Pharmaceutical Biochemistry
PHM 381M (Unique #57455)
Fall-2019

Course Faculty: Dr. Chris Whitman, Ph.D.

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The BME building is on the southeast corner of Dean Keeton and University, across the street from the Student Services building. You enter the building on Dean Keeton on the 3rd floor. Take the elevator (or the stairs) to the 6th floor. Get out of the elevator, turn left, and go through the double doors.

Office Hours: Tu 2-3 and F 1-2. Wed. office hour (1-2) is in PHR 3.106.

Office hours are subject to change. I’ll give you advanced notice. Students can meet with me by appointment and email me anytime (24/7)!

Course Unique Number: #57455

Classroom: PHR 2.110

Class Days/Times: 11:00-12:30 TTh

There is no class on Thursday Oct 10 and Tuesday Nov 24 and no office hours on Friday Oct 11 and Tuesday Nov 24.

Course Faculty: Dr. Chris Whitman, Ph.D.

Academic Assistant: contact information and hours to be announced.
Course Information

Course Description:
Basic principles of intermediary metabolism, with an emphasis on protein structure and function, fundamentals of metabolic pathways, mechanisms of enzyme function and other biochemical processes, and how drugs affect these pathways, functions, and processes, along with defects in pathways that result in disease and the identification of molecular targets for therapeutic control.

Course Prerequisites/Co-Requisites:
P1 Standing

Course Learning Objectives (CAPE Objectives):
The primary CAPE Outcomes addressed in this course are from Domain 1 – “Foundational Knowledge”; Subdomain 1.1 (“Learner”) represented by the following Learning Objectives:

1.1.1 Develop and demonstrate depth and breadth of knowledge in pharmaceutical, social/behavioral/administrative, and clinical sciences.
1.1.2 Articulate how knowledge and discovery in foundational sciences is integral to clinical reasoning; evaluation of future advances in medicine; supporting health and wellness initiatives; and delivery of contemporary pharmacy services.
1.1.3 Integrate knowledge from foundational sciences to explain how specific drugs or drug classes, drug products, and dosage forms work and evaluate their potential value in individuals and populations.
1.1.4 Apply knowledge in foundational sciences to solve therapeutic problems and advance patient-centered care.

Course Success:
It is strongly recommended that students attend class and actively take notes. Reviewing the notes (before each class), reading and understanding the handouts, and working out the assigned problems will reinforce concepts discussed in class. Attendance in review sessions will provide students with the opportunity to seek clarification and apply the material to assigned problems.

Course Website:
This course uses Canvas, a Web-based course management system in which a password-protected site is created for each course. Canvas will be used to distribute course materials, to communicate, and to post grades. Canvas is available at http://canvas.utexas.edu. Support is provided by the ITS Help Desk at 475-9400 Monday through Friday 8 am to 6 pm.

Course Communications:
Official course communications will take place in class, through e-mail and on the course Canvas website. Students are advised to configure their Canvas settings to forward course announcements to their official e-mail address. Canvas uses only the e-mail address listed on the official University of Texas directory, so please check the University’s online directory to ensure your e-mail address is listed correctly.

Course Video Recordings:
A video capture system will be used in this course. The video streams are offered as a supplement to lecture attendance, not as a substitute. Therefore, if technical problems preclude recording the lecture, the lecture will not be re-recorded, but students are still responsible for the content of the lecture. Lecture recordings will be available to you for the balance of the semester unless otherwise specified. Do not expect to have access after the semester is over.
Faculty and students utilizing class video recordings should be careful to not compromise the privacy of either themselves or other users (http://registrar.utexas.edu/students/records/ferpa), or the rights of the presenter. Students are free to make their own recordings of lectures unless specifically prohibited from doing so by the presenter. Any additional distribution of College- or student-generated recordings (regardless of format) is prohibited without the written and signed permission of the presenter and students identifiable on the recording. Likewise, all course materials developed by the faculty member (handouts, PowerPoints, etc.) are the intellectual property of that faculty member and cannot be distributed further without the permission of that faculty member.

Viewing video-streamed recordings of lectures can be streamed on campus or can be viewed off-campus using a DSL broadband connection. Your faculty are not in a position to troubleshoot your video-streaming problems, so please do not ask them to do so; rather, you should access the LRC’s help website at https://www.utexas.edu/pharmacy/help/ to address those problems. You will find additional information about the lecture capture system or can report technical issues at http://sites.utexas.edu/phr-lrc/ and/or http://sites.la.utexas.edu/lecturesonline/
Course Policies

Course Grading Policies:
There will be a total of four exams (three – 2 hour exams administered during the semester and a final administered during the Final Exam period). The exams will cover the lectures as announced in class. A portion of each exam (T/F, M/C, maybe more) will be administered using ExamSoft® along with a written, short answer portion. Exams will be given according to the schedule below:

Exam 1 - Thurs., Oct 3, PHR 2.108/2.110, 7-9 PM
Exam 2 - Thurs., Nov 7, PHR 2.108/2.110, 7-9 PM
Exam 3: - Mon., Dec 9, PHR 2.108/2.110, 7-9 PM
Final Exam – Date during Finals week, Dec. 12-18th

Exams (including the final) are worth 100 points each for a total number of 400 points.

