Syllabus BIOCHEM

Instructor: Stefan Kanzok, Ph.D.
Quinlan Life Sciences Center, Rm. 427
Office: (773) 508-3790
Email: skanzok@luc.edu

Lectures: MWF 1:40PM – 2:30PM in Cuneo Hall, Rm. 002

Prerequisites: **BIOL 251** and **CHEM 224** or **222** *(for Bioinformatics majors CHEM 224 or 222 only)*

Office Hours: Mondays 3:00 PM- 4:00 PM or by appointment

Required Text: "**Biochemistry**", Campbell & Farrell ; Cengage learning 8th Edition; ISBN 978-1-285-42910-6

Additional readings will be handed out in class as needed

Sakai: Make sure you have access to **Sakai**. Course supplements and documents will be posted through the Sakai website. Most of the lectures will be presented using Microsoft Power Point. The slide show for each lecture will be available on Sakai usually the day before.

iClicker: **iClicker remotes are required** for this class, as I will use iClicker for small quizzes during lecture (see below). If you do not already possess a remote you can purchase individual clicker remote devices from the Loyola bookstore for approximately $30 (prices may vary). The ISBN number is 0-7167-7939-0. **IMPORTANT:** it is **vital** that you **REGISTER your iClicker** device for this course on Sakai. Following login to the course-site on Sakai you will find a link on the left-hand side called [i>clicker]. It contains all the information you need to register and how to use your clicker remote. You can also follow instructions on how to Register Clicker Remotes. For more information about iClicker please visit HERE.

Course Objective: Life is based on four principle cellular components: proteins, lipids, carbohydrates and nucleic acids. Biochemistry is concerned with the structure, function and interactions of these compounds with one another and their environment. As such biochemistry plays a vital part in all aspects of the medical sciences since it not only helps us to understand how the (human) cell works at a molecular level but also how to decipher and possibly counter pathogenic conditions. Consider that almost all drugs used in medical treatment target proteins or groups of proteins to modulate their biochemical properties. In this course, we will focus on proteins and their structure-function relationships, kinetics and regulation. We will also look at lipid-, carbohydrate, and nucleic acid-metabolisms, and their impact on cells, tissues and (human) organisms.

Studying for this class: Be aware that this course covers a significant amount of material! It is important to me that you understand the fundamental concepts of biochemistry rather than memorize every detail. If you haven't done so already, seek out fellow students and form **study groups**! Focus on my lecture and the corresponding slides. The **slides for each lecture will be available on Sakai** prior to each class. During study sections and in study groups make a point *explaining* concepts to one another; preferentially by drawing your own figures. Use the textbook as a reference. If things are still unclear

you are welcome to approach me before or after lecture and during discussion sessions. I am more than happy to go over topics again. For the exams you will be allowed to use a **cheat card** (see below).

Use your resources! Lecture notes & slides, peers, Wikipedia etc., me and the textbook as reference!

Attendance: while attendance for this course is not mandatory, it is however **strongly advised** as I will draw my exam questions as well as my iClicker questions (see below) from my lectures.

Loyola Tutoring Services: LUC Center for Tutoring & Academic Excellence (CTAE). The Peer Tutors are academically successful Loyola students trained to provide content- and skill-based academic support in a collaborative learning environment. They are referred by LUC faculty and have completed the courses for which they tutor with an A- or higher (www.LUC.edu/tutoring).

Questions are good! Do not hesitate to ask question during lecture, after lecture, especially during discussion sections, and/or email me. It is an excellent idea to bring question to the discussion sessions. Other students will benefit from the explanations and discussions.

