A. **Academic Division:** Health Sciences

B. **Discipline:** Science

C. **Course Number and Title:** BIOL2751 Human Anatomy & Physiology I

D. **Course Coordinator:** Jeff Taylor, MS
   **Assistant Dean:** Melinda Roepke, MSN, RN
   
   **Instructor Information:**
   - Name: Click here to enter text.
   - Office Location: Click here to enter text.
   - Office Hours: Click here to enter text.
   - Phone Number: Click here to enter text.
   - E-Mail Address: Click here to enter text.

E. **Credit Hours:** 4
   Lecture: 3 hours
   Laboratory: 3 hours

F. **Prerequisites:** High school chemistry with minimum C minus (C-) grade or CHEM1010 with minimum C minus (C-) grade; AND READ0080, WRIT0090 MATH0074 (Minimum grade of C- for all) or qualifying placement test score. If the student has completed BIO121 and BIO122 OR BIOL1730 with a minimum grade of C, then the student is not required to have high school Chemistry or CHEM 1010

G. **Syllabus Effective Date:** Fall, 2017

H. **Textbook(s) Title:**
   
   *Visual Anatomy and Physiology*
   - Author: Martini
   - Copyright Year: 2015
   - Edition: 2nd
   - ISBN #: 9780321918949

I. **Workbook(s) and/or Lab Manual:**
   
   *Atlas of the Human Body*
   - Authors: Martini
   - Copyright Year: 2015
   - Edition: 10th
   - ISBN #: 9780321940728

   *The Anatomy Coloring Book*
   - Authors: Kapit and Elson
   - Copyright Year: 2002
Course Description: This course is an in-depth study of the principles of human anatomy and physiology. It includes the study of structure and function of the body as a whole and study of cell biology, histology, the integumentary, skeletal, muscular, endocrine, and nervous systems plus the special senses. Laboratory exercises are designed to supplement lecture topics and include microscopy, the study of models, cat and specimen dissection, cadaver study, and physiological experiments. (OTM approved course in Natural Sciences TMNS)

K. College-Wide Learning Outcomes

<table>
<thead>
<tr>
<th>College-Wide Learning Outcomes</th>
<th>Assessments - - How it is met &amp; When it is met</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communication – Written</td>
<td></td>
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<tr>
<td>Communication – Speech</td>
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<tr>
<td>Intercultural Knowledge and Competence</td>
<td></td>
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<tr>
<td>Critical Thinking</td>
<td>Given a homeostatic imbalance, predict the physiological responses (all body systems throughout the semester).</td>
</tr>
<tr>
<td>Information Literacy</td>
<td>Accessing course quizzes, tutorials, audio presentations and grades in Blackboard and faculty websites (throughout the semester).</td>
</tr>
<tr>
<td>Quantitative Literacy</td>
<td>Determination of alteration of cell membrane potentials (completion of the muscular and nervous systems).</td>
</tr>
</tbody>
</table>

L. Course Outcomes and Assessment Methods:

Upon successful completion of this course, the student shall:

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Assessments – How it is met &amp; When it is met</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Describe the body planes and organization and apply these to appropriate models, drawings, and specimens.</td>
<td>Exams, quizzes, practical lab tests throughout the semester</td>
</tr>
<tr>
<td>2. Explain the basic concept of homeostasis.</td>
<td>Exams, quizzes, practical lab tests throughout the semester</td>
</tr>
<tr>
<td>3. Identify selected cell structures and explain their respective functions.</td>
<td>Exams, quizzes, practical lab tests throughout the semester</td>
</tr>
<tr>
<td>4. Summarize the steps of cell division and protein synthesis.</td>
<td>Exams, quizzes, practical lab tests throughout the semester</td>
</tr>
<tr>
<td>5. Describe, locate, and identify the basic tissues of the body and explain their functions.</td>
<td>Exams, quizzes, practical lab tests throughout the semester</td>
</tr>
<tr>
<td>6. Identify the organs of the integumentary system and describe the functions of the system.</td>
<td>Exams, quizzes, practical lab tests throughout the semester</td>
</tr>
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</table>
### Outcomes

<table>
<thead>
<tr>
<th></th>
<th>Assessments – How it is met &amp; When it is met</th>
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</thead>
<tbody>
<tr>
<td>7.</td>
<td>Identify and describe the major microscopic and macroscopic anatomical components of the skeletal system, osteogenesis, repair, and functional contributions to movement.</td>
</tr>
<tr>
<td>8.</td>
<td>Identify and describe the major microscopic and macroscopic anatomical components of the muscular system and explain their functional roles in body movement.</td>
</tr>
<tr>
<td>9.</td>
<td>Identify and describe the major microscopic and macroscopic anatomical components of the endocrine system and explain their functional roles in communication, cellular control and integration.</td>
</tr>
<tr>
<td>10.</td>
<td>Identify and describe the major microscopic and macroscopic anatomical components of the nervous system and explain their functional roles in communication control, and integration.</td>
</tr>
<tr>
<td>11.</td>
<td>Identify and describe the major microscopic and macroscopic anatomical components of the eye and ear and explain their functional roles in vision and hearing.</td>
</tr>
</tbody>
</table>

