

BIO341: Human Anatomy and Physiology II

Spring 2008 Syllabus

Instructor: Chrystal Ho Pao, Ph.D.

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Lecture: McLennan 212
TR 10:50am–12:05pm

Office Hours: Tue 1:30 pm -4:20 pm
and by appointment

Laboratory: McLennan 113

Lab: Thursday 1:40-4:30 pm

Human Anatomy and Physiology I and II Course Description: “An in-depth study of the anatomical and physiological features of the following human body systems: integumentary, skeletal, muscular, nervous, circulatory, digestive/metabolic, lymphatic, and endocrine. Relevant clinical information and pathology are discussed. A strong emphasis is placed on experimental study and analysis of physiological processes.” (TIU catalog)

Course Objectives: This course aims to assist each student in learning the complex structures and functions of the human body. The second semester examines the organization of the autonomic nervous, endocrine, cardiovascular, lymphatic, immune, respiratory, digestive, urinary and reproductive systems. We will also study metabolism; fluid, electrolyte, and acid-base homeostasis; development and inheritance.

Course Materials:

Required (To be used for BOTH semesters)

- *Principles of Anatomy and Physiology*, G.J. Tortora and B. Derrickson, 11th Ed., John Wiley and Sons, Inc., 2006.
- *Human Anatomy & Physiology Laboratory Manual (Cat Version)*, Elaine N. Marieb, 8th Ed. Benjamin Cummings, 2005.
- A bound, graph-ruled laboratory notebook
- A good quality dissecting kit.
- Safety glasses

Recommended:

- *Anatomy & Physiology Coloring Workbook*, Elaine N. Marieb, 8th Ed, Pearson Benjamin Cummings, 2006. (**Strongly recommended**)
- *Anatomy and Physiology Flash Cards*, I.E. Alcamo, Bryan Edwards Publishing.

Course Policies:

Attendance

Lecture: Students are expected to attend lecture and come prepared to take an active part in the learning process. **Periodically, students will be called upon in class to answer questions. Therefore, it is essential that students keep up with reading assignments and frequently review class notes.** However, students are allowed up to three (3) absences if necessary. For each of the three absences not used, 1% point will be added to the composite score, for each absence beyond the three, 1% will be deducted from the composite score. **Classes missed for sports, field trips etc., even if cleared in advance with the instructor, count toward the three allowed.** (Note, however, that if you were to have 4 or more excused absences you would not be penalized, but would also not receive the attendance bonus.)

Please note: Cell phones and other electronic devices not used for note taking, which are a distraction to the entire class, **must be turned off in class.** Violations will result in the student being asked to leave the class and receive an unexcused absence.

Laboratory: Attendance is **REQUIRED.** One unexcused absence will drop the course grade by one full letter. Two absences will drop the grade by two full letters. Three absences will result in failure of the course. Prompt attendance to lab is **mandatory** due to the hands-on nature of the laboratory exercises. Points will be deducted from one's laboratory exercise for tardiness. Since the lab exercises often require partners and specific amounts of materials prepared in advance, students must attend only the lab section in which they are enrolled to avoid unnecessary disruption. Exceptions to this policy are extremely limited, and students are required to contact the instructor at least seven (7) days in advance regarding extraordinary situations that interfere with attendance to one's enrolled lab section. An absence will be considered EXCUSED only if granted by the instructor and the student makes up the missed laboratory work within a reasonable time period (1 to 2 weeks maximum).

Examinations: Unexcused absences will be recorded as a zero. Excused absences can be made up on the student's own time, scheduled **in advance** with the instructor.

EXCUSED ABSENCES for lecture, laboratory, exams, or field trips MUST be granted by the instructor IN PERSON and IN ADVANCE. Blanket notices of extracurricular events such as sports, field trips, etc. are not considered adequate reasons alone for excused absences. See the instructor in person and in advance if you wish to be excused for such events.

