Department of Chemistry: E331 CB, 335-1350

Instructors:  Dr. Gregory K. Friestad -- E455 CB, 319-335-1364, gregory-friestad@uiowa.edu
   Office Hours: Tu 2:30–3:30pm, W 2-3pm, or by appointment
Dr. Shuvendu Das -- Oakdale MTF B160, 319-467-4559, shuvendu-das@uiowa.edu
   Office Hours: W 5:30–6:30 pm, F 2:00–3:00 pm, or by appointment

Scheduled Lectures:  Section A Friday 11:30-12:20, W290 CB
   Section B: Wednesday 4:30–5:20, W55 CB

Laboratory Sections: 01 Monday and Wednesday, 1:30–4:20 pm, W468 CB
   02 Monday and Wednesday, 1:30–4:20 pm, E464 CB
   03 Tuesday and Thursday, 9:30–12:20 pm, W468 CB
   04 Tuesday and Thursday, 9:30–12:20 pm, E464 CB
   05 Tuesday and Thursday, 2:00–4:50 pm, W468 CB
   06 Tuesday and Thursday, 2:00–4:50 pm, E464 CB
   07 Tuesday and Thursday, 9:30-12:20 pm, E424 CB
   09 Tuesday and Thursday, 5:00–7:50 pm, W468 CB
   10 Monday and Wednesday, 5:30–8:20 pm, E464 CB
   11 Monday and Wednesday, 5:30–8:20 pm, W468 CB
   13 Tuesday and Thursday, 5:00–7:50 pm, E464 CB

Course Goals
   • become familiar with standard organic chemistry laboratory operations
   • gain experience in conducting organic reactions
   • learn and apply methods of separation and identification of organic compounds

Prerequisites: CHEM:1120 and CHEM:2210 (or CHEM:2230)
Co- or Prerequisite: CHEM:2220 (or CHEM:2240)

Course Materials
Course Website (ICON): icon.uiowa.edu -- For assistance go to icon.uiowa.edu/help/students/
Required Text: “Techniques and Experiments in Organic Chemistry: Biological Perspectives and
   Sustainability” -- Electronic (PDF file), download from ICON.
   To avoid exposing devices to lab hazards, you may print the text and put it in a 3-ring binder.
Required Equipment: laboratory goggles, laboratory notebook (with duplicate carbonless pages),
   internet access, access to scanner or smartphone for submitting assignments

Course Administration at the Chemistry Center
For inquiries about TA office hours, SDS-related scheduling, and other administrative details.
   Contact: chemistry-center@uiowa.edu, 335-1341, E225 CB.
   Hours: 8–12 noon & 1–5 pm on M–Th (close at 4:30 PM on Friday)
Changes in registration will operate via email. For instructions, students should go to this link:
   https://registrar.uiowa.edu/changes-registration
Teaching Assistant Office Hours
Your teaching assistant (TA) can be found in the Student Resource Center (E208 CB) during their office hours. In addition, CHEM:2410 students can get help from other TAs who may staff that room at various times. Your TA will tell you their office hours; a listing for all other TAs will be available in the Chem Center (E225 CB).

Grading
There will be two exams (midterm and final), 11 laboratory reports, and two assessments of in-class laboratory performance (midterm and final). Plus and minus grades will be given. An A+ is only awarded for exceptional (i.e., near perfect) performance.

CLAS Recommended Grade Distribution (% of class): A 18%, B 36%, C 39%, D 5%, F 2%
CLAS Recommended Grade Average = 2.63 / 4.0
Typical Grade Average in this course = about 3.0

A total of 680 points is possible:
• Exams (2 x 100) = 200 points
• In-class performance assessments (2 x 50) = 100 points
• Laboratory reports = 380 points

Lab Reports:

<table>
<thead>
<tr>
<th>Expmt #</th>
<th>Title</th>
<th>Prelab Quiz</th>
<th>Report</th>
<th>Total Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Literature</td>
<td></td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td>2</td>
<td>Extraction</td>
<td>10</td>
<td>25</td>
<td>35</td>
</tr>
<tr>
<td>3</td>
<td>NMR Spectrometry</td>
<td></td>
<td>35</td>
<td>35</td>
</tr>
<tr>
<td>4</td>
<td>Nucleophilic Substitution</td>
<td>10</td>
<td>25</td>
<td>35</td>
</tr>
<tr>
<td>5</td>
<td>Transfer Hydrogenation</td>
<td>10</td>
<td>25</td>
<td>35</td>
</tr>
<tr>
<td>6</td>
<td>Adipic Acid</td>
<td>2 x 10</td>
<td>15 (short)</td>
<td>35</td>
</tr>
<tr>
<td>7</td>
<td>Furoin Condensation</td>
<td>2 x 10</td>
<td>15 (short)</td>
<td>35</td>
</tr>
<tr>
<td>8</td>
<td>Biocatalytic Reduction</td>
<td>10</td>
<td>25</td>
<td>35</td>
</tr>
<tr>
<td>9</td>
<td>Suzuki Coupling</td>
<td>10</td>
<td>25</td>
<td>35</td>
</tr>
<tr>
<td>10</td>
<td>Unknowns</td>
<td>10</td>
<td>25</td>
<td>35</td>
</tr>
<tr>
<td>11</td>
<td>Solventless Aldol Reaction</td>
<td>10</td>
<td>25</td>
<td>35</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>110</td>
<td>270</td>
<td>380</td>
</tr>
</tbody>
</table>

