

CHEM 3B, Spring 2021 Course Syllabus

Reedley College, SCCC

Course Info:

Course #: 56608 – Lecture (online); Lab W 8:00-10:50am in PHY-82; Quizzes and exams in-person (see course schedule)

Instructor and Contact Information:

Instructor: Kurtis Thiesen
Office: ANX 5 (Faculty Annex)
Office Hours: Mon, Tues, Thurs 9-9:50am (Zoom); Wed 7-7:50am (Zoom); Fri 8-8:50am (email)
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Prerequisites

To become enrolled in CHEM 3B students need to have passed CHEM 3A (with a grade of C or better).

Required Items

Textbook: Chemistry: Introduction to Organic and Biochemistry, 8th edition by Bettelheim et. al. OR the 10th or 11th edition of Introduction to General, Organic, and Biochemistry, by Bettelheim et. al. (which is the same textbook as the 8th edition OB book, it just contains additional introductory chemistry information at the beginning, i.e. CHEM 3A material)

Homework: Suggested homework problems for each chapter will be given. Mastery of these problems is vital to your success in this course.

Lab Text: Laboratory experiments will be uploaded to Canvas in pdf format; you must print these experiments out and bring them with you to class.

Scientific calculator: Any scientific calculator is acceptable, but graphing/programmable calculators and cell phone calculators are NOT allowed during exams and quizzes.

Safety Goggles & Lab coat: You will not be allowed to participate in lab experiments without your safety goggles and a lab coat. Approved safety goggles and lab coats are available for purchase in the bookstore. Gloves will be provided.

Scantron Form: #882-E, you'll need one of these for each lecture exam we take in class.

Course Description

Introduction to the basic concepts of organic and biological chemistry. A study of the structure and behavior of organic and biochemical compounds, including metabolism, and regulation. Topics such as bonding, saturated and unsaturated hydrocarbons, the chemistry of organic functional groups, and the properties of important biological compounds such as carbohydrates, fats, and proteins are covered. Primarily for students in health-oriented professions.

Additional Resources:

Free tutoring is available in the Tutorial Center (Library, Room LRC 111). The link to the RC Tutorial Center is as follows: <http://www.reedleycollege.edu/index.aspx?page=128>

Important Dates:

Sunday (1/31) - Last day to drop in order to avoid a "W" (last day to drop in-person is Friday, 1/29)
Friday (3/12) - Last day to drop with a "W" (a letter grade will be assigned after this date)

Course Policies:

Lecture Attendance:

- Lectures will be posted on Canvas; lecture exams will be given in-person (see course schedule).

Lab Attendance:

- In order to be counted as present for a lab you must arrive on time, participate in the experiment or activity, and, unless otherwise instructed, stay the entire lab period. In other words, if you arrive late, leave early, or do not participate in lab activities, you may be counted absent and given a zero on your lab exercise. Showing up late for lab is a safety risk for you and others, as specific safety concerns are generally addressed at the beginning of lab. Lab quizzes will be given in-person (see course schedule)
- **Important Note: If a student misses more than 2 laboratory sessions they will be dropped from the course (if these absences occur before the final “drop” deadline), or receive a failing grade in the course (if their 3rd absence occurs after the final “drop” deadline etc.).**

Canvas:

- Canvas will be used extensively in this course, and students will be expected to check Canvas regularly for updates; lecture videos, PowerPoints and other important documents (for both lecture and lab) will be uploaded to Canvas regularly.

Reading:

- Listed on the course schedule is the associated reading for each chapter. The course expectation is that you will have completed the readings before coming to class on the days those topics are discussed etc.

Missed exams, quizzes and labs:

- Make-up exams and quizzes are generally not given (exceptions are very unlikely), and as such, a missed exam will result in a score of “0” on the exam etc.
- Official RC Policy concerning absences - “There are no institutionally approved excused absences for any reason. Only your instructor may excuse an absence. Absences caused by personal engagements, transportation delays and business affairs will not be excused, nor will absences from class to complete registration or add/drop activities...Makeup work must be completed to the satisfaction of the instructor of the course. Being excused from class does not relieve the student from the responsibility for completing all assignments.”

