CHEM 4521 Organic Chemistry

Instructor and Contact Information: The Teaching Assistant Laboratory assigned to your class is able to answer most of your questions concerning: Experiments, Quizzes, Prelab section, and Lab Reports. For other more specific questions and concerns about organization of the Organic Chemistry course: CHEM 4521 or approval for University like sanctioned absences and make up labs schedule, please contact our Instructor. See information below:

Instructor:

Name: Bruno Donnadieu
Office: Hand 2229
Email: bdonnadieu@chemistry.msstate.edu

Course Description: This is a laboratory course to accompany CH 4523 lecture (Organic Chemistry II)

Schedule: The first lab meeting for the 2018 summer is 07-09-2018 and will end 08-07-2018 depending on your lab day schedule. See below:
All class will be at the room Hand 3302.

<table>
<thead>
<tr>
<th>Course</th>
<th>SC</th>
<th>Title</th>
<th>Syllabus</th>
<th>Books</th>
<th>Type</th>
<th>Delivery Method</th>
<th>Status</th>
<th>Total Seats</th>
<th>Seats Avail</th>
<th>Crse Earl</th>
<th>Cmt</th>
<th>Start Date</th>
<th>End Date</th>
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<th>Times</th>
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<td>51</td>
<td>Org Chem Lab II</td>
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<td>Laboratory</td>
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<td>A</td>
<td>12</td>
<td>0</td>
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<td>07-09-2018</td>
<td>08-07-2018</td>
<td>M W F</td>
<td>01:00pm - 03:36pm</td>
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<td>T R F</td>
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</tbody>
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A detailed schedule will be provided on MyCourses, and can be downloaded as well on the Mississippi State University, Department of Chemistry under the following link:

https://www.chemistry.msstate.edu/academics/undergraduate/student-worker/

There will be nine laboratory meetings from July 09th to August 07th 2018. Three Sections are scheduled for the entire summer session: CH4511_51, CH4511_52 and CH4511_54. Sections: CH4511_51 and CH4511_52: (MWF) meet together Monday, Wednesday and one Friday Section CH4511_54: (TRF) meet Tuesday, Thursday and two Fridays.

It means Sections 51 and 52 meet Friday: July 27th. Section 54 meet Fridays: July 13th and August 03rd.
All class will be taught excepted the Combinatorial Synthesis of Azo Dyes and Casein/Lactose experiments. They will be eight Quizzes:

1. **Checking/Safety/Diels-Alder Reaction.**
2. **Electrophilic Aromatic Substitution.**
3. **Friedel-Crafts Acylation.**
4. **Wittig Reaction.**
5. **Fisher Esterification.**
6. **Imine Formation.**
7. **Crossed Aldol Condensation.**
8. **Student Project.**

Four additional Quizzes on analytical methods:

1. **IR.**
2. **MS.**
3. **NMR $^1H$.**
4. **NMR $^{13}C$.**

Download and Print out the syllabus and the detailed schedule to bring with you at the first day of lab, **read carefully the syllabus before your first day lab** in order you fully understand the policies, especially all **Safety Rules and Regulations**. You will be expected to begin experiments on the first day of lab. On your first class meeting, you have to wear appropriate garments (*long pants & closed toe shoes*). **Laboratory goggles and Laboratory Coats** will be provided at your first lab meeting by your assigned teaching assistant.

**Learning Objectives:** The goal of this class is to supplement the lecture material in CH 4523 with hands-on experience in an organic laboratory. Over the course of the summer class you will learn the most common techniques and reactions in organic chemistry as well as use some instrumentation and will be trained to interpret spectral data such as: Mass Spectrometry, Infra-Red, $^1H$ and $^{13}C$ NMR.

**Course Materials:** You need to purchase a voucher for the at the Barnes and Noble / Campus Bookstore / Campus Bookmark. Bring this official voucher with you to the first day of lab to receive your lab manual. You are expected to read and understand all assigned materials before coming to lab. No assignment will be graded in the course until you purchase
an official lab manual. Safety goggles are also required for lab. We will provide a pair of goggles and a lab coat to you for the semester.