Exams, iClicker and Grading:
Exams: There will be **three written in-class exams, which are non-cumulative** (**100** points each). The exams will consist of multiple choice-type questions. For each exam I will allow **one** cheat card (3 x 5 in. flash card), which may carry exam relevant information on ONE side only. **Note**: Everything that goes on this card has to be HANDWRITTEN! For missed exams please see below.
iClicker questions: Incorporated into the lectures will be 50 **unannounced** iClicker questions distributed throughout the semester. Each correctly answered iClicker question is worth 1 point. **Note** that the combined iClicker questions constitute almost 15% of your grade! Therefore, attending class is clearly beneficial. Also, there will be **no make ups** for missed iClicker questions! Keeping you iClicker remote in functional condition is YOUR responsibility! So make sure batteries are full and connections work!
Grading: Your **final grade** will thus depend on **the sum of your three exam scores** plus your **iClicker scores**. This adds to a maximum total score of 350 points. Your final grade will be calculated as a percentage to the maximum 350 points. **THERE WILL BE NO EXTRA CREDIT!**
My expectations are that the following grade cutoffs will apply.

Grade	Cut off		
A	88-100%	4.00	Excellent
A-	84-87%	3.67	
B+	80-83%	3.33	
B	76-79%	3.00	Good
B-	72-75%	2.67	
C+	68-71%	2.33	
C	64-67%	2.00	Satisfactory
C-	60-63%	1.67	
No passing grades:			
D+	56-59%	1.33	
D	50-55%	1.00	Poor
F	0-49%	0.00	Failure

***Note**: Exam scores may be subject to a curve depending on the performance of the class and at the sole discretion of the instructor.*

Missed Exams Policy:
Individuals who miss an examination will be given zero points unless they have an official excuse (Serious illness of student, illness or death of immediate family member, officially approved university activity). On a strictly limited and pre-approved basis, a student may be allowed to miss a class in order to participate in a University-sponsored event. This situation normally includes only such events as official athletic games or Loyola-sponsored competitions, e.g., debate, theater, etc. **It is the student's obligation** to inform the instructor of such an authorized absence in a **timely fashion. This is the only way to justify a makeup exam.** If you must miss an exam you need to contact me **BEFORE** (pre-approved) the exam. Medical excuses must be in writing from the treating physician and verifiable. If you have a death in your family and need to leave for a funeral or you are part of an officially approved University activity, notify me approximately one week **before** the exam. **Students missing an exam due to an emergency should contact me if possible immediately after the date of the exam to schedule a make-up exam.** Taking the exam in advance is negotiable.

Students with Special Needs
If you have any special needs in order to successfully complete this course, please inform me immediately. The University may be able to provide special services or assistance. If you have questions in this regard, contact Services for Students with Disabilities (SSWD), Sullivan Center (773-508-3700). Visit www.luc.edu/sswd for more information.

Academic Integrity
Academic misconduct of any kind gravely jeopardizes the scholarly integrity of the academic process. Cheating and plagiarism are severe academic offenses that are not tolerated at Loyola University. Plagiarism is taking someone else's ideas, expressions, or productions and passing them off as your own. It is the instructor's goal to maintaining the security of all examinations, tests, and quizzes prior to their administration as well as in proctoring examinations, tests, etc., throughout the semester. Proctoring of tests may include taking attendance, patrolling the room, changing the usual seating arrangement, checking prior to the test to see that students' materials are inaccessible (e.g., in a closed backpack, not on the bill of their caps, or on hand-held devices, or on cellular phones) and collecting (for later retrieval) other material that students are not to use during the test, such as loose notes, books, or calculators or other devices. Please do not leave the room or neglect to observe activity in the room. All tests and exams will be proctored by the instructor—unless in an emergency.
Any academic offense will result in a minimum penalty of an "F" grade for the assignment or the examination, failure of the exam, and possibly failure of the course. The incident will be reported to the student's academic dean's office to block the student from withdrawing from the course so that an F, rather than a W, will be recorded on the student's transcript.
Any academic dishonesty will be reported to the Dept. Chair and to the student's academic dean's office where they are entered in our records and will be disclosed to medical schools, state bar examiners, and others who have a legitimate reason to inquire.. Please visit the following Loyola web site for more information on academic integrity:
www.luc.edu/cas/pdfs/CAS_Academic_Integrity_Statement_December_07.pdf . Also see www.luc.edu/english/writing.shtml#source. This Web page also includes a link to resources to help students avoid unintentional plagiarism.