Coursework Requirements:

Examinations:

There will be three in-class examinations and a non-cumulative final exam during finals week; in addition there will be two (2) laboratory practicums. These are designed to cover each system or subject studied. **Any material discussed in class, laboratory, or in the reading assignments is fair game for exam questions.**

Chapter Homework:

You must visit the website for your textbook regularly:

<http://bcs.wiley.com/he-bcs/Books?action=index&itemId=0471689343&bcsId=2287>

You will be required to complete some online study quizzes as homework. The website also contains other helpful information like chapter notes and practice tests.

Laboratory Notebook:

The **Lab Notebook and Lab Manual MUST be brought to all lab sessions**. The lab notebook is a permanent copy of your work in the laboratory. All experimental observations and data for **each exercise** done in the lab should be recorded in the notebook according to the guidelines and format given in appendix 1. The laboratory write-ups in the notebook will be graded for adherence to format, completeness, and logical conclusions based on the data. Particular emphasis will be placed on the conclusions of the experiment, which should show understanding of the scientific principles being tested. Observations and notes during dissection should also be kept in the laboratory notebook. Students, who do not have their laboratory notebook, do not submit their book for grading, or who have not completed the pre-lab write-up, will receive 0 points for the assignment.

COURSE POLICY ON PLAGIARISM AND CHEATING

PLAGIARISM, which is defined as utilizing another person's ideas, works, or words as if they were one's own, without identifying the source, will not be tolerated in any form, including written papers, exams, notebooks, or oral presentations. If you have questions regarding what is or is not considered plagiarism, please clarify with the instructor before handing in the assignment.

CHEATING, which is defined, as any form of fraud or deception that results in a better grade or even a better impression of the student's performance than she/he actually earns or deserves, will not be tolerated.

INCIDENTS OF PLAGIARISM OR CHEATING will be dealt with severely by the instructor. The penalty will include, at least, a zero for the assignment(s) involved, but could include failure of the course. Incidents of plagiarism and cheating will be reported to the Academic Dean, who has the authority to undertake further disciplinary measures in accordance with TIU policy on community standards violations.

Course Grading:

Lecture/lab quizzes		100 pts.
Lecture Exams	4 x 100 pts.	400 pts.
Laboratory Practicum's	2 x 100 pts.	200 pts.
Online homework		156 pts.
Laboratory Notebook	12 X 12	144 pts.
Course Total		1000 pts.

Grading Scale*

A	94-100%	C+	76-78.9%
A-	90-93.9%	C	73-75.9%
B+	86-89.9%	C-	69-72.9%
B	82-85.9%	F	0-68.9%
B-	79-81.9%		

Please Note: No “D” grades will be awarded in this course. It is an upper level course in your major. You will be expected to perform at a C- level or better to pass the course.

*The final grade will be based upon an objective point evaluation. However, the student should not overlook the influence of one’s general impression, which includes attendance, promptness, class participation, and attitude. One’s general impression is helpful in determining borderline grades.

Attention Athletic Training Education Program Students: the National Athletic Trainers’ Association Educational Competencies that are covered in this course can be viewed at the ATEP home page by following the link to:

https://portal.tiu.edu/uportal/tcathletictraining/course_competencies

Please select the course you are currently enrolled in to view the specific competencies and proficiencies associated with this course.