This course is designed for students who are either currently enrolled in CH 4523 or have taken CH 4523. If you drop the lecture course, you MUST drop the lab course as well.

**Class Assignments:** There will be 09 lab reports/projects and 12 quizzes over the course of the semester. Lab reports and projects will be due the next class period after they are completed. For more details regarding class assignments, see the subsequent sections.

**Pre-Lab Responsibilities:** Before beginning any experiment, you are required to have completed the following:

1. Read all the required material for the experiment.
2. Complete Sections A, B, C & D of your lab report (see lab report guidelines).

For each lab there will also be a quiz given at the beginning of every lab. The question(s) will be based on the Introduction or the Procedure for the experiment. Be sure to carefully study and read these sections in our lab manual before to come to the class. The quizzes account for over 20% of your grade.

**Lab Reports:** Each lab report will be worth **100 pts.** Specific lab report guidelines for each lab report are provided in the lab manual. Lab reports are counted late when they are not ready to be turned in upon request of the Teaching Assistant at the beginning of class. A late report may be turned in for a 15-pt/meeting penalty. Lab report guidelines can be found in your lab manual. Two lab reports count as 2 grades of **100** it is the **Wittig experiment** and then the **Student Project.**

As it was notified above one laboratory report counts as **2 grades of 100** (so **200** points total for this laboratory report. It is the “**Wittig**” is a two weeks experiment) and the **Student Project.**

**CH 4511-Laboratory Report Important Guidelines:**

All lab Reports have to be written legibly (Points can be removed in the case of the lab report won’t be legible handwrite). The lab report can be typed or handwritten, proper grammar and correct sentence structure are both expected and can be part of the grade. (If you decide to type your report you need to be aware your report can be scanned and processed in order to prevent copy and plagiarism issues).

All lab report **must be written or typed** on **white standard printable and scan able paper: 8.5”×11” (216×279) mm format.** With a separate cover page including the experiment number with the title of the experiment, the course number and section of the course number, example: CH4521_03, the name of the student author of the laboratory report and the names of his partners in the laboratory course.
Remark: The name of the student author of the laboratory report have to be separated and clearly identify from the names of his/her lab partners).

No exception to these rules any report that won’t match these criterions will be accepted by your Teaching Assistant.

To know what a correct laboratory report should contains, read carefully the Laboratory Report Guidelines - CH 4511, Pages 5 to 8 of your laboratory manual. Your grade for the laboratory report will strongly depends about your ability to write and redact properly every parts of the report as they are precisely described in your laboratory manual. Indeed carefully read and understand every guidelines before writing your laboratory report. (Questions or concerns about the redaction of the Laboratory Report can be addressed to your Teaching Assistant or your Instructor).

It is important to be precise in your answers and synthetic in your description or your data interpretation. The purpose here is to write a clear and concise Scientific Report avoiding the superfluous details. Not to write a long essay. As it mentioned in your manual a laboratory report should be from 4 to 8 pages range in length (not including the cover page). Passive tense should be used.

As is notified above all lab reports are normally due at the beginning of the laboratory at your Teaching Assistant’s request. A 15points demerit can be applied to all late report, no exception. All questions or concerns concerning the keys grade of the laboratory report can be directly addressed to your assigned Teaching Assistant or your Instructor for the semester.

Prelab: The prelab part of every labs have to be prepared before every lab’s session. The purpose is to demonstrate to your teaching assistant that you come attend your lab well prepared. The prelab will be specifically graded along with the lab report when you turn it in to your teaching assistant.

Important parts of lab report:

Procedure: Purpose is too concisely and precisely details the experiment’s procedure as it was done. All procedure as to be written using past tense. Pay attention to carefully detail every step of the process in order that a student reading your lab report will be able to perform the same experiment just following your description. See example in page 7 of your CHEM 4511 of your lab manual.