There will be FIVE formal lab reports (format as instructed in the lab manual) and SIX short lab reports (format as discussed in class). As indicated in the table above, Experiments 6 and 7 will be short lab reports. For the other experiments, formal or short lab reports will be assigned by an in-class announcement the next lecture after the experimental work is completed. Only Experiments 6 and 7 have reduced credit for the short lab reports; credit for all other lab reports will remain as shown below. The short reports are intended to relieve some of the writing workload so you can focus more on understanding the chemistry. Expect exam questions on material which might normally be included in a formal lab report (as indicated in the lab manual), even if you only wrote a short lab report.
Submitting Lab Reports: Lab reports are due on Fridays at 5pm via online submission. Details on the submission procedure will be discussed in class.

Lab Reports: For late reports, within one week of due date, these should be submitted in the usual way. A penalty of 10% of the available points per day will be assessed. Reports that are a week or more late will only be accepted/graded with special permission from the instructor.

Regrades of Lab Reports: Lab reports can only be submitted for regrade within a week after they were returned to you. A written request indicating the reason for the regrade must be included. The ENTIRE report will be re-evaluated. Scoring addition errors or ungraded sections are valid reasons for regrade. Negotiating for points on a report which has been correctly graded is not a valid reason for regrade.

In-Class Performance Assessments: There will be two 50-point evaluations of practical lab activities based on TA observations of performance in the lab. Some subjectivity is inherent in this assessment. TAs will assess understanding and mastery of practical lab techniques on the basis of their daily observations of your work
- integrating theory with lab practice to better understand lab procedures (20 points)
- efficiency and organization (10 points)
- safety and cleanliness (10 points)
- growth toward independence in laboratory operations (10 points)

After TAs provide raw scores, the section average will be normalized across all sections, so that people in any individual lab section are neither advantaged nor disadvantaged relative to the rest of the class.

Examinations
There are two exams:
- Exam 1: Wednesday October 20, 2018, 8:45–10:15 pm, W290 CB
- Exam 2: time and location to be announced later

Exams will ONLY be given at the designated times. A makeup exam will only be given in the case of an excused absence for University-approved reasons. Personal or family travel is NOT an excused absence.

Absences and Attendance
Students are responsible for attending class, lab and for completing all assignments. In case of absence, students must contact their instructors and TA prior to their absence. Students who miss more than two classes due to unexcused absences will be given an F in the course. This rule is NOT applied for excused absences. The nature of absence must be determined based on the UI policy related to student illness, mandatory religious obligations, including Holy Day obligations, unavoidable circumstances, and University authorized activities (https://clas.uiowa.edu/students/handbook/attendance-absences).

Illnesses: Please respect your classmates and instructional staff. Students with symptoms of illness (for example, coronavirus, flu, cold, etc.) should notify their lab TA and instructor, and should NOT attend class. Students will not be penalized for absences that are in accordance with UI policies related to student illness or public health measures. For more information, see https://coronavirus.uiowa.edu/

Academic Misconduct: Representing scientific or professional work of others as your own is unethical, dishonest, and unacceptable. The University has specific policies which govern academic
misconduct. Students who are found to be engaging in academic misconduct will be given an F in the
course and the case will be reported to the Office of Academic Affairs.

How to Avoid Academic Misconduct in This Course:

Exams and Quizzes: Individuals must work alone. There must not be any communication about the
content until all students have completed the exam or quiz.

Laboratory experiments: All work in the lab must be conducted independently by each student, except
in those cases when the TA specifically instructs the class to work in pairs or groups. Open discussion
before, during and after the lab is encouraged.

Laboratory reports: Individuals must write their own lab reports, using their own words. Discussion is
encouraged while preparing to write, but all students must ultimately do their own writing. Copying the
work of others, whether they are current or prior students in this course, is plagiarism, and such
academic misconduct will not be tolerated.

