

SUMMER 2016
SYLLABUS
CHEM 341-50 (ORGANIC CHEMISTRY I - ONLINE)

By remaining enrolled in this class, you agree to the policies outlined in this syllabus.

This syllabus is to be used as a reference throughout the term. Please consult it when you have questions.

The instructor reserves the right to make changes necessary to meet learning objectives, to compensate for missed classes, or for similar reasons. The most up to date version of the syllabus is available on the Blackboard website for the course.

This document is available in large print or alternate font upon request.

BASIC CLASS INFO

Important disclosure: The University of Louisville defines an "online class" a course that has 80% of its content delivered online. This course requires the student to take written exams either proctored or on campus, which is not delivered online.

Senior Instructor: Dr. Natali B. Richter

Office: 205, Chemistry Building (***please note: limited in-office availability during summer term***)

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*For online students, the best way to contact me is via **email**. Please include "341 online" or "341-50" in the subject line of your email to receive priority response; if I do not know that your email is from an online student you will be in the queue with the rest of my email! If you do not get a response within two business days please contact me again, as spam filters sometimes delay legitimate mail.*

Virtual Office Hours: Tuesdays & Thursdays from 11 AM to noon Eastern Standard Time **or by appointment**.

To access the virtual office hours, click on the link on your Blackboard page and then click on the "Office Hours" tab. Please make sure that you have all the plug-ins required.

Required Text: *Organic Chemistry*, 5th ed. by Janice Gorzynski Smith

Recommended: *Study Guide/Solutions Manual for Organic Chemistry*, 5th ed. by Janice Gorzynski Smith and Erin Smith Berk

Course website: [Blackboard](#)

(https://blackboard.louisville.edu/webapps/portal/execute/tabs/tabAction?tab_tab_group_id=_23_1)

Homework website: [Sapling Learning](#) (<https://www.saplinglearning.com/ibiscms/login/>)

Course pre-requisites: CHEM 202, CHEM 209

COURSE DESCRIPTION

"Basic principles of organic chemistry: structure and geometry of molecules and consequential physical, chemical, and spectroscopic properties; chemical reactions, mechanisms, and synthetic applications; industrial and biological examples." This is the course description as it appears in the University of Louisville Catalog. Pretty dry stuff, eh? All will become clearer (we hope!) once you have read the following section.

COURSE LEARNING OUTCOMES

CHEM 341 – Organic Chemistry I is the first course in the two-semester organic chemistry sequence; CHEM 342 - Organic Chemistry II - completes the sequence. CHEM 341 and 342 should be thought of as a single course divided into two administrative units. Organic chemistry is the chemistry of carbon. Sounds simple enough but as you'll soon discover carbon is a very unique element. It has to be, otherwise why would it, of all the elements (of which there are over 115), have its own field of chemistry? The focus of CHEM 341 will be on molecular structure, i.e., how carbon bonds, as well as an introduction to organic synthesis. The chemical reactivity of organic molecules will be the major focus of CHEM 342.

By the end of CHEM 341 students will be able to:

1. Demonstrate sufficient facility with the notation of chemistry to communicate knowledge (understand and answer questions, look things up, etc.).
2. Compare the relative energy states of a given set of molecules based on the three-dimensional properties of the molecule.
3. Predict the three-dimensional structure of any given molecule including its stereochemistry, if appropriate.
4. Predict the products and know the reaction mechanisms of the typical reactions of several organic functional groups.
5. Demonstrate understanding of the thermodynamic and kinetic underpinnings of chemical reactivity.
6. Predict the structure of a molecule based on its IR and NMR spectra and to be able to determine the name of that molecule.
7. Continue developing critical thinking and problem solving skills germane to this course and subsequent science courses.

The order of these outcomes is not perfectly arbitrary because the highly interwoven and cumulative nature of organic chemistry requires that basic facts of structure and reactivity be learned before later material can make sense. **Self-quizzes, exercises, and worksheets** will be used throughout the semester on an informal basis (i.e., not graded) to make sure students understand the key concepts from each chapter.

