

Syllabus for BCH 3025 – Fundamentals of Biochemistry

Credits and Section	4 Credits - Section 5901
Course Instructor	Peggy R. Borum, Ph.D., Professor of Human Nutrition, Room 409 FSHN Bldg., prb@ufl.edu, 352-392-7553
Teaching Assistant	Dylan Lennon (dlennon@ufl.edu) is the Teaching Assistant for this class. If you have questions or need assistance from him, you should email him through E-Learning to schedule an appointment. If for some reason that does not work, his University of Florida email address is are given above. Dylan is a graduate student in the Department of Food Science and Human Nutrition.
Goals	By the end of the course students should be able to: <ol style="list-style-type: none"> 1. Appreciate why the broad spectrum of biochemistry is important in medicine, agriculture, pharmaceuticals, and ethics; 2. Understand the basis for the molecular structure of different biochemical compounds; 3. Understand the biosynthesis of basic biochemical “building blocks”; 4. Understand the conformation, dynamics, and function of proteins; 5. Understand the generation and storage of metabolic energy; 6. Understand overall aspects of the integration of metabolic processes; 7. Have developed the skills to accumulate, integrate, and apply biochemical information in their own field of study
Lehninger Principles of Biochemistry by David L. Nelson and Michael M. Cox, Sixth Edition, 2013	The required text for BCH 3025 is Lehninger Principles of Biochemistry by David L. Nelson and Michael M. Cox, Sixth Edition, 2013. The publisher website for the text is at http://bcs.whfreeman.com/lehninger6e/default.asp?s=&n=&i=&v=&o=&ns=0&uid=0&rau=0 . It contains summaries for each chapter and some electronic media that may be helpful to you.
Course Overview	The goal of the instructor is to organize the course to help each student achieve each of the above goals. Each module covered by the exams is presented in 4 formats. A short video presents a summary of the module. The printed book provides all the details of the module material. For those who prefer to read the lecture, PowerPoint slides including the lecture notes can be downloaded. For the more audio learners there are narrated lectures with slides. Each student thus has the material in several formats and can cover the material at a pace that is most comfortable for the individual. On average two to three modules will be introduced each week of the course. Short quizzes will be given as many of the chapters are introduced and will comprise 20% of the course grade. The quizzes are an incentive to read the chapters as they are scheduled for the course and to give a “preview” of the exam to come. Extra credit opportunities will be provided in the form of an optional term paper.

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Organization Of Modules	The chapter modules are organized by week with Monday being the first day of the week and Friday being the last day of the week.
Suggestions For Use Of Module Resources	You can use the video summary as the first step and the last step of your study plan. Viewing the video summary as an introduction provides you with an overview of the material to come. Viewing it again as the last step of your studying allows you to ask yourself if you feel comfortable with all the material. You should read the chapter in your textbook which is the source of all the content details. The course instructor has outlined the most important information in each chapter and made it available to you as a PowerPoint with audio and as a PowerPoint with notes. This material very closely follows the textbook in order to provide audio learners and visual learners with the material in the best format for them. This format is more similar to a “live lecture”, but can be viewed at your convenience during the week. You can also review any slides that seemed to go too fast the first time you viewed them.
Beyond the Textbook	Each module has a section “Beyond the Textbook” for those students who wish to venture beyond the material in the textbook. Some of the material is taken from http://bcs.whfreeman.com/lehninger/default.asp . The remaining material is taken from journals, websites, and other textbooks.
Instructor and Teaching Assistant Office Hours	<p><u>Instructor Office Hours:</u> The course instructor will check email on E Learning approximately every 24 hours during the school week in an effort to respond quickly to individual student questions. Walk in office hours are Monday at 4:00 – 5:00PM and Wednesday at 4:30 – 5:30 PM in Room 409 in the Food Science and Human Nutrition Building.</p> <p><u>TA Office Hours:</u> Teaching Assistant will check email on E Learning approximately every 24 hours during the school week in an effort to respond quickly to individual student questions. Individual appointments may be scheduled by emailing him through E-Learning.</p>
Exams	There will be four exams, 70 points each, for a total of 280 points. All exams are cumulative, in that information gained in previous sections will be needed to answer correctly and completely, but questions specifically on earlier concepts will not be asked. Each exam will consist mainly of multiple choice questions, but other types of questions may be included.
Makeup Exams	There are no regularly scheduled makeup exams and no dropped scores. Truly extraordinary circumstances will warrant some accommodation, but requests for makeup exams for other than personal or immediate family emergencies will not be considered. Any allowance will be arranged on a case – by – case basis. Requirements for make-up exams, assignments and other work are consistent with university policies that can be found at: https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx .

