

COURSE INTRODUCTION, GROUND RULES, AND GENERAL INFORMATION

YOU ARE RESPONSIBLE FOR READING AND UNDER-  
STANDING THE MATERIAL IN THIS HANDOUT

**Instructors**

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**Course Objectives**

In MCMP 205, you'll continue to apply the theoretical principles learned in MCMP 204 to the functional classes of compounds that are most important in pharmaceutical and biological chemistry. We'll continue to rely heavily on certain principles of general chemistry, such as ionization theory and the theories of orbitals and bonding. You should be prepared to review this material as necessary. We're particularly interested in teaching you the techniques of studying, learning on your own, and problem solving that will be important not only in organic chemistry, but also in other areas of study and in future pharmacy practice.

MCMP 205 will be taught in a format that is similar to that used in MCMP 204, but will differ in one important respect. Formal study groups will not be assigned. Students are strongly encouraged to continue to work in study groups for purposes of study and review. Meet with your group from last semester or form a new group. Like MCMP 204, there *will be less formal lecturing than found in many other university lecture courses*. You will be expected to read the assignments *in advance* and come to class prepared to discuss them. "Discuss" can mean that you might ask a question about something you don't understand, or it can mean that you might be asked to work a problem and answer questions in class. We will typically cover in class only a small portion of the day's assignment. The rest will be your responsibility.

If you have questions about the way the course will be conducted, please do not hesitate to contact us.

**About the Instructors**

This course is staffed by three experienced instructors and a teaching assistant.

*Professor Donald Bergstrom* is in charge of the classroom part of the course. He has been an organic chemistry instructor at Purdue since he joined the faculty in 1989 and previously taught organic and general chemistry at the University of North Dakota, the University of California, Davis, and the Rockefeller University. In addition to this

course he teaches the graduate level course, MCMP 625, Grant Writing. His research is focused in the area of nucleic acid chemistry, nanomaterials and drug development.

*Professor Arun Ghosh is one of two assisting instructors.* Professor Ghosh has been teaching organic chemistry since 1995. He taught organic chemistry at the University of Illinois, Chicago until 2004 then he moved to Purdue in 2005 and taught MCMP 205 with Professor Bergstrom from 2006-2008. In addition to this course he teaches the graduate level course, CHEM-696D, Aspects of Drug-design and Medicinal Chemistry. His research interests include diverse areas of organic, bioorganic and medicinal chemistry with particular emphasis on organic synthesis and protein-structure-based design of biomolecules.

*Professor Albert Bowers is the second assisting instructor.* Professor Bowers joined the Purdue faculty in 2011. He obtained a Ph.D. degree in organic chemistry from the University of Illinois, Chicago in 2007 followed by postdoctoral appointments at Colorado State University and Harvard Medical School. As an undergraduate at the University of Chicago he was an Art History major and two-time captain of the Men's Crew Team. Dr. Bowers research seeks to combine synthetic and biosynthetic methods to create pharmacologically active molecules.

You will have an opportunity to evaluate the course and its staff at the end of the semester.

## Textbook and Course Materials

1. The texts for the course are the same as last semester: "Organic Chemistry", 5th Edition, by Marc Loudon, published by Roberts and Company. The Study Guide and Solutions Manual is "Study Guide & Solutions Manual for Organic Chemistry", 5th Edition, by Marc Loudon and Joseph G. Stowell, also published by Roberts and Company. (The 4th Edition is not used.) Lists of errors in both text and study guide ("Errata") are available at the course web site. Make a note of these errors before you read each chapter. As other errors are detected, these Errata will be updated. If you find an error that has not been listed, let Professor Loudon know. A new error reported to him (other than trivial spelling errors, grammar errors, etc.) earns you 5 points of extra credit to a maximum of 15 points.
2. The laboratory exercises should be purchased from the Boiler CopyMaker in the Union. Ask for the MCMP 205 lab packet. The laboratory syllabus will be handed out in lecture on the first day of class. It will also be posted on the laboratory course website (<https://courses.pnhs.purdue.edu/mcmp205L/>). (Login is required).
3. You will still benefit by using the HGS molecular models that you purchased last semester.

You will receive *no more handouts!* A copy of the course schedule as well as the first reading and problem assignment is attached to this syllabus. ALL future assignments should be viewed at the course website on the web.