We will use Smith as our primary information source, but please be aware that I may use other materials to augment the text. The Sapling Learning assignments are intended to give you additional practice using the concepts learned in lecture. **I still highly recommend also working the end-of-chapter problems in Smith.**

ONLINE COURSE STRUCTURE

We will rely heavily on the textbook, taking chapters in the following order (see “Tentative Course Schedule” for more details): Chapters 1-4; Chapters 5-7; Chapters 6-10; Chapters 11-14. Suggested end-of-chapter problems from the textbook can be found on the course Blackboard site.

You will watch video lectures, read the textbook, work end-of-chapter problems and associated worksheets, and submit online homework on a weekly basis. **For a summer course, expect to spend a *minimum* of 5-6 hours per day viewing lectures, reading the book, and working through problems. If you cannot devote the proper time to this summer course expect that your performance may suffer.**

CONSIDER THE FOLLOWING ABOUT TAKING AN ONLINE COURSE:

- ***Without lectures, you will be teaching yourself to learn.*** That’s what life-long learning is all about.
- ***You will do most of your communicating by writing.*** So, as a result, there will be more writing, perhaps, than in a traditional, face-to-face setting.
- ***Class communication is largely asynchronous,*** meaning not occurring at the same time. The cyber classroom will not function in a single unit of time, like the traditional classroom. You can access the course and assignments at any time of day or night from any part of the world. You can work ahead, but you cannot be behind the schedule.
- ***There is a shift in the role of the teacher and the student relative to a face-to-face course.*** I am more a facilitator, guide, coach, or resource than source of information. My job is to create an environment that guides you to acquire and apply the information yourself. You assume the responsibility for your own learning: you will find the academic opportunities provided, construct and share information, manage your time, and use that time for critical thinking, reflection, and application.
- ***Students in online courses depend on technology to submit work and communicate.*** The key word in the previous sentence is “depend.” If electronic communication is disrupted, please call the IT Help Desk (contact info found in “Student Support” section of syllabus).

TECHNOLOGY EXPECTATIONS

CHEM-341-50 is a distance education course, meaning that course content is delivered exclusively online. ***You must have daily access to a computer and a reliable internet connection for this course.*** More information about computer, software, and internet specifications, may be found [here](#).

You must be able to use access and navigate Blackboard, use email, and know how to download documents.

For your privacy and security, only your official U of L email account will be used for communication. No information will be sent to personal email accounts. Please check your U of L email account daily.

STUDENT SUPPORT

Tech Support

Blackboard Student and After-Hours Support: Help Desk Call Service: (502-852-7997)

Email Service: helpdesk@louisville.edu

Live Online Support: <http://louisville.edu/it/support/helpdesk>

The Help Desk provides support to the entire University of Louisville community: faculty, staff and students. If you need assistance with accessing your university accounts, unlocking your password, accessing wireless or more, please let the support staff know.

Academic Support

Supplemental Instruction (SI) sessions are put on by the **REACH Program**. Tutoring by appointment may also be scheduled through REACH. Go to the [REACH website](http://www.reach.louisville.edu), (www.reach.louisville.edu), click "Tutoring" then "General Tutoring" and then "[Online Tutoring Request Form](#)" to fill out a tutoring-request form. If you are on campus, you may go in person to Strickler Hall, Room 107 and complete a request form.

GRADE DETERMINATION

Since this is a distance education course, there are a few options for how your grade may be determined. ***All students are required to take the Final Exam.*** The Sapling online homework will count as 15% of the overall course grade no matter which option is chosen. ***You must let me know by Friday, June 3 which option you would like to choose. If no option is selected, the default set-up will be Option 1 with all exams being taken on campus.***

Option 1: Regular Exams, Final Exam, and Sapling Online Homework. If you live in the area, you are welcome (and encouraged) to take all 3 regular on-campus exams during the term. If you choose this option, you will take all 3 exams on campus; the Final Exam and online homework are also required. Under Option 1, your overall course grade will be allocated as follows:

| | | |
|------------------------|-----|---------|
| EXAMS 1-3 | 50% | 300 pts |
| FINAL EXAM | 35% | 210 pts |
| WEEKLY ONLINE HOMEWORK | 15% | 90 pts |

