

General Biochemistry 115:404/504

Lecture and Exam Schedule, Spring 2017

Instructors: Yana Bromberg (YB) Theodorus VanEs (TVE) Peter C. Kahn (PCK)

Class	Date	Instructor	Subject	Chapter
1	W 1/18	PCK	Course policies; Bioenergetics, Introduction to Metabolism	13
2	M 1/23	PCK	Carbohydrate Metabolism I: glycolysis, pentose phosphate shunt, gluconeogenesis, glycogen metabolism; Controls.	13, 14, 15
3	W 1/25			
4	M 1/30	PCK	TCA Cycle	16
5	W 2/1			
6	M 2/6	PCK	Lipid metabolism	17, 21
7	W 2/8			
8	M 2/13	PCK	Electron transport & oxidative phosphorylation; Light reactions of photosynthesis.	19,20
9	W 2/15			
10	M 2/20	FIRST EXAMINATION		
11	W 2/22	TVE	Carbohydrate metabolism II: biosynthesis; photosynthetic dark reactions.	20
12	M 2/27			
13	W 3/1	TVE	Nitrogen metabolism: Overview, N ₂ fixation, protein turnover	18, 22
14	M 3/6	TVE	Nitrogen metabolism continued: urea cycle, amino acid catabolism & anabolism, outline of nucleotide catabolism and anabolism.	18, 22
15	W 3/8			
	3/11-19	Spring Break		
16	M 3/20	PCK	Metabolic coordination	18, 22
17	W 3/22	PCK	Replication overview; DNA polymerases, accessory enzymes, initiation, model systems.	23
18	M 3/27			
19	W 3/29	SECOND EXAMINATION		
20	M 4/3	PCK	Mutagenesis, DNA repair, restriction and modification, recombination, transposition, laboratory applications.	24, 25
21	W 4/5			
22	M 4/10	PCK	Transcription: operon theory, RNA polymerases, initiation, termination, regulatory models and examples, signal transduction, eucaryotic transcription, posttranscriptional processing of RNA.	26
23	W 4/12			
24	M 4/17	PCK	Translation: overview, requirements, ribosome structure, initiation, elongation, termination, regulation.	27
25	W 4/19			
26	M 4/24	PCK	Posttranslational events: targeting, export, folding, degradation.	27
27	W 4/26	YB	Bioinformatics	27
28	M 5/1	PCK	Origins of life.	several

Text: Nelson & Cox, *Lehninger; Principles of Biochemistry*, Sixth Edition, W. H. Freeman & Co.

The final examination is not yet scheduled.

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General Information and Course Policies

Learning Goals: Students will gain a fundamental understanding of what makes living systems tick at the molecular level. They will also gain an understanding of the experimental methods which give rise to biochemical knowledge. The course will impart a thorough grasp of the relationship between biochemical structure and function. The primary emphases this term are to gain a deep grasp of metabolic pathways, of information processing, and of how these are coordinated.

Welcome to the second semester of General Biochemistry 115:403-404 and 503-504, a one year integrated survey of biochemistry. We hope you come to enjoy the subject as we do, and we will do everything we can to make your experience of it agreeable. To that end, should you have a problem or wish to explore a topic in greater depth than possible in lecture, please feel free to contact us. We hold open office hours, which we invite you to attend, and we will be pleased to make appointments with those who cannot come at the scheduled times. The hours and our offices are all on the Cook campus. The locations are:

	<u>Theodorus van Es</u>	<u>Peter Kahn</u>	Yana Bromberg
Office:	119 Lipman Hall	120 Lipman Hall	218 Lipman Hall
Telephone:		848-932-5618	848-932-5638
Hours:	Friday, 10 A.M - 4P.M.	Monday, 1:30 - 3:00 P.M.	By appointment

In addition to our office hours, the Learning Assistants and other staff will hold regular review sessions according to a schedule which will be announced.

There are several course policies of which you should be aware. The lecture schedule on the reverse side of this page gives an indication of the topics to be covered, but it is not a complete list. The chapter numbers are intended as a guide to where to ***begin*** your reading in the text, but material in each lecture topic may be found in other chapters, as well. **Use the index and the table of contents!** Some lecture material is not in the text at all, and supplementary readings will be suggested as appropriate. The policy with respect to material for which you may be held responsible is that **(a) if it is covered in lecture, you are responsible for it, and (b) if a section of the text or if another source is specifically assigned to be mastered, you are responsible for it even if it is not covered in lecture.** There will not be many of these. The text is thus a supplement to the lectures, not the other way around; read as much of it as you find necessary to illuminate the lectures. Use whatever other sources you may find in the library, including other texts, as well.

Examinations: there will be two during the term plus a cumulative final. Each hour examination represents 30% of the grade. The final counts for 40%. Copies of previous exams can be accessed from the course web site, <https://sakai.rutgers.edu/portal> . Appropriate arrangements for make-up exams must be made with the instructors PRIOR to the exam's scheduled time. The final exam is to be taken as scheduled. Only in extreme circumstances will a make-up final be given.

If you are unsure whether your training has prepared you adequately for General Biochemistry, please see one of the instructors forthwith. For those enrolled in Biochemistry 404 there will be two forms of extra credit: computer tutorials and a short paper. For those enrolled in Biochemistry 504 these are required. The details will come later.

Your attention is drawn to the policies with respect to academic integrity, which are described on a separate page given out at the start of the fall semester. If you do not have this page, let me know, and I'll supply another copy.