

CHEM 26/28: OUTLINE OF ORGANIC AND BIOCHEMISTRY

Spring 2015

Lecture A: CHEM 26 (10114) & CHEM 28 (10115), M,W,F 8:30AM-9:20AM, Angell B-106

Lecture B: CHEM 26 (10996) & CHEM 28 (11030), T,Th 8:30AM-9:45AM, Angell B-106

GENERAL INFORMATION: (see also the CHEM26 BlackBoard page)

Instructor: Steve Flemer

Email: sflemer@uvm.edu

Office: A-335 Cook

Office Hours: M W F 9:30 AM - 10:30 AM
T Th 10:00 AM – 11:00 AM

Lecture: The lecture will primarily be used to cover new material. Included in this syllabus is a tentative schedule covering the text material and the corresponding problems to be worked from each chapter.

Exams: Three 2-hour exams are given on Wednesday nights from 6:15-8:15 PM.

	Lecture A (MWF; 8:30-9:20 AM)	Lecture B (TTh; 8:30-9:45 AM)
Exam 1	Wed, Feb. 18; 105 Votey	Last names A-I: Wed, Feb. 18; B112 Angell Last names J-Z: Wed, Feb. 18; 103 Rowell
Exam 2	Wed, Mar. 25; 105 Votey	Last names A-I: Wed, Mar. 25; B112 Angell Last names J-Z: Wed, Mar. 25; 103 Rowell
Exam 3	Wed, Apr. 22; 105 Votey	Last names A-I: Wed, Apr. 22; B112 Angell Last names J-Z: Wed, Apr. 22; 103 Rowell
Final Exam	Tues., May 5; 7:30-10:15AM; B106 Angell	Thurs., May 7; 7:30-10:15AM; B106 Angell

Absences from exams: Students with legitimate excuses (ie: a UVM-related conflict) may be permitted to take an exam sometime during the day that it is given to the rest of the class that evening. This must be cleared with the instructor first, however. **Makeup exams will only be administered after the scheduled exam time if a medical or family emergency precludes taking the exam at the scheduled time.**

Review Sessions: I will normally have an Exam Review Session on the Monday afternoon prior to impending exams.

Weekly Blackboard Quizzes: Each week, you will be responsible for taking a short online BlackBoard quiz covering the class material from the current week. Just click on the "Weekly Quiz" link on the left hand side of the CHEM26 BlackBoard page and follow the instructions. These quizzes are open-book, but must be completed independently and in one sitting. Weekly quizzes will be available to take until 5:00PM of the Sunday prior to a new week of classes. A skipped or a missed quiz is given a zero.

Problems: Exam questions will be modeled very closely to the type of problems you will encounter on class exams and quizzes. Solutions to most of these problems are in the back of the text. While it is strongly suggested that you do as many problems as possible, the problems are not collected and do not count towards your grade.

REQUIRED TEXTBOOKS:

Text: "General, Organic, and Biochemistry" 8th edition, by Denniston, Topping, Woodrum, & Caret is sold at the UVM bookstore.

Lab Manuals: "Chemistry 26, Experiments" is sold at the first floor stockroom, A-143 Cook, for \$15.00. **This is not required for CHEM 28 students.**

LABORATORY:

Time and Room: See your class schedule for your specific Lab time and room.

TA: Will be announced at your first lab session.

Attendance: Students must attend the lab section they are assigned to. Official documentation of sickness or family crisis is required if a lab is missed. **If more than 2 labs are missed, this results in a failure for the course.** In order to take a lab at a time other than your assigned time one must obtain the permission of the TA and instructor.

Breakage Card: A breakage card (\$40.00) must be purchased from the first floor stockroom, A-143 Cook, prior to your first lab. The \$40.00 is refundable, and if you are careful you should get most of it back. Remember, you must have it with you to be admitted into lab.

Safety Eyewear: OSHA approved safety glasses or goggles must be worn by everyone once any experimentation has started in any area of a lab room. Safety eye wear can be purchased at the UVM bookstore.

Foot Wear: Only shoes that cover the toes are permitted in the lab. Sandals and open toed shoes are not permitted.

Lab Notebook: A bound notebook is required for recording lab data.