Cheating:

- Cheating is the act or attempted act of taking an examination or performing an assigned, evaluated task in a fraudulent or deceptive manner, such as having improper access to answers in an attempt to gain an unearned academic advantage. Cheating may include, but is not limited to, copying from another’s work, supplying one’s work to another, giving or receiving copies of examinations without an instructor’s permission, using or displaying notes or devices inappropriate to the conditions of an examination, allowing someone other than the officially enrolled student to represent the student, or failing to disclose research results completely.
- You are encouraged to work together on labs. However, ***your individual work must be evident***. Do not copy work or allow others to copy from your work. Instances of confirmed cheating will generally result in failure and be referred to the Dean for further action.
- Electronic devices such as cell phones, tablets, etc. are not allowed during exams and must be put away in a backpack or purse; confirmed use of these devices constitutes cheating.
- As an alternative to automatic failure in the course, at the instructor’s discretion, you may instead be assigned negative credit for the amount of points possible on the assignment. In this instance, the score would not be allowed to be dropped as your lowest score.
- RC Academic Dishonesty Statement: *“Because cheating, plagiarism, and collusion in dishonest activities erode the integrity of the college, each student is expected to exert an entirely honest effort in all academic endeavors. Academic dishonesty in any form is a very serious offense and will incur serious consequences.”*

Plagiarism:

- Plagiarism is a specific form of cheating: the use of another’s words or ideas without identifying them as such or giving credit to the source. One of the most common forms of this is copying information from a website and pasting it into your document. Instances of plagiarism will be treated like any other form of cheating.

Laboratory Safety:

- On the first day of lab we will cover various safety rules. If you do not follow these rules you will be asked to leave, and you may be dropped from the course. For example, if you refuse to wear safety glasses, you would be immediately and permanently removed from the course for your own protection and those around you.

Disabled Students:

- It is our policy not to discriminate against any student. If you suspect that you have any type of physical disability or learning disability that is relevant to your performance in the course, I'll encourage you to come talk to me about it right away (though you're not required to) so that I can support you to the best of my ability. Additionally, it may be helpful for you to stop by the disabled student services office and talk with staff members there to determine what kinds of services and support are available to you to help you succeed in this and other courses. SCCCD policy: *If you have a verified need for an academic accommodation or materials in alternate media (i.e., Braille, large print, electronic text, etc.) per the Americans with Disabilities Act (ADA) or Section 504 of the Rehabilitation Act, please contact the Disabled Student Services as soon as possible.*

Electronic Devices:

- Use of electronic devices (laptop, tablet, etc.) in the classroom is acceptable as long as it is not a distraction to the instructor or to other students. In lab, they must also be used in such a way as to not cause a safety risk (e.g. do not handle chemicals and then use your computer without removing your gloves and/or washing your hands). Electronic devices of any kind are NEVER permitted during exams.

Classroom Visitors:

- In accordance with Reedley College policy, only students currently enrolled in the course will be allowed in the classroom during lab and lecture.

Grading: Your course grade will be calculated as follows:

Lab Reports	15%
Lab Quizzes	12%
Exams	48.75% (3 unit exams worth 16.25% each)
Final exam	16.25%
Homework	8% (possibility for 5% XC)

***Grading Scale:**

A	90-100%
B	80-89%
C	70-79%
D	60-69%
F	0-59%

*The instructor reserves the right to alter grade ranges to accommodate borderline grades.

Lab Reports: Expectations about lab reports will be discussed during our first in-person lab.

Lab Quizzes: There will be 3 lab quizzes during the term that are meant to examine whether you've gained a thorough understanding of relevant lab theory, the techniques associated with lab experimentation, and, where appropriate, how these lab experiments are related to lecture topics.

Exams: There will be 3 exams and a final; all exams have equal weight, and the final exam is NOT comprehensive. Exams may be multiple choice, essay, short answer, or a mixture of these. If you need to bring a calculator to the exams, scientific calculators are ok, but graphing calculators (or any other electronic devices) are NOT allowed. Make up exams will be given only in exceptional circumstances and only by prior arrangement with the instructor.