Option 2: Final Exam and Online Homework. Students who cannot make it to campus for the three regular exams may opt to take the on-campus Final Exam only. Under this option, online homework is still required. If you choose Option 2 your overall course grade will be allocated as follows:

| | | |
|------------------------|-----|---------|
| FINAL EXAM | 85% | 510 pts |
| WEEKLY ONLINE HOMEWORK | 15% | 90 pts |

Option 3: One or Two Regular Exams, Final Exam, and Sapling Online Homework. Students who cannot make all three on-campus regular exams may opt to take only one or two of those exams. If the student chooses this option, the Final Exam and online homework are still required. Depending on the number of exams that are taken, the overall course grade will be allocated as follows:

One-Exam Option:

| | | |
|-------------------------------|-----|---------|
| EXAM 1, 2, OR 3 (ONLY 1 EXAM) | 17% | 100 pts |
| FINAL EXAM | 68% | 410 pts |
| WEEKLY ONLINE HOMEWORK | 15% | 90 pts |

Two-Exam Option:

| | | |
|----------------------------------|-----|---------|
| EXAMS 1, 2, OR 3 (2 EXAMS TOTAL) | 33% | 200 pts |
| FINAL EXAM | 52% | 310 pts |
| WEEKLY ONLINE HOMEWORK | 15% | 90 pts |

Option 4: Proctored exams at a remote location. Students who do not live in the Louisville area may make arrangements for any or all of the exams to be proctored at an off-campus site. Examples of acceptable exam proctoring sites are a local testing center or a local high school/college. Exams may NOT be proctored by friends or family members. If you choose to take exams off-site under a remote proctoring set-up, you must:

1. Seek my approval of your proctoring arrangement for **Exams 2, 3, or the Final** by **Friday, June 10**.
2. Put me in contact with the proctor no later than 1 week prior to the remotely-proctored exam.

If you wish to take Exam 1 under a remote proctor, you need to have the arrangement approved and I must be able to contact the proctor no later than Monday, June 6.

Under Option 4 grades will be determined as outlined in Options 1-3, depending on the number of exams taken.

GRADING SCALE

Under any of the 4 options letter grades will be earned as follows:

| Letter Grade | Percentage | Points |
|--------------|-----------------|----------------|
| A | $100 \geq 87.5$ | $600 \geq 525$ |
| B | $87.5 \geq 75$ | $524 \geq 450$ |
| C | $75 \geq 62.5$ | $449 \geq 375$ |
| D | $62.5 \geq 50$ | $374 \geq 300$ |
| F | less than 50 | < 300 |

Grades will not be curved. While extra credit opportunities may come up from time to time (typically toward the online homework grade), requests for extra credit to help change your letter grade will be denied. Additionally, requests for a grade change due to GPA requirements, scholarship eligibility, athletic eligibility, hardship, financial aid, etc. will not be considered. **Grades will be earned entirely by student performance on exams and online homework.**

Exams

Three exams will be held **on campus** throughout the term, according to the schedule below. The mandatory Final Exam will be essentially a fourth exam covering all new material after Exam 3, *plus* a cumulative section “retesting” material on the first 3 exams. The Final will be given on the last day of Summer Term II classes (Tuesday, July 5). A missed Final Exam is an automatic F for the entire course.

Make-up exams will NOT be given. If you cannot make one of the exam dates below, please see the “Grade Determination” section in this syllabus for options and note the deadlines for making alternate arrangements. In the case of missed exam due to illness, etc. please see me regarding the prorating of your grade. Appropriate documentation will be required for the miss to be excused.

| Exam | Date | Time | Room | Points |
|------------|--------------------|-------------------|---|---------|
| Exam 1 | Wednesday, June 15 | 11:30 am-1:00 pm | Last Name A-O: CB LL16 Last Name P-Z: CB 329 | 100 pts |
| Exam 2 | Wednesday, June 22 | 11:30 am-1:00 pm | Last Name A-O: CB LL16 Last Name P-Z: CB 329 | 100 pts |
| Exam 3 | Wednesday, June 29 | 11:30 am-1:00 pm | Last Name A-O: CB LL16 Last Name P-Z: CB 329 | 100 pts |
| Final Exam | Tuesday, July 5 | 11:15 am- 2:00 pm | Last Name A-O: CB LL16 Last Name P-Z: CB 329 | 210 pts |

Weekly Homework

There are two types of homework for this course, each with a different purpose. You need to be doing ALL of BOTH types of homework to be successful in this course.