Lecture Schedule

<u>Date</u>	<u>Chapter</u>	<u>Topic</u>
Jan. 10	13	Spinal Cord & Spinal Nerves
Jan. 15	14	Brain & Cranial Nerves
Jan. 17	14	
Jan. 22	15	Autonomic Nervous System
Jan. 24	16	Sensory, Motor & Integrative System
Jan. 29	17	Special Senses
Jan. 31	17	
Feb. 5	Exam I	Chapter 13 – 17
Feb.7	18	Endocrine System
Feb. 12	18	
Feb. 14	19	Cardiovascular System: Blood
Feb. 19	20	Cardiovascular System: Heart
Feb. 21	21	Blood Vessels & Hemodynamics
Feb. 26	21	
Mar. 11	Exam II	Chapter 18 - 21
Mar. 13	22	Lymphatic System & Immunity
Mar. 18	22	
Mar. 27	23	Respiratory System
Apr 1	23	
Apr. 3	24	Digestive System
Apr. 8	24	
Apr. 10	Exam III	Chapter 22 – 24
Apr. 15	26	Renal System
Apr. 17	26	Renal System
Apr. 22	27	Fluid, Electrolyte, & Acid-Base Homeostasis
Apr 24	28	Reproductive System
Apr 29	28	
May 1	28	
May 8 Thur 10:30 am	Final Exam	Chapter 26 - 28

* Subject to change based on time constraints, flow of the course and the requirements of pedagogy.

Tentative Lab Schedule for the old edition of the lab manual:

Date	Study Focus	Lab Exercise *
1/10	Spinal Cord Human Reflex Physiology	Ex. 21 Act. 1, 2 (skip dissection) Ex. 22 Act. 1, 3, 8
1/17	Brain and Cranial Nerves	Ex. 19 (Act. 1, 2, & dissection: p.214-8)
1/24	Autonomic Nervous System	Ex. 21 Act.4 & 5
1/31	Special Senses: Vision Special Senses: Hearing and Equilibrium Special Senses: Olfaction and Taste	Ex. 24 (Act.1,2, Cow Eye Dissection, 7, 8, 11) Ex. 25 (Act.1,4,7 Skip Romberg test) Ex. 26 (Act. 3, 5, 6, 7)
2/7	Identification & Functional Anatomy of Endocrine Glands Cat dissection: Blood Vessels	Dissection Ex. 3 (p.773-776) Ex. 27 Models and slides Dissection Ex. 4 (p.777-786)
2/14	Blood (Models of Ex. 30 and 32) Human Cardiovascular Physiology: Blood Pressure and Pulse Determinations	Ex. 29A Act 2, 3 (skip step 3), 4, 5 (Tallquist method), 7, 10 Ex. 33A Act. 1, 2, 4-6
2/21	Sheep Heart Dissection and Heart Models IWORX: Tutorial	Ex. 30 & dissection Handout
3/13	Midterm Lab Exam	Nervous, Endocrine & Cardiovascular,
3/27	EKG (IWORX) Lymphatic System & Immune Response	Handout (Ref: Ex.31 p.332-335) Ex. 35
4/3	Anatomy of Digestive System	Dissection Ex. 7 (p.791-795)
4/10	Chemical and Physical Processes of Digestion: Wet Lab	Ex. 39A All material except video (Act.6)
4/17	Spirometry (IWORX) Urinalysis	handout Ex. 41A Act. 1
4/24	Anatomy of the Urinary System Anatomy of the Reproductive System (Models & Dissections)	Ex. 40, Dissection Ex. 8 Ex. 42 (Act 1, 2, 5, 6 skip mammary glands), Dissection Ex. 9
5/1	Final Lab Exam	EKG, Immune, Digestive, Respiratory, Renal, & Reproductive Systems

*Exercises are from *Human Anatomy & Physiology Laboratory Manual (Cat Version)*, Elaine N. Marieb, 8th Ed. Benjamin Cummings 2005.

Please Note: During some lab times I will also lecture on material that you will be responsible for on lecture and/or lab exams.

