

BI410 -- Advanced Human Physiology: Nutrition and Metabolism

Syllabus

Fall 2015

Instructor: Dr. Michael Weichhaus
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Office Hours: Tue: 13:00-17:00, Wed: 13:00-17:00
Class Hours: M or F 14:30-17:20 Henry Hall Lab 1

Required Text:

- Human Anatomy & Physiology Laboratory Manual, Chaminade University Custom Edition Pearson, Benjamin Cummings.

Pre-REQUISITE: BI 205/205L; BI 206/206L; BI 207/L; BI 208/208L

Co-REQUISITE: BI 410

COURSE DESCRIPTION AND GOALS: BI 410L utilizes a variety of apparatus to measure physiological phenomena such as metabolic rate, muscle contraction, heart rate, membrane transport, and the components of biological samples. Handouts will be given for most labs. Furthermore, many of the experiments will be conducted with minimal design provided by the instructor, thus allowing student groups to undertake the responsibility of experimental design based upon scientific methodology.

Goals of the Course: This course is designed to fulfill the following goals:

- Developing your ability to interpret factors that affect performance of the systems in different situations
- Developing your ability to interpret physiological data and present reasonable explanations for any observations
- Develop your ability to carry out accurate scientific design methodology
- Develop proficiency in designing, carrying out, interpreting and presenting scientific data
- Have the ability to work in a group setting

Objectives for Students: At the completion of the course, the student will be able to do the following:

- Design experiments for future research course(s) and graduate work
- Accurately compare varying physiology amongst different species
- Work comfortably in a laboratory setting manipulating data and setting up apparatus.

Hybrid-Lab Model:

1. This course will be taught in two distinct sessions. The initial four weeks of the course will consist of lab exercises (both physical and virtual) to demonstrate the various functions and anatomy of the digestive tract. During this time, you are also to familiarize with the group partners you have been assigned and decide on a project for the second part of the course.
2. The second part consists of formulating a scientific hypothesis on the project of your choosing. You may choose from one of the suggested projects, or come up with your own project. You will then design and perform experiments that will answer your question and validate or disprove your hypothesis as well as collect data from these experiments. Lastly you will analyze and present the data as individual reports and group presentations.

Laboratory preparation, outline, and attendance:

1. Preparation of laboratory assignments listed on the lab outline and presented in lab handouts are essential in successful completion of the laboratory and safety of your fellow students.
2. Handouts in the laboratory outline refer to assignments not in the lab manual. Lab handouts will be given to students prior to the laboratory exercise and include procedures and instructions for the laboratory.
3. Attendance for the laboratory is mandatory. Laboratory absences must be documented by valid excuses, such as a physician's excuse. Grade penalties will be imposed for unexcused absences by the instructor.

Grade Determination:

1. Separate grades will be given for lecture and laboratory. It is possible to receive different grades for lecture and laboratory.
2. There will be one midterm lab exam covering the topics discussed and analyzed in the first part of the lab.
3. The rest of the grade will be assessed from different parts of your project. The report and the lab notebook will be assessed on an individual basis. The final presentation will be a group presentation and will consist of the same grade for all group members. Further instructions will be provided on an individual group level and depend on the project you chose to undertake.
4. The laboratory grade will be determined in the following manner:

Midterm lab exam	32.5 percent
Final presentation	32.5 percent
Final Report	20 percent
Final Lab notebook	<u>15 percent</u>
Total	100 percent

Grading scale:

A	90 – 100%
B	80 – 89%
C	70 – 79%
D	50 - 69%
F	less than 50%

Class standing:

The schedule of the class makes it impossible to estimate final grades by the withdrawal deadline, as 2/3 of the grade will be assessed after the deadline. It is therefore up to the student to estimate their performance during the project time.

Situations to avoid:

1. Tardiness and Absences during the first part of the lab:
Arriving late will cause you to miss important information and instructions given at the beginning of each class session. Please be on time as a mark of respect for your instructor and classmates, and be discreet in entering the lab if you must come late.
2. Turning in assignments late:
If there is insurmountable problem, please let me know ASAP. You can always contact me via email. I would rather have your work late than not at all, but timelines are imposed to help you keep up and comprehend the materials being discussed.

Music Devices and Cellphones

Use of music devices and cell phones is prohibited during all Natural Science and Mathematics classes at Chaminade, unless specifically permitted by your instructor. Use of cellphones and music devices in laboratories is a safety issue. In addition, use of cellphones and music devices in any class is discourteous and may lead to suspicion of academic misconduct. Students who cannot comply with this rule will be asked to leave class and may be subject to laboratory safety violation fines. Please refer any questions to the Dean of Natural Sciences and Mathematics.

ADA Accommodations

Students with special needs who meet criteria for the Americans with Disabilities Act (ADA) provisions must provide written documentation of the need for accommodations from the CUH Counseling Center (Dr. June Yasuhara; phone 735-4845) by the end of week three of the class, in order for the instructor to plan accordingly. Failure to provide written documentation will prevent your instructor from making the necessary accommodations. Please refer any questions to the Dean of Students and review the procedures at http://www.chaminade.edu/student_life/sss/counseling_services.php.

Title IX Compliance

Chaminade University of Honolulu recognizes the inherent dignity of all individuals and promotes respect for all people. Sexual misconduct, physical and/or psychological abuse will NOT be tolerated at CUH. If you have been the victim of sexual misconduct, physical and/or psychological abuse, we encourage you to report this matter promptly. As a faculty member, I am interested in promoting a safe and healthy environment, and should I learn of any sexual misconduct, physical and/or psychological abuse, I must report the matter to the Title IX Coordinator. Should you want to speak to a confidential source you may contact the following:

- Chaminade Counseling Center 808 735-4845.
- Any priest serving as a sacramental confessor or any ordained religious leader serving in the sacred confidence role.

LAB OUTLINE: *Note that the Dates, Experiments, and Reports are subject to change based upon confirmation of field trips and arrival of ordered supplies.*

Date	Experiment
Week 1	Lab Rules/Projects
Week 2	Microscopic Examination of GI-samples
Monday, September 7 th HOLIDAY	
Week 3	PhysioEX virtual labs
Week 4	Enzyme activity labs
Week 5	Mid-term Exam (9/28 and 10/02)
Week 6	Students begin project
Week 7	
Monday, October 12 th HOLIDAY	
Week 8	Student projects continue
Week 9	
Week 10	
Week 10	
Week 11	
Week 12	
Week 13	Students finish experiments on projects
Friday, November 28 th HOLIDAY	
Week 15	Final Presentations/Final Reports due/Lab book due