

Chemistry 719 Syllabus, Summer 1999

Lecturer: **Dr. Allen Hunter** (Office 5015, NMR Lab 5031, X-Ray Lab 5024/5020, Advanced Synthesis Lab 5005)
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- Textbooks:**
1. Fox and Whitesell, "Organic Chemistry", 2nd Edition, Jones & Bartlett, 1997 (required).
 2. Fox and Whitesell, "Organic Chemistry: Study Guide and Solutions Manual", 2nd Edition, Jones & Bartlett, 1997 (recommended).
 3. Problem Sets, Exams, Handouts, and Answers for Chemistry 719, Summer 1998, Dr. Hunter (available in the reserve section of the library for photocopying). **This is the most important material available to help you succeed in this class! Get it and use it!!!!!!!!!!!!!!**
 4. Pasto, Johnson, and Miller, "Experiments and Techniques in Organic Chemistry", 1992 (required).
 5. Lab Coat, OSHA Approved Safety Glasses, Paper Towels, Notebook (hard cover, bound), rubber gloves (e.g. the yellow dish washing gloves), for the lab (required).
 6. Molecular Model Set (strongly recommended, use will be allowed during exams).

Lecture: Monday to Thursday 8:00 to 9:20, labs following lectures on Monday/Wednesday **YOU MUST COME TO THE FIRST LAB ON TIME!!!!!!**

Office Hours: Tuesday and Thursday 9:30 to 11:30 and Monday 1:30 to 2:30; or by appointment

Course Objectives: To study the fundamental concepts and reactions of organic chemistry by building upon the basics of bonding and structure in the many types of molecules containing carbon; to experience the many practical techniques used by the professional organic chemist in the modern laboratory; to build an appreciation of the importance of these topics in such fields as biology, medicine and the chemical industry.

Course Philosophy: In the Chemistry 719 lecture we will be covering the first six chapters in the text. We will learn to classify the major classes of organic compounds in terms of their molecular structure and then learn how to systematically name simple organic molecules. Such important concepts as the acid-base chemistry of organic compounds, types of bonding involving carbon atoms, hybridization states of carbon, and the techniques involved in the qualitative analysis of organic chemicals will be covered in detail. The laboratory portion of this class (Chemistry 719L) is designed to coincide with the lecture sequence and both lecture and laboratory texts will be referred to extensively. The lab text will be used to supplement the discussion of spectroscopy in the lecture text.

| Week | Chapter(s) | Title |
|------|------------|---|
| 1 | | Introduction to Chemistry 719 |
| 1 | 1 | Structure and Bonding in Alkanes. |
| 1 | 2 | Alkenes, Arenes, and Alkynes. |
| 2 | 3 | Functional Groups Containing Heteroatoms. |
| 3 | 4 | Chromatography and Spectroscopy. |
| 4 | 5 | Stereochemistry. |
| 5 | 6 | Understanding Organic Reactions |

* This schedule is tentative and the order and relative weighting of topics may be revised as the class progresses.

| GRADING SYSTEM | TOTAL POINTS |
|---|--------------|
| Midterm (third week of class) | 150 |
| Laboratory (including a 50 point Lab Exam) | 100 |
| Final Exam (last class, this exam is comprehensive) | <u>200</u> |
| Total | 450 |

A 92 - 100%, B 80 - 91%, C 65 - 79%, D 50 - 64%, F Below 50%

Exams: The midterm exam will be given on the third week of class. **MAKE-UP EXAMS WILL NOT BE GIVEN.** Absences that have not been approved in advance will result in a grade of **ZERO** for that exam. Approved absences for sporting events, holidays, car breakdown, etc. will be given **only** if I am informed in advance and only if I agree. Absences for health reasons or family emergencies must be discussed with me *within 24 hours* of the missed exams for approval to be granted. The points for exams missed during approved absences will be applied to the final exam. An exam must be submitted for re-grading *within 48 hours* after it has been returned. The whole exam will be re-graded, not just single questions. **You must bring photo ID with you when you write exams and place it on the desk top.**

Attendance: Lecture attendance is **mandatory** and will be recorded through daily sign-in sheets. Your timely arrival in class is expected. Students are responsible for all information, material, and announcements made in class. Attendance will be taken in class and used in deciding borderline grades. It is **your responsibility** to be sure you sign up if you are present when the sheets are circulated.

Assigned Readings and Problems: You are required to read the assigned chapters from the lecture and lab texts **before** we discuss them in class. Some question based on these will appear on exams. I will assign problems from the text and problem sets (available in the library) regularly. These will not be graded but are very important since these are the questions on which most of the exams will be based!

Repeating the Class: When repeating a course, the Chemistry Department has decided that it is in the best interest of our students to have all students repeat the entire course, including the current laboratory!

Passing the Laboratory: To pass the course, you must obtain a grade of at least 70% in the laboratory portion and you must have successfully completed all the scheduled experiments.

Safety: The potential of risk is present in some lecture demonstrations and laboratory experiments. Accidents have been rare, but have happened. Faculty and staff members exercise great care to minimize and, where possible, eliminate all potential hazards. Additionally, minimization of risks requires that students come well prepared for each assigned exercise and are attentive in class. Safety glasses must be worn in the laboratory at all times. If you have a condition (e.g., chemical sensitivity, pregnancy) that might affect your laboratory safety, discuss it with your physician and instructor and alternate arrangements for the lab may be made. Contact the instructor immediately if you have any questions on this or any other safety issues.

Materials fees: The materials fees collected for this laboratory course are used to partially defray the cost of replacing expendable materials and obsolete equipment, repairing equipment, and obtaining new equipment appropriate for student use in state of the art instruction in the laboratory science of chemistry.

Academic Honesty: In accordance with university policy and professional standards, the highest levels of academic integrity are expected in this lecture and lab. The code of student conduct will be *strictly* enforced. Academic dishonesty will result in reductions in grades and/or expulsion from this class and/or the university. *[Note: Representative exams are photocopied before they are returned. These photocopies are compared to the originals returned for re-grading to check if answers have been altered.]*

Computer Laboratory: The "Windows 95" computer lab is located in room WB 5043 and contains 25 Pentium II computers equipped with a range of software. It is available for students to work on their chemistry assignments during the posted hours.