

COURSE DESCRIPTION:

A study of the structure, function, and homeostatic mechanisms of the endocrine, circulatory, lymphatic, respiratory, digestive, urinary, and reproductive systems; defense mechanisms of the body; pregnancy; embryonic development; and inheritance. The laboratory includes dissection of cat and large mammal heart and appropriate physiological experiments.

PREREQUISITES: None

COURSE OBJECTIVES:

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

1. Identify components and explain functions of the endocrine, circulatory, lymphatic, respiratory, digestive, and reproductive systems.
2. List homeostatic mechanisms of the body.
3. Describe ways the body performs as a unified whole.
4. List and explain defense mechanisms of the body.
5. Discuss pregnancy, development, and how inherited traits are passed.

COURSE OUTLINE:

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| <ul style="list-style-type: none"> I. Control - Endocrine System II. Transportation <ul style="list-style-type: none"> A. Blood <ol style="list-style-type: none"> 1. Formed elements and plasma 2. Hemostasis 3. Types B. Anatomy of Cardiovascular System <ol style="list-style-type: none"> 1. Heart 2. Blood Vessels C. Physiology of Cardiovascular System <ol style="list-style-type: none"> 1. Blood pressure and flow 2. Heartbeat rate – volume | <ul style="list-style-type: none"> D. Lymphatic System and Immunity <ol style="list-style-type: none"> 1. Lymphatic system <ol style="list-style-type: none"> a. Vessels b. Organs 2. Nonspecific and specific defense mechanisms III. Obtaining Nutrients and Energy <ul style="list-style-type: none"> A. Respiratory System <ol style="list-style-type: none"> 1. Organs 2. Function B. Digestive System <ol style="list-style-type: none"> 1. Organs 2. Digestion 3. Absorption C. Nutrition, Metabolism and Body Temperature Regulation |
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- IV. Fluid and Electrolyte Regulation
 - A. Urinary System
 - 1. Organs
 - 2. Function
 - B. Water, Electrolyte, and Acid-base Balance

- V. Reproduction
 - A. Male: Organs, Glands, Hormones
 - B. Female: Organs, Glands, Hormones
 - C. Cycles
 - D. Pregnancy and Embryonic Development
 - E. Inheritance

Lab Schedule (tentative)

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| <p>Lab 1: Endocrine glands-torso model, microscope slides, cat dissection
Video and experiments on hormonal action
Projected cadaver slides: Endocrine organs</p> <p>Lab 2: Blood cells: models, slides
Differential white blood cell count
Hemoglobin determination by Tallquist method and Hemoglobinometer
Hematocrit
Coagulation time
Blood typing
Plasma cholesterol concentration</p> <p>Lab 3: Heart structure: sheep heart dissection and human models
Human cadaver heart video
Cardiac muscle slides
EKG
Heart sounds</p> <p>Lab 4: Human cadaver blood vessels - video
Microscopic study of blood vessels
Major blood vessels - models
Cat circulatory system dissection</p> | <p>Lab 5: Human cardiovascular physiology</p> <p>Lab 6: Cat lymphatic system and respiratory system anatomy
Demonstration of preserved specimens: human larynx, human lung, sheep pluck, lung tissue
Models
Slides: lymph node, spleen, Peyer's patches, lung, trachea
Projected cadaver slides: respiratory organs
Projected human cadaver slides:</p> <p>Lab 7: Respiratory system physiology
Mechanics of breathing
Respiratory volumes using spirometer
Model lungs and respiratory sounds
Respiratory system role in acid-base balance</p> <p>Lab 8: Practical</p> <p>Lab 9: Digestive system - models
Cat digestive system - dissection
Slides: liver, stomach, intestines, pancreas
Projected cadaver slides: digestive system organs</p> |
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Lab 10: Digestive enzyme action
Deglutition

Lab 11: Kidney models
Dissection of pig kidney
Urinary system models
Cat urinary system dissection
Projected cadaver slides:
urinary system organs

Lab 12: Urinalysis
Fluid and electrolyte study
Acid-base balance experiment

Lab 13: Male and female reproductive
system models
Microscopic slides: testis,
epididymis, ovaries
Projected cadaver slides
Cat reproductive system
dissection

Lab 14: Physiology of Reproduction
Gametogenesis
Female cycles

Lab 15: Fertilization and development
Videodisc: pregnancy
Embryonic slides and models
Preserved specimens

Lab 16: Practical

COURSE REQUIREMENTS:

Attendance is mandatory. Each unexcused absence from lecture or lab will lower the student's numerical grade average one-half point.

Students may make up any missed lecture class by attending other lecture sections taught by the instructor. Labs may be made up only if lab spaces are available and the material to be covered is the same as that lab missed by the student. Please check with the instructor.

