# CHEMISTRY 2710 (CHEM 301 AT UNM)

## ORGANIC CHEMISTRY I

## FALL 2017

## I. General Information


Instructor: Clarissa Sorensen-Unruh, M.S. Section: 101 (10:30-11:45am TR in MS 301)
Office Hours+: 9am-12pm M, 9-10am T, 10:30am-11:30am W
Office Number: Main Campus, JS 312B Phone #: 505-224-4000 (ext. 50078)
Email: csorensen@cnm.edu Website: http://learn.cnm.edu
Twitter Handle: @RissaChem YouTube Channel: https://www.youtube.com/user/csoren1


+**Office hours are subject to change. Other office hours may be scheduled by appointment.**

## II. Course Description

Introduces study of modern organic chemistry including bonding theory, structure and reactivity, physical properties and the reactions of organic compounds. Systematic examination of organic compounds based on their functional groups, including their synthesis and characterization by instrumental methods. A good background in Chemistry provides the toolkit and training needed to understand and solve some of the significant challenges we face in the fields of energy, environment and medicine. This section employs collaborative learning – in class, you will work in teams on hard problems designed to help you apply the concepts you are learning to real world problems. To succeed in this environment, you must shift your classroom persona from listener, observer and note-taker to active problem solver, contributor and discussant. **If a student does not meet the prerequisite (or corequisite) for this course, he or she may be dropped from the class at any time during the term.**

**Prerequisite**: CHEM 1810 and 1892

## III. Essential Resources

- Access to the textbook: ***Organic Chemistry, by David R. Klein, 3rd Edition, Wiley, 2017.***
  The CNM Bookstore package should include: Hardback book and Study Guide/Solutions Manual (which is recommended). Other textbooks can be used as well but check with the instructor as to what will work.
- **Access to CNM Learn and CNM email:** In class exercises and learning materials are delivered via CNM Learn. Important class announcements will be made to your CNM email and you should check both at least 2-3 times a week.
- **A molecular model kit** is highly recommended for visualizing approaches and solutions to certain spatially related course problems (e.g. stereochemistry). **You can use the model kits during major exams, including the final exam.**
- **A scientific calculator** is required for this course as well. Inexpensive models may be purchased at stores such as Wal-Mart, K-Mart, Target, OfficeMax, Staples, etc. Two-line displays, such as those found in the series TI 30X II, tend to work best. If you are also taking Gen Chem II, you may want to invest in a TI 36X PRO. **Due to their programmable functions and memory, graphing calculators will not be allowed in the 75-minute or final exams.**
- **Recommended:** Notebook and pen for note-taking before and after watching the video lectures.
- **Recommended:** Homework notebook which should be used to record what you have learned and to make note of any problems you need to get help with.
- **Recommended:** From chapter 2 onwards, a printed periodic table (which I have posted to CNM Learn) is VERY helpful in class.

**See the appendix of this syllabus for further information about to obtain each resource.**

## IV. Course Learning Outcomes

*Students Shall:*

- Apply bonding theory to the common structural patterns encountered in organic molecules (e.g. molecular formulas*, 2-D* drawings [Lewis formulas], *3-D* structures, etc.)
- Classify organic compounds and their properties by functional group

- Use common and IUPAC rules of nomenclature to name organic compounds
- Identify, classify and understand chemical isomerism
- Study common organic reactions in terms of reactants, products, reagents, and mechanisms
- Become proficient at structural determination using spectroscopic and spectrometric data

