

## UNIVERSITY OF FLORIDA

COURSE SYLLABUS

## Chemistry 4230/5235 (Section 5683)

## ORGANIC SPECTROSCOPY

Fall 2017

**Instructor and Contact Info:**

Professor Zhongwu Guo; Office: JHH Room 302D; telephone: 352-392-9133; e-mail: zguo@chem.ufl.edu

**Class Time and Location:**

Lectures: M, W period 3 (9:35 – 10:25 AM); Room: LEI 0207

Problem session: F period 3 (9:35 – 10:25 AM); Room: LEI 0207

**Office Hours:**

M, W, F: 10:30-11:30 AM at JHH Room 302D

**Teaching Assistants:** TBA**E-Learning Website:**

<https://lss.at.ufl.edu/> (check regularly to find announcements, lecture notes and handouts, exam scores, and other information related to this class). From this webpage, click on the Canvas login button and then use your Gatorlink ID to log in.

**Textbooks:**

*“Organic Structure Analysis”* (Crews, Rodriguez, and Jaspars, Eds), 2nd Ed.

**Textbook Buying Options:**

In addition to the UF bookstore and usual on-line booksellers to purchase, see also <https://ares.uflib.ufl.edu/> for a list of books that are available for two-hour check-out at the Marston Science Library. There is a link to Ares on the course e-Learning site as well.

**Prerequisites:**

One year of organic chemistry (CHM 2210/2211) is necessary.

**Reading and Homework Assignments:**

Reading assignments are based on the above textbook. For lecture topics not covered therein, students are responsible only for the contents in the lectures; however, in case of questions or for any other information, students are encouraged to consult the cited references.

Selected problems as homework will be assigned for chapters of the textbook with due dates listed below. No assignments will be accepted late, except when there are certified medical reasons. However, homework assignments will not be graded or corrected. Instead, you will receive **6** bonus points for each completed and turned-in assignment, and these points will be included in the calculation of your final letter grade. You are strongly encouraged to attempt each problem without consulting the solution, and check your answer against that in the solution manual and the theories discussed in the textbook and lectures. You can earn a maximum of **36** points toward your final grade by handing in all of your completed assignments.

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**Conduct in the Classroom:**

All students are expected to be punctual in their attendance at lectures. If you are a few minutes late for a class, please sit in a seat that does not require you to climb over numerous other students. ***You are expected to be on time for all exams, and extra time will NOT be allocated to any student who arrives late.*** You are expected to be considerate toward your fellow students; it is requested that you do not hold conversations during the class. Any student who persists in talking during lectures will be asked to leave the room. Please turn off cell phones before entering the lecture hall, or you will be asked to leave the room.

**Examinations and Grading Policies:**

There are two (2) in-classroom 50-min exams (100 pts each) and one final exam (200 pts). Tentative dates of the 50-min exams are: ***September 25*** and ***November 8***. The final exam should be on ***December 13*** from ***3:00 to 5:00 PM*** at Room LEI 0207, except for changes made by the registrar's office.

***There is no make-up exam for this class.*** If a student has to miss a 50-min exam, he/she must submit a valid reason (of emergency) that will need to be verified and approved by the instructor. Under this condition, the missed 50-min exam will be replaced by 50% of his/her final exam. No student will be allowed for missing the final exam, ***and*** no student will be allowed for missing both in-class exams. In the event that you have valid reasons ***and*** have gotten permission from the dean of graduate or undergraduate studies for missing the final exam or missing both in-class exams, you will get an "I" grade, and you will need to take the missed exams with the class next year to obtain your final letter grade to replace the "I" grade.

Letter grades will be assigned based upon the scores of the ***three exams*** and the ***bonus points*** that you have earned from the homework assignments. According to the instructor's experience, it is ***very important*** that you do not fall behind with the homework assignments, because a few points can make a big difference with your final grade.

**Grade scales:**

- A ≥90%;**
- A- <90% but ≥85%;**
- B+ <85% but ≥80%;**
- B <80% but ≥75%;**
- B- <75% but ≥70%;**
- C+ <70% but ≥65%;**
- C <65% but ≥60%;**
- C- <60% but ≥55%;**
- D 54.99-40%;**
- E <40%.**

**Class Schedules:**

We have lectures on every Mon. and Wed. (LEI 207) and a problem session on every Fri. (LEI 207). The problem session is required for CHM 5235 students and participation will be graded. CHM 4230 students are highly encouraged to attend the problem session, as this should be very helpful for you.