Student Success Center. Tutors may be obtained through the Student Success Center. Contact the staff in C219 if this service is desired. John A. Logan College will make reasonable accommodations for students with documented disabilities under Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990. Any student with a disability that may have some impact on work in this class, who feels she/he needs an accommodation, should make an appointment with the Coordinator of Services for Students with Disabilities on campus, Jennifer Frost, Room C219B, Ext. 8516. Before services can be provided, this advisor must determine eligibility and arrange appropriate academic adjustments. ***It is the student's responsibility to register in advance of a school term with this office and to turn in a schedule each term to ensure that there is every opportunity for success in this class.***

English Writing Center/Tutoring. For assistance with writing assignments in any college course, students are encouraged to visit "The Write Place" in Room E109. English instructors are available for one-on-one tutoring each semester during hours posted at the center.

Financial Aid. Students who receive financial assistance and completely withdraw from classes prior to 60% of the semester being completed (approximately 2-3 weeks after midterm) could be responsible to return a portion of their Federal Pell Grant award. Prior to withdrawing from courses, students should contact the Financial Aid Office.

Course Withdrawal Information. It is expected that you will attend this class regularly. If you stop attending for any reason, you should contact your advisor and withdraw officially to avoid the posting of a failing grade (an E) to your transcript. It is also advisable to discuss the situation with your instructor before dropping.

METHOD OF EVALUATION:

Lecture (chapter)	50%	<u>Grading Scale:</u>	
Laboratory	30%	89.5 - 100	= A
Final Examination	<u>20%</u>	79.5 - 89.4	= B
	100%	69.5 - 79.4	= C
		59.5 - 69.4	= D
		Below 59.4	= E

Length of course: 16 weeks = 1 semester
Classroom participation: 48 hours
Laboratory participation: 32 hours
Total 80 hours

The laboratory grade will be based upon two practical examinations, one blood vessel diagram test, and a composite score based on lab reports, quizzes, and dissections. Students are required to complete the review sheets in the lab manual. Some lecture examination and quiz questions may be selected from these exercises.

Six lecture tests will be given and the student's lowest score will not be counted in the lecture average.

No make-up exams will be given. A missed lecture test will count as the student's lowest grade and will serve as the test not counted.

Examination grades will not be curved, however, point adjustment may occur via open note, open book, or impromptu (pop) quizzes and critical thinking activities.

Extra credit points may be earned by reading and writing summaries of relevant articles from current periodical literature and use of CD ROM tutorials in the Biology Tutoring Center. Check-in in room C243A. The tutor or student worker will assist you. A record is kept of your use.

Extra service learning credit may also be earned by:

1. donation of blood at Red Cross blood drives;
2. assistance in the donor room;
3. writing a summary of the experience relative to the anatomy and physiology; and/or
4. serving as a volunteer at community education events such as Hunting and Fishing Day or health fairs.

CD ROM titles which may be used are:

1. A.D.A.M. Standard
2. A.D.A.M. Practice Practical
3. Dynamic Human
4. A.D.A.M. Interactive Physiology
5. Interactive Physiology - Cardiovascular System
6. Interactive Physiology - Respiratory System
7. Interactive Physiology - Urinary System
8. Enzymes
9. Cellular Respiration
10. Meiosis
11. Cat Dissection

METHOD OF PRESENTATION:

The course will be taught from a systematic approach to the anatomy and physiology of the body and will include:

1. Classroom lecture and discussion
2. Laboratory demonstration, experiments, and dissection
3. Microscopic examination of prepared slides and materials
4. Anatomical charts
5. Projected cadaver slides, slides, transparencies, and overhead projector
6. Videotapes and videodiscs
7. Chalk board
8. Preserved organs
9. Models
10. Various instrumentation including heart and respiratory sounds manikin
11. Projected slides: Human cadaver dissection

TEXT:

Human Anatomy and Physiology, Elaine Marieb and Katja Hoehn. Benjamin/Cummings Publishing Co., Inc., Seventh Ed., 2007. ISBN: 0-8053-5909-5

Human Anatomy and Physiology Laboratory Manual, cat version, Elaine Marieb, 9th Edition, Benjamin/Cummings Publishing Co., Inc., 2008. ISBN: 0-8053-7362-4

INSTRUCTOR: Nelda Hinckley
Office: C255
Ext: 8323

DATE: Summer, 2009

ADDITIONAL INFORMATION:

Your instructor welcomes you to Human Anatomy and Physiology and is most interested in your having success in this course.

Because of safety and potentially inappropriate material or disruption, children should not be present in the laboratory or classroom.

Laboratory Help Sessions:

Students may have access to the lab at times when no classes are scheduled in the lab. Please check in and out with the laboratory technician or student worker in room 251-A and keep the laboratory locked during these times.

Service Learning Credit: Credit may be earned by assisting at activities such as blood drives, health fairs, or becoming a blood donor.

John A. Logan College Telephone Numbers

Cartersville and Williamson County 985-3741 (operator)
.....985-2828 (direct extension access)
Carbondale and Jackson County 549-7335 (operator)
.....457-7676 (direct extension access)
Du Quoin 542-8612
West Frankfort..... 937-3438
Crab Orchard, Gorham, & Trico areas 1-800-851-4720
TTY (hearing-impaired access) 985-2752

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