Course Grading:
A Range:   A = 100%-93%  A- = 92%-90%
B Range:   B+ = 89%-87%  B = 86%-83%  B- = 82%-80%
C Range:   C+ = 79%-77%  C = 76%-73%  C- = 72%-70%
D Range:   D+ = 69%-67%  D = 66%-65%
F = Below 65%

This scale may be curved more leniently in the final analysis of grades at the discretion of Dr. Whitman.

Attendance:
Class Attendance: You are strongly encouraged to attend class in order to optimize your learning. If you miss class, you are still accountable for the subject matter presented as well as all announcements.

Excused Absences: The only absences that will be considered excused are for religious holy days or extenuating circumstances due to an emergency. If you miss class, you will still be responsible for any work you will miss on that day (if applicable). (This section is applicable for the exams.)

Attendance at Professional Meetings:
It is the student’s responsibility to ASK permission IN ADVANCE if they plan to attend a professional meeting that would necessitate missing an exam, assignment, or other required course activity. It is at the discretion of Dr. Whitman as to whether to grant permission and allow the student to make up any missed work. (This section is applicable for the exams.)

Required Materials:
There is not a required textbook or required materials for this class.

Recommended Materials:
Biochemistry (9th Edition) by Mary K. Campbell, Shawn O. Farrell, and M. McDougal. Please do not buy this textbook. You can use an earlier edition (much cheaper) or any other Biochemistry textbook that you might have. Dr. Whitman’s lecture followed Campbell’s chapters, but they have been supplemented with other materials over the years. Reading, notes, and problems will be provided on Canvas. If you want to learn more or read another explanation for clarification, you might want to consult a textbook (or find a YouTube Video), or ask Dr. Whitman.
Classroom Expectations:

**Class Break:** We usually have a break around 11:45 so you can stretch, go get more coffee, etc.

**Cell Phones:** Cell phones must be put away during class. You can catch up with texts and email during the break.

**Laptops:** Laptop computer use during class is strictly limited to viewing lecture handouts and taking notes.
Exam Policies

ExamSoft®:
Students are responsible for the maintenance of their approved personal devices and Examplify® software. Students are required to bring approved personal devices and privacy screens for all exams. Lack of preparation may result in an inability to take the exam, adjustments to course grades at the discretion of course coordinators, and/or an unprofessional conduct referral.

Any problems with Examplify® or ExamSoft® should be addressed via phone to Student Tech Support at 866.429.8889, email to support@examsoft.com, or live chat at www.examsoft.com. Do not expect Dr. Whitman to troubleshoot your technology issues.

Students found improperly using ExamSoft® or Examplify® to gain unfair academic advantage are violating the College of Pharmacy Honor Code. Violations such as “academic dishonesty” and/or “professional misconduct” would include, but are not limited to using a classmate’s login/password, tampering with exam files, and falsifying upload or download information, or any attempt to circumvent the security features of the software.

Students should refer to the ExamSoft® Policies Handbook for a complete listing of policies related to exams, quizzes and assignments.

Exam Format:
Exam questions will mostly include True/False, Multiple Choice, and short answer questions. The format for the exam is entirely the prerogative of Dr. Whitman. Students must arrive on time for examinations. All instructions and corrections will be made at the beginning of the examination period and will not be repeated. Semester exams will begin promptly at the designated hour and will be concluded (in ExamSoft®) in exactly 2 hours. The final examination will last three hours. Students arriving after any students have completed the exam and left the room may not be allowed to sit for the exam and may receive a score of zero. You are strongly encouraged to look at old exams which will be provided on the Canvas site and work the problems in the old exams.

Exam Grading:
Grading of exams, along with statistical analysis and review of exam questions, will be the responsibility of Dr. Whitman who may choose to grant credit for statistically poor questions (or for some other reason).

Exam Return:
The ExamSoft® portion of the exam will not be returned, but an old-fashioned version will be available on the course Canvas site (you will need these for the final exam). The short answer section will be returned. The final examination is not returned. Exam scores will be posted on the course Canvas site.

