DEPARTMENT OF BIOCHEMISTRY

BCHM 30700 – Biochemistry Syllabus
Summer 2013

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COURSE OBJECTIVES

Students who enroll in BCHM 30700 have wide-ranging interests and aspire to pursue careers in biological science, medicine, nursing, veterinary medicine, animal science, dietetics, food science, botany and nutrition. This course will provide students with the basic foundation of biochemistry concepts that will be required for the pursuit of their academic and career objectives. The first third of the course will use a structure-based approach to introduce students to central biomolecules including nucleic acids, proteins, carbohydrates, and lipids. As each biomolecule is described, its relevance and context will be demonstrated using real-world examples drawn from human health and agriculture. This part of the course will cover the molecular basis of protein structure and the catalytic activity of enzymes. During the second third of the course, the essential features of the central dogma will be described with an emphasis on the enzymes and macromolecules that are involved in replication, transcription and translation. The final third of the course will cover metabolic pathways and focus on the interconnection between glycolysis and the citric acid cycle and the production of chemical energy by the formation of proton gradients.

LEARNING OUTCOMES

Upon completion of BCHM 30700, students with a passing or above grade will have an understanding of the following content areas:
• structure/function of amino acids, carbohydrates, lipids and nucleic acids
• protein structure, function and purification
• basic enzymology
- replication, transcription and translation
- intermediary metabolism including:
  - glycolysis
  - the citric acid cycle
  - oxidative phosphorylation
- photosynthesis

BCHM 30700 students will also develop an appreciation for some of the contributions that have been made by biochemistry to society, including improvements to medicine, agriculture, and the economy.

**TEXTBOOK**


The course textbook is on reserve in the Life Sciences and Undergraduate libraries.

**LAB TIME AND PLACE**

Monday, Wednesday and Friday, 9:50am – 11:40am in BCHM 102

**BLACKBOARD**

The syllabus for the course will be available via the Purdue University Blackboard Learn site at https://mycourses.purdue.edu/

**ASSESSMENT**

**Quizzes**

There are five quizzes that will each be held during the first 20 minutes of class. Each quiz is worth 20 points.

**Examinations**

There are three exams that will be given. Each exam is worth 100 points. Two of the exams will be given in class during the semester, and the last exam will be given during the final week. The date of the final exam will be announced when scheduled. Exams 1 and 2 are non-cumulative; Exam 3 (the final exam) is cumulative.

Missing an exam or quiz will result in a grade of zero being recorded unless documented justification for the absence is presented. If you know in advance that you will need to miss an exam or quiz due to participation in a university-sanctioned event, please request approval for the absence in advance of the exam date. Any request to be excused from an exam or quiz must include a completed copy of the form attached at the back of this syllabus, accompanied by official documentation. Only in the case of illness or a death in your family is prior approval not required for missing an exam or quiz. Makeup tests will be scheduled in consultation with the instructors.

All exams and quizzes must be completed in ink to be eligible for re-grading. If you disagree with the grading of your quizzes or exams, please consult the instructor or course TA.

Requests for re-grading of a quiz or exam must be submitted no later than the end of the second class period after the graded test or assignment has been returned.
GRADING SCHEME

Exam 1 100 points
Exam 2 100 points
Exam 3 (Final) 100 points
Quizzes 100 points

Total points 400

The cutoff values for letter grades are as follows:

360 points A
320 points B
280 points C
240 points D
239 points and below F

EXTRA CREDIT

There will be no opportunity for extra credit.

OBTAINING EXTRA HELP

Dr. Hart will be available to answer questions immediately after class or by appointment (arranged in class or by email). Questions can also be submitted by email and will be answered in class or by return email. The TA will hold office hours as needed and can also be reached by email.

Afternoon help sessions will be offered prior to each exam including the final. The time and place for these help sessions will be announced in class.

