree in health related careers and/or pre-professional course work (i.e. nursing, pre-medical, pre-dental, etc.).

C. Instructor
Instructor’s Name: Angela Johnson
Office Location: S120-D
Office Hours: MW – 2:00 to 2:30; TR – 2:25 to 4:25; F – 2:00 to 2:30
Office Phone: (936)633-5259
E-mail Address: ajohnson@angelina.edu (preferred method of contact)

II. INTENDED STUDENT OUTCOMES:
A. Core Objectives Required for this Course
1. Critical Thinking: To include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information.
2. Communication: To include effective development, interpretation and expression of ideas through written, oral and visual communication.
3. Empirical and Quantitative Skills: To include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.
4. Teamwork: To include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal.

Upon successful completion of this course, students will:
1. Lecture
   a. Use anatomical terminology to identify and describe locations of major organs of each system covered.
   b. Explain interrelationships among molecular, cellular, tissue, and organ functions in each system.
   c. Describe the interdependency and interactions of the systems.
   d. Explain contributions of organs and systems to the maintenance of homeostasis.
   e. Identify causes and effects of homeostatic imbalances.
   f. Describe modern technology and tools used to study anatomy and physiology.
2. Lab
   a. Apply appropriate safety and ethical standards.
   b. Locate and identify anatomical structures.
   c. Appropriately utilize laboratory equipment, such as microscopes, dissection tools, general lab ware, physiology data acquisition systems, and virtual simulations.
   d. Work collaboratively to perform experiments.
   e. Demonstrate the steps involved in the scientific method.
   f. Communicate results of scientific investigations, analyze data and formulate conclusions.
g. Use critical thinking and scientific problem solving skills to make decisions, recommendations, and projections.

III. ASSESSMENT MEASURES:
A. Assessments for the Core Objectives
1. **Critical Thinking:** Students will identify, organize, and recall relevant information and demonstrate an in-depth understanding through completing an assignment/worksheet that is presented to them during a physiology topic. The Angelina College (AC) Critical Thinking Rubric will be used to assess each student’s critical thinking skills and correctness.
2. **Communication:** Students will organize, analyze, and convey effective communication through writing a report that communicates information about a disease/disorder related to physiology. The Angelina College (AC) Communication Rubric will be used to assess each student’s communication skills and correctness.
3. **Empirical & Quantitative Skills:** Students will demonstrate their abilities to represent, calculate, interpret, and analyze empirical and quantitative data by completing an assignment/worksheet. The Angelina College (AC) Empirical & Quantitative Skills Rubric will be used to assess each student’s empirical and quantitative skills and correctness.
4. **Teamwork:** Students will demonstrate their abilities to communicate effectively with team members by evaluating one another after working through activities together. The Angelina College (AC) Teamwork Rubric will be used to assess each student’s teamwork skills and correctness.

B. Assessments for Course Learning Outcomes
1. **Lecture**
   a. Students will use anatomical terminology to identify and describe locations of major organs of each system covered by answering written questions during lecture activities, on lecture exams, and by orally answering questions during presentations and class activities.
   b. Students will explain interrelationships among molecular, cellular, tissue, and organ functions in each system by answering questions during lecture activities and on lecture exams.
   c. Students will describe the interdependency and interactions of the systems by answering written questions during lecture activities and on lecture exams.
   d. Students will explain contributions of organs and systems to the maintenance of homeostasis by answering written questions about case studies and on lecture exams.
   e. Students will identify causes and effects of homeostatic imbalances by answering embedded exam questions and by answering written questions about case studies and current advances in medicine.
   f. Students will describe modern technology and tools used to study anatomy and physiology by answering written questions about case studies or writing critical analyses of current medically related journal articles.
2. **Lab**
   a. Students will demonstrate and apply appropriate safety and ethical standards by answering written questions during lab activities and by orally answering questions during lab activities.
   b. Students locate and identify anatomical structures by answering written questions about simulated lab activities, dissections, and by identifying anatomical structures during lab exams.
   c. Students will demonstrate the appropriate utilization of laboratory equipment such as microscopes, dissection tools, general lab ware, physiology data acquisition systems, and virtual simulations by answering written questions during lab activities and by orally answering questions during lab activities.
   d. Students will work collaboratively to perform experiments and demonstrate teamwork ability by working together to answer questions during teamwork activities.
   e. Students will demonstrate the steps involved in the scientific method by collecting laboratory data and performing elementary comparisons of that data, as well as, answering embedded lab exam questions.
   f. Students will communicate results of scientific investigations, analyze data and formulate conclusions by orally answering questions and writing answers to questions during lab activities.
   g. Students will demonstrate critical thinking and scientific problem solving skills to make decisions, recommendations, and projections by answering written questions about case studies.
IV. **INSTRUCTIONAL PROCEDURES:** The online format of Anatomy and Physiology requires a student to work independently to complete the information by required deadlines indicated in the course schedule below. Instructors will provide reading guides, terminology lists, and optional recorded lectures. **STUDENTS ARE RESPONSIBLE FOR USING THE PROVIDED MATERIALS TO PREPARE FOR EXAMS. ***SEE EXAM DESCRIPTION BELOW***