## Course Materials on the Internet

### The Course Home Page

The lecture part of the course has a home page on the world-wide web at: <https://courses.pnhs.purdue.edu/mcmp205/> To log on to the home page you will need to use the login ID and password that you previously obtained.

**NOTE CAREFULLY ABOUT E-MAIL:** Your e-mail address should already be filled in (from Purdue records). Check to be sure this is the address at which you would prefer to receive mail. If it is not, provide another. If the address is not valid, you will not be able to receive e-mails from the instructors or the TAs about important course-related matters such as assignments, last-minute notices about exams, corrections, etc. You may change your address at any time. It is YOUR responsibility to provide us with an accurate e-mail address and to read the e-mails we send you. We don't "SPAM"—we will not bother you with e-mails unless we need to convey essential course information.

Documents: Most course documents on the course web site are in PDF (Portable Document Format). To read them, you need a free utility, Adobe Reader or Acrobat Reader. Version 10 of this utility can be downloaded from <http://www.adobe.com/products/reader/>. The PDF format allows you to view and print documents exactly as we

created them, even though the fonts and images used might not be resident on your computer. In addition to course documents in pdf format, a link is also provided to Realmedia files of the course lectures.

The course home page contains the following materials:

- 1. Course Announcements.** Please check these frequently. Urgent items will be announced in class as well.
- 2. Course Instructors.** This will lead you to pictures of the course staff and to their e-mail addresses.
- 3. Resources.** Besides course announcements, this is the most important part of the site.
  - a. Course Administration.**
    - Course Introduction.*
    - Course Schedule.*
    - Lecture TA Office hours and contact information.*
  - b. Reading and suggested problems for study.** These are the day-by-day schedules of assigned readings and problems plus end-of-chapter problems.
  - c. Answers to Problems.** These are the answers to the problems that are not answered in the Solutions Manual.
  - d. Supplementary lecture notes.** During lecture we sometimes present supplementary information including charts, graphs, tables that may not be included in your textbook. This material is posted on the web site shortly following the lecture at which it is introduced.
  - e. Recorded Lectures.** This is a link to audio/video recordings of the classes. This will be discussed further below.
  - f. Exams, Fall 2011.** Complete, worked-out answers to the hour examinations and final examination are posted as soon as possible after the exam period is over.
  - g. Exams from Spring 2010 and Spring 2011.** These are provided as examination study aids. These will not substitute for working problems in the text, but will give you a good idea of examination style. Note that we do not repeat examinations in this course. Note also that coverage on the exams may differ from previous years.
  - h. Quizzes.** Most course quizzes will be posted ~ 2 days prior to the lecture period in which the quiz is to be given. The key to each quiz will be posted after the quiz is given in class.
  - i. Textbook and Study Guide errors.** Please mark these in your text and study guide/solutions manual to avoid confusion.

4. A list of your grades. (Available only to you.) Note that this “gradebook” does NOT apply extra credit or activate the “resurrection grading system,” nor does it contain the laboratory grades. Its principal purposes are for you to have all your grades in one convenient place and for you to check the accuracy of our records. The grade calculation provided is BEFORE these additions and corrections are applied. Hence, the letter grade calculated in the gradebook is MEANINGLESS. This section of the site also allows you to see exam distributions and averages also. Note that because this course is not graded on a curve, these statistics have very little utility except for you to see how you did in relation to the class.

The laboratory portion of this course has a separate home page <https://courses.pnhs.purdue.edu/mcmp205L/>. Please visit the laboratory website for lab related information—handouts, grades, etc.

### On-line Problem Resource from Sapling Learning

We are offering an OPTIONAL extra-credit opportunity this semester that will involve completion of online homework that will follow the chapters in the book as we cover them in lectures. Please consider using this resource. You will be invited to create an account at <http://saplinglearning.com/>. Access costs \$29.99 per semester, and you only need to create an account if you would like to use this resource. If you choose not to participate, you can ignore this invitation to join the site.