## V. Course Policy

1. ***Respect the learning environment*** and make sure your conversations on CNM Learn and on social media are related to the course material.
2. **Attendence expectations**: **I will exercise my discretion to drop you from the class after you miss 15% of class time (online).** It is ultimately your responsibility to drop yourself, however.
3. Smoke-free campus: In an effort to respect all students, CNM has created smoke-free zones as well as designated smoking areas at all CNM locations. The use of tobacco products, including the use of chewing tobacco and e-cigarettes is limited to the designated smoking areas and banned from all other areas. View CNM's policy on smoking at http://www.cnm.edu/about/smoke-free-campus. View a map of the designated smoking areas at http://www.cnm.edu/about/smoke-free-campus/designated-smoking-areas.
4. **Final grades**: After the drop date (**11/10/17**), you will no longer be able to drop the class and you will be assigned a letter grade A-F. Grade boundaries are set by CNM and cannot be changed. I WILL NOT change final grades unless there has been a legitimate error in my grading.
5. **Exam policy**: You will need at least one #2 pencil – exams will be partially multiple choice but mostly short answer and will administered during the class periods outlined in the class schedule. You will be provided with a periodic table and as much scratch paper as you need as well as a paper copy of the exam itself. To each midterm test, you may bring a 3" x 5" notecard with whatever information you chose handwritten on it as well as your modeling kit. No material may be stuck to the card. You may also need a non-programmable, non-graphing calculator for the exams if calculations are required.
6. Cheating is taken very seriously and will result in automatic and immediate consequences.
7. **Withdrawal and Grading Options Policy:** You may only change your grading option to Credit/No-Credit if the course does not apply to your major OR your minor. You should check the CNM and your possible transfer university regulations regarding Credit/No-Credit if you are considering this option.
8. **Faculty Feedback**: The Faculty feedback system allows your instructor to securely provide feedback on your performance in this course. If your instructor uses it, you may be contacted by a CNM Academic/Achievement Coach to follow up on the feedback. You can read more about the system here: link.
9. **PaperCut:** PaperCut is an element of the sustainability effort at CNM. Its purpose is to reduce paper usage. Each student has an online account with an allotment of 150 free printer pages per term. If this allotment runs out, additional pages may be purchased by the student. For more information, go to the PaperCut website: http://cnm.edu/papercut.

## VI. Class Structure

During class time, you will be engaged in problem-solving activities in small groups. You will have the chance to work on harder (exam type and real world application) problems with the resources of your fellow classmates and myself. The key components of the class are:

- **BEFORE CLASS:** Detailed pre-class reading assignments and/or video lecture assignments. Additional preparation using the 1st attempt on your SW homework is HIGHLY recommended. **If you don't do the reading and/or video watching, you will be lost in class!** Material in the reading assignments and video lectures will **NOT** necessarily be reviewed in class unless I am asked a question about it.
- **IN CLASS:** I will ask for questions at the beginning of class to give further explanation and clarification on the pre-class material. You will then work in small groups on assignments applying the material from the pre-class reading. You will be graded on your small group work individually and collectively throughout the semester via collected group work.
- **AFTER CLASS:** To deepen and fix your learning, you should regularly attempt the end-of-chapter problems as homework. **Get into the habit of doing your homework within 24 hours of watching the lecture on the topic while it is still fresh in your mind.** This will save you time and contribute to better understanding and higher grades. Use the resources available (office hours, study groups) when you get stuck with a problem

after you have given it your best effort. Expect weekly deadlines on regularly throughout the semester. You should expect to spend **at least 3-4 hours per week** on your homework.

