

**Molecular Spectroscopy**

Smith 222 TuTh 9:40-11:05 AM.

Instructor: Ted Burkey

Office: SM205

phone: 678-2634

email: [tburkey@memphis.edu](mailto:tburkey@memphis.edu)**A nearly paperless course:** Homework and links to Course Notes will submitted by email.Texts: "Spectrometric Identification of Organic Compounds", Silverstein, Webster, Kiemle 7<sup>th</sup> Ed. (SWK)

ISBN-10: 0471393622, ISBN-13: 978-0471393627

<http://www.memphis.edu/chem/faculty-burkey/tjb-4416.php>**Grade:** Assigned problems, two interval exams and Final, 25% each, team lecture presentations (complete/incomplete), Submit PowerPoint one week before lecture week.

Week of	assignments
January 16	Introduction: theory of quantized energy transitions
January 23	Mass Spectroscopy: <b>SWK CH1</b> Appendices A-C Problems: 5-11
January 30	IR Spectroscopy SWK CH2 Appendices B-E, Problems 2-6 <b>CH1 Due 2/2</b>
February 6	PNMR <b>SWKCH3</b>
February 13	CNMR: <b>SWCH4</b> , <b>CH3</b> Due 2/16
February 20	Structure determination <b>CH4</b> Due 3/21 <b>PowerPoint Guidelines</b>
February 27	2D NMR: <b>SWK CH5</b> CH8a due 2/28 starts on page 381
March 6	<b>Spring Break</b>
March 13	Electronic spectroscopy, <b>Baker March 16 lecture on biochemical MS</b>
March 20	<b>CD/ORD (Tu) Raman Spectroscopy (Th) Take home due 3/21</b>
March 27	<b>ESR (Tu) Mossbauer (Th)</b>
April 3	<b>SEM/TEM (Tu) AFM (Th) CH8b due 4/4 starts on