SYLLABUS

Instructor: Dr. John Kiernicki

Email: kiernicj@umich.edu – include "CHEM216" in subject line of all emails.

Office hours: online only (see Canvas for times and links)

Administrative Graduate Student Instructor: Rebecca Fantone, rfantone@umich.edu

Graduate Student Instructor (GSI) Office Hours: virtual via an online platform (zoom/bluejeans). Schedule with links is located in Canvas in "Office Hours" folder

Course Description: Chemistry 216 (Synthesis and Characterization of Organic Compounds) will build upon the experimental approach started in Chemistry 211. Laboratory sessions will be performed through three methods:

1) In-person instruction.
2) Virtual experiments performed via *Beyond Labz*.
3) Observation of GSI-performed labs.

The development of both observational and problem-solving skills will be emphasized. Students will evaluate the results of experiments through interpretation of analytical data including thin-layer chromatography (TLC), infrared spectroscopy (IR), melting point (MP), and nuclear magnetic resonance spectroscopy (NMR). Students will be expected to perform pre-lab quizzes, in-lab activities, and post-lab worksheets where results will be analyzed and questions relating to the experiments will be answered.

Useful Texts (not required):

S.N. Ege, *Organic Chemistry*, *5th Ed*., Houghton Mifflin Co., 2003. ISBN-13: 978-0-547-12694-4

Free access to corresponding study guide: https://mnv-media.s3.amazonaws.com/hm-media/coppola_SG/index.html

The Chem 216 Coursepack, ISBN: 9781533918055. The coursepack includes carbon copy pages and would serve as your lab notebook for the term. It also includes practice problems for the quizzes.

Note: The coursepack for Chem 216 – Fall 2020 *is not required*. Students participating in in-person lab sessions will be given "notebook pages". Due to changes in the lab schedule, typical lab reports/observations will be infrequent. Supplementary practice problems will be included in Canvas under "IR and NMR Resources".

Lecture: Lecture will be asynchronous (not held live). Instead, lectures will be posted generally on Mondays. Please refer to the course schedule in the Syllabus folder on Canvas. The lecture content will be linked in both the Modules tab and the Media Gallery tab on Canvas. Links will be attached if you have trouble viewing through Canvas, or if you wish to download the lectures for offline viewing.

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Laboratory Periods: All sections will perform an equivalent number of labs. This course is offered in both "In-Person/Online hybrid" and "Online-Only" formats

> **Sect 190-194, 196-197**: These sections will perform online labs for the entirety of the semester.
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> **Sections 130-134, 150-154, 170-173:** These sections with contain both online and in-person lab components. In-person labs will occur on a tri-weekly basis at the Wolverine Access scheduled time. The intervening weeks will contain online labs. For a detailed schedule, see course calendar.

Canvas: The Chemistry 216 Canvas site will be used by the course instructor and GSI to post course-related material. This includes, but is not limited to, the following: quizzes, assignments, lectures, practice problems, etc. You should check Canvas often. You should read the e-mail messages that come from the canvas system.

Beyond Labz: Beyond Labz is a software program that allows you to perform virtual laboratory experiments. For all sections, *Beyond Labz is required in order to complete the semester*. The cost of the software is included in this semester's lab fee and allows you to access the software for up to one year. Please see the Beyond Labz information documents in the "Beyond Labz" folder in Canvas for installation and support resources. Students are encouraged to use the software beyond the required experiments for Chemistry 216 (biology and physics sections are included).

Attendance: All sections will have an attendance requirement.

> **Sections 190-194, 196-197**: These sections will be asked to attend weekly lab meetings. Note that you are only *required* to attend seven lab meetings. If you cannot attend your designated section, you may attend the lab meeting hosted by another GSI.
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> **Sections 130-134, 150-154, 170-173:** Students must attend every in-person lab. Make-up in-person labs will not be offered. If you cannot attend due to serious illness or emergency, contact your GSI. Additionally, the university has instituted a more flexible withdrawal policy. During weeks when the students are performing virtual laboratory sessions, students are expected to attend weekly lab meetings and/or office hours.

Grades: Course grades will be based on the assignments, attendance, and quizzes posted in Canvas. The schedule for all assignments is posted on Canvas in the syllabus folder. The course instructor and GSI will post reminder emails and make announcements. However, it is your responsibility to keep track of upcoming assignments and due dates.

