

# Biochem ppt 56



**ASSIGN  
BUSTER**

| BARRY UNIVERSITY COLLEGE OF HEALTH SCIENCES COURSE SYLLABUS

SPRING 2013| COURSE NUMBER: BMS 528 SEC 01 COURSE NAME:

BIOCHEMISTRY II TERM/YEAR: Spring 2013 (Jan. 9th, 2013 – May 3rd, 2013)

LECTURE ROOM: Hollywood Rm 2 LECTURE SCHEDULE: Friday, 9: 00 – 12: 00

p. m. INSTRUCTOR NAME: Graham Shaw, Ph. D. Professor OFFICE ADDRESS:

Wiegand 229 OFFICE TELEPHONE: 305-899-3264 EMAIL:

[email protected]barry. edu OFFICE HOURS: Tuesday, 12. 30 – 3 p. m.

Thursday, 12. 30 – 3 p. m. All other times by appointment COURSE

DESCRIPTION:

Biochemistry at Barry University is taught over two semesters, Biochemistry I in the Fall and Biochemistry II in the Spring. These courses have been designed so that when integrated they provide the necessary biochemical knowledge for those in the medical and health related professions. The structure, function and metabolism of biologically important molecules were reviewed in biochemistry I. Biochemistry II serves to build on this material whilst considering the application of biochemistry to disease etiology, diagnosis and treatment.

Biochemistry II starts with a review of two areas crucial to normal, healthy cellular functioning. The structure and function of biological membranes, in particular the variety of cell signal transduction paradigms and the biochemistry of hormones. The structure, function and replication of the cell's genetic material. This information is reviewed in a series of lectures on DNA, the genetic code, protein synthesis and aspects of molecular biology. The digestion and absorption of biomolecules is reviewed and the consequences of malfunction considered.

A number of disease states are used to illustrate selected principles including the relationship between nutrition and disease; atherosclerosis, hyperlipidemia, obesity and diabetes. The application of clinical biochemistry techniques to disease diagnosis is described and the biochemistry of exercise and aging visited. **ARTICULATION TO MISSION OF THE UNIVERSITY:** This course is offered by the College of Health Sciences, which is grounded in the liberal arts tradition and is a part of Barry University's scholarly community, committed to the highest academic standards in graduate education.

This Biochemistry course addresses both the university mission statement as well as the strategic plan adapted by the College of Health Sciences. This is accomplished by offering a high quality student-centered curriculum in an environment, that encourages Christian and ethical values and promotes intellectual growth and curiosity. Throughout the semester students will be encouraged to visit with faculty and demonstrate their critical thinking skills by offering opinions on current scientific theories and research reviews as they relate to Biochemistry.

Case studies will be incorporated into lecture material and used to encourage student pursuit of knowledge and truth. Students in this course will develop an awareness of health issues that impact those living within and outside of our community as they analyze nutrient deficiency diseases. The course will also stimulate awareness for the wellbeing of others as the prevalence and etiology of metabolic disorders is addressed. **COURSE GOALS:** At the end of this course, students should be able recall and apply biochemical principles to other courses throughout the curriculum, e. g.

Pharmacology, Physiology. Students should be able to rationalize the significance of biochemistry in health and disease. COURSE OBJECTIVES: At the end of the course, the student will be able to: [1] Evaluate the structure and function of the plasma membrane. [2] Discriminate between the variety of signal transduction mechanisms. [3] Explain the principles of DNA transcription and translation and evaluate the mechanisms by which protein synthesis is regulated. [4] Discuss the digestion and absorption of biomolecules. [5] Summarize the principles of clinical biochemistry and organ function tests. [6] Appraise the importance of biochemistry to disease etiology and diagnosis. TEACHING METHODS: Each lecture will be presented using Powerpoint. Topical material not covered in the text may be addressed in class as appropriate, and is examinable. Where possible, time will be allowed for informal discussion of clinical scenarios and questions at the end of each class. Additional class materials, including case studies, and e-learning materials may also be posted to the Blackboard learning environment as the course progresses, and students are also responsible for this material.

An atmosphere of mutual respect will be reflected in all teaching/learning experiences COURSE TEXTS: REQUIRED TEXT(S) Shaw, G. P. Biochemistry for Health Professionals. Third Edition, John Wiley. New York. 2011. EVALUATION CRITERIA: There will be three (3) quizzes and two (2) unit tests, a mid-term and a final. QUIZ I Jan 18th 10% QUIZ II: Feb 22nd 10% QUIZ III April 12th 10%

MID-TERM TEST (Lecs 1 – 7) Mar 1st 35% FINAL EXAM (Lecs 8 – 14) May 3rd 35% TOTAL 100% DETERMINATION OF GRADE: Biochemistry II will be assessed by 3 quizzes, a mid-term examination and a final non-cumulative

examination as indicated in the course schedule. Tests will be of one hour duration, and may contain material from class discussion, the Blackboard learning environment (including case studies) as well as the course text. Any questions you wish to challenge either from a quiz or a test, **MUST BE IN WRITING** and documented within 1 week of the key being posted.

Tests and quizzes will not be returned and grades will not be rounded. GRADING SCALE: 100 - 90%A 89.9 - 80%B 79.9 - 70%C less than 70%F Grades will be posted on Blackboard. ACADEMIC DISHONESTY POLICY: Cheating or plagiarism will not be tolerated. A student who is caught either giving or receiving information or assistance during a testing session, quiz or examination will automatically receive the F grade and 0% on either the quiz or examination. The same consequence will apply to any proven case of plagiarism or communicating material on an examination to students in another section of the course.