Safety

The course is designed to be safe when students follow appropriate, defined procedures and use the lab
materials in the designated way. Safety is enhanced when all students are properly prepared and alert:

• You must pass the safety quiz with 100% before you are allowed to work in the lab.
• Show up and leave on time. Do not enter the lab until a TA or instructor is present. Come prepared in every
  aspect (content preparation, goggles, clothing)
• Wear safety eye protection (goggles) at ALL times. The TA may make a few introductory comments before any
  equipment or materials are out. Eye protection must be worn from that point until you leave. Group discussion
  may be best convened in the hall. Wearing contact lenses is discouraged.
• Feet, legs, and the midriff should be covered. Shoes that expose any part of the foot are not permitted. (You
  can carry a pair of sweats and tennis shoes during warm weather.)
• Eating, drinking, and smoking are prohibited in the lab at ALL times. No flames are allowed in the lab. Wash
  your hands right before you leave.
• Report ALL injuries of any kind to the TA. You should even report a minor cut or burn to the TA before you go
to the bathroom to wash it.
• Solvents, solids, and sharp items must be disposed of properly. NOTHING goes down the sink.
• An organic chemical may pose a different level of hazard to an adult than to an unborn fetus. Students who are
  pregnant or think that they might become pregnant during the course should discuss their enrollment in this course
  with their physician(s). Material safety data sheets MSDS are available and the chemical materials used are listed
  in the manual or via additions/corrections provided during the lecture portion.
• Safe practice in the lab requires that students be able to hear warnings or announcements. Lab computers MAY
  NOT be used to play music; personal music devices even with headphones are not appropriate for labs. You
  should remove them and shut off cell phones before lab starts.

A student will be asked to leave the laboratory for the entire lab period (and will receive NO credit for
that day’s activities or any report or assignment derived from the work) for the following behaviors:

• Repeated refusal to wear goggles or to conform to the safe lab dresscode (i.e., covered feet, legs and midriff)
• Conducting experiments or activities using equipment and chemicals other than the assigned activities. The
course wishes to promote independent thinking; independent experiment design and performance is NOT
allowed.
• Improper behavior that puts oneself or another individual at risk. Egregious improper behavior is grounds for
dismissal from the course.
ATTENDANCE AND CLASSROOM EXPECTATIONS
Students are responsible for attending class and for knowing an instructor’s attendance policies, which vary by course and content area. All students are expected to attend class and to contribute to its learning environment in part by complying with University policies and directives regarding appropriate classroom behavior or other matters.

ABSENCES
Students are responsible for communicating with instructors as soon they know that an absence might occur or as soon as possible in the case of an illness or an unavoidable circumstance. Students can use the CLAS absence form to help communicate with instructors who will decide if the absence is excused or unexcused; the form is located on ICON within the top banner under “Student Tools.” Delays by students in communication with an instructor could result in a forfeiture of what otherwise might be an excused absence (https://clas.uiowa.edu/students/handbook/attendance-absences).

ABSENCES: ILLNESS, UNAVOIDABLE CIRCUMSTANCES, AND UNIVERSITY SPONSORED ACTIVITIES
Students who are ill, in an unavoidable circumstance affecting academic work, or who miss class because of a University sponsored activity are allowed by UI policy to make up a missed exam. Documentation is required by the instructor except in the case of a brief illness. Students are responsible for communicating with instructors as soon as the absence is known (https://opsmanual.uiowa.edu/students/absences-class#8.1).

ABSENCES: HOLY DAYS
Reasonable accommodations are allowed for students whose religious holy days coincide with their classroom assignments, tests, and attendance if the student notifies the instructor in writing of any such religious Holy Day conflicts within the first days of the semester and no later than the third week. (See the UI Operations Manual, https://opsmanual.uiowa.edu/students/absences-class#8.2).

ABSENCES: MILITARY SERVICE OBLIGATIONS
Students absent from class due to U.S. veteran or U.S. military service obligations (including military service-related medical appointments, military orders, and National Guard Service obligations) must be excused without penalty. Instructors must make reasonable accommodations to allow students to make-up exams or other work. Students must communicate with their instructors about the expected possibility of missing class as soon as possible. (For more information, see https://opsmanual.uiowa.edu/iv-8-absences-class%C2%A0%20class#8.2).

ACADEMIC MISCONDUCT
All undergraduates enrolled in courses offered by CLAS have in essence agreed to the College's Code of Academic Honesty. Academic misconduct affects a student's grade and is reported to the College which applies an additional sanction, such as suspension. Outcomes about misconduct are communicated through UI email (https://clas.uiowa.edu/students/handbook/academic-fraud-honor-code).