Discussion/Results: Crucial part of your lab report. Total length can varies in the range from 3 to 8 paragraphs. Two parts have to be distinguished. First part:
**Discussion:** The purpose here is to discuss about your data and observations (previously listed in the procedure section) and provide a precise and synthetic explanation for all of them. In the case of you will have to perform a lot of trials and tests you will need to report your data in the **Results** section in a Table form and provide a discussion of your experimental results as well. (*Don’t forget to discuss all your experimental results not only provide a Table form of them*). When you are doing an experiment that result in a weighted amount of product, you have to calculate a percent yield and (possibly) the theoretical yield. Those calculations must be properly presented in the **Results** section. See example, page 7 of your CHEM 4511 of your manual.

**Conclusion:** It is an important part of your lab report. The main purpose of this part of the lab report is to do a recapitulation of the experiment performed during the lab in accordance to your data discussion and results obtained you should discuss about the way the experiment worked, if your results make sense or why you got some bad data or incorrect results. You should emphasizes whether if you succeeded or not and tell what you will if you will have to redo the same experiment in order to get better results. See example, page 7 of your CHEM 4511 of your lab manual.
Laboratory Report Template:

(A) Cover page:

Experiment’s number: Experiment’s title

CH4511, Section’s number, Teaching assistant’s name

Student’s name

Lab partners’ names

Date

(B) Purpose:

(C) Introduction:

(D) Safety/Hazards Chart:

(E) Procedure:

(F) Discussion/Results:

(G) Conclusion:

(H) Post-Lab questions:
Exams and Projects: There will be no final exam for this course. There will instead be an individual project the Student Project to be turned in that counts 200 points total. More details on the project report can be found under Report Guidelines page 5 to 8 of your CHEM 4511 manual.

Methods of Evaluation & Standards of Achievement: The total of your lab reports + quizzes + worksheets + student project will be divided by the total number of points to give an average grade. The following grading scale according to the US grade scale will be used:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>100-89.6%</td>
</tr>
<tr>
<td>B</td>
<td>89.5-79.6%</td>
</tr>
<tr>
<td>C</td>
<td>79.5-69.6%</td>
</tr>
<tr>
<td>D</td>
<td>69.5-59.6%</td>
</tr>
<tr>
<td>F</td>
<td>59.5-0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Number</th>
<th>Points/Assignment</th>
<th>Total Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quizzes/Worksheets</td>
<td>12</td>
<td>30</td>
<td>360</td>
</tr>
<tr>
<td>Lab Reports/Project</td>
<td>09</td>
<td>100 (2 count as 200)</td>
<td>1100</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>1460</strong></td>
</tr>
</tbody>
</table>

This is an estimated total be aware that additional assignments may be included for the points total.

Safety: For the first laboratory you are required to read and understand the ‘Laboratory Safety Rules’ and sign a copy attesting you effectively did it. It is imperative that you follow all safety rules at all times. If you are pregnant or are considering getting pregnant, you immediately inform the Instructor in charge before attending or continuing lab. Failure to do so will absolve the University from any and all liability resulting from chemical exposure. An additional policy concerning pregnancy in the Organic lab will follow in a separate document.

All backpacks and personal items must be stored in the cubbies of the organic laboratories. Backpacks or personal items may not be stored on the floor or on your workbench top as these items can interfere with cleared benchtops and aisles.

*You must wear your goggles whenever you are handling chemicals or glassware or “doing an experiment”.

*You must wear CLOSED-TOE, SOLID SHOES with LONG PANTS. It means solid “Tennis-shoe” type Sneakers. Anything that falls into the category of a “Sandal” is not allowed.

*Eating, drinking or chewing gum in the organic laboratory is not allowed. If you break this rule, you will lose your quiz grade for the lab. Multiple offenses will result in you being asked to leave the laboratory and you will get a “0” on both quiz and experiment.
You must wear your lab coat while in the Organic laboratory. This is for your own protection as your skin and clothing will be protected from hazardous chemical spills. Your lab coat is numbered and you are responsible for its safe handling and return. Failure to return the lab coat undamaged and in good condition will result in a replacement charge of $100. If you arrive in lab wearing inappropriate shoes, you will be asked to leave and will get a grade of “0” on the quiz.