**Where to get help:**

- **Ask questions** at any time, of your classmates or of me through the **class communication,** including the social media extension.
- **Attend office hours**.
- **Consider forming a study group.**
- **Tweet me at @RissaChem.** Be sure to read the Twitter handout first, and **always use the hashtag #CNMCHEM2710** when you tweet so that all in the class can see your tweets. I will not respond to tweets without the appropriate hashtag.
- **Email me at csorensen@cnm.edu.** If you do not name the class you are in (i.e. CHEM 2710) within the email, I will not respond to it. Period. If I have not responded within 2 business days, or sooner if urgent, please check the class communication app as I have probably responded there and then feel free to email me again to remind me. In busy times, emails sometimes get buried.
- **Accessibility**: If you are having difficulties, consider contacting Connect Services at your campus. Connect Services offers access to Achievement Coaches and general student support. Website: https://www.cnm.edu/student-resources/connect-services
- If you have a physical, psychological or medical condition that may affect your performance in the class, please consider enrolling with **Disability Resource Center** as soon as possible. They can provide a quiet place to take the tests, additional time, as well as the possibility of a note-taker and additional services, if there is a medically documented need. For more info, go to the DRC's website: http://www.cnm.edu/depts/disability-resource-center. You may also call or email the DRC: Main Campus and Westside Campus 224-3259, e-mail: disability_resource_center@cnm.edu and Montoya Campus, e-mail: disability_resource_center_jmmc@cnm.edu
- **ACE Tutoring** (the Assistance Centers for Education) is a great resource if you cannot meet me during my office hours. Many options are available and most tutoring hours are offered as a first come first served service. Please visit the website: http://www.cnm.edu/depts/tutoring/ACE_Tutoring_Home.html
- **Web resources:** There is an incredible library of resources on the web (including the Khan Academy, etc.). USE THEM!
- **Textbook**: The end of chapter problems in blue have answers at the back of the book. This is a great free resource.

## VII. Grading

Students' grades will be calculated out of a 100 point total:

**Reflection Papers (including Muddy Point Journals) (10%)**

- In an effort to help students become digital citizens with appropriate professionalism online, four reflection papers (one for each exam) will be collected throughout the semester. Reflection papers will in a blog format, will be a minimum of 400 words, and will be submitted through a free account on WordPress. **Constructive and thoughtful comments on other students' blogs and/or answers for questions on the class social media can count for up to 5% of the in-class group work.**
- A muddy point journal, with a minimum of 4 muddy point questions per chapter including their answers, can used instead of the reflection papers. Muddy point journals will be collected before each exam. The muddy point question is a chance for you to tell me what was most difficult or most interesting in your assigned preparation.
- In terms of the participation in online discussion forums, you are expected to conduct yourself professionally as well as with respectful and thoughtful behavior. Quality counts! Your postings must have correct sentence structure and must be spell-checked. **Reflection papers (or muddy point journals) are graded mostly on a participation basis; if you post or submit the journal with correct grammar and spelling on time then you will receive between 80-100% for that posting or submission.**

**In Class Group Exercises (20%)**

- In Class Exercises will be administered via submitted group work. The group work may or may not be available after class if not completed during class.

**Examinations (45%)**

- Four major exams (3 in class and 1 take home) will be given throughout the semester during the class periods noted in the Class Schedule.
- **There are NO make up exams; exceptions on a case-by-case basis. Make-up exams will be given in the Distance Learning and Make-Up Testing Center (http://www.cnm.edu/depts/assessment-center/distance-learning-and-make-up-testing).**
- The lowest exam will be dropped.
- All class tests will be cumulative (with up to 5 questions adapted from previous tests).

**Final Exam (25%)**

- It is a Math, Science, and Engineering policy that all courses require final evaluations.
- If you do not take the final exam, you will not be able to make up the missing credit for the class.
- The final exam is comprehensive and has 40-ish multiple choice questions plus 1-2 short answer questions.
- If the day of the final exam is cancelled by the school (snow day, etc.), then final grades for students will be calculated based on all work completed and assessed up to that point in the course.