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Major Exams	Students must take the 4 major exams online beginning at 4 PM on the day designated in the class schedule. An average of 1 minute will be allowed for each multiple choice question (usually 35 questions). The exam must be completed by 6 PM on the day designated in the class schedule.
Weekly Quizzes	A short quiz on the topic of each module covered during the week must be completed online before the date and time designated in the class schedule in the syllabus. It is important to closely follow the deadlines listed in the class schedule in the syllabus. Quizzes will comprise 80 points or 20% of your grade.
Academic Honesty	<p>As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: <i>“We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.”</i> You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: <i>“On my honor, I have neither given nor received unauthorized aid in doing this assignment.”</i></p> <p>None of the quizzes or exams is open book and you are not allowed to receive assistance from anyone during any quiz or exam. It is assumed that you will complete all work independently in each course. Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/ .</p>
Journal Club PowerPoint	<p>The required Journal Club PowerPoint will contribute 40 points or 10% of your grade. Each student is an author of a Journal Club PowerPoint and an editor of another. The points will be obtained as follows:</p> <ul style="list-style-type: none"> • Step 1 – Post citation of article • Step 2 - Author’s outline of journal club presentation – 5 points • Step 3 - Author’s draft of journal club PowerPoint – 5 points • Step 4 - Author posts draft journal club for editor after assignment to group – 2 points • Step 5 - Editor’s critique of the draft journal club PowerPoint – 8 points • Step 6 - Author’s final PowerPoint presentation for Journal Club – 20 points <p>It is important to note that each step builds on the previous steps. If you miss</p>

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	<p>a step, you do not get points for that step and you cannot continue the assignment and thus lose all points for the remaining steps. More information (including deadlines) is provided for the assignment in the document entitled Journal club with a link on the Course Home page of the course site.</p>
<p>Extra Credit Paper</p>	<p>The extra credit assignment is an opportunity for students to earn up to 25 points to add to their exam scores/grades. By no means is it mandatory.</p>
<p>Extra Credit Paper</p>	<p>One should develop a 10-20 page, double-spaced research-based paper on an assigned topic (Example: Folate and neural tube defects). Do not forget that this is a biochemistry class and the paper should focus on the biochemical aspects of the topic. The paper should be a scientific paper designed for an audience that has completed a biochemistry class. The paper should not be designed for the general public or read like a website. Your paper should include an abstract, an introduction, a body, a conclusion, and a list of "References." You should define the problem/issue, indicate its significance, and review relevant literature that includes evidence that supports the arguments for and against the problem/issue. You must document evidence with in-text citations, according to the format used by the Journal of Nutrition.</p> <p>Please be sure to make your ideas, thoughts, arguments, theories, facts, or evidence very clear to the reader. Peer-reviewed information is the preferred source. References from Internet sources should be used cautiously. If you copy a phrase or a sentence from another source you must quote that source. Using the words of someone else is simply a form of academic dishonesty and will not be tolerated. The paper should be prepared solely for this class. The TurnItIn tool will be used to evaluate the originality of the paper as part of the grading process. As a result of completing the registration form at the University of Florida, every student has signed the following statement: "I understand that the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action, up to and including expulsion from the University."</p>
<p>Extra Credit Paper</p>	<p>Even though one has the opportunity to gain up to 25 points on this paper, by no means does this imply that all papers submitted will be given a credit of 25 points. In fact, if the reader gets the impression that the paper submitted does not include intelligent, well-organized and thorough literature review discussions on the topic, there is a possibility that no points will be given. If the paper is not of adequate quality and does not include the criteria listed above, the author will be deducted 5 points from the total grade earned in class. To be graded, the paper must be turned into the Extra Credit Paper Assignment tool on the BCH 3025 homepage as a WORD document attachment. Any papers submitted after 12 Noon on October 20, 2014 or not submitted, will result in 0 points (your paper will not be graded) in addition to</p>