ACADEMIC ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES
UI is committed to providing an educational experience that is accessible to all students. A student may request academic accommodations for a disability (such as a mental health, attention, learning, vision, and a physical or health-related condition) through the Student Disability Services (SDS) office. The student is responsible for discussing specific accommodations with the instructor. Note that accommodations are not granted retroactively but from the time of the student’s request to the instructor onward; additionally, accommodations must be requested at least two weeks in advance of the related assignment or exam (https://sds.studentlife.uiowa.edu/).

CLASS RECORDINGS: PRIVACY AND SHARING
Course lectures and discussions are sometimes recorded or live-streamed. These are only available to students registered for the course and the intellectual property of the faculty member. These materials may not be shared or reproduced without the explicit written consent of the instructors. Students may not share these recordings with those who are not enrolled in the course; likewise, students may not upload recordings to any other online environment. Doing so is a breach of the Code of Student Conduct and could be a violation of the Federal Education Rights and Privacy Act (FERPA); also see https://dos.uiowa.edu/policies/code-of-student-life/.
COMMUNICATION: UI EMAIL
Students are responsible for all official correspondences sent to their UI email address (uiowa.edu) and must use this address for any communication with instructors or staff in the UI community (Operations Manual, III.15.2). Emails should be respectful and brief, with complex matters addressed during the instructor’s drop-in hours, for example. Faculty are not expected to answer email after business hours or during the weekends.

COMPLAINTS ABOUT ACADEMIC MATTERS
Students with a complaint about a grade or a related academic issue should first visit with the instructor and then with the course supervisor (if one is assigned), and next with the Chair of the department or program offering the course. If not resolved, students may bring their concerns to the College of Liberal Arts and Sciences: https://clas.uiowa.edu/students/handbook/student-rights-responsibilities.

FINAL EXAMINATION POLICIES
The final exam schedule is published during the fifth week of the fall and spring semesters or on the first day of summer classes; students are responsible for knowing the date, time, and place of their final exams. Students should not make travel plans until knowing this information. A student with exams scheduled on the same day and time or who have more than two final exams on the same day should visit this page for how to resolve these problems by the given deadline: https://registrar.uiowa.edu/makeup-final-examination-policies. No exams may be scheduled the week before finals; some exception, however, have been made for labs, language courses, and off-cycle courses (https://registrar.uiowa.edu/final-examination-scheduling-policies).

FREE SPEECH AND EXPRESSION
The University of Iowa supports and upholds the First Amendment protection of freedom of speech and the principles of academic and artistic freedom. We are committed to open inquiry, vigorous debate, and creative expression inside and outside of the classroom. Visit Free Speech at Iowa for more information on the University’s policies on free speech and academic freedom (https://freespeech.uiowa.edu/).

HOME OF THE COURSE
The College of Liberal Arts and Sciences (CLAS) is the home of this course, and CLAS governs the course’s add and drop deadlines, the “second-grade only” option (SG0), and other undergraduate policies and procedures. Different UI colleges may have other policies or deadlines. See https://clas.uiowa.edu/students/handbook. Questions? Contact CLAS at clasps@uiowa.edu or 319-335-2633.

MENTAL HEALTH
Students are encouraged to seek help as a preventive measure or if feeling stressed or overwhelmed. Students should talk to their instructors for guidance with specific class-related concerns and are encouraged to contact University Counseling Service (UCS) at 319-335-7294 during regular business hours to schedule an appointment. USC offers group and individual therapy as well as counseling for couples about relationships while making referrals to other resources (https://counseling.uiowa.edu/). Student Health can also address related concerns (https://studenthealth.uiowa.edu/). These visits are free to students. After hours, students are encouraged to call the Johnson County Community Crisis Line at (319) 351-0140 or dial 911 in an emergency.

NONDISCRIMINATION IN THE CLASSROOM
The University of Iowa is committed to making the classroom a respectful and inclusive space for people of all gender, sexual, racial, religious, and other identities. Toward this goal, students are invited in MyUI to optionally share the names and pronouns they would like their instructors and advisors to use to address them. The University of Iowa prohibits discrimination and harassment against individuals based on race, class, gender, sexual orientation, national origin, and other identity categories indicated by the University’s Human Rights policy. Contact the Office of Equal Opportunity and Diversity at https://diversity.uiowa.edu/division/office-equal-opportunity-and-diversity-eod.

SEXUAL HARASSMENT
Sexual harassment subverts the mission of the University and threatens the well-being of students, faculty, and staff; all members of the UI community are expected to conduct themselves in a manner that maintains an environment free from sexual harassment and sexual misconduct. Those experiencing sexual harassment are strongly encouraged to report the incidents and to seek help (https://osmrc.uiowa.edu/).