CHEM F620
Applications of NMR Spectroscopy
Fall 2016

CRN: 76676, 3 credits

Lecture: REIC 202, 9:15 MWF

Student-Learning Outcomes.

1. Understand the fundamental concepts of nuclear behavior in an NMR experiment, including excitation and relaxation in a magnetic field.
2. Know the fundamental parameters associated with an acquisition of NMR data, and how parameter adjustment affects the resulting spectrum.
3. Know fundamental concepts of basic pulse sequences through the use of vector diagrams.
4. Be proficient in the interpretation of 1D and 2D NMR data of small molecules (< 2000 Daltons).
5. Be able to critically analyze scientific literature regarding NMR techniques.
6. Be able to understand and appropriately decide on NMR techniques best suited for specific applications.

Course Structure. The coursework will follow the Friebolin textbook (Green section) and the Simpson and Simpson textbook (Guerard section) in the order on the Tentative Lecture Schedule. The instructor Green will lecture on the theory, instrumental aspects, and interpretation of spectra. Problem solving sessions will be held every two weeks. The instructor Guerard will lecture on solid state methods and applications of NMR used in a variety of environmental applications. Instructors will use a combination of Power Point slides and Whiteboard, providing copies of notes and handouts to the students. Homework problems will be assigned.

Point Breakdown.		**Grading.**
Exams (3)	= 300 pts	A = ! 90% (! 630 pts)
Homework (7)	= 100 pts	B = 80-89% (560 – 629 pts)
Paper Reviews (4)	= 100 pts	C = 70-79% (490 – 559 pts)
Unknown Analysis	= 100 pts	D = 60-69% (420 – 489 pts)
Final Exam	= 100 pts	F < 60% (< 420 pts)
Total Course Points	= 700 pts	

Homework (7). Homework assignments are listed on the tentative course schedule in this syllabus and are due in class on the days shown. Late assignments are not accepted. Homework is a very important component of this class. The homework problems provide you with an opportunity to learn how to approach a problem and the mechanics of actually doing the problem. I encourage you to work in groups to solve the homework problems. However, your work must be your own - just copying someone else's solution violates the Honor Code (see below).

Exams (4). Exams are listed on the course schedule in this syllabus. No electronic devinldevi Nibnev(4)

Tentative Lecture Schedule

Week		Date	Topic	Assignments
1	M	8/29	Ch 1 (Friebolin)	HW 1 assigned
	W	8/31	Ch 1 (Friebolin)	
	F	9/2	Problem Solving	
2	M	9/5	Labor Day: NO CLASS	
	W	9/7	Ch 1 (Friebolin)	
	F	9/9	Ch 2 (Friebolin)	**HW 1 Due**
3	M	9/12	Ch 2 (Friebolin)	HW 2 assigned
	W			