COURSE: BIO 137 Anatomy and Physiology I Fall 2006

DESCRIPTION: The interrelationship of structure and function of each body system will be presented in two semesters. The first semester will include basic chemistry, cell structure, cell physiology, metabolism, tissues, and integumentary, skeletal, muscular and nervous systems. 4 cr. hr.

STRUCTURE: Web enhanced course with additional CD-ROM and internet work
Lecture: 3 credit hours; Laboratory: 2 contact hours/1 credit hour

Students should follow these instructions to access content for web-enhanced classes.

1. Point your browser to http://www.elearning.kctcs.edu/
2. Type in your PeopleSoft user id and password. These are the same that you use to check your PS e-mail and grades. If you have not activated your PS account, go to http://www.maycc.kctcs.edu/ click on Support Services and follow the directions.
3. Click the course link (BIO 137 A&P I) to get started.

PREREQUISITES: Reading, English and Mathematics assessment exam scores above the KCTCS developmental placement level or successful completion of the prescribed developmental course(s) or consent of instructor.

INSTRUCTOR: Sharon Golden Wilson  OFFICE: Room D-240b
PHONE: (606) 759-7141  Ext. 66170
FAX: (606) 759-7176 (library)
E-MAIL: Sharon.Wilson@kctcs.edu

OFFICE HOURS:

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<td>MW</td>
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<td>TTh</td>
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Please note: I am often in my office beyond the hours listed above. If my posted office hours do not fit your schedule, please contact me so that we may schedule an appointment.
CLASS MEETINGS:

Lecture: TTh 1:00 p.m. - 2:15 p.m. Rm. A-268
Lab 1: T 2:30 p.m. - 4:30 p.m. Rm. D-240
Lab 2: Th 2:30 p.m. - 4:30 p.m. Rm. D-240
Lab 3: M 2:30 p.m. - 4:30 p.m. Rm. D-240
Lab 4: W 2:30 p.m. - 4:30 p.m. Rm. D-240
(Lab 4 Instructor: Mr. Joseph Shearer)

TEXTS:

CD-ROMs*: Regulation: The Nervous and Endocrine Systems
Support and Movement: The Skeletal and Muscular Systems
Disease Resistance: The Integumentary, Lymphatic and Immune Systems
Energy Acquisition and Use: The Digestive System and Metabolism
(* or DVD)

ATTENDANCE:
1. Lectures and labs will begin promptly scheduled times.
2. Attendance is expected at ALL lecture and lab sessions. Only two excused lab absences due to extreme emergencies will be allowed per student per semester. Any labs missed will be made up by the student at a time arranged with the instructor. Labs must be made up within 1 week of the absence. Any student failing to do so will receive no credit for that lab exercise.
3. NO "make-up" exams will be given except in cases of valid and unavoidable hardships that are approved IN ADVANCE by the instructor.

GRADING:
1. The lecture average will count 70% of the final grade for the course and the lab portion 30%.

Course Grade = (.7 x lecture average) + (.3 x lab average)

2. The lecture grade will be determined from the average of 4 lecture exams, quiz average and a final exam.

Lecture Ave = (sum of tests + quiz average) / # of tests + 1

3. The lab grade will be determined from an average of 3 lab exams and the total of points accumulated from lab exercises and participation.
Lab Ave = \[ \text{sum of lab tests + } \left[ 100 \times \left( \frac{\# \text{ of labs completed}}{\# \text{ of labs assigned}} \right) \right] \] 
\[ \frac{\# \text{ of lab tests} + 1}{\# \text{ of lab tests} + 1} \]

Each lab exercise will include the completed lab module(s), data sheet(s), and colored and labeled sketches of microscope slides for that particular lab activity. Lab exercises will be due 1 week after the lab period in which they were assigned. Half credit will be given for late, incomplete or inaccurate lab exercises. [Please note: >5 incorrect/blank answers = inaccurate]

4. Grading scale:
   - 89.5 - 100 A
   - 79.5 - 89 B
   - 69.5 - 79 C
   - 59.5 - 69 D
   - 0 - 59 E

WITHDRAWAL: Students may withdraw up to and including October 13th, 2006 without permission from the instructor. After October 13th, 2006, students with valid hardships must contact the instructor to receive a "W". Withdrawal forms must be completed, signed and submitted to the registrar's office prior to December 8th, 2006 in order to receive a "W".