Syllabus and Introduction to the Course (Chapter 1)

1 lecture

**Aug. 21**

Chapter 2. Introduction to NMR

2 lectures

**Aug. 23, 25**

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## Chapter 3. NMR – Chemical Shifts

3 lectures

Problem sessions

Homework #1 (Chapters 1, 2, 3) due date **Sept. 11****(Note: no class on Sept. 4 - holiday)****Aug. 28, 30; Sept. 6****Sept. 1, 8**

## Chapter 4. NMR – Coupling Constants

4 lectures

Problem sessions

Homework #2 (Chapter 4) due date **Sept. 27****Sept. 11, 13, 18, 20****Sept. 15, 22****Exam #1: Sept. 25** (in classroom, Chapters 1-4)

## Chapter 5. NMR – Multiple Pulse and Dimension NMR

5 lectures

Problem sessions

Homework #3 (Chapter 5) due date **Oct. 16****(Note: No class on Oct. 6 - homecoming day)****Sept. 27; Oct. 2, 4, 9, 11****Sept. 29; Oct. 6, 13**

## Chapter 6. MS – Basic Techniques

3 lectures

Problem session

**Oct. 16, 18, 23****Oct. 20**

## Chapter 7. MS – Application Scope

1 lecture

Problem session

**Oct. 25****Oct. 27**

## Chapter 8. MS – Fragmentation Patterns

3 lectures

Problem session

Homework #4 (Chapters 6, 7, 8) due date **Nov. 13****Oct. 30; Nov. 1, 6****Nov. 3****Exam #2: Nov. 8** (in classroom, Chapters 5-8)

## Chapter 9. IR

6 lectures

Problem sessions

Homework #5 (Chapter 7) due date **Dec. 6****(Note: No class on Nov. 10, 22, 24 - holidays)****Nov. 13, 15, 20, 27, 29; Dec. 4****Nov. 10, 17, Dec. 1**

## Chapter 10. Solving Problems by Using All Techniques

1 lectures

Homework #6 due on **Dec. 13** (before the final exam)**Dec. 6****Final Exam: Dec. 13, 3:00-5:00 PM, Room LEI 0207****Homework Assignments:**

#1: Chapter 1: 1.2, 1.3, 1.8, 1.11, 1.15, 1.16, 1.19, 1.24;

Chapter 2: 2.1, 2.4, 2.5, 2.8, 2.10, 2.12, 2.15, 2.17, 2.18, 2.21, 2.22, 2.26, 2.28;

Chapter 3: 3.3, 3.5, 3.6, 3.7, 3.8, 3.10, 3.12, 3.14, 3.15, 3.17, 3.19, 3.20, 3.21, 3.23, 3.25

#2: Chapter 4: 4.1, 4.2, 4.3, 4.5, 4.6, 4.8, 4.9, 4.10, 4.11, 4.12, 4.14, 4.16, 4.17, 4.19, 4.20, 4.23, 4.24, 4.25, 4.27

#3: Chapter 5: 5.1, 5.2, 5.3, 5.7, 5.8, 5.9, 5.11, 5.13, 5.14, 5.17, 5.18, 5.22, 5.23, 5.24, 5.25, 5.26, 5.28, 5.29

#4: Chapter 6: 6.1, 6.3, 6.5, 6.6, 6.10, 6.11, 6.16, 6.19, 6.20

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Chapter 7: 7.1, 7.2, 7.4, 7.7, 7.9, 7.10, 7.12, 7.14, 7.15, 7.18, 7.20

Chapter 8: 8.2, 8.3, 8.5, 8.6, 8.7, 8.10, 8.12, 8.15, 8.16, 8.19, 8.21, 8.26, 8.29, 8.33

#5: Chapter 9: 9.1, 9.3, 9.5, 9.6, 9.8, 9.9, 9.10, 9.12, 9.13, 9.14, 9.15-9.19

#6: Chapter 12: 12.29, 12.31, 12.3, 12.35, 12.37, 12.39, 12.41, 12.43, 12.45, 12.47, 12.49, 12.51

**Other Important Information:**

- Disability Resources: Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.
- Division of Student Affairs (Counseling, Dean of Students Office): <http://www.ufsa.ufl.edu/>.
- UF Grades and Grading Policies: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>.
- Lose or find something during class? Visit the Chemistry lost-and-found (Leigh Hall 218).
- Need help dropping this class? Contact a Chemistry undergraduate advisor here: <https://www.chem.ufl.edu/undergraduate/academic-advisors/>.
- Your well-being is important to the University of Florida. The U Matter, We Care initiative (<http://www.umatter.ufl.edu/>) is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu) so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.
- Online course evaluation: Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

**Copyright Notice:**

All handouts used in this course are copyrighted and may not be copied without Dr. Guo's expressly granted permission. "Handouts" include all materials generated for this class. Only students currently enrolled in the class may make a single copy of this material for their personal use.

**Minus Grades:**

Used if appropriate. UF policy requires the following URL be listed:

<http://www.registrar.ufl.edu/catalog/policies/regulationgrades.html>

**Student Honor Code:**

The UF Student Honor Code (see <http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/> for details): We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." Honor Code violations include copying on an exam (or helping another student to copy) and/or turning in an exam for regrading that has been changed since it was graded by the instructor.

*Any student found responsible for an academic honesty violation in this course will be recommended sanctions consistent with the offense.*