### Topical Timeline (Subject to Change):

#### LECTURE:

1. **Introduction**
   - a. Life and its maintenance
     - 1) Homeostasis
     - 2) Characteristics
     - 3) Levels of organization
   - b. Anatomical terminology and reference systems
   - c. Chemistry, matter, and life
2. **The Cell**
   - a. Introduction to cellular concept
   - b. A composite cell
   - c. Movements through cell membranes
   - d. Nucleic acids and protein synthesis
   - e. Life cycle of a cell
   - f. Metabolic processes
3. **Cells Working Together - Tissues**
   - a. Tissue groups
   - b. Tissue transplantation
4. **The Integument (Skin)**
   - a. Skin functions
   - b. Skin layers and appendages
   - c. Response to injuries
5. **The Skeletal System**
   - a. Functions
   - b. Organization
   - c. Bone structure and development
6. **The Articular System**
   - a. Types of joints and their movements
   - b. Disorders of joints
7. The Muscular System
   a. Purposes
   b. Special characteristics and structure
   c. Skeletal muscle contraction
   d. Other muscle types
   e. Actions and naming of muscles

8. The Endocrine System
   a. Basic Endocrine Functions
   b. Hormones secreted by the pituitary, thyroid, parathyroid, adrenal, pancreatic, G.I. and reproductive glands.
   c. The effects of each of the hormones
   d. Control mechanisms for each hormone secretion
   e. Conditions of clinical significance
   f. Other Endocrine Tissues and Hormones (Pineal body and thymus gland)
   g. Prostaglandins

9. The Nervous System
   a. Introduction
   b. Divisions of organization
   c. Cells and tissues of the nervous system
   d. Physiology of the neuron and synapse
   e. Neuron receptors
   f. The spinal cord and reflex arcs
   g. Anatomy and function of the brain and related structures
   h. The peripheral nervous system
      1) Somatic
      2) Autonomic

10. Special Senses
    a. The Eye
        1) Structures of the eye and their functions
        2) Physics of vision
        3) Vision disorders
    b. The Ear
        1) Structures of the ear
        2) Mechanism of hearing
    c. Smell
    d. Taste

LABORATORY EXERCISES:

1. Introduction to the lab and the human body
2. Basic microscope
3. Cell structure
4. Membrane transport
5. Mitosis
6. Tissues
7. The skin
8. The skeleton (skull)
9. Thoracic and vertebral skeleton
10. Skeleton of upper appendage
11. Skeleton of lower appendage
12. Muscles of hind limb
13. Muscles of neck, chest and abdomen
14. Muscles of back and shoulder
15. Muscles of arm
16. Physiology of muscle
17. Endocrine gland structure and hormone function
18. Human brain and sheep brain external anatomy
19. Human brain and sheep brain internal anatomy
20. Neuron cell structure and spinal cord
21. Reflex action and nervous control
22. Major Somatic nerves
23. Eye
24. Ear

N. Course Assignments:

1. Assignments as dictated by instructor
2. Lecture exams
3. Laboratory practical exams
4. Completion of pre-laboratory worksheets

O. Recommended Grading Scale:

<table>
<thead>
<tr>
<th>NUMERIC</th>
<th>GRADE</th>
<th>POINTS</th>
<th>DEFINITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>93–100</td>
<td>A</td>
<td>4.00</td>
<td>Superior</td>
</tr>
<tr>
<td>90–92</td>
<td>A-</td>
<td>3.67</td>
<td>Superior</td>
</tr>
<tr>
<td>87–89</td>
<td>B+</td>
<td>3.33</td>
<td>Above Average</td>
</tr>
<tr>
<td>83–86</td>
<td>B</td>
<td>3.00</td>
<td>Above Average</td>
</tr>
<tr>
<td>80–82</td>
<td>B-</td>
<td>2.67</td>
<td>Above Average</td>
</tr>
<tr>
<td>77–79</td>
<td>C+</td>
<td>2.33</td>
<td>Average</td>
</tr>
<tr>
<td>73–76</td>
<td>C</td>
<td>2.00</td>
<td>Average</td>
</tr>
<tr>
<td>70–72</td>
<td>C-</td>
<td>1.67</td>
<td>Below Average</td>
</tr>
<tr>
<td>67–69</td>
<td>D+</td>
<td>1.33</td>
<td>Below Average</td>
</tr>
<tr>
<td>63–66</td>
<td>D</td>
<td>1.00</td>
<td>Below Average</td>
</tr>
<tr>
<td>60–62</td>
<td>D-</td>
<td>0.67</td>
<td>Poor</td>
</tr>
<tr>
<td>00-59</td>
<td>F</td>
<td>0.00</td>
<td>Failure</td>
</tr>
</tbody>
</table>

P. Grading and Testing Guidelines:

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Q. Examination Policy:

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R. Class Attendance and Homework Make-Up Policy:

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S. Classroom Expectations:

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T. College Procedures/Policies:

Attendance Requirements: All students are required to attend all scheduled classes and examinations. Each faculty member has the right to establish regulations regarding attendance that he/she considers necessary for successful study.
Students who do not attend classes may be administratively withdrawn from those classes. However, failure to attend classes does not constitute withdrawal, and students are expected to process a formal withdrawal though the Student Records Office in Kee Hall.