Exam Review:
An exam review will be conducted in the immediate week following each exam (Tuesdays; PHR 3.106, 2:30-3:30). Attendance is optional unless a student scores <70% on any individual exam, in which attendance is mandatory. Use of the exam “autopsy” is strongly encouraged to assist in identifying weaknesses. The ExamSoft® portion of the exam will not be returned (see above).

Exam Reconsideration Requests:
Students will have the opportunity to review their exam results at the secure ExamSoft® review session scheduled after each test. Review sessions are optional unless the student scored <70% (in which case attendance is mandatory). If a student feels there is a justifiable discrepancy between their answer and the
keyed answer, they can submit a formal reconsideration request on the form provided at the review session. Students must turn in their reconsideration request form(s) and show the proctor that they have logged out of Examplify® before they leave the review session. There are no reconsiderations on the Final Exam.

Final Exam Review of Old Exams:
The ExamSoft® portion of the exam will not be returned, but an old-fashioned version will be available on the Canvas site (you will need these for the final exam). The short answer section will be returned. The final examination is not returned.

Final Exam Re-Examination Policy:
There is no final exam reconsideration requests or re-examinations allowed for this course.

Request for an Alternate Exam Time:
No allowances will be made for an exam being missed, other than documented illness or emergency, or by prior approval by Dr. Whitman. An unexcused absence from an exam may result in a grade of "zero" for that exam. Any student requesting accommodation for an upcoming exam must submit the request to Dr. Whitman using the online form posted on Canvas® at least one month prior to the exam. The form can be found at the following link: https://utexas.qualtrics.com/jfe/form/SV_bfGs9VUDgOYwoXH.

Note the new policy that an alternate exam time will be considered only if the student documents that they can’t be physically present on the date the exam is already scheduled.

Academic Integrity:
Students who violate University rules on academic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from the University. See College Policies and Information, and University Policies and Information for more details.

Religious Holy Days
If you will miss a class, an examination, a work assignment or a project in order to observe a religious holy day, you must notify Dr. Whitman the first week of class so that arrangements for all such students can be made for the full semester.

Services for Students with Disabilities:
Students with disabilities may request appropriate academic accommodations from the Division of Diversity and Community Engagement, Services for Students with Disabilities at 471-6259 (voice) or 232-2937 (video phone) or https://diversity.utexas.edu/disability/. All University rules concerning accommodations must be followed, including the student arranging for special accommodations prior to each examination. In the absence of such prearrangement, it will be assumed that the student is not requesting special accommodations for that exam, and will be expected to take the exam with the rest of the class at the regularly scheduled exam time.

Please provide a copy of the letter to the course coordinator and the office of the Associate Dean for Academic Affairs as soon as possible after receipt.
The lecture schedule is approximate (especially near the end)!! The lectures that you are responsible for on each Exam will be announced in Class.

Lecture #1  Introduction, pH, Henderson-Hasselbalch Equation and Applications
Lecture #2  Buffers and the Bicarbonate Buffering System
Lecture #3  Amino Acids, Peptides, Properties and Examples
Lecture #4  Amino Acids, Peptides, Properties and Examples
Lecture #5  Proteins: Structure and Function
Lecture #6  Proteins: Structure and Function and Examples
Lecture #7  Myoglobin and Hemoglobin
Lecture #8  Hemoglobin – Allosterism and Sickle Cell Diseases

Exam #1 – October 3, 2019 7-9 PM

Lecture #9  Enzymes and Enzyme Kinetics
Lecture #10  Enzyme Inhibition and Drug Action
Lecture #11  Enzyme Inhibition and Drug Action
Lecture #12  Enzyme Inhibition and Drug Action
Lecture #13  Enzyme Mechanism: Introduction
Lecture #14  Enzyme Mechanism: Proteases and Hydrolases and Drug Action
Lecture #15  Enzyme Mechanism: Proteases and Hydrolases and Drug Action

Exam #2 – November 7, 2019 7-9 PM

Lecture #16  Vitamins and Coenzymes: Introduction
Lecture #17  Vitamins and Coenzymes: Examples and Disease States
Lecture #18  Vitamins and Coenzymes: More Examples and Disease States
Lecture #19  Carbohydrates: Properties and Disease States
Lecture #20  Glycolysis
Lecture #21  Glycolysis: Regulation and Fates of Pyruvate
Lecture #22  Citric Acid Cycle and Mutations in Cancers
Lecture #23  Storage Mechanisms: Glycogen
Lecture #24  Gluconeogenesis and the Cori Cycle
Lecture #25  Pentose Phosphate Pathway and Hemolytic Anemia
Lecture #26  The Warburg Effect and Cancer

Exam #3 – December 9, 2019 7-9 PM

Final Examination - TBA