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	a reduction of 5 points from the student's total score earned in class.
Extra Credit Paper Procedures	If you are interested in this extra credit assignment, go to the Extra Credit Papers Folder on the E-Learning at UF BCH 3025 home page and choose one of the topics. To complete the contract, visit the Extra Credit page - then open the "Extra Credit Topics" - click on your topic and use the sign-up sheet in the Discussions section of the course website. The sign-up sheet is the only official mechanism for contracting for the Extra Credit Paper. No contracts can be completed after 12 Noon September 19, 2014 . Only 1 person may request a topic.
Extra Credit Paper	If you would like to write an extra credit paper on a topic not listed, you may submit a request to the instructor via email in E-Learning at UF. The request must be submitted before 12 Noon, September 15, 2014 . The request must be submitted as an E-Learning email and must consist of a 1 page summary of the paper you wish to write. The summary must be sent as a Word document attachment to the email requesting the topic. If approved, the topic will be added to the list of topics in E-Learning at UF and you will be assigned the topic.
Extra Credit Paper	To post your final draft click on Extra Credit Paper Assignment Tool on the course homepage. Papers must be posted before 12 Noon, October 20, 2014 .
Software Use:	All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.
Campus Helping Resources	<p>Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.</p> <ul style="list-style-type: none"> • <i>University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575, www.counseling.ufl.edu/cwc/</i> <ul style="list-style-type: none"> Counseling Services Groups and Workshops Outreach and Consultation Self-Help Library Training Programs Community Provider Database • <i>Career Resource Center, First Floor JWRU, 392-1601, www.crc.ufl.edu/</i>
Services for Students with	The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending

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Disabilities	academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation (0001 Reid Hall, 352-392-8565, www.dso.ufl.edu/drc/)
Distance Courses	Each online distance learning program has a process for, and will make every attempt to resolve, student complaints within its academic and administrative departments at the program level. See http://distance.ufl.edu/student-complaints for more details.
General Comments	It is important that you be familiar with the use of Canvas I suggest that you review the information at https://lss.at.ufl.edu/help/Student_Faq If there is a problem with Canvas on the University of Florida end, it is the instructor's problem to fix. If there is a problem with a PC, an internet connection, or errors in the use of Canvas, it is not the instructor's problem to fix and is not a reason for a make-up exam. If you feel that there is a problem during an exam, quiz, or assignment on the UF end, it is important to get documentation that the problem was on the UF end from the HELP desk at 352-392-HELP.
Grades and Grade Points	There will be no curve in this course. Final grades will be simply calculated from the total accumulated points. For information on current UF policies for assigning grade points, see https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

Final Grade	Total Points
A	373-400
A-	360-372
B+	348-359
B	333-347
B-	320-332
C+	308-319
C	293-307
C-	280-292
D+	268-279
D	253-267
D-	240-252

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Course Schedule

Fall Course Schedule

<u>Week 1</u>	
Monday – August 25, 2014	Introduction to course; – Module 1 (Chapter 1 in textbook) - The Foundations of Biochemistry
Wednesday August 27, 2014	Module 2 (Chapter 3 in textbook) - Amino Acids, Peptides, and Proteins
Friday –, August 29, 2014	Module 3 (Chapter 5 in textbook) - Protein Function The deadline for quizzes for Module 1 (Chapter 1), Module 2 (Chapter 3), Module 3 (Chapter 5) are delayed to next Friday due to drop/add.
<u>Week 2</u>	
Monday – September 01, 2014	Labor Day Holiday
Wednesday September 03, 2014	Module 4 (Chapter 6 in textbook) – Enzymes
Friday –, September 05, 2014	Quizzes for Module 1, Module 2, Module 3 and Module 4 must be completed online before 12 Noon
<u>Week 3</u>	
Monday – September 08, 2014	Module 5 (Chapter 7 in textbook) - Carbohydrates and Glycobiology
Wednesday September 10, 2014	Quiz for Module 5 must be completed online before 12 Noon Authors must post journal club article before 3 PM (Step 1)
Friday –, September 12, 2014	Exam 1 multiple choice questions and Exam 1 short answer questions on Modules 1, 2, 3, 4, and 5 must be completed online by 6 PM. The exams will be available beginning at 4 PM on Friday September 12, 2014.
<u>Week 4</u>	
Monday – September 15, 2014	Module 6 (Chapter 8 in textbook) - Nucleotides and Nucleic Acids Deadline to request an extra credit paper on a topic not listed
Wednesday September 17, 2014	Module 7 (Chapter 9 in textbook) - DNA-Based Information Technologies
Friday –, September 19, 2014	Quiz for Modules 6 and 7 must be completed online before 12 Noon - Extra Credit Contracts due before 12 Noon. Authors must post outline of journal club presentation before 3 PM (Step 2)
<u>Week 5</u>	
Monday –	Module 8 (Chapter 10 in textbook) - Lipids