Furthermore, that individual[s] will be referred to the Dean for appropriate disciplinary action. DISABILITY STATEMENT: Students with documented special learning needs may want to inform the instructor so that accommodations may be made, or contact Barry Office of Services for students with Disabilities (305) 899-3489. STUDENT BEHAVIOR: All Barry students are expected to behave according to accepted norms that ensure a climate wherein all can exercise their right to learn. Disruptive behavior is not acceptable in the classroom.

Students engaging in such behavior may be asked to leave or may be removed from the class by security personnel. Actions such as violence, shouting, use of cell phones and/or beepers, using profanity, interrupting,

and any other behavior that the instructor believes creates an unpleasant environment in the classroom will be grounds for withdrawal from the course, judicial proceedings and/or failure in the course. FOOD/BEVERAGES: Barry University has a policy of prohibiting eating and drinking within classroom space. PUNCTUALITY: Students are expected to be on time for class. If you arrive later than 10 minutes after class has started, there is a possibility that the door will be locked. COURSE-SPECIFIC POLICIES: Attendance: Students are expected to attend all lectures and to take all tests and quizzes at the regularly scheduled time. Students should have completed the assigned reading in advance of class, and be prepared to discuss this at class time. Only by participating in class can the student gain a complete understanding of the concepts presented in the course objectives, course text and recommended readings. Attire for all lectures and examinations should be professional. Academic Assistance:

After the first exam those students receiving a grade below a C must make an appointment with Dr. Shaw within one week of grade posting, for academic counseling. Excused absences from exams: If any student is unable to attend an exam due to illness (or other circumstances) he/she should notify Dr Shaw prior to the examination (or shortly after) if at all possible. The student is responsible for submitting a physician's excuse. An excuse may be refused for chronic absentees. Once the absence has been excused, the student is also responsible for contacting the Dr Shaw to arrange a date and time to take the make-up exam.

**NOTE: FAILURE TO OBTAIN AN EXCUSE WILL RESULT IN A GRADE OF 0% FOR THE EXAM. LACK OF PREPARATION IS NOT CONSIDERED A VALID EXCUSE**

FOR MISSING AN EXAM. CHALLENGE POLICY: Faculty will review all examinations in class with students, usually within 1 week of the grades being posted. This will not be a discussion session and any questions you wish to challenge either from a quiz or a test, MUST BE IN WRITING and documented within 1 week of the key being posted; verbal challenges will not be accepted at any time. In the case of a challenge the final authority for accuracy will be the course text.

Tests and quizzes will not be returned though they may be viewed by students with faculty approval. Make-Up Exam Policy: Make-up exams can be of many types at the discretion of the instructor. Make-up exams will be given after (not before) the regularly scheduled exam. If more than one person misses an exam, the make-up exams will be given simultaneously. Videotape: Video and audiotape of Biochemistry classes is not permitted unless approved by faculty and the Office of Disability Services. Online lectures and e-learning materials will be available for review from the Blackboard website.

COURSE SCHEDULE Lecture No. | Date Friday| TOPIC| READING(Shaw) Chapter| 1| 11th Jan| Membrane structure and functionCystic fibrosisG proteins, Signal transduction| 34 - 36| 2| 18thJan| Quiz I (Lecture 1 plus e-learning materials) (10%)Deoxyribonucleic acidPreparation for DNA replicationDNA replication| 37 - 39| 3| 25th Jan| Mutations and DNA repairRNA and transcriptionThe genetic code| 40 - 42| 4| 1st Feb| Protein synthesisRegulation of protein synthesis in prokaryotesRegulation of protein synthesis in eukaryotes| 43 - 45| 5| 8th Feb| CancerInvestigating DNA| 46 - 47| | 15th Feb| Principles of nutritionCalcium and osteoporosis| 48| 7| 22nd

Feb| Fed, fasting & starving| Integration of metabolism Digestion of dietary fat| QUIZ II (Lecture 6 plus e-learning materials) (10%)| 49 - 51| 8| 1st Mar| MID-TERM EXAMINATION (35%) (Lectures 1 - 7)| Obesity Lipoproteins| 52 - 53| SPRING BREAK MARCH 4th - 8th| 9| 15th Mar| Atherosclerosis and hypercholesterolemia| Digestion of carbohydrates| Diabetes mellitus| Diabetic complications| 54 - 57| 10| 22nd Mar| Protein digestion and absorption| Iron metabolism| Heme metabolism & Jaundice| 58 - 60| | 29th Mar| Easter No Class| | 1| 5th Apr| Collagen Growth factors and wound healing| Blood clotting & Clot dissolution| Blood tests and clinical scenario| 61 - 64| 12| 12th Apr| Plasma proteins| Organ function tests| QUIZ III (Lecture 11 plus e-learning materials) (10%)| 65 - 66| 13| 19th Apr| Enzyme diagnostics| Alcohol metabolism| 67 - 68| 14| 26th Apr| Exercise metabolism| Aging| 69 - 70| | May 3rd| FINAL EXAMINATION (Lectures 8 - 15) 35 % 3: 00 pm| | ----- [ 1 ]. Subject to change in extenuating circumstances