Homework: Before we begin a new chapter, I will post suggested HW problems; it is HIGHLY recommended that you complete these practice problems in order to prepare yourself for the exams, and in order to receive HW credit (see grading scheme above). HW will be collected before each exam (e.g. Exam #1 will cover chapters 1-5, and the corresponding HW for these chapters will be collected on the day of the exam); there will be 4 HW collections (before each of the 3 unit exams, and before the final exam), making each HW collection worth 2.5% of your overall grade. Grading of these HW assignments is qualitative, and will be discussed on the first day of class. It is possible to receive an additional 5% (1.25% per HW collection) added to your overall course total. This extra credit opportunity will be discussed on the first day of class.

Student Learning Outcomes for CHEM 3B:

(Specify the learning skills the student demonstrates through completing the course and link critical thinking skills to specific course content and objectives.)

Upon completion of this course, students will be able to:

- A. demonstrate structural formula--name conversions for less complex organic and biochemical compounds.
- B. describe physical properties of organic compounds.
- C. predict products of representative chemical reactions.
- D. explain basic concepts of biomolecules, such as carbohydrates, lipids, proteins, enzymes, and nucleic acids.
- E. safely demonstrate laboratory experiments involving basic organic chemistry and biochemical themes.

Course Objectives for CHEM 3B:

(Specify major objectives in terms of the observable knowledge and/or skills to be attained.)

In the process of completing this course, students will:

- A. assess the process, products, and coenzymes in metabolic pathways.
- B. describe different organic functional groups and major biological categories of compounds.
- C. use (with safe procedures) laboratory equipment for simple organic chemistry and biochemical experiments.
- D. describe and discuss the procedures used in basic organic chemistry and biochemical experiments

COVID-19 disclaimers:

The link below will direct students to their SCCCD/College Portal. If they are already signed into the portal, it will open up the student safety agreement page. If they are not signed into the SCCCD Portal, it will open up the portal's sign in page and once a student signs in, it will then open the student safety agreement page. All students reporting for in-person classes must review and acknowledge the COVID-19 Safety Agreement before they come on campus to attend your class next week.

Here is the link: <https://covidsafety.sccd.edu/>

All the student has to do is click at the bottom to acknowledge that they've read and will comply with the agreement. A digital copy of the agreement will then be archived in a searchable database.

Also, SCCCD policy requires anyone coming onto campus in-person (students, faculty, and staff) to adhere to the following safety protocols:

- Go to the following link (https://sccd.az1.qualtrics.com/jfe/form/SV_3IO880HybZg7ajX) and complete the self-assessment before reporting to campus each day.
- Facial Coverings: Students and instructors are required to wear snug-fitting facial coverings that cover the nose and mouth when entering, exiting, and throughout class. Students who have a documented medical need can use face shields as an alternative.
- Handwashing: Students are required to wash their hands or use hand sanitizer prior to class. Hand sanitizer is available in the classroom for their use.
- Social Distancing: Students are required to stay at least 6 feet apart while on campus. In the classroom, maintain social distance and sit in seats as designated by the seating chart.
- Classroom Cleaning: Students will wipe down their area with disinfectant wipes or other materials provided for that purpose in each classroom.

Additional disclaimers:

If a student becomes ill for an extended period of time during the semester, and is unable to attend in-person meetings (i.e. lecture exams, labs or lab quizzes), it may be difficult for the student to proceed in the course, and a course drop or an "incomplete" (if the student qualifies) may be unavoidable. To accommodate a situation such as this, the following accommodations will be in-place (for our 3B course...not necessarily for other RC courses).

- A student will be allowed to miss a maximum of 2 labs for Covid-related reasons. These absences must be accompanied by written verification from a certified health professional, and will be further verified by the instructor. In an event such as the one described above, the student's course lab grade will simply be determined out of a lesser total # of points (i.e. make up labs cannot be given...we simply have no other times/opportunities to make up labs per our schedule). If during this COVID-related sickness period, the student misses an exam, here again, no make-up exam will be given. The student's overall exam grade will simply be calculated based upon the number of completed exams (i.e. the relative % values/worth for the student's completed exams would be scaled up to make up for the missed exam). Only one missed exam (for Covid-related reasons) will be allowed.
- If the student (in the scenario above) misses more than 2 labs and/or 1 exam, a drop or incomplete will likely be unavoidable.

Note: If absences are not Covid-related, normal penalties (see course policies above) will be assessed.