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September 22, 2014	
Wednesday September 24, 2014	Module 9 (Chapter 11 in textbook) - Biological Membranes and Transport
Friday –, September 26, 2014	Quizzes for Module 8 and Module 9 must be completed online before 12 Noon
<u>Week 6</u>	
Monday – September 29, 2014	Module 10 (Chapter 12 in textbook) - Biosignaling
Wednesday October 01, 2014	Quiz for Module 10 must be completed online before 12 Noon
Friday –, October 03, 2014	Exam 2 on Modules 6, 7, 8, 9, and 10 must be completed online by 6 PM. The exams will be available beginning at 4 PM on Friday September 26, 2014
<u>Week 7</u>	
Monday – October 06, 2014	Module 11 (Chapter 13 in textbook) - Bioenergetics and Biochemical Reaction Types
Wednesday – October 08, 2014	Module 12 (Chapter 14 in textbook) - Glycolysis, Gluconeogenesis, and the Pentose Phosphate Pathway
Friday –, October 10, 2014	Quizzes for Module 11 and Module 12 must be completed online before 12 Noon Authors must post a draft of journal club PowerPoint by 3PM (Step 3)
<u>Week 8</u>	
Monday – October 13, 2014	Module 13 (Chapter 15 in textbook) - Principles of Metabolic Regulation
Wednesday October 15, 2014	Quiz for Module 13 must be completed online before 12 Noon Authors must post to the designed discussion Group pairing by 3PM the same file posted in Step 3 (Step 4)
Friday –, October 17, 2014	Homecoming Holiday
<u>Week 9</u>	
Monday – October 20, 2014	Module 14 (Chapter 16 in textbook) - The Citric Acid Cycle Extra Credit Papers due before 12 Noon Monday, October 20, 2014
Wednesday – October 22, 2014	Module 15 (Chapter 17 in textbook) - Fatty Acid Catabolism

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Friday –, October 24, 2014	Quizzes for Module 14 and Module 15 must be completed online before 12 Noon Editors must post critique of the draft journal club PowerPoint by 3 PM (Step 5)
<u>Week 10</u>	
Monday – October 27, 2014	Module 16 (Chapter 18 in textbook) - Amino Acid Oxidation and the Production of Urea
Wednesday October 29, 2014	Module 17 (Chapter 19 in textbook) - Oxidative Phosphorylation and Photophosphorylation
Friday – October 31, 2014	Quizzes for Module 16 and Module 17 must be completed online before 12 Noon
<u>Week 11</u>	
Monday – November 03, 2014	Exam 3 on Modules 11, 12, 13, 14, 15, 16, and 17 must be completed online by 6 PM. The exams will be available beginning at 4 PM on Monday, November 03, 2014.
Wednesday November 05, 2014	Module 18 (Chapter 21 in textbook) - Lipid Biosynthesis Authors must post final PowerPoint presentation for Journal Club by 3 PM (Step 6)
Friday –, November 07, 2014	Quiz for Module 18 must be completed online before 12 Noon
<u>Week 12</u>	
Monday – November 10, 2014	Module 19 (Chapter 22 in textbook) - Biosynthesis of Amino Acids, Nucleotides, and Related Molecules
Wednesday November 12, 2014	Module 20 (Chapter 23 in textbook) - Hormonal Regulation and Integration of Mammalian Metabolism
Friday –, November 14, 2014	Quizzes for Module 19 and Module 20 and must be completed online before 12 Noon
<u>Week 13</u>	
Monday – November 17, 2014	Module 21 (Chapter 24 in textbook)- Genes and Chromosomes
Wednesday November 19, 2014	Module 22 (Chapter 25 in textbook)- DNA Metabolism
Friday –, November 21, 2014	Quizzes for Module 21 and Module 22 and must be completed online before 12 Noon
<u>Week 13</u>	

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Monday – November 25, 2014	Module 23 (Chapter 26 in textbook)- RNA Metabolism
Wednesday November 27, 2014	Thanksgiving Holiday
Friday –, November 29, 2014	Thanksgiving Holiday
<u>Week 14</u>	
Monday – December 01, 2014	Module 24 (Chapter 27 in textbook) - Protein Metabolism
Wednesday December 03, 2014	Module 25 (Chapter 28 in textbook) - Regulation of Gene Expression
Friday – December 05, 2014	Quizzes for Module 23, Module 24 and Module 25 must be completed online before 12 Noon
<u>Week 15</u>	
Monday – December 08, 2014	Happy studying ☺
Wednesday December 10, 2014	Exam 4 on Modules 18, 19, 20, 21, 22, 23, 24, and 25 must be completed online by 6 PM. The exams will be available beginning at 4 PM on Wednesday, December 10, 2014