

Chemistry 102 Lecture Syllabus
Spring 2012

Instructor: Dr. Fernanda Burke

Office: Bradley 222

Office Hours: M: 10am-11am, T: 11am-1pm, W: 10am-11am, or anytime you can find me in my office or in the labs (Bradley 201, 202, or 208)

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Lecture: MW: 1pm-2:15pm, Bradley 103

Labs: M: 2:30pm-5:30pm (Section 005)—Dr. Burke
T: 11:00am-2:00pm (Section 105)—Prof. Marin

Course

Description: To introduce the student to organic chemistry and biochemistry, and to relate these studies to clinical and medical applications. The foundation in organic chemistry from the first half of the course will be used to understand the structure and function of biological compounds (carbohydrates, lipids, proteins, and nucleic acids) in the second half of the class.

Learning

Outcomes: Following the completion of the Fundamental Chemistry II course the students will be able to:

- name and draw the structure for many organic compounds that represent the major classes (hydrocarbons, alcohols, aldehydes, ketones, carboxylic acids, esters, amines, and amides).
- associate the major organic classes with specific physical properties and chemical reactions that each undergoes.
- recognize and summarize the metabolic pathways by which the four major biological compounds (carbohydrates, lipids, proteins, and nucleic acids) are synthesized (anabolism) and broken down to yield energy (catabolism) will also be explored.
- apply theoretical ideas to practical situations in the laboratory while gaining skills in performing data collection and assessment, in drawing meaningful conclusions, and in developing confidence in their own abilities.

Text(s): General, Organic, and Biological Chemistry, 5th Edition, H.S. Stoker, 2010
ISBN: 978-0-547-15281-3

Prentice Hall Customized Laboratory Manual, 2008

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Attendance

Policy:

Classroom attendance and participation are required in this course. Not only are you expected to arrive on time to class, but you are also expected to stay for the entire class period, participate in classroom discussion, ask questions and periodically present or lead discussions on assigned special topics.

According to the *USC Academic Bulletin*, “absence from more than 10 percent of the scheduled class sessions, whether excused or unexcused, is excessive and the instructor may choose to exact a grade penalty for such absences.” Please note that USC makes no distinction between “excused” and “unexcused” absences. This course meets 2 times a week for lecture and 1 time a week for lab. Being more than 10 minutes late to class or leaving class early will count as an absence. Thus, if a student misses more than **3 lectures** or **1 lab**, his or her final grade in the lecture course will be dropped one letter grade. Continual tardiness may also result in a drop in a student’s grade.

Students are responsible for any work or assignments missed during absences. If a quiz is missed during lecture, the student will receive a zero for that quiz. If homework is turned in a day late or after lab or lecture begins, the final grade on that homework will be dropped one letter grade.

Reading:

Reading assignments are given each day along with homework problems. You will need to stay on top of the reading assignments to be successful in this course. The reading material will be a part of classroom discussions and may be asked on quizzes or tests.

Homework:

In addition to the reading assignments, problems from the book will be assigned for homework after each lecture. Homework assignments are due at the beginning of the next day’s class. Selected homework assignments will be graded and returned to you as quickly as possible.

Tests:

There will be 3 tests covering lecture topics, reading assignments, movies shown in class, laboratory experiments, and assigned homework problems. Each test typically has 25 questions, which are a combination of fill-in-the-blank and short answer. There may also be a few extra credit questions on each test. If you do not show up for a test, there will be NO MAKE UPS given, except under extreme circumstances.

Final Exam:

The final exam is a comprehensive exam over all of the material covered in the course. There are 50 questions on the final exam, most of which are based on questions from the 3 tests. If any material is covered after the last test, it will also be included on the final exam.

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Laboratory: Attendance in the laboratory is mandatory and NO MAKE UPS will be provided, except under extreme circumstances. Your laboratory grade will be based on successful and accurate completion of the experiments and the completion of the laboratory reports for selected experiments. Each student is expected to read the lab and complete any pre-lab assignments BEFORE coming to class.