**Student engagement requirements:**
Student engagement is based on the “active pursuit” of learning which can be measured by class attendance, class participation (in class or online), taking required quizzes/examinations, and submission of work assignments or papers. Student engagement consists of a student attending at least 60% of the class sessions (there should be attendance throughout the term) and/or completing 75% of the assignments listed on the syllabus at the midpoint in the term. Exceptions can be made when there is on-going communication between the student and faculty member. The communication must be documented and the faculty member and student must be in agreement regarding the exception. Students not meeting the expectation will be administratively withdrawn from class. If a student believes he/she was administratively withdrawn in error, he/she may file an appeal. Being administratively withdrawn may have program and financial aid implications.

**Academic Misconduct** is any activity that tends to compromise the academic integrity of the college, or subvert the educational process. Examples of academic misconduct include, but are not limited to:

1. **Violation of course or program rules** as contained in the course syllabus or other information provided to the student; violation of program requirements as established by departments and made available to students.

2. **Plagiarism** including, but not limited to, submitting, without appropriate acknowledgment, any written, visual or oral material that has been copied in whole or in part from the work of others (whether such source is published or not) even if the material is completely paraphrased in one’s own words. This includes another individual’s academic composition, compilation, or other product, or a commercially prepared paper. Plagiarism also includes submitting work in which portions were substantially produced by someone acting as a tutor or editor.

   Such practices constitute plagiarism regardless of motive. Those who deny deceitful intent, claim not to have known that the act constituted plagiarism, or maintain that what they did was inadvertent are nevertheless subject to penalties when plagiarism has been confirmed.

3. **Cheating** and dishonest practices in connection with examinations, papers and projects, including but not limited to using unauthorized notes, study aids or information on an examination; obtaining help from another student during an examination; taking an exam or doing work for another student; providing one’s own work for another student to copy and submit as his/her own; or allowing another student to do one’s work and then submitting the work as one’s own. Also included would be altering a graded work after it has been returned, then submitting the work for re-grading; or submitting identical or similar papers for credit in more than one course without prior permission from the course instructors.

4. **Fabrication** including but not limited to falsifying or inventing any information, data or citation; presenting data that were not gathered in accordance with defined appropriate guidelines, and failing to include an accurate account of the method by which data were collected.

5. **Obtaining an Unfair Advantage** including, but not limited to stealing, reproducing, circulating, or otherwise gaining access to examination materials prior to the time authorized by the instructor; unauthorized collaborating on an academic assignment; taking, hiding or altering resource material; or undertaking any activity with the purpose of creating or obtaining an unfair advantage over another student’s academic work.

6. **Aiding and Abetting Academic Dishonesty** including, but not limited to providing material,
information or other assistance to another person with the knowledge that such aid could be used in any of the violations stated above, or providing false information in connection with any inquiry regarding academic integrity.

7. **Alteration of Grades or Marks** including but not limited to, action by the student in an effort to change the earned credit or grade.

In addition, cases of academic dishonesty may involve photocopied materials. Materials used may fall under the Copyright Act. Violations of said Act may subject the user and/or the College to sanctions.

**Statement on Disabilities:** Any student who requires reasonable accommodations related to a disability should inform the course instructor and the Coordinator of Specialized Services (Room 138 in Kee Hall; phone 419-755-4727).

Students who encounter difficulty in any of their courses are encouraged to visit the Tutoring Resource Center (Room 119 in Fallerius Technical Education Center) for tutoring assistance, and the Student Success Center (Room 136 in Kee Hall) for academic assistance, advising services, referrals for personal counseling and Learning Disability (LD) Testing.

**Statement on Withdrawals:** As a student, you are expected to attend class. If you are unable or choose not to attend class, or if for whatever reason you are unable to keep up with the requirements of a course, you need to officially drop the class at the Student Records Office. Refund dates and withdrawal dates will vary slightly from term to term. Contact the Student Records Office for applicable dates. Additionally, these dates are posted on the academic calendar available on the college’s website, [www.ncstatecollege.edu](http://www.ncstatecollege.edu), under the Academics heading on the home page and are available at the Student Records Office in Kee Hall. Students should go to the Student Records Office (Room 142 in Kee Hall) to process their withdrawal from any class.

If you choose to walk away from your class without officially withdrawing from it, the faculty member teaching the class must grade your classroom performance on the material available to him or her. This normally results in an "F" grade. An "F" grade can lower your grade point average considerably depending on the total credits accumulated.