To make participating in this homework worth your while, we are offering a SIGNIFICANT level of extra credit: the potential for 50 points. The total extra credit you earn will scale with the amount of the material you complete and the overall grade you get on the material. (For example, if you complete half of the exercises with a grade of 75%, you get  $(50)(0.50)(0.75) = 19$  extra points.) If you complete all of the material and obtain high scores, you can achieve an increase in grade points that can push you past the borderline level into solid A/B territory (and that's not

even considering what the extra practice and motivation to keep up with your reading and chapters will do for your base grade!). The Sapling system provides problems that you will have to work by a certain deadline, and on-line tutorial assistance is available if you need help. Additional details will be provided via the regular course website and updates in class.

Here are the instructions for signing up:

1. Go to <http://saplinglearning.com>
2.
  - a. If you already have a Sapling Learning account, log in, click "View Available Courses", then skip to step 3.
  - b. If you have a Facebook account, you can use it to quickly create a SaplingLearning account. Click "create account" located under the username box, then click "Login with Facebook". The form will auto-fill with information from your Facebook account (you may need to log into Facebook in the popup window first). Choose a password and timezone, accept the site policy agreement, and click "Create my new account". You can then skip to step 3.
  - c. Otherwise, click "create account" located under the username box. Supply the requested information and click "Create my new account". Check your email (and spam filter) for a message from Sapling Learning and click on the link provided in that email.
3. Find your course in the list (listed by school and instructor) and click the link.
4. Click the button that says "Send payment via Paypal or Credit Card" and follow the remaining instructions.
5. Once you have registered and enrolled, you can log in at any time to complete or review your homework assignments.
6. If you have any problems, send an email to [support@saplinglearning.com](mailto:support@saplinglearning.com) explaining the issue.
7. During sign up - and throughout the term - if you have any technical problems or grading issues, send an email to [support@saplinglearning.com](mailto:support@saplinglearning.com) explaining the issue. The Sapling support team is almost always more able (and faster) to resolve issues than your instructor and TAs.

*Ground Rules:*

You are allowed to discuss these problems with other students in the class.

Even if you do not subscribe, you can certainly discuss the problems with others who are logged in. However, you may not log on for someone else. You also may not copy someone else's answers directly.

*Disclosure:*

Professors Bergstrom, Ghosh, and Bowers have no financial interest in Sapling Systems whatsoever. We are trying this solely because we think it might help you learn.

## Recording of Classes

All courses will be recorded with Boilercast and may be accessed either through the Purdue iTunes U page (<http://www.itap.purdue.edu/learning/tools/boilercast/>), or through the HookTV courses page at <http://hooktv.pharmacy.purdue.edu/courses.php?course=MCMP20501>

## Assistants and Assistance

Office hours are by appointment; you may phone, e-mail, or catch the course instructor after class for an appointment if necessary. In addition, the lecture TA will be available at a time and place to be announced in class. You need not wait for a help session or office hour to ask for assistance from the instructors or the TA. Do not hesitate to contact us by electronic mail if that is convenient for you. The lecture TA will attend all classes, and will be available for questions. Because class participation will be an integral part of the way this section is conducted, in-class questions are of course strongly encouraged. For help with the laboratory part of the course information about the teaching assistants may be found in the Laboratory Syllabus and at the MCMP 205L web site, <https://courses.pnhs.purdue.edu/mcmp205L/materials/>.

## Seating

An open seating policy has been adopted for MCMP 205 and seats in the lecture room are not assigned.

## Academic and Professional Integrity

The methods used in this course presuppose that students will uphold the highest standards of professional and academic integrity. The expectations are as follows:

1. All written work must be your own, and must be carried out privately. That is, you may *not* copy answers, or allow your answers to be copied, by any other students.
2. You may discuss the take-home laboratory question sheets freely with other students. However, you must work them on your own. Outright copying of these sheets or allowing them to be copied is a violation of academic integrity.
3. No electronic calculators, notes, cribs or texts will be allowed on any midterm examination or the final examination, unless specifically noted by the instructor.
4. Turning in an altered examination paper for re-grade is a violation of academic integrity.
5. Falsifying an excuse for a missed examination is considered a violation of academic integrity.
6. Failure to report violations of academic integrity makes you an accomplice, just as failure to report misuse of drugs would violate your ethical standards as a pharmacist.

Because a healthy class atmosphere is poisoned by *any* violation of the above standards, a violation will subject the offender to the harshest penalty allowed by the university. No additional warnings will be given. That having been said, it is expected that violations will not occur. If you wonder whether a course of action violates this policy, simply ask in advance!

