

Chemistry 2081, Section 001
Chemistry for the Life Sciences III
Fall 2022
MWF 11:15 – 12:05pm, 230 Bruininks

Instructor: Dr. Angela Perkins

Office: 425 Smith Hall

Email: aperkins@umn.edu (best way to contact me)

Website: All class information will be posted on the course website on Canvas - access through canvas.umn.edu

Office Hours: See Canvas Site as dates/times will be posted there. All office hours will be virtual via zoom. The zoom link can be found on the Canvas page. If office hours don't work for you or you want to be sure to chat one-on-one, please email to set up an appointment.

Problem Sessions: There will be 3 problem sessions that will be held every week by our course Lecture TA, Serena DiLiberti. Attendance at these sessions is entirely voluntary, but the TA in charge of these sessions will come with a prepared problem set and will actively work problems with you. There will also be time at the end of these sessions for you to ask questions about problems that are covered in lecture or things you are seeing in the Achieve homework. These sessions will be held on Wednesdays from 4-5pm, Thursdays from 1-2pm or Thursdays from 4-5pm. All three sessions will cover the same problem set on the same material. Answers to the problem sets will be posted after the last session on Thursday afternoon. Locations of these problem sessions will be available on the Canvas site.

Materials: *Organic Chemistry: Principles and Mechanisms* by Joel Karty, 3rd Ed. (required); Access to Online Homework (Achieve, Required); Solutions Manual to accompany the textbook (very highly recommended); Molecular Model kit (very highly recommended)

General Course Information: Chemistry 2081 with accompanying 2085 lab is the third semester in a three-semester sequence of courses designed to provide a strong chemistry background for students pursuing degrees and careers in the life sciences. Upon completion of these courses, the desired outcome is that the student (1) can identify, define and solve problems; (2) can locate and critically evaluate information; (3) has mastered a body of knowledge and a mode of inquiry; (4) can communicate effectively; and (5) has acquired the skills for effective and life-long learning.

Prerequisite Material: To register/remained registered in this course, you must meet all of the following criteria:

1. Registration in both 2081 (lecture) and 2085 (lab) during the same semester is required
2. Completed with a C- or better in CHEM 1082 lecture.
3. If you do not meet these criteria, you should report your situation to the staff in Smith 115 (624-0026) immediately. They handle all registration issues pertaining to this course.

Calculating Final Grades: Your final grades will be calculated based on five 50-minute exams, the final exam, the online assignments in Achieve and on a "My Favorite Drug" project.

Final Grade:	Five exams (#1 – 65 pts, #2-5 – 85 pts each)	405 points
	Achieve Homework	85 points
	"My Favorite Drug" Project	50 points
	Final Exam	<u>160 points</u>
	Total	700 points

Grade ranges for this course will be assigned as follows: A 89.0-100% (623-700pts), A- 85.0-88.9% (595-622pts); B+ 82.0-84.9% (574-594pts), B 78.0-81.9% (546-573pts) ~~75-84%~~, B- 75.0-77.9% (525-545pts); C+ 70.0-74.9% (490-524pts), C 65.0-69.9% (455-489pts), C- 60.0-64.9% (420-454pts); D's: 50-59% (350-419pts).

Historically, using these ranges, the top half (50%) of the class received some type of A or B. ***The grade lines (percentage cutoffs) above may be lowered if warranted by exam scores, but they will not be raised.***

Exams: Five exams (50 minutes each) will be given on the dates provided below and on the course schedule. The final exam is 2 hours. All exams will start promptly at the time listed so do not be late as you will not be granted additional time. You must have your student ID (or other form of ID) with you to take the exams. All exams will be closed book and closed notes and no other study aids are permitted. You will be assigned a room to take your exams because not all people will be able to take their exams in our regularly scheduled room. Please see the Canvas site for your room assignments.

Exam I	Friday, September 22 nd 11:15am-12:05pm
Exam II	Friday, October 6 th 11:15am-12:05pm
Exam III	Friday, October 27 th 11:15am-12:05pm
Exam IV	Friday, November 17 th 11:15am-12:05pm
Exam V	Friday, December 8 th 11:15am-12:05pm
Final Exam:	Wednesday, December 20 th , 1:30pm – 3:30pm

All examinations must be taken at the times indicated above. Absolutely NO late make-up exams will be given. See below on policy for exam absences.

In the case of a University sponsored activity that will require the student to be out of town, it may be possible to take the exam with the coach, team academic advisor, or another instructor as the proctor. Please see the instructor about such conflicts *as soon as possible* so that arrangements can be made.

Achieve Homework Assignments: These will be due online over the course of the semester. These assignments will cover the material that we are covering in class. You will need to have an active Achieve account to complete these assignments. All graded assignments will be listed and submitted on this website. These assignments are for your benefit and are designed to help you keep pace with the material that we are covering in lecture. Obtaining a 90% overall by the end of the semester on the Achieve Homework will give you full credit at the end of the semester. At the end of the semester if your overall Achieve score is below 90%, the homework points will be calculated based on your percentage in Achieve. This means that if you end with a 70%, you will receive 70% of the homework points.