COURSE COMPETENCIES: Upon completion of this course, the student will be able to:

1. recognize the complementarity of structure and function,
2. describe basic metabolic processes of organ systems,
3. explain the interrelationships between organ systems and physiological processes,
4. explain the major homeostatic mechanisms utilized in each body system in response to internal and external environmental changes,
5. explain physiological and anatomical mechanisms of common dysfunctions.

GENERAL EDUCATION COMPETENCIES:

I. Communicate Effectively

1. Read and listen with comprehension.

   Students in BIO 137 will demonstrate this competency by incorporating their understanding of the material from the lectures, textbook, laboratory manual and other course materials to formulate questions and actively participate in discussions and cooperative testing.
2. Speak and write clearly using standard English.

Students in BIO 137 will demonstrate this competency by using standard English (correct spelling, punctuation and grammar) in class discussions and assignments.

3. Interact cooperatively with others using both verbal and non-verbal means.

Students in BIO 137 will demonstrate this competency by interacting with their fellow students and instructors in a courteous and respectful manner at all times. Professional behavior and demeanor befitting future health care professionals is expected.

4. Demonstrate information processing through basic computer skills.

Students in BIO 137 will demonstrate this competency by accessing web-based materials, utilizing supplemental CD-ROMs/DVDs and by submitting assignments in the proper format as required by the instructor.

II. Think Critically

1. Make connections in learning across the disciplines and draw logical conclusions.

Students in BIO 137 will demonstrate this competency by synthesizing knowledge learned in this and other areas (A&P, Microbiology, Health Care and the social sciences) to view the human body as an interrelated whole when answering application questions.

2. Demonstrate problem solving through interpreting, analyzing, summarizing and/or integrating a variety of materials.

Students in BIO 137 will demonstrate this competency by analyzing, summarizing and/or interpreting information/concepts from lecture and other course materials when answering application questions.

3. Use mathematics to organize, analyze, and synthesize data to solve a problem.

Students in BIO 137 will demonstrate this competency by applying mathematics *when appropriate* to further their understanding of an application/concept and/or to construct a solution for a problem.

III. Learn Independently
1. Use appropriate search strategies and resources to find, evaluate and use information.

   Students in BIO 137 will demonstrate this competency by determining the information needed, calculating, measuring or researching as appropriate to find the information, and using the information to solve various questions/applications.

2. Make choices based upon awareness of ethics and differing perspectives/ideas.

   Students in BIO 137 will demonstrate this competency by showing sensitivity to the concerns and opinions of other students and the instructor when discussing current bioethical issues related to class content. Students are also required to display honesty and integrity in all class work. Plagiarizing or cheating will not be tolerated and will be dealt with according to the policies set forth in the KCTCS Student Handbook [http://www.kctcs.edu/student/code.htm](http://www.kctcs.edu/student/code.htm)

3. Apply learning in academic, personal, and public situations.

   Students in BIO 137 will demonstrate this competency by answering “real-life” application questions relating course content to their daily lives, future studies and professions.

4. Think creatively to develop new ideas, processes, or products.

   Students in BIO 137 will demonstrate this competency by utilizing knowledge gained in class to answer questions which require more than repeating the methods and examples given in the text and class.

IV. Examine Relationships in Diverse and Complex Environments

1. Recognize the relationship of the individual to human heritage and culture.

   Students in BIO 137 will demonstrate this competency by showing an awareness of the history of the discipline and the influences of individuals and cultures upon that history and our current understanding.