## Course Schedule

The course schedule accompanies this handout. It contains the class schedule, the laboratory schedule, and the examination schedule. This schedule is posted on the world-wide web. You can consult it there at any time

## Suggestions for Study

Organic Chemistry is a subject, which, like mathematics, is cumulative in nature. Each new idea builds upon a previous idea. As you'll see below, our testing/grading scheme emphasizes this point. It follows logically that if you want to get the most out of the course, you have to (a) keep up, and (b) not let previously learned material slip away into oblivion. Thus:

(1) Keep up with reading and problem assignments. You are in trouble if you fall behind! This means that you should have at least one serious study period between each class. You will find that you will learn more and have to study less if you do your studying in many smaller "bites" rather than in one large "chunk". It's like athletics: what is better—six practices per week for an hour each, or one practice for six hours? If you feel that you are spending a disproportionate amount of time on MCMP 205, then spend less, but spend it efficiently. You need not work every problem assigned if the ones you do work are worked (or puzzled about) thoughtfully.

(2) LET PROBLEM-SOLVING BE A TOP PRIORITY IN YOUR STUDYING once you have read the material. What is it that you have to do to perform well in organic chemistry? Obviously, you have to take examinations! What do you find on examinations? PROBLEMS! It should then be clear that working problems (rather than highlighting the text with a marker) is the BEST way to prepare for exams and to learn the material. The problems should tell you what you need to study further. It is common to see students working problems with the Solutions Manual open on the desk. If this is your habit, ask yourself: "Will I have an answer book available during a test?" Obviously the answer is NO! This should tell you something about the wisdom of using the solutions manual while you work problems. You should work problems with the solutions manual CLOSED. If there is a problem you don't understand, formulate a question about it and WRITE IT DOWN. Then move on to the next problem. Only

after you have worked a set should you look at the answer book. *You will probably not have time to work every assigned problem!* Decide how much time you can afford to spend with problems. Spend it by working thoroughly as many problems as you can rather than by skimming every problem.

(3) Review earlier material—including material from general chemistry—whenever necessary. Initially, this will be time-consuming, but eventually, it will become easier and easier. Educators have shown that the best way to learn is by continued reinforcement. Frequent review provides this reinforcement. Take time to review even if it means working fewer problems!

(4) *Organize into study-groups for greater efficiency.* Discuss difficult concepts with others. You will learn as much or more by intense discussion than you will from listening to a lecture. *Since the course is NOT graded on a curve, you do not hurt yourself by helping someone else learn—in fact, quite the opposite!*

(5) Studying from old examinations IS a legitimate way to review for an examination. We do NOT repeat old examinations in this course. Please be aware, however, that coverage on old examinations may be different than in previous years. Old examinations and their answers are included in the web posting.

(6) Seek assistance when you need it.

## Lecture Examinations and Quizzes

### A. Examinations.

There will be four examinations: three midterms and a final examination. The three midterm examinations will be given in the evenings from 8–9:30 PM on the dates and in the locations listed below:

EXAMINATION I	Thursday, September 22	8–9:30 PM	Location WTHR 200
EXAMINATION II	Thursday, October 20	8–9:30 PM	Location WTHR 200
EXAMINATION III	Thursday, November 17	8–9:30 PM	Location WTHR 200

Please note that in order to compensate for evening exams there will be no lectures on Friday, September 23, Friday, October 21, and Friday, November 18.

Graded exams will be returned to you in your laboratory section.

### B. Quizzes.

In-class quizzes will be given on Friday of each week throughout the semester with the exception of, 1) those weeks in which there is an exam (there are no lectures on Fridays following an exam), 2) the final week of the course, and 3) Thanksgiving break.

There will be eleven quizzes worth 20 points each (total 220 pts).

Most quizzes will be posted on the MCMP web site ~ 2 days prior to the lecture period in which the quiz is to be given. The key to each quiz will be posted on the MCMP web site after the quiz is given in class.

Graded quizzes (in-class quizzes only) will be returned to you in your laboratory section.

Missed quizzes can be submitted electronically or by campus or US mail to Dr. Bergstrom no later than 24 hrs following the in-class quiz along with an explanation of why the in-class quiz was missed. Credit will be given for up to two missed in-class quizzes submitted in this way.