Late Homework: All Achieve assignments are due at 11:59pm on the dates (Thursdays) listed on the schedule. While every assignment has a due date set based on when we have completed the chapters being covered, Achieve will allow you work on the assignment for 14 additional days without late penalty if you did not get it finished by the due date. After 14 days or after the last day of the semester (12/13), the assignment will be locked and no further work will be able to be completed towards grading. I am aware the life happens so this is being done to allow you to complete your homework if you get a little behind or have an emergency situation without needing to contact me. **The last day to complete any work on your online homework for points is Wednesday, December 13th at 11:59pm.** This corresponds to the last day of classes.

“My Favorite Prescription Drug” Project: You will be completing a project where you will be selecting your “favorite” prescription drug and researching it. Over the course of the semester, you will be turning in 3 different parts of the project. You can find more information on the project and the due dates on the course Canvas.

Policy on Exam Absences: A student can be excused from one midterm exam for a true emergency, serious illness, or University sponsored activity. The student should contact the instructor as soon as circumstances allow and appropriate documentation must be provided (Dr’s note, note from coach, etc). If the circumstances are deemed as appropriate for missing the exam, the unweighted average score of all other midterm exams and of the final exam in the course will be used in place of the missed exam. If circumstances lead to a student missing more than one midterm exam, the student should immediately schedule a meeting with the instructor to discuss any available options. **There will be no late makeup exams given – NO EXCEPTIONS!!**

The final exam can only be missed due to illness or family emergency and documentation again must be provided. However, in cases where the final exam is missed an incomplete ("I") final grade will be assigned according to the policy outlined below.

Policy on an Incomplete (I) Grade: An incomplete grade will be assigned only when the final exam is not taken **AND** the work completed to that date is satisfactory (C- or better). An incomplete grade can only be corrected by taking a regularly scheduled 2081 final exam in the next available semester. If the final exam is not taken and/or the work completed to that date is not satisfactory, and **F** grad or an **N** grade will be given depending on whether the course is taken under the A-F or S-N grading system. **The "Agreement for Making Up and I Grade" form must be completed and signed by the Instructor, student, and a third party within 48 hours after the final exam.**

How to do well in this course:

- **Be prepared for lecture.** Review the material that is going to be covered in class before you come to class. It helps to have a basic knowledge of what is being discussed in class and can help you tailor questions for material you don't understand.
- **Participate in Class.** Ask questions if there is something that you don't understand.
- **Study the material covered in class.** It is helpful to reread the material covered in class while the material is still fresh in your mind. If there is something you do not understand, you should ask for help as soon as possible.
- **Work out the assigned problems.** Chemistry can only be mastered by applying concepts learned and the best way to do this is to work problems. Make sure you understand the concepts presented in the chapter and then attempt the problems related to these concepts. The best way to work the problems is without the aid of the solutions manual.
- **Participate in a study group.** Study groups are an effective way of succeeding in this class. Forming a group of 2-3 other students from the class can be a great tool for understanding what you have learned and discover with which concepts you are still struggling. Do not go to the study group hoping to learn the material you have not studied, rather complete your studying and take questions to the study group.
- **Get help early.** This class moves very quickly and we cover a lot of material each week, so if you get lost you need to be proactive about getting the help that you need, whether that means going to the tutor room or coming to office hours with questions.

Scholastic Dishonesty Policy: "Scholastic dishonesty is any act that violates the rights of another student with respect to academic work or that involves misrepresentation of a student's own work. Scholastic dishonesty includes (but is not limited to) cheating on assignments or examinations, plagiarizing (misrepresenting as one's own, anything done by another), submitting the same or substantially similar papers (or creative work) for more than one course without consent of all instructors concerned, depriving another of necessary course materials, and sabotaging another's work." – *Classroom Grading and Examination Procedures*. College of Liberal Arts.

A student guilty of scholastic dishonesty will be awarded a grade of zero (0) for the exam involved. Additionally, the incident will be reported to the Office for Community Standards (<https://communitystandards.umn.edu/>) and to the college in which the student is enrolled.

As a student at the University you are expected to adhere to the Board of Regents Policy: Student Conduct Code. To review this policy see: http://regents.umn.edu/sites/regents.umn.edu/files/policies/Code_of_Conduct.pdf

Tutor Hours: The schedule can be found on the course Canvas site. These hours are limited so come prepared with direct questions. A reminder that the purpose of a tutor is to help you learn, not simply give you answers to questions or problems. The tutors are instructed, in fact, to ask YOU questions that will help you understand what concept you are missing that is preventing you from solving a particular problem. Self-discovery will enhance the depth and retention of your knowledge.

Private Tutors: The department also maintains a list of people who are available for private tutoring. This list can be obtained from 115 Smith Hall during business hours or you can find it on the course website. The cost/hour for a private tutor is negotiated between you (the student) and the tutor.