ACADEMIC MISCONDUCT

Academic misconduct of any kind will not be tolerated in any course offered by the Department of Biochemistry. Information on Purdue’s policies with regard to academic misconduct can be found at http://www.purdue.edu/studentregulations/student_conduct/regulations.html

Any incidence of academic dishonesty will be reported to the Office of the Dean of Students. Academic dishonesty may result in disciplinary sanctions including expulsion, suspension, probated suspension, disciplinary probation, and/or educational sanctions. In addition, such dishonesty will result in punitive grading such as:

• receiving a lower or failing grade on the assignment, or
• assessing a lower or failing grade for the course

Punitive grading decisions will be made after consultation with the Office of the Dean of Students. Please note reported incidences of academic dishonesty go on record for reference by other instructors. Further, a record of academic dishonesty is likely to influence how current/future situations are handled.
To provide you with an unambiguous definition of academic misconduct, the following text has been excerpted from "Academic Integrity: A Guide for Students", written by Stephen Akers, Ph.D., Executive Associate Dean of Students (1995, Revised 1999, 2003), and published by the Office of the Dean of Students in cooperation with Purdue Student Government, Schleman Hall of Student Services, Room 207, 475 Stadium Mall Drive West Lafayette, IN 47907-2050.

"Purdue prohibits "dishonesty in connection with any University activity. Cheating, plagiarism, or knowingly furnishing false information to the University are examples of dishonesty." [Part 5, Section III-B-2-a, Student Regulations] Furthermore, the University Senate has stipulated that "the commitment of acts of cheating, lying, and deceit in any of their diverse forms (such as the use of substitutes for taking examinations, the use of illegal cribs, plagiarism, and copying during examinations) is dishonest and must not be tolerated. Moreover, knowingly to aid and abet, directly or indirectly, other parties in committing dishonest acts is in itself dishonest." [University Senate Document 72-18, December 15, 1972]

More specifically, the following are a few examples of academic dishonesty which have been discovered at Purdue University.

- substituting on an exam for another student
- substituting in a course for another student
- paying someone else to write a paper and submitting it as one's own work
- giving or receiving answers by use of signals during an exam
- copying with or without the other person's knowledge during an exam
- doing class assignments for someone else
- plagiarizing published material, class assignments, or lab reports
- turning in a paper that has been purchased from a commercial research firm or obtained from the internet
- padding items of a bibliography
- obtaining an unauthorized copy of a test in advance of its scheduled administration
- using unauthorized notes during an exam
- collaborating with other students on assignments when it is not allowed
- obtaining a test from the exam site, completing and submitting it later
- altering answers on a scored test and submitting it for a regrade
- accessing and altering grade records
- stealing class assignments from other students and submitting them as one's own
- fabricating data
- destroying or stealing the work of other students

Plagiarism is a special kind of academic dishonesty in which one person steals another person's ideas or words and falsely presents them as the plagiarist's own product. This is most likely to occur in the following ways:

- using the exact language of someone else without the use of quotation marks and without giving proper credit to the author
- presenting the sequence of ideas or arranging the material of someone else even though such is expressed in one's own words, without giving appropriate acknowledgment
- submitting a document written by someone else but representing it as one's own

CLASS ATTENDANCE

In accordance with University policy, you are expected to attend every scheduled class. If you have a valid reason for missing class such as a University-sponsored activity, religious observances, illness, or family emergency, the instructor or TA will assist you in obtaining
information and materials you may have missed. Students who skip class without a valid excuse should not expect the instructor or TA to supply class notes or provide special help. For the official university policy, see: www.purdue.edu/odos/services/classabsence.php and http://www.purdue.edu/studentregulations/regulations_procedures/classes.html

EMERGENCY PREPAREDNESS

In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances. To get information about changes in this course consult the class Blackboard site or e-mail or phone the instructor.

ON-LINE COURSE EVALUATIONS

During the last week of the semester, you will be provided an opportunity to evaluate this course and your instructor(s). To this end, Purdue has transitioned to online course evaluations. On Monday of the eighth week of classes, you will receive an official email from evaluation administrators with a link to the online evaluation site. You will have one week to complete this evaluation. Your participation in this evaluation is an integral part of this course. Your feedback is vital to improving education at Purdue University. I strongly urge you to participate in the evaluation system.
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