V. **COURSE REQUIREMENTS AND POLICIES:**

A. **Required Textbooks, Materials, and Equipment:**
   1. *Human Anatomy and Physiology* by Elaine Marieb (Benjamin/Cummings), Tenth Edition
   3. Mastering A & P code (supplied in the textbook bundle from the bookstore or online)
   5. Lecture terminology list
   6. Lab terminology list

B. **Course Policies – (This course conforms to the policies of Angelina College as stated in the Angelina College Handbook.)**

1. **Academic Assistance** – If you have a disability (as cited in Section 504 of the Rehabilitation Act of 1973 or Title II of the Americans with Disabilities Act of 1990) that may affect your participation in this class, you should see Sellestine Hunt Associate Dean of Student Services, Student Center, Room 200. At a post-secondary institution, you must self-identify as a person with a disability; Ms. Hunt will assist you with the necessary information to do so. To report any complaints of discrimination related to disability, you should contact Mr. Steve Hudman, Dean of Student Affairs, in Student Center, Room 101, (936) 633-5292 or by email shudman@angelina.edu.

2. **Attendance:** Attendance is required as per Angelina College Policy and will be recorded every day. Any student with three (3) consecutive absences of four (4) cumulative absences may be dropped from the class. Records will be turned in to the academic dean at the end of the semester. Do not assume that non-attendance in class will always result in an instructor drop. **You must officially drop a class or risk receiving an F.** This is official Angelina College Policy.

3. **Additional Policies Established by the Individual Instructor:**

   **STUDENT CONDUCT**
   A positive environment for learning will be maintained by students being courteous to each other and to the instructor.
   - Arrive in class on time and do not prepare to leave before class is over, unless special arrangements have been made prior to class with the instructor.
   - No eating in class.
   - Cell phones should be on “vibrate only” (silent mode) or turned off.
   - Only one person speaks at a time. Distracting conversations during lecture will not be allowed. Respect all members of the class.
   - Profanity will not be tolerated. Rude or provocative logos on clothing are not allowed in the classroom.
   - Cheating on tests is not tolerated as per Angelina College policy and may result in expulsion from the course. Plagiarism is not tolerated and will result in a zero for any assignment in which it is detected.
VI. COURSE CONTENT:

Lecture and Lab content and reading assignments: The schedule below provides the due dates for Mastering A & P quizzes and exams with their corresponding information. Students are allowed, and encouraged, to submit quizzes and test before the final due dates.

<table>
<thead>
<tr>
<th>August 28th – September 22nd</th>
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<tr>
<td>- The Introduction to Mastering A &amp; P homework assignment must be completed on or before Friday, September 1st.</td>
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<td>- All Mastering A&amp;P quizzes for Exam 1 must be completed on or before Thursday, September 21st.</td>
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<td>- Exam 1 must be completed on or before Friday, September 22nd.</td>
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**EXAM 1:**

**LECTURE CHAPTERS:**
The Endocrine System (Ch. 16); Blood (Ch. 17); The Heart (Ch. 18)

**LAB EXERCISES:**
The Endocrine System (Ex. 27); Blood (Ex. 28); Anatomy of the Heart (Ex. 29)

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<th>September 23rd – October 13th</th>
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<tr>
<td>- All Mastering A&amp;P quizzes for Exam 2 must be completed on or before Thursday, October 12th.</td>
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<td>- Exam 2 must be completed on or before Friday, October 13th.</td>
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**EXAM 2:**

**LECTURE CHAPTERS:**
Blood Vessels (Ch. 19); The Lymphatic System and Lymphoid Organs & Tissues (Ch. 20); The Immune System (Ch. 21)

**LAB EXERCISES:**
Anatomy of Blood Vessels (Ex. 32); Human Cardiovascular Physiology (Ex. 33); The Lymphatic System and Immune Response (Ex. 35)

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<th>October 14th – November 10th</th>
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<td>- All Mastering A&amp;P quizzes for Exam 3 must be completed before Thursday, November 9th.</td>
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<td>- Exams 3 must be completed before Friday, November 10th.</td>
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**EXAM 3:**

**LECTURE CHAPTERS:**
The Respiratory System (Ch. 22); The Digestive System (Ch. 23); Nutrition, Metabolism, and Energy Balance (Ch 24)

**LAB EXERCISES:**
Anatomy of the Respiratory System (Ex. 36); Respiratory System Physiology (Ex. 37); Anatomy of the Digestive System (Ex. 38)