2. Demonstrate an awareness of the relationship of the individual to the biological and physical environment.

   Students in BIO 137 will demonstrate this competency by exhibiting comprehension of interrelationship of the structure and function of the body’s systems to the biological and physical environment in which we live.
COURSE OUTLINE

Unit 1  (Tentative test date Th 9/14/06)
Chapter 1  An Intro to the Human Body  Assignment – Ex 1 Anatomical Language
Chapter 2  The Chemical Level of Organization
Chapter 3  The Cellular Level of Organization  Assignment – Ex 4 Cell pp. 41-43
Chapter 25  Metabolism (pp. 950-962)  Anaerobic & Aerobic respiration
Chapter 10  Muscle Tissue (pp. 306-307)  Anaerobic & Aerobic respiration

Unit 2  (Tentative test date T 10/10/06)
Chapter 4  The Tissue Level of Organization
Chapter 5  The Integumentary System  Assignment – Ex 7 Integumentary System
Chapter 6  The Skeletal System: Bone Tissue  Assignment – Ex 8 Bone
Chapter 7  The Skeletal System: The Axial Skeleton  (Covered in Lab Ex 9)
Chapter 8  The Skeletal System: The Appendicular Skeleton  (Covered in Lab Ex 10)

Unit 3  (Tentative test date Th 11/2/06)
Chapter 9  Joints  Assignment: Ex 11 Joints and Synovial Joint Movements
Chapter 10  Muscle Tissue  Assignment – Ex 12 Skeletal Muscle Structure
Chapter 11  The Muscular System (pp. 325-331)  (remainder covered in Lab Ex 14)
Chapter 12  Nervous Tissue  Assignment - Ex 16 Nervous Tissue

Unit 4  (Tentative test date T 12/5/06)
Chapter 12  Nervous Tissue  (Overview of Nervous System pp. 404-6,
Neuroglia pp. 409-414, Regeneration pp. 432-3)
Chapter 13  The Spinal Cord and Spinal Nerves  (Meninges pp. 440-442)
Chapter 14  The Brain and Cranial Nerves  (pp. 474-500)
  Lab Assignment – Ex 20 Brain Structure & Function (covered in lab also)
Chapter 16  Sensory, Motor and Integrative Systems  (pp. 558,560-568)
Chapter 14  The Brain and Cranial Nerves  (Cranial nerves pp 500-515)
  Lab Assignment – Ex 21 Cranial Nerves (covered in lab also)
Chapter 13  The Spinal Cord and Spinal Nerves  (pp. 442-467)
  Lab Assignment – Ex 17 Spinal Cord Structure  (covered in lab also)
  Ex 18 Spinal Nerves  (covered in lab also)
  Ex 19 Somatic Reflexes
Chapter 16  Sensory, Motor and Integrative Systems  (Pain p. 552-3)
Chapter 15  The Autonomic Nervous System  Assignment – Ex 24 ANS
Chapter 17  The Special Senses
  Lab Assignment – Ex 23 Special Senses  (covered in lab)
Chapter 16  Sensory, Motor and Integrative Systems  (pp. 546-560)
  Assignment – Ex 22 General Senses

“FINAL CHANCE” EXAM - Th 12/14/06  12:00 noon – 2:00 p.m.
# Tentative Lab Schedule

## LAB #1
- **M 8/21**
- **T 8/22**
- **W 8/23**
- **Th 8/24**
  - **Assignment:** Ex 1 Anatomical Language
  - **Ex 2 Systems & Cavities**
  - Ex 3 Compound Light Microscope (video)
  - Ex 4 Cell Structure: Structure & Specialization

## LAB #2
- **M 8/28**
- **T 8/29**
- **W 8/30**
- **Th 8/31**
  - Ex 5 Transport: Diffusion & Osmosis
  - Ex 6 Tissues: Epithelial Tissue
- **Due:** Ex 3 Compound Light Microscope