**Grading In Summary:**

| | |
|---|---|
| In Class Group Exercises | 20% |
| **(ICE = In Class Group Exercises average * 0.20)** | |
| Reflection Papers or Muddy Point Journal | 10% |
| **(R = Final reflection paper/muddy point journal grade * 0.10)** | |
| Exams (3 75-minute and 1 take home, the lowest exam is dropped) | 45% |
| **(E = Exam average (best 3 of 4) * 0.45)** | |
| Final Exam | 25% |
| **(F = Final exam grade * 0.25)** | |

To estimate your grade at any point during the course, use the following formula:

**ICE + R + E + F = Course grade**

**A = 90-100%  B = 80-89.9%  C = 70-79.9%  D = 60-69.9%  F = 59% or below**

## VII. Tentative Lecture Schedule for Chemistry 2710, Fall 2017

| Week | Klein Chapters | Lecture Topic |
|---|---|---|
| 1 | Syllabus, 1 | Review of General Chemistry: Electrons, Bonds, and Molecular Properties |
| 2 | 2 | Molecular Representations |
| 3 | 3 | Acids and Bases |
| 4 | 4 | Alkanes and Cycloalkanes |
| 5 | 5 | Stereoisomerism |
| 6 | **Review for Exam 1** | **Exam 1 will be given in class on Thursday, 10/5/17. See the Exam Policy under V. for info on what to bring, etc.** |
| | **Exam 1 (1-5)** | |
| 7 | 6 | Chemical Reactivity and Mechanisms |
| | 7 | Alkyl Halides: Nucleophilic Substitution & Elimination Rxns |
| 8 | 7 and 8 | Addition Reactions of Alkenes |
| 9 | 8 and 9 | Alkynes |
| 10 | **Review for Exam 2** | **Exam 2 will be given in class on Thursday, 11/2/17. See the Exam Policy under V. for info on what to bring, etc.** |
| | **Exam 2 (6-9)** | |
| 10 | **Take Home Exam (over Chapters 14 & 15) handed out** | **The take home exam will be handed out on Thursday, 11/2/17, in class and collected 2 weeks later (Thursday, 11/16/17) promptly at the beginning of class (10:30am).** |
| 11 | 14 and 15 | Structural Determination |
| 12 | 10<br>**(Take Home Exam Due)** | Radical Reactions |
| 13 | 11 | Synthesis |
| | 12 | Alcohols and Phenols |
| 14 | 13<br>**Review for Exam 3** | Ethers and Epoxides<br>**Exam 3 will be given in class on Thursday, 11/30/17. See the Exam Policy under V. for info on what to bring, etc.** |
| | **Exam 3 (11-14)** | |
| 15 | **Review for the Final Exam** | **The final exam will be administered in MS 301 on Thursday, 12/7/17, during regularly scheduled class hours.** |
| | **Comprehensive Final Exam** | |

The last day to drop without a grade of F or to change your grading option (letter grade, CR/NC, Audit) is **November 10th.** If you have any questions, please discuss them with your advisor. **Some changes may occur in the schedule as we proceed through the course. Changes will be announced in class and through email with myCNM and/or CNM Learn.**

## IX. Appendix

**1. How to get started with CNM Learn:**

- Point your web browser to http://learn.cnm.edu
- Log-in using your CNM Net ID and Password.
- You *must enable pop-up windows* in order for CNM Learn to function on the computer.
- You will also *need Adobe Acrobat Reader* in order to read a lot of the files on the web site. Acrobat Reader is already installed on CNM pod computers and if you do not have it on your home computer it is a free download.
- All materials in this course fall under copyright laws and should not be downloaded, distributed, or used by students for any purposes *outside* of this course.

CNM Learn automatically records student activities, including but not limited to: your first and last access to the course, number of times you have accessed the course, and pages you have accessed. This data may be accessed by the instructor to evaluate class participation and to identify students having difficulty using Bb Learn features.

**2. Calculators:**

You need a scientific non-programmable calculator for exams (not a graphing calculator). IN EXAMS, YOU MAY NOT USE CALCULATORS ON CELLPHONES OR COMPUTERS. If your calculator has any of the following buttons -- PROG, PGM, CLEAR, CLR -- it is probably programmable **and will not be accepted**. If your calculator has a large screen and can graph functions, it is programmable and will not be accepted. If you are unsure, please bring your calculator into my office hours before the 1st exam and I will check it for you.