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<th>November 11th – December 8th</th>
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<tr>
<td>- All Mastering A&amp;P quizzes for Exam 4 must be completed before Thursday, December 7th.</td>
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<td>- Exams 4 must be completed before Friday, December 8th</td>
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**EXAM 4:**

**LECTURE CHAPTERS:**
The Urinary System (Ch. 25); Fluid, Electrolyte, and Acid-Base Balance (Ch. 26)

**LAB EXERCISES:**
Anatomy of the Urinary System (Ex. 40); Urinalysis (Ex. 41 ); Anatomy of the Reproductive System (Ex. 42); Physiology of the Reproduction (Ex. 43); Survey of Embryonic Development (Ex. 44); Principles of Heredity (Ex. 45)

**Wednesday, AUGUST 16TH**
- THE FINAL EXAM IS COMPREHENSIVE AND WILL INCLUDE ALL LECTURE CHAPTERS AND LAB EXERCISES INCLUDED ON EXAMS 1, 2, 3, AND 4.
VII. EVALUATION AND GRADING:

A. **Grading Criteria** *(percents, extra credit, etc.)*

Questions for lecture exams and quizzes will be taken from lecture notes and textbook chapters. *It is important for the student to understand that not all of the textbook information will be discussed in class, thus it is the student's responsibility to read and study all chapter material (besides lecture notes) in preparation for an exam.* Combined scores from lecture and laboratory constitute the final grade in the course:

**Lecture**

- 4 Lecture Exams = 100 points each
- Lecture Quizzes (11 online) = 100 points total (quizzes are averaged to reach this total)*
- Comprehensive Final = 100 points
  
  \[
  \text{Lecture Average} = \frac{100 + 100 + 100 + \text{Comprehensive Final}}{4} = \frac{400 + 100}{4} = 100
  \]

**Lab**

- 4 Virtual Practical Exams = 100 points each
- Lab Quizzes (+6 in class) = 100 points total (quizzes are averaged to reach this total)*
  
  \[
  \text{Lab Average} = \frac{100 + 100 + 100 + \text{5 Lab Quizzes}}{5} = \frac{400 + 5 \times 100}{5} = 100
  \]

Course average will be determined according to the following:

- Lecture Average (60%) = 100 x .60 = 60
- Lab Average (40%) = 100 x .40 = 40

\[
\text{Total Course Average} = \frac{60 + 40}{100} = 100
\]

B. **Determination of Grade** *(assignment of letter grades)*

Grades for the course will be based on the following guidelines:

- A = 90 - 100 points
- B = 80 - 89 points
- C = 70 - 79 points
- D = 60 - 69 points
- F = 59 points

C. **Exams:** There will be four PROCTORED exams that must be taken on or before the dates shown in the class schedule. These four exams include lecture and lab questions. Each exam will be used to calculate two grades including one for lecture and one for lab. The multiple-choice lecture questions will be used to calculate a lecture grade, and the fill-in-the-blank, short answer, and matching lab questions will be used to calculate a lab grade. *(For example, EXAM 1 will have lecture and lab questions on the exam, and will be divided into a separate lecture exam grade and a separate lab exam grade.)* Utilize the lecture terminology list and reading guide and lab terminology list to prepare the exams. *All exams must be taken at an Angelina College Testing Center or online through ProctorU. Both require scheduled testing times. Angelina College Testing Center administers exams at no cost, but ProctorU does require a fee for each exam. Make-up exams are to the discretion of the instructor.*

D. **Homework:** All homework assignments are taken on Mastering A & P, and must be completed on or before the dates listed in the class schedule. *(Please see the Pearson Student Registration Instruction document to setup your account.)* All lecture chapters and lab exercises will have a corresponding Mastering A & P homework assignment. Lecture homework assignments will be averaged to calculate one lecture exam grade, and lab homework assignments will be averaged to calculate one lab exam grade. The homework assignments could possibly take up to two hours, and students should not procrastinate in completing them. Most assignments will include helpful instructional videos or simulations on the more challenging subjects of the course. Utilize the lecture terminology list and reading guide and lab terminology list while completing the homework.
E. **Final Exam:** The PROCTORED final exam will be comprehensive, and will included lecture and lab material. Terminology lists and reading guides will helpful during preparation for the exam. The final exam will be divided into two grades, including one lecture final exam grade and one lab final exam grade. Grades received from the final exam could possibly drop and replace previous exams grades, if a student scores higher on the final exam than on a previous lower correlating exam grade. (For example, the grade received on the lecture portion of the final exam can replace the single lowest grade on the regular lecture exams, and the grade received on the lab portion of the final exam can replace the single lowest grade on the regular lab exams.

VIII. **SYLLABUS MODIFICATION:**
The instructor may modify the provisions of the syllabus to meet individual class needs by informing the class in advance as to the changes being made.