ACADEMIC INTEGRITY:

Offenses against the Code of Academic Integrity (ie: Cheating) are deemed serious and insult the integrity of the entire academic community. Any suspected violations of the code are taken very seriously and will be forwarded to the Center for Student Ethics & Standards for further investigation.

LABORATORY SCHEDULE

<u>Week of:</u>	<u>Experiment</u>	<u>Description</u>
26-29 Jan	1 (pg. 15)	Molecular Models
2-5 Feb	2 (pg. 20)	Fractional Distillation of Wine
9-12 Feb	3 (pg. 23)	Isolation of Caffeine
16-19 Feb	NO LABS	(PRESIDENT'S DAY WEEK)
23-26 Feb	4 (pg. 27)	Dehydration of 2-methyl-2-butanol
2-5 Mar	NO LABS	(SPRING BREAK)
9-12 Mar	5 (pg. 31)	TLC Analysis of Analgesics
16-19 Mar	6 (pg. 37)	Synthesis of Esters
23-26 Mar	7a (pg. 42) 7b (pg. 43)	Carbonyls (Tollen's Test) Carbohydrates (Benedict's Test)
30 Mar -3 Apr	8 (pg. 50)	Polymers
6-9 Apr	9 (pg. 54)	Isolation and Analysis of a Protein
13-16 Apr	10 (pg. 58)	Fats, Oils, & Soaps CHECKOUT

TENTATIVE LECTURE SCHEDULE

<u>CHAPTER</u>	<u>SUGGESTED PROBLEMS</u>
10 (Saturated Hydrocarbons)	3,7,19,21,25,31,41,42,43,45,51,53,55,57,59a,63,65,67,75,77,79,81,83,85,86,87,97,98,99
11 (Unsaturated Hydrocarbons: 11.1-11.6)	1,3,5,7,9,11,13,15,17,19,21,22,27,31,41,43,47,49,65,69,71,73,79,81,89,90,95,97
12 (Alcohols, Phenols, Thiols, & Ethers)	1,11,15,19,23,29c,31a,c,32,33,37,51,52,55,61,63,65,68,69,83,85,86,87,91
WED, 18 FEB	EXAM 1 6:15 – 8:15 PM
13 (Aldehydes & Ketones:	5,7,11,13,21,23,29,30,31,33,39,41,44,49,57,61,62,63,67,69,71,73,75,77,81,82,83
14 (Carboxylic Acids & Derivatives: 14.1-14.2)	1,3,5,7,13,29,31,35,47,49,51,52,53,55,59,63,65,71,72,73,74,75,77,81,83
15 (Amines & Amides: 15.1, 15.3)	2,4,5,7a,19,21,22,23a,c,25a,c,26b,d,33,37,47,53,55,61
16 (Carbohydrates)	3,5,7,13,23,25,27,32,33,45,51,55,57,61,78,83,84,85,86
17 (Lipids & their Function: All except 17.5)	11,13,21,23,24,39,41,43,44,49,57,58,61,62,67,68,69,77,81,99,100,103,104
WED, 25 MAR	EXAM 2 6:15 – 8:15 PM
18 (Protein Structure & Function)	1,2,3,5,6,23,25,28,32,33,34,36,37,39,43,45,46,48,52,53,55,59,60,63,65
19 (Enzymes: 19.1-19.7, 19.11)	3,5,7,8,10,17,19,23,25,29,30,32,39,40,46,57,59,61,91,95,97
20 (Intro to Molecular Genetics: 20.1-20.6)	1,3,5,7,9,10,17,19,20,29,31,33,36,37,38,39,40,43,44,45,46,49,50,57,61,65,66,67,70,71
21 (Carbohydrate Metabolism: all except 21.5)	3,5,6,10,19,22,25,35,36,37,38,39,40,45,55,56,66,67,77,81,87,89
22 (Aerobic Respiration: all except 22.5)	1,4,7,11,12,13,14,24,25,26,29,30,31,33,35,36,37,40,41,42,43,44,45,46,49,53,71,72,73,74,77,79,80,81,85a,c,88,91
WED, 22 APR	EXAM 3 6:15 – 8:15 PM
23 (Fatty Acid Metabolism:23.1-23.2, 23.4)	1,12,19,20,22,23,26,31,40,43
	FINAL EXAM (cumulative)