Problems: For each chapter a series of problems have been chosen from within and at the end of each chapter. These problems can be found on the course website. These problems will be similar in concept and difficulty to the ones that you will see on the exams. These problems **will not be** collected but are to help you understand the concepts and practice the material, so feel free to do as many or few as needed to understand the concepts presented in the chapters and in class. I generally choose a large number of problems because the best way to learn and understand the concepts is to work problems and also because some students appreciate a lot of examples. Again, do as many or as few as you need to understand the concepts.

Policy Statements:

Overlapping and Back-to-Back Courses: Enrolling in overlapping or back-to-back courses that do not allow for enough travel time to arrive at our class meetings on time is prohibited. For more information see:

<http://policy.umn.edu/Policies/Education/Education/Overlappingclasses.html>

Student Mental Health and Stress Management: As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. University of Minnesota services are available to assist you with addressing these and other concerns you may be experiencing. You can learn more about the broad range of confidential mental health services available on campus via <http://www.mentalhealth.umn.edu/>.

Teaching and Learning: The materials provided in this course are intended only for the students officially enrolled in this section and are to be used to learn and practice the course material. Disseminating class notes, videos, exams, etc.... beyond the classroom community or accepting compensation (in the form of cash or trade, such as access to study website) undermines instructor interests in their intellectual property while not substantially furthering instructor and student interests in effective learning. Such actions violate shared norms and standards of the academic community and are not allowed. For additional information please see <http://policy.umn.edu/Policies/Education/Education/Studentresp.html>

Disability Resource Center: Students with special needs should contact the Disability Resource Center (<https://diversity.umn.edu/disability/>), which will provide a letter to share with the instructor on how those needs shall be accommodated.

Sexual Harassment:

<http://regents.umn.edu/sites/regents.umn.edu/files/policies/SexHarassment.pdf>

Equity, Diversity and Equal Opportunity:

http://regents.umn.edu/sites/regents.umn.edu/files/policies/Equity_Diversity_EO_AA.pdf

**This syllabus is available in alternative formats upon request.
Please contact instructor**

Lecture Schedule:

Week (dates)	Material Coverage	Monday	Wednesday	Friday
1 (9/4-9/8)	IR Spectroscopy Ch. 16.1-16.8	No Class	Review, 16.1-16.3	16.4-16.8
2 (9/11-9/15)	NMR Spectroscopy & Mass Spectrometry Ch 17.1-17.10, 17.12, 17.14, 15.1-15.5	17.1-17.7	17.8-17.10, 17.12	15.1-15.5, 17.14
3 (9/18-9/22)	Electrophilic Addition 1 Ch. 12.1-12.12	12.1-12.5	12.6-12.9	Exam I
4 (9/25-9/29)	Electrophilic Addition 2 Ch. 13.1-13.9	12.10-12.12	13.1-13.6	13.7-13.9
5 (10/2-10/6)	Conjugation/Aromaticity & UV/Vis Ch. 14.1-14.7, 14.9, 16.9-16.10	14.1-14.7	14.9, 16.9-16.10	Exam II
6 (10/9-10/13)	Nucleophilic Addition & Organometallics Ch. D.3, 18.1-18.8	D3, 18.1-18.2	18.3-18.5	18.6-18.8
7 (10/16-10/20)	Nucleophilic Addition to C=O Ch 18.9-18.12, 19.1-19.6	18.9-18.12	19.1-19.2	19.3-19.6
8 (10/23-10/27)	Nucleophilic Addition (weak nucleophiles) Ch. 19.7, 19.15, 10.6	19.7, 19.15	10.6, 19.8	Exam III
9 (10/30-11/3)	Enols/Enolates & Reduction/Oxidation Ch. 10.6, 19.8-19.14, 20.1, 20.3-20.6	19.9-19.11	19.12-19.13, 20.1	20.3-20.6
10 (11/6-11/10)	Nucleophilic Addition- Elimination (strong nuc) Ch 22.1-22.8	22.1-22.4	22.5-22.8	23.1-23.4
11 (11/13-11/17)	Nucleophilic Addition- Elimination (weak nuc) Ch 23.1-23.7, 23.9-23.10	23.5-23.7	23.9-23.10	Exam IV
12 (11/20-11/24)	Electrophilic Aromatic Substitution Ch 24.1-24.8, 23.9-23.10	24.1-24.4	24.5-24.7	No Class Thanksgiving Break

13 (11/27-12/1)	EAS on Substituted Benzene Rings Ch. B.3, 25.1-25.7	24.8-24.9, B.3	25.1-25.3	24.4-25.7
14 (12/4-12/8)	EAS on Substituted Rings Ch. 25.9-25.12	25.9-25.10	25.11-25.12	Exam V
15 (12/11-12/15)	No new material	Q&A for Final Exam		No CLASSES
12/20 (Wednesday)	Final Exam (1:300m-3:30pm) Material: Cumulative			