Tentative Lecture & Exam Schedule for spring semester 2015

***Note**: The following schedule is subject to change depending on pace of material coverage. Students should attend class regularly and monitor the course website for announcements about exam schedule changes.* For the academic calendar please see www.luc.edu/academics/schedules .

* Book chapters refer to "**Biochemistry**" from Campbell & Farrell, 8th Edition (also see above under "required text").

	Date	Topic	Campbell Chapter#
M	12-Jan	Intro to course	
W	14-Jan	Biochemical Energetics; Energy & Change	1-8 & 1-9
F	16-Jan	Spontaneity; Thermodynamics	1-10 & 1-11
M	19-Jan	*MLK, Jr. Day - no classes*	
W	21-Jan	Chemical bonds	2
F	23-Jan	Amino acids and peptides	3
M	26-Jan	Protein structure and function 1	4-1 to 4-3
W	28-Jan	Protein structure and function 2 & Folding	4-4 to 4-6
F	30-Jan	Proteins: Experimental Methodology	5
M	2-Feb	The behavior of proteins: Enzymes 1	6-1 to 6-4
W	4-Feb	The behavior of proteins: Enzymes 2	6-5 to 6-7
F	6-Feb	The behavior of proteins: Mechanisms & Control 1	7-1 to 7-4
M	9-Feb	The behavior of proteins: Mechanisms & Control 2	7-5 to 7-8
W	**11-Feb**	**EXAM 1**	
F	13-Feb	Introduction to lipids	8-1 & 8-2
M	16-Feb	Biological membranes 1	8-3 to 8-5
W	18-Feb	Biological membranes 2	8-6 to 8-7
F	20-Feb	Introduction to metabolism	15-1 to 15-3
M	23-Feb	Electron flow in metabolic reactions	15-4 to 15-7
W	25-Feb	Structure of Carbohydrates	16-1 & 16-2
F	27-Feb	Oligo- & Polysaccharides; Glycoropteins	16-3 to 16-5
M	2-Mar	*spring break - no classes*	
W	4-Mar		
F	6-Mar		

	Date	Topic	Campbell Chapter#
M	9-Mar	Glycolysis 1	17-1 & 17-3
W	11-Mar	Glycolysis 2	17-4 to 17-6
F	13-Mar	Carbohydrate Metabolism 1	18-1 & 18-2
M	16-Mar	Carbohydrate Metabolism 2	18-3
W	**18-Mar**	**EXAM 2**	
F	20-Mar	Carbohydrate Metabolism 3	18-4
M	23-Mar	Citric Acid Cycle 1	19-1 to 19-4
W	25-Mar	Citric Acid Cycle 2	19-5 to 19-9
F	27-Mar	Electron Transport 1	20-1 to 20-3
M	30-Mar	Electron Transport 2	20-4 & 20-5
W	1-Apr	Electron Transport 3	20-6 & 20-7
F	3-Apr	*Easter holiday - no classes*	
M	6-Apr		
W	8-Apr	Lipid Metabolism 1	21-1 to 21-3
F	10-Apr	Lipid Metabolism 2	21-4 & 21-5
M	13-Apr	Lipid Metabolism 3	21-6
W	15-Apr	Nitrogen Metabolism: Amino Acid Biosynthesis	23-4 & 23-5
F	17-Apr	Nitrogen Metabolism: Amino Acid Catabolism	23-6
M	20-Apr	Integration of Metabolism: Signal transduction	24-3
W	22-Apr	Insulin and its effects	24-5
F	24-Apr	Review	
	FINAL EXAM TBA		

***Chapters/Topics that will <u>not</u> be covered**: 9, 10, 11, 12, 13, 14, 22*