Although you are allowed to discuss these quiz problems with other students in the class, in those cases where you submit an out-of-class quiz electronically or by mail, you must complete that quiz independently; you may not copy someone else's answers directly.

### Electronically:

Scan the completed quiz and submit as an attachment to [bergstrom@purdue.edu](mailto:bergstrom@purdue.edu) Subject: Quiz \_ first and last name. If you do not have access to a scanner it is acceptable to take a picture of each page of the quiz with the camera on your cell phone and submit as an attachment.

**By campus mail:**

To (Name)	Dept.	Building	From (Name)	Dept
D. E. Bergstrom	MCMP	BRK	Print full name	MCMP205

**By US Mail** (postmarked no later than one day following in-class quiz):

Professor D. E. Bergstrom  
 Purdue University  
 Room 2042  
 Birck Nanotechnology Center  
 1205 West State Street  
 West Lafayette, IN 47907-2057

**Grading and Missed Examinations**

A. *Classroom.* Please note the following points carefully:

1. The point values for the examinations are as follows: Exam 1, 100 points; Exam 2, 100 points; Exam 3, 100 points; Final Exam, 150 points.
2. There are 11 quizzes worth 20 points each.
3. The total of your exams and quizzes will be multiplied by 1.2836 to convert the classwork points to the proper point ratio to lab work.
4. You can receive up to 50 additional extra credit points from the Sapling exercises. You can receive a maximum of 70 extra-credit points from all sources.
5. There are *no dropped examinations*.
6. The *Resurrection Grading System (RGS)* will apply to the three midterm examinations.

In the resurrection grading system, if you have a bad performance on *any* examination, your score on the individual item will be replaced by your final examination grade (suitably corrected for total points) if your percentage score on the final is higher. Suppose, for example, that you obtain a grade of 40 on Exam 1. Suppose that you obtain a grade of 100 on the Final Examination ( $100/150 \cdot 100 = 67\%$ ). You are then given a grade of 67% ( $0.67 \cdot 100 = 67$  points) for Exam 1. Thus, you will have "resurrected" a poor performance on Exam 1 with a better performance on the Final Examination. If the percentage grade on Exam 1 is better than that on the final, the Exam 1 score will not be changed. Any number of exams can be changed in this manner. The reason for using this system is that it acknowledges that a student can "put everything together" late in the course and demonstrate a mastery of the course even with poor performances on the individual examinations. *BUT WATCH OUT! If you use this system as an excuse for procrastination you will probably not succeed in this course. You MUST study regularly, because time for review prior to the final examination is very short!*

Another aspect of the resurrection grading system is that if you are ill or if you must be unexpectedly absent for an examination, your grade for that examination will be determined by your grade on the final.

Grading Summary

<i>Item</i>	<i>Maximum points possible</i>
A. <i>Classwork:</i>	
Eleven Quizzes	220
Three Midterm Examinations	300
Final examination	150
Add and multiply the result by 1.2836	
<i>Classwork subtotal</i>	<b>860</b>
B. <i>Laboratory subtotal (see Laboratory syllabus for details):</i>	<b>340</b>

<https://courses.pnhs.purdue.edu/mcmp205L/materials/>

*COURSE TOTAL*

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**1200**

Final grades will be assigned from the following standards:

A student with 1020 points will receive no worse than an "A" grade.

A student with 840 points will receive no worse than a "B" grade.

A student with 660 points will receive no worse than a "C" grade.

A student with a score lower than 660 points will be assigned a "F" grade.

What happens if everyone in the class gets more than 1000 points? Then everyone gets an "A"! There are no quotas for any grade. Hence *there is absolutely no reason that you should not work together as much as possible, help each other out, and do everything possible to learn together.*

To see how you are doing in the class work part of the course, simply calculate your total points and take the percentage of the total possible.

### **Important Disclaimer**

Purdue University requires us to post the following notice. The reason for this is concern over the possibility of a flu epidemic.

Disclaimer: In the event of a major campus emergency, the requirements, deadlines and grading policies described herein are subject to changes that may be required by a revised semester calendar. Any such changes in this course will be posted, once the course resumes, on the course website or can be obtained by contacting the instructor via email or phone.