Grading: Your final grade in this course will be based on the following:

3 Tests (15% each)	45%
Comprehensive Final Exam	30%
Laboratory	15%
Homework/Classroom Participation	10%

The laboratory is an essential and required component of this course. A failing grade for the lab will automatically result in failure of the course.

Grade Scale:	90-100	A	70-76	C
	87-89	B+	67-69	D+
	80-86	B	60-66	D
	77-79	C+	Below 60	F

Academic Integrity and the Honor Code

It is the responsibility of every student at the University of South Carolina at Lancaster to adhere steadfastly to truthfulness and to avoid dishonesty, fraud, or deceit of any type in connection with any academic program. Any student who violates this rule or who knowingly assists another to violate this rule will be subject to disciplinary action.

The Honor Code is intended to prohibit all forms of academic dishonesty and should be interpreted broadly to carry out that purpose. The following examples illustrate conduct that violates this Honor Code, but this list is not intended to be an exhaustive compilation of conduct prohibited by the Honor Code:

1. Giving or receiving unauthorized assistance, or attempting to give or receive such assistance, in connection with the performance of any academic work.
2. Unauthorized use of materials or information of any type or the unauthorized use of any electronic or mechanical device in connection with the completion of any academic work.
3. Access to the contents of any test or examination or the purchase, sale, or theft of any test or examination prior to its administration.
4. Use of another person's work or ideas without proper acknowledgment of source.
5. Intentional misrepresentation by word or action of any situation of fact, or intentional omission of material fact, so as to mislead any person in connection with any academic work (including, without limitation, the scheduling, completion, performance, or submission of any such work).

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6. Offering or giving any favor or thing of value for the purpose of influencing improperly a grade or other evaluation of a student in an academic program.
7. Conduct intended to interfere with an instructor's ability to evaluate accurately a student's competency or performance in an academic program.

Whenever a student is uncertain as to whether conduct would violate this Honor Code, it is the responsibility of the student to seek clarification from the appropriate faculty member or instructor of record prior to engaging in such conduct.

USC Lancaster General Education Goals

General education is the set of fundamental skills (reading, writing, reasoning, and oral communication), the knowledge, and the capacity for thought needed to pursue further learning, to succeed in chosen fields, and to assume the responsibilities of informed and enlightened citizenship.

Communication Skills

USC Lancaster helps its students read effectively and attain a basic familiarity with the basic texts of the Western and other cultures. In the area of writing skills, USC Lancaster students work to develop the ability to write effectively for both academic and professional audiences. In addition, USC Lancaster helps its students learn to listen critically and speak effectively before a group.

Critical Thinking

USC Lancaster helps its students acquire analytical reasoning abilities and exercise informed value judgments. USC Lancaster students also work to develop mathematical and/or computational skills.

Cultural Literacy

USC Lancaster strives to give its students an understanding of the history and culture of Western civilization as well as provide some exposure to other cultures. USC Lancaster also recognizes the centrality of science and technology to modern culture; therefore, USC Lancaster students also are offered opportunities to increase their understanding and familiarity in these crucial subject areas.

Student Development

USC Lancaster supports the intellectual, personal, physical, and social development of students, in recognition of the critical interdependency of all these areas. By providing opportunities for productive interaction with students, faculty, and staff, USC Lancaster helps students develop a spirit of curiosity, integrity, and confidence in planning and pursuing academic, career, and personal goals.