1. ***Suggested problems from each chapter of the textbook.*** These problems are not graded, but working these problems will be central to your learning and test preparation. ***Students should be able to work these problems quickly and skillfully.***
2. ***Online homework using Sapling.*** This portion of the homework consists of a smaller selection of problems that students complete for credit. Please note that the Sapling homework for credit is NOT sufficient for test preparation, nor is it intended to be.

Sapling homework will be given weekly beginning on May 31. Students must register with Sapling Learning at the following website: [Sapling Learning](https://www.saplinglearning.com/ibiscms/login/) (<https://www.saplinglearning.com/ibiscms/login/>).

Please see Blackboard for more specific instructions on how to enroll for Sapling. Sapling access can be purchased on a per-semester or per-year basis.

Students can earn a maximum of 90 pts (15%) of the overall course grade from weekly homework. The percentage earned for homework will be prorated to 90 pts in the following fashion:

| Weekly Homework % | Points |
|-------------------|--------|
| 100 > 90 | 90 |
| 90 > 80 | 80 |
| 80 > 70 | 70 |
| 70 > 60 | 60 |
| 60 > 50 | 50 |
| 50 > 40 | 40 |
| 40 > 30 | 30 |
| 20 > 10 | 20 |
| 10 > 0 | 10 |

Time extensions will not be given for online homework – NO EXCEPTIONS.

ACADEMIC HONESTY

The academic honesty policy followed in this class is consistent with that stated in Sections 5 and 6 of the University policy on Student Rights and Responsibilities. You may read the policy in full [Student Rights and Responsibilities](https://louisville.edu/dos/students/studentrightsandresponsibilities) (<https://louisville.edu/dos/students/studentrightsandresponsibilities>). Please note that a student who complies with academic dishonesty will be subjected to the same disciplinary action as the student who commits the dishonest act.

DISABILITY SERVICES

Students with disabilities who require accommodations (academic adjustments and/or auxiliary aids or services) for this course must contact the Disability Resource Center (DRC). Please do not request accommodations directly from the professor. The DRC can be reached at (502)852-6938.

SEXUAL HARASSMENT

Sexual misconduct (sexual harassment, sexual assault, and sexual/dating/domestic violence) and sex discrimination are violations of University policies. Anyone experiencing sexual misconduct and/or sex discrimination has the right to obtain confidential support from the PEACC Program 852-2663, Counseling Center 852-6585 and Campus Health Services 852-6479. Reporting your incident to any other University employee (including, but not limited to, professors and instructors) is an official, non-confidential report to the University.

To file an official report, please contact the Dean of Student's Office 852-5787 and/or the University of Louisville Police Department 852-6111. For more information regarding your rights as a victim of sexual misconduct, visit the Office for Civil Rights (<http://www2.ed.gov/about/offices/list/ocr/docs/know-rights-201404-title-ix.pdf>) and for more information about resources and reporting at UofL, visit the Sexual Misconduct Resource Guide (<http://louisville.edu/hr/employeerelations/sexual-misconduct-brochure>).

OTHER UNIVERSITY POLICIES

Please refer to the university policies on religious holy days/observances and diversity as detailed in the [Student Handbook](https://louisville.edu/dos/students/studentpoliciesandprocedures/student-handbook) (<https://louisville.edu/dos/students/studentpoliciesandprocedures/student-handbook>).

WHAT YOU SHOULD KNOW FROM PREVIOUS CHEMISTRY COURSES

Chemistry, like any other science, is built up from fundamental concepts and principles that are then expanded on and utilized in new situations. It is vital that you retain and understand concepts learned from your general chemistry courses. You will find your general chemistry text (if you still have it!) extremely useful in this regard. The following is a list of key concepts you need to understand and be able to use if you are to succeed in this course:

1. STOICHIOMETRY
2. ORBITAL THEORY
3. ELECTRONIC CONFIGURATIONS & PERIODIC TRENDS
4. LEWIS STRUCTURES AND COVALENT BONDING
5. MOLECULAR SHAPE
6. INTERMOLECULAR FORCES IN PURE SUBSTANCES AND IN MIXTURES
7. KINETICS (REACTION RATES) AND THERMODYNAMICS (EQUILIBRIA)
8. ACID-BASE CHEMISTRY
9. REDOX CHEMISTRY

STUDY STRATEGIES

Many students find this to be a difficult course that demands a great deal of time. Be prepared to work hard. To help you do well in this course, I have outlined a few basic study strategies that you should find useful.