Tentative Lab Schedule for the new edition of the lab manual:

Date	Study Focus	Lab Exercise *
1/10	Spinal Cord Human Reflex Physiology	Ex. 21 Act. 1, 2 (skip dissection) Ex. 22 Act. 1, 3, 8
1/17	Brain and Cranial Nerves	Ex. 19 (Act. 1, 2, & dissection: p.293-7)
1/24	Autonomic Nervous System	Ex. 21 Act.4 & 5
1/31	Special Senses: Vision Special Senses: Hearing and Equilibrium Special Senses: Olfaction and Taste	Ex. 24 (Act.1,2, Cow Eye Dissection, 6, 7, 10) Ex. 25 (Act.1,4,7 Skip Romberg test) Ex. 26 (Act. 3, 4, 5, 6)
2/7	Identification & Functional Anatomy of Endocrine Glands Cat dissection: Blood Vessels	Dissection Ex. 3 Ex. 27 Models and slides Dissection Ex. 4
2/14	Blood (Models of Ex. 30 and 32) Human Cardiovascular Physiology: Blood Pressure and Pulse Determinations	Ex. 29A Act 2, 3 (skip step 3), 4, 5 (Tallquist method), 6, 9 Ex. 33A Act. 1, 2, 4, 5, 7
2/21	Sheep Heart Dissection and Heart Models IWORX: Tutorial	Ex. 30 & dissection Handout
3/13	Midterm Lab Exam	Nervous, Endocrine & Cardiovascular,
3/27	EKG (IWORX) Lymphatic System & Immune Response	Handout (Ref: EM Ex.31 p.457-460) Ex. 35
4/3	Anatomy of Digestive System	Dissection Ex. 7
4/10	Chemical and Physical Processes of Digestion: Wet Lab	Ex. 39A All material except video (Act.6)
4/17	Spirometry (IWORX) Urinalysis	handout Ex. 41A Act. 1
4/24	Anatomy of the Urinary System Anatomy of the Reproductive System (Models & Dissections)	Ex. 40, Dissection Ex. 8 Ex. 42 (Act 1, 2, 5, 6, 7), Dissection Ex. 9
5/1	Final Lab Exam	EKG, Immune, Digestive, Respiratory, Renal, & Reproductive Systems

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Please Note: During some lab times I will also lecture on material that you will be responsible for on lecture and/or lab exams.

Your laboratory notebook is your permanent copy of your work in the laboratory. **You must have it with you in the laboratory at all times. All experimental data, observations, and conclusions should be recorded in your lab notebook, NOT in your lab manual.** Entries should be in black ballpoint ink. Do not erase or white out any errors in your notebook. Draw a single line through any information you do not wish to include. Do not tear any pages out of your notebook. If you wish to delete an entire page, simply draw a large X across the page. The format for the notebook and experimental entries should be as follows:

1. Number all pages in the notebook consecutively.
2. The hard cover of your notebook is your Title Page. The title page should include your name, your assigned laboratory partner's name, the name of the class section, and the inclusive dates covered by the experiments in the notebook. Keep pages 1 through 3 free for a Table of Contents. The table of contents should include for each exercise: the date, title of the laboratory exercise, and the page in your notebook where it is written up.
3. **Each report should include the following:**
 - a. **Title, Date, and Lab partner(s).**
 - b. **Purpose:** Before coming to the lab, read the assigned information and write a general statement (1 to 2 lines long) that describes the objective(s) of EACH exercise.
 - c. **Materials and Methods:** Make a list of major equipment and materials you will use in the order you will need it. Outline a brief step-by-step procedure or make a flow chart that you can follow to perform the required exercises. Leave room for any revisions or additions to the procedure that might be made in the laboratory. Write only on the right-hand pages, leaving the left-hand pages (facing pages) blank for additions and corrections. For dissections, there is no need to write out the detailed procedure of every cut. But one needs to highlight tricky steps and lists organs to be identified.
 - d. **Data and Observations:** In this section, record what you actually discover in the laboratory. Any data collected, sketches drawn, or observations made should be written here as you do the experiment.
 - e. **Results:** Organize your raw data into a table or graph if necessary. Data tables should be formatted so that the information is clear and readily retrievable. Include and explain any necessary calculations, statistical tests or data manipulation.
 - f. **Conclusions:** Discuss or explain what your data means in a written paragraph form. Summarize and interpret your results. Discuss any unexpected results and offer a possible explanation for them. Follow the guidelines in the laboratory manual and or handouts and include answers to any questions posed therein.