You grade will be assigned based on a fixed scale where:

>90% = A+/A/A-
80-89% = B+/B/B-
70-79% = C+/C/C-
<69% = No Record Covid (NRC)

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Your semester grade will be determined by the following point totals (500 points total):

1. **Introduction Worksheets (2 x 10 pts = 20 pts)**: Worksheet A is meant to provide the instruction staff with additional information about you and to ensure that you understand how the in-person and virtual labs will be administered. Worksheet B is an activity to begin to familiarize yourself with the Beyond Labz software that will be used throughout the course.
2. **Participation Points (7 x 2 pts = 14 + 1 pts)**: Sections 190-196: At the virtual lab meetings, students will interact with their classmates and GSI in a variety of activities and have the opportunity to ask questions about the course content. Two points will be awarded for each virtual lab meeting attended to a maximum of 14 pts. Sections 130-173: students will be awarded two points for each office hour or virtual lab meeting that they attend to a maximum of 14 pts. Upon accumulating 14 points, the students will automatically be awarded an additional 1 point.
3. **Pre-lab Activity (7 x 5 pts = 35 pts)**: For all labs (in-person or virtual) a pre-lab activity will be posted on Canvas at the beginning of the week. Students will have one attempt at each quiz and can complete it at any time prior to the lab due-date. For students attending an in-person lab that week, it is strongly encouraged that they perform the pre-lab activity prior to lab.
4. **In-lab activity (7 x 20 pts = 140 pts)**: For all labs (in-person or virtual) an in-lab activity will be posted on Canvas with each experiment. The worksheets must be uploaded to Canvas in the Assignments section by no later than midnight on the due date. Due dates are listed on Canvas in the course schedule.
5. **Post-lab activity (7 x 25 pts = 175 pts)**: For all labs (in-person or virtual) a post-lab activity will be posted on Canvas with each experiment. The worksheets must be uploaded to Canvas in the Assignments section by no later than midnight on the due date. Due dates are listed on Canvas in the course schedule).
6. **NMR Quizzes (3 x 5 pts = 15 pts)**: Short, 10-minute NMR problems will be given as Canvas Quizzes. Students will be given 20 minutes total to account for upload time. Each will have a 24-hour window to perform the quiz.
7. **Quizzes (2 x 50 pts = 100 pts)**: Two 50-minute quizzes will be given as a Canvas. Note: Worksheet A will ask you to request an alternate quiz time if you are currently in a vastly different time zone. Quiz 1 will focus on calculations, experimental technique, TLC, and IR spectroscopy. Quiz 2 will include those topics as well as NMR spectroscopy.

Late Assignment Policy: Any assignment that is turned in late will be penalized according to the following:

Time Late	Point Deduction
1 day late (anytime during day following due date)	10%
2 days late	50%
3 or more days late	100%

If you have an emergency or are seriously ill and cannot complete the assignments by the due date, contact your GSI and Dr. Kiernicki via email ASAP. We can be flexible, but do not wait until last second to contact us. Keep in mind, assignments will generally have 5 days to be completed.

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Grade Grievance Policy: Departmental policy indicates that the first step in inquiring about the accuracy of a final grade should be directed to the lead instructor of the course. The initial inquiry should occur within the first fifteen business days of the first full term following the term in which the disputed grade was issued. If, after this inquiry, the student is not satisfied with the instructor's response, the student may choose to initiate a formal grade grievance. To initiate a formal grade grievance, the student should contact the Associate Chair of Undergraduate Studies of the home department of the course in questions before the end of the fifth week of classes in the first full term following the term in which the disputed grade was issued.

Academic Integrity: Collaboration in the laboratory setting is encouraged. However, the majority of assignments and written work are to be completed individually. If an assignment is to be completed as a group, it will be clearly stated in the assignment description. Sharing of data is ok on these assignments, but the short-answer portion of any assignment should be written in your own words, not copied from your partner(s). Unauthorized collaboration on individual assignments will result in a zero for the assignment. If you are unclear about whether something should be completed individually, please ask your GSI or course instructor. Academic misconduct is treated seriously and will result in a grade of zero on the assignment for which it takes place. Cheating on a quiz may result in failing the course. For more information, please visit the LSA Site for Academic Integrity for examples of academic misconduct.