A word of advice: Remember—in the Chemistry laboratory (especially Organic), you are working with hazardous chemicals. Almost every chemical you are using is listed in some way as being hazardous or toxic.

Penalty for no safety rules and regulations observances:

- **First Offense:** deduct 20 points from your lab report.
- **Second Offense:** deduct 40 pts from your lab report.
- **Third Offense:** You will be asked to leave lab and get a “0” grade for the day.

Attendance: You are expected to attend all scheduled labs at the designated times. Any exceptions must be arranged with the Instructor, and will require all necessary documentation according to the University regulations. If you have to miss a lab due to a University event, you will need to provide a letter the week before the event and arrange to attend another lab section to do the experiment. Turning in documentation after the fact will not be considered valid as an excuse.

Illness: If you have missed a lab due to illness, you must present a valid note explaining your absence from a physician or a health center in order for it to be considered “excused”. We can excuse one (1) absence per semester with a proper medical note and arrange for it not to affect your grade. More than one absence will not be allowed and will count as a “0” (on both the quiz and the experiment) toward your grade. Because we only have 9 class meetings for the summer, every lab counts more weight for your grade and for attendance. Three or more absences during the summer will result in an automatic “F” in the course. (And if you miss 2 labs, you are likely still looking at a “D”). Indeed don’t miss our lab for any serious reasons.

Make up labs: They won’t be any make up labs during the summer session. Indeed don’t miss lab for others reasons as indicated above: Illness: just one medical absence will be granted or a university event.

A Special Note on the Worksheets: There are four worksheets completed during the semester (IR, MS and two NMR). These worksheets count 30 points each. Three of them (IR, ¹H-NMR, and MS) are marked as additional grades on the days given. If you are absent during one of the worksheet days, you can do the worksheet outside of lab and still make up that
portion of the grade (even if you miss everything else). One of the Worksheets (13C-NMR) is counted in place of the quiz that day. You may not make up this worksheet if you were absent for lab or came to lab late so that you missed the quiz.

**Announcements/ Supplemental Documents**: Class announcements and supplemental information may occasionally be sent by e-mail to your official university e-mail address. Be sure to check your e-mail frequently and keep sufficient space in your inbox to receive attachments. Other announcements and information can be found at your MyCourses website.

**Other Rules**: All cellular phones must be turned off and hidden at all times during the laboratory. Writing or drawing on lab benches is unacceptable. *Failure to comply with either of these two rules will cause you to be asked to leave the lab for that day which would give you a zero grade on both the quiz and lab report!*

**Student Honor Code**: Mississippi State has an approved Honor Code that applies to all students. The code is as follows: “As a Mississippi State University student, I will conduct myself with honor and integrity at all times. I will not lie, cheat, or steal, nor will I accept the actions of those who do.” Upon accepting admission to Mississippi State University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor Code. Student will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the MSU community from the requirements or the processes of the Honor Code. For additional information, please visit:

http://honorcode.msstate.edu/policy.

**Title IX**: MSU is committed to complying with Title IX, a federal law that prohibits discrimination, including violence and harassment, based on sex. This means that MSU’s educational programs and activities must be free from sex discrimination, sexual harassment, and other forms of sexual misconduct. If you or someone you know has experienced sex discrimination, sexual violence and/or harassment by any member of the University community, you are encouraged to report the conduct to MSU’s Director of Title IX/EEO Programs at 325-8124 or by e-mail to titleix@msstate.edu. Additional resources are available at http://www.msstate.edu/web/security/title9-12.pdf, or at http://students.msstate.edu/sexualmisconduct/.

**Support Services**: Students who need academic accommodations based on a disability should visit the Office of Student Support Services, 01 Montgomery Hall, call 662-325-3335, or visit the website at www.sss.msstate.edu.