- Note that your grade comes primarily from exams. I have found the best way for students to prepare for my exams is as follows: read text ↔ attend/watch lectures ↔ work suggested problems from textbook → complete Sapling assignments → complete worksheets → practice old exam questions
- **Do the work!** In order to do well in this course, to understand the material, you must do the reading, complete the homework assignments, work through the problems at the end of each chapter, and view every video.
- **Allow yourself enough time to do the work. This is particularly important in a summer course.** You might find it very helpful to set up a schedule and then to stick to it.
- **Don't fall behind!** We all procrastinate, myself included. Keep ahead of what is happening in class. This is a very difficult course in which to catch up.
- **Get help when you need it.** By keeping ahead of the material and doing the work, you will be able to identify those areas you are having trouble with and get timely help.
- **Understand concepts; don't just memorize facts.** Do not rely on memorization to get you through this course. If you understand the concepts, you should be able to do well on the exams. "How do I do that?" you ask. One method is to continually ask yourself at each step when solving a problem, "Why did I do that?" If you can answer these questions, you should have no difficulty succeeding in this class.
- **Participate in a study group.** If you can't find one, organize one yourself. Develop a network of peers with whom you meet regularly to discuss chemistry concepts and problems. If you are struggling to understand the material, you will find it less frustrating and perhaps even fun to meet with other students.
- **Attend Supplemental Instruction (SI) sessions put on by the REACH Program.** Tutoring by appointment may also be scheduled through REACH. Go to the website (www.reach.louisville.edu), click "Appointment Tutoring" to fill out a tutoring-request form or go in person to Strickler Hall, Room 107 and complete a request form. The *Student Solutions Manual* is available on reserve in Ekstrom Library.
- **Ask questions.** Ask other students, ask the instructor, ask your SI leader. Don't be shy.

The following is the **tentative schedule** for the summer term. If any changes are necessary, they will be announced in class and posted on Blackboard.

Week 1: May 31-June 3

Topics Covered (Chapters 1 & 2)

Carbon, Bonding, Lewis Structures, Resonance Part 1
Orbital Hybridization, Resonance Part 2, Condensed & Skeletal Structures
Acids & Bases, Assessing Acid/Base Strength Part 1
Assessing Acid/Base Strength Part 2, Lewis Acids/Bases

Week 2: June 6-June 10

Topics Covered (Chapters 3 & 4)

Functional Groups, Introduction to Alkanes, Nomenclature, Physical Properties
Conformational Analysis, Part 1: Ethane and Butane
Conformational Analysis, Part 2: Beyond Butane, Cyclohexane

Wednesday, June 15 EXAM 1: Chapters 1-4

Week 3: June 13-June 17

Topics Covered (Chapters 5-7)

Introduction to Stereochemistry, Identifying Chiral Centers, *R* vs *S*
Diastereomers & Meso Compounds, Disubstituted Cycloalkanes
Intro to Organic Reactions, Review of Thermodynamics & Kinetics, Nucleophilic
Substitution Part 1
Nucleophilic Substitution Part 2

Wednesday, June 22 EXAM 2: Chapters 5-7

Week 4: June 20-June 24

Topics Covered (Chapters 8-10)

Elimination Reactions Part 1
Elimination Reactions Part 2
Alcohols, Ethers, & Epoxides
Alkenes

Wednesday, June 29 EXAM 3: Chapters 8-10

Week 5: June 27-July 1

Topics Covered (Chapters 11-14)

Alkynes
Organic Redox
IR Spectroscopy
NMR Spectroscopy

Tuesday, July 5 Final Exam: New Material (Chapters 11-14) plus Old Material (Chapters 1-10)

Last modified 5/23/2016 [NBR]