## LAB #3
- **M 9/4**
  - **Academic Holiday – Labor Day** (*M lab makeup F 9/1*)
- **T 9/5**
- **W 9/6**
- **Th 9/7**
  - Ex 4 Cell Cycle: Mitosis
  - Handout – Meiosis: Ex 38 Spermatogenesis
  - Ex 39 Oogenesis
  - Ex 6 Tissues: Connective Tissue (loose & dense c.t.)
- **Due:** Ex 5 Transport: Diffusion & Osmosis

## LAB #4
- **M 9/11**
- **T 9/12**
- **W 9/13**
- **Th 9/14**
  - Ex 6 Tissues: Connective Tissue (cartilage & bone)
  - Ex 8 Bone (histology) p. 114
- **Due:** Ex 4 Cell Structure & Cell Cycle (with handout)

## LAB #5
- **M 9/18**
- **T 9/19**
- **W 9/20**
- **Th 9/21**
  - Ex 6 Tissues: Muscle Tissue
  - Ex 12 Skeletal Muscle Structure (histology) p. 195

## LAB #6
- **M 9/25**
- **T 9/26**
- **W 9/27**
- **Th 9/28**
  - Ex 6 Tissues: Nervous Tissue
  - Ex 16 Nervous Tissue (histology) p. 278
  - Ex 7 Integumentary System (histology) p. 99

## LAB #7
- **M 10/2**
- **T 10/3**
- **W 10/4**
- **Th 10/5**
  - **Review for Lab Test #1 (all lab sections)**
  - **Due:** Ex 6 Tissues
  - Ex 7 Integumentary System
  - **Lab Test #1 (all lab sections)** Histology, Cell Parts, Microscope Parts & Rules

## LAB #8
- **M 10/9**
- **T 10/10**
- **W 10/11**
- **Th 10/12**
  - **Due:** Ex 8 Bone
  - Ex 9 Axial Skeleton
  - **Assignment:** Ex 11 Joints & Synovial Joint Movements
  - Ex 12 Skeletal Muscle Structure
  - Ex 13 Contraction of Skeletal Muscle

## LAB #9
- **M 10/23**
- **T 10/24**
- **W 10/25**
- **Th 10/26**
  - Ex 10 Appendicular Skeleton
  - **Assignment:** Ex 16 Nervous Tissue

