

CHEM 026/028: OUTLINE OF ORGANIC AND BIOCHEMISTRY

Spring 2022

Lecture A: CHEM 026 (10089) & CHEM 028 (10090), M,W,F 8:30AM-9:20AM, E105 Innovation

Lecture B: CHEM 026 (10539) & CHEM 028 (10556), T,Th 8:30AM-9:45AM, E102 Innovation

GENERAL INFORMATION: (see also the CHEM 026 BlackBoard page)

Instructor: Steve Flemer **email:** sflemer@uvm.edu

Office: 331 Innovation

Office Hours:

Mon: 9:30-10:30AM	In-person: 211 Discovery - lab room
Tue: 10:00-11:00AM	In-person 211 Discovery - lab room
Wed: 9:30-10:30AM	In-person 211 Discovery - lab room
Thurs: 10:00-11:00AM	Remote on Teams: https://go.uvm.edu/wng7r
Fri: 9:30-10:30AM	Remote on Teams: https://go.uvm.edu/olwa6

Lecture: The lecture will primarily be used to cover new material. Included in this syllabus is a tentative schedule covering the class material and problem sets to be worked from each Unit of Study.

Exams: Three 2-hour exams are given on Wednesday nights from 6:40-8:40 PM.

	Lecture A (MWF)	Lecture B (TTh)
Exam 1	Wed, Feb. 23; 105 Innovation	Wed, Feb. 23; 102 Innovation
Exam 2	Wed, Mar. 23; 105 Innovation	Wed, Mar. 23; 102 Innovation
Exam 3	Wed, Apr. 20; 105 Innovation	Wed, Apr. 20; 102 Innovation
Final Exam	Monday, May 9; 7:30-10:15AM; 105 Innovation	Tuesday, May 10; 7:30-10:15AM; 102 Innovation

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 be holding Exam Review Sessions the Tuesday evenings prior to impending exams. Weekly SI sessions will also be starting shortly after the beginning of classes. Firm dates for these Review Sessions and SI sessions will be announced.

Exam 1 Review Session	Tuesday, Feb. 22; L207 Lafayette; 6:00 – 8:00PM
Exam 2 Review Session	Tuesday, Mar. 22; L207 Lafayette; 6:00 – 8:00PM
Exam 3 Review Session	Tuesday, Apr. 19; L207 Lafayette; 6:00 – 8:00PM

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

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 CHEM 026 BlackBoard page and follow the instructions. These quizzes are open-book, but must be completed independently. Weekly quizzes will be available to take until midnight of the Sunday prior to a new week of classes. A skipped or a missed quiz is given a zero.

REQUIRED COURSE MATERIALS:

Text: There is no textbook for the course. Each unit of study has a corresponding folder in the Course Materials section of the course’s BlackBoard site, within which are educational notes for that unit. These notes, while helpful for following along with the material, should not be thought of as comprehensive. Your own written class notes should be the basic core of your study materials.

Lab Manual: Available for download from the class’ BlackBoard site.

Bound Laboratory Notebook: Available at the UVM Bookstore. Required for recording data.

(Note: the last two items are not required for CHEM 028 students)

Inclusion Statement: I want everyone to be successful and fulfilled in this course. As such, I do not play favorites and treat every student with the same respect we all deserve from one another regardless of who you are, what you look like, and what your beliefs are. We are here to master organic and biochemistry, and I will do everything in my power toward your success in the course.

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:

(labs start 2 weeks after classes begin)

Time and Room: See your class course schedule as to your assignments.

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.

Online Lab Safety Quiz: Prior to the lab sessions beginning, students must read through Lab Safety documentation and take a one-time online quiz before being allowed into their lab session. Just click the “Lab Safety” link on the left hand side of the CHEM 026 BlackBoard page and follow the instructions. Students must score an 80 or better on the quiz to be admitted to lab. If you choose, you may take the Lab Safety quiz as many times as you want in order to maximize this score, as it will also count as your first lab quiz grade.

Lab Safety considerations & Gear: OSHA approved safety glasses or goggles (available at the UVM Bookstore) must be worn by everyone once any experimentation has started in any area of a lab room. Only shoes that cover the toes are permitted in the lab. Sandals and open-toed shoes are not permitted.

Laboratory Schedule

<u>Week of:</u>	<u>Experiment Description</u>
31 Jan – Feb 2	CHECK-IN and Fractional Distillation of Wine
7 - 9 Feb	Molecular Models
14-16 Feb	Isolation of Naproxen
21 - 23 Feb	NO LABS (PRESIDENT’S DAY ON MON)
28 Feb – Mar 2	NO LABS (TOWN MEETING DAY ON TUES)
7 - 11 Mar	NO LABS (SPRING BREAK)
14 - 16 Mar	Dehydration of 2-methyl-2-butanol
21 - 23 Mar	TLC Analysis of Analgesics
28 - 30 Mar	Synthesis of Esters
4 - 6 Apr	Tollen’s & Benedict’s tests
11 - 13 Apr	Polymers
18 - 22 Apr	Isolation and Analysis of a Protein
25 - 27 Apr	Fats, Oils, & Soaps

TENTATIVE LECTURE SCHEDULE

UNIT 1 (Introduction to Organic Chemistry – Saturated Hydrocarbons)

UNIT 2 (The Unsaturated Hydrocarbons)

UNIT 3 (Alcohols, Ethers, & Thiols)

Exam 1 (Wednesday, Feb. 23; 6:40-8:40PM)

UNIT 4 (Aldehydes & Ketones)

UNIT 5 (Carboxylic Acids & Esters)

UNIT 6 (Amines & Amides)

Exam 2 (Wednesday, Mar. 23; 6:40-8:40PM)

UNIT 7 (Carbohydrates)

UNIT 8 (Lipids)

UNIT 9 (Proteins)

UNIT 10 (Enzymes)

Exam 3 (Wednesday, Apr. 20; 6:40-8:40PM)

UNIT 11 (Genetics)

UNIT 12 (Anaerobic Energy Production)

UNIT 13 (Aerobic Energy Production)

UNIT 14 (Fatty Acid Energy Production)

Final Exam (Cumulative)