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Monday	Tuesday	Wednesday	Thursday	Friday
9-Jan Syllabus & Quick Review	10-Jan NO LAB	11-Jan Ch. 12: Alkanes	12-Jan	13-Jan <i>Last day to drop/add</i>
16-Jan MLK Day—NO CLASS	17-Jan <i>Lab: Exp 1 Safety & Techniques</i>	18-Jan Ch. 12 cont'd Ch. 13: Alkenes & Alkynes	19-Jan	20-Jan
23-Jan Ch. 13 cont'd	24-Jan <i>Lab: Exp 2 Reactivity of Hydrocarbons</i>	25-Jan Ch. 14: Alcohols	26-Jan	27-Jan
30-Jan Ch. 14 cont'd	31-Jan <i>Lab: Exp 3 Preparation of Aspirin</i>	1-Feb Ch. 15: Aldehydes and Ketones	2-Feb	3-Feb
6-Feb Ch. 15 cont'd	7-Feb <i>Naming Organic Compounds Workshop</i>	8-Feb Review for Test 1 HW (12-15) Due	9-Feb	10-Feb
13-Feb Test 1: Ch. 12, 13, 14, 15	14-Feb <i>Lab: Exp 4 Analgesics & Chromatography</i>	15-Feb Ch. 16: Carboxylic Acid	16-Feb	17-Feb
20-Feb Ch. 17: Amines & Amides	21-Feb <i>Lab: Exp 5 Vitamin C in Juices</i>	22-Feb Ch. 18: Carbohydrates	23-Feb	24-Feb
27-Feb Ch. 18 cont'd <i>Last day to withdraw without WF</i>	28-Feb <i>Lab: Exp 6 Carbohydrates</i>	29-Feb Ch. 19: Lipids	1-Mar	2-Mar
5-Mar	6-Mar	7-Mar	8-Mar	9-Mar
Spring Break – No Classes				
12-Mar Ch. 19 cont'd	13-Mar <i>Lab: Exp 8 Soap to a Fatty Acid</i>	14-Mar Review for Test 2 HW (16-19) Due	15-Mar	16-Mar
19-Mar Test 2: Ch. 16, 17, 18, 19	20-Mar <i>Lab: TBA</i>	21-Mar Ch. 20: Proteins	22-Mar	23-Mar
26-Mar Ch. 20 cont'd	27-Mar <i>Lab: Exp 9 Aspartame</i>	28-Mar Ch. 21: Enzymes	29-Mar	30-Mar
2-Apr Ch. 21 cont'd	3-Apr <i>Lab: Exp 11 Digestive Enzymes</i>	4-Apr Ch. 22: Nucleic Acids	5-Apr	6-Apr
7-Apr Ch. 22 cont'd	10-Apr <i>Lab: Exp 10 Milk and Its Principal Components</i>	11-Apr Review for Test 3 HW (20-22) Due	12-Apr	13-Apr
16-Apr Test 3: Ch. 20, 21, 22	17-Apr <i>Handout: Nucleic Acids/ Review for Final Exam</i>	18-Apr Ch. 23: Biochemical Energy Production	19-Apr	20-Apr
23-Apr Review for Final Exam <i>Last day of classes</i>	24-Apr <i>Reading day</i>	25-Apr	26-Apr	27-Apr
30-Apr Final Exam: Ch. 12-23 1pm-3:30pm	1-May	2-May	3-May	4-May & 5-

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Lab Schedule

Day	Date	Topic	Experiment #	Due Today
1	M, 1/9	Safety & Common Lab Techniques	Handout & Online Safety Quiz	Handout
2	M, 1/16	MLK Jr. Day—NO LAB	-----	-----
3	M, 1/23	Reactivity of Hydrocarbons	2	Safety Certificate & Lab 2
4	M, 1/30	Preparation and Examination of a Drug: Aspirin	3	Prelab & Lab 3
5	M, 2/6	Naming Organic Compounds Workshop	Handout	Handout
6	M, 2/13	Analgesics and Thin-Layer Chromatography	4	Prelab & Lab 4
7	M, 2/20	Vitamin C in Natural and Synthetic Fruit Juices	5	Prelab & Lab 5
8	M, 2/27	Carbohydrates	6	Prelab & Lab 6
9	M, 3/5	Spring Break—NO LAB	-----	-----
10	M, 3/12	From Soap to a Fatty Acid	8	Prelab
11	M, 3/19	Fatty Acid cont'd TBA	8 Handout	Lab 8 -----
12	M, 3/26	Aspartame Lab Digestive	9	Prelab & Lab 9
13	M, 4/2	Enzymes	11	Prelab & Lab 11
14	M, 4/9	Milk and Its Principal Components	10	Prelab & Lab 10
15	M, 4/16	Nucleic Acids Review for Final Exam	Handout	Handout

Each student is expected to read the laboratory handouts and complete any pre-lab assignments BEFORE coming to lab. Students cannot begin an experiment until the pre-lab assignment is completed and checked by the laboratory assistant.