## Fall Break – No classes
- **10/16-10/20**
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<tr>
<th>Lab #10</th>
<th>M 10/30</th>
<th>Review for Lab Test #2 (all lab sections)</th>
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<tr>
<td>T 10/31</td>
<td>Due: Ex 9 Axial Skeleton</td>
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<td>W 11/1</td>
<td>Ex 10 Appendicular Skeleton</td>
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<td>Th 11/2</td>
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<tr>
<th>LAB #11</th>
<th>M 11/6</th>
<th>Ex 14 Skeletal Muscles &amp; Their actions</th>
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<tr>
<td>T 11/7</td>
<td><strong>Assignment</strong> – <strong>Ex 15 Surface Anatomy</strong></td>
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<tr>
<td>W 11/8</td>
<td>Due: Ex 11 Joints &amp; Synovial Joint Movements</td>
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<td>Th 11/9</td>
<td>Ex 12 Skeletal Muscle Structure</td>
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<td>Ex 13 Contraction of Skeletal Muscle</td>
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<td>Ex 16 Nervous Tissue</td>
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<th>LAB #12</th>
<th>M 11/13</th>
<th>Ex 20 Brain Structure &amp; Function (Dissection)</th>
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<td>T 11/14</td>
<td>Ex 21 Cranial Nerves</td>
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<td>W 11/15</td>
<td><strong>Assignment</strong> – <strong>Ex 24 ANS</strong> <em>(covered in lecture)</em></td>
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<td>Th 11/16</td>
<td>Due: Ex 14 Skeletal Muscles &amp; Their actions</td>
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<td>Ex 15 Surface Anatomy</td>
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<th>LAB #13</th>
<th>M 11/120</th>
<th>Ex 17 Spinal Cord Structure</th>
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<td>T 11/21</td>
<td>Ex 18 Spinal Nerves</td>
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<td>W 1/22</td>
<td><strong>Assignment</strong> – <strong>Ex 19 Somatic Reflexes</strong></td>
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<td>Due: Ex 20 Brain Structure &amp; Function (Dissection)</td>
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<td>Ex 21 Cranial Nerves</td>
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<td><em>Th 11/23</em></td>
<td><strong>Academic Holiday – Thanksgiving (No classes!)</strong></td>
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<tr>
<th>LAB #14</th>
<th>M 11/27</th>
<th>Ex 23 Special Senses (Dissection)</th>
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<td>T 11/28</td>
<td>Due: Ex 17 Spinal Cord Structure</td>
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<td>W 11/29</td>
<td>Ex 18 Spinal Nerves</td>
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<td>Ex 19 Somatic Reflexes</td>
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<td><strong>Assignment</strong> – <strong>Ex 22 General Senses</strong></td>
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<th>LAB #15</th>
<th>M 12/4</th>
<th>Review for Lab Test #3 (all lab sections)</th>
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<tr>
<td>T 12/5</td>
<td>Due: Ex 23 Special Senses</td>
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<td>W 12/6</td>
<td>Ex 22 General Senses</td>
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<td>Th 12/7</td>
<td>Lab Test #3 (all lab sections)</td>
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EMERGENCY PROCEDURES
Emergency Procedures are posted in each of the on-campus classrooms for students to review. Off-campus classes will follow the procedures of the facility in which they meet.

Students, please inform your emergency contacts who your instructor is, what class you are taking, and in what room the class is taught. This will expedite locating you if there is an emergency.

STUDENT PLANNER
The academic calendar, policies regarding withdrawal, smoking, parking, and weather can all be found in the Student Planner, available in Master Advising, Student Development, and Division offices.

E-MAIL POLICY
All students enrolled in one or more credit hours will have a KCTCS e-mail account established. This will allow for better communication to students from faculty and staff at the college. Faculty, advisors, and students may use these accounts to share information on office hours, consultation, advising sessions, missed classes, etc. Staff will use e-mail for grades, schedule changes, bill changes, financial aid notices, and general information bulletins. Students should check this account regularly.

Students are assigned a KCTCS student e-mail address by completing the following steps:
1. Register for class.
2. Go to https://webmail.kctcs.edu
3. Enter last name & student ID number.
4. Enter password (must be at least 8 characters and include one uppercase & lowercase letter and at least one number). Ex: K999999m.

DISABILITY SERVICES
If you need an accommodation because of a documented disability, you are required to register with Disability Services each semester. Contact Nancy Hunter, Disability Services Coordinator, at 606-759-7141 ext. 66143. Mrs. Hunter's office is located in the Administration Building, suite 114, room 115 or you may e-mail her at nancyvd.hunter@kctcs.edu. If you require assistance during an emergency evacuation, notify Disability Services immediately.

STUDENT SURVEY INFORMATION
All students are asked to complete a Course/Instructor Survey plus a Student Satisfaction Survey during the semester. Students will be given information about completing the surveys when they become available online.

IMPORTANT WEB ADDRESSES AND INFORMATION:

STUDENT CODE OF CONDUCT
The KCTCS “Student Code of Conduct” is available on the KCTCS web site, http://www.kctcs.edu/student/code.htm. Students are responsible for all of the material located in this document. Hard copies are available in the Student Development office.

PLAGIARISM
Students are expected to exhibit honesty in all work. Students caught plagiarizing or cheating will be subjected to the disciplinary policy as stated in the KCTCS Student Code of Conduct at http://www.kctcs.edu/student/code.htm.

SAFETY PLAN

LIBRARY