Tentative Schedule:

Week	Date	Lecture topics	Text section	Lab experiment
1	1/11	M Syllabus, Intro. to Chem. 3B		
1	1/13	W Intro. to Organic Chemistry + Review Topics (part I)	Ch 1 + Review	Intro. to Organic Chemistry + Review Topics (part II) – (Lecture posted on Canvas)
2	1/18	M Martin Luther King Jr. Day Holiday		
2	1/20	W Chapter 2 Alkanes	Ch 2.1-2.5	Experiment 21 Structure in Organic Compounds (group 1) – online
3	1/25	M Chapter 2 Alkanes (part II)	Ch 2.6-2.11	
3	1/27	W Chapter 3 Alkenes and Alkynes	Ch 3.1-3.5	Experiment 21 Structure in Organic Compounds (group 2) – online
4	2/1	M Chapter 4 Benzene and Its Derivatives	Ch 4.1-4.4	
4	2/3	W Chapter 5 Alcohols, Ethers, and Thiols	Ch 5.1-5.5	Experiment 30 Aspirin Synthesis (group 1)
5	2/8	M Chapter 6 Chirality (part I)	Ch 6.1-6.2	
5	2/10	W Chapter 6 Chirality (part II)	Ch 6.1-6.2	Experiment 30 Aspirin Synthesis (group 2)
6	2/15	M Washington Day Holiday		
6	2/17	W Chapter 8 Amines	Ch 8.1-8.5	Lab Quiz #1 (Experiments 21, 30) – Everyone/8AM (SOC-32)
7	2/22	M Exam #1 (Chapters 1-5) – Everyone/8AM (SOC-32)		
7	2/24	W Chapter 9 Aldehydes and Ketones (part I)	Ch 9.1-9.3	Experiment 22 Stereochemistry (group 1)
8	3/1	M Chapter 9 Aldehydes and Ketones (part II)	Ch 9.4-9.5	
8	3/3	W Chapter 10 Carboxylic Acids	Ch 10.1-10.5	Experiment 22 Stereochemistry (group 2)
9	3/8	M Chapter 11 Carboxylic Anhydrides, Esters, and Amides	Ch 11.1-4, 11.6	
9	3/10	W Chapter 7 Acids and Bases (selected topics)	Ch 7.1-7.11	Experiment 31 Caffeine from Tea (group 1)
10	3/15	M Chapter 12 Carbohydrates	Ch 12.1-12.3	
10	3/17	W Chapter 12 Carbohydrates cont'd	Ch 12.4-12.5	Experiment 31 Caffeine from Tea (group 2)
11	3/22	M Exam #2 (Chapters 6-11) – Everyone/8AM (SOC-32)		
11	3/24	W Chapter 13 Lipids	Ch 13.1-13.6	Lab Quiz #2 (Experiments 22, 31) – Everyone/8AM (SOC-32)
N/A – No Classes Held During Spring Break				
12	4/5	M Chapter 13 Lipids cont'd	Ch 13.7-13.11	
12	4/7	W Chapter 14 Proteins	Ch 14.1-14.7	Experiment 40 Casein (group 1)
13	4/12	M Chapter 14 Proteins cont'd	Ch 14.8-14.13	
13	4/14	W Chapter 15 Enzymes	Ch 15.1-15.4	Experiment 40 Casein (group 2)
14	4/19	M Exam #3 (Chapters 12-14) – Everyone/8AM (SOC-32)		
14	4/21	W Problem-solving session		Problem-solving session
15	4/26	M Chapter 15 Enzymes cont'd	Ch 15.5-15.8	
15	4/28	W Chapter 22 Nutrition	Ch 22.1-22.6	Experiment 47 Quantitative Analysis of Vitamin C in Foods (group 1)
16	5/3	M Chapter 20 Specific Catabolic Pathways	Ch 20.1-20.3	
16	5/5	W Chapter 17 Nucleotides, Nucleic Acids	Ch 17.1-17.3	Experiment 47 Quantitative Analysis of Vitamin C in Foods (group 2)
17	5/10	M Chapter 17 Nucleotides, Nucleic Acids cont'd	Ch 17.4-17.6	
17	5/12	W Catch up/Review		Lab Quiz #3 (Experiments 40, 47) – Everyone/8AM (SOC-32)
18	5/17	M Final Exam 8:00-9:50am (Chapters 15, 22, 20, 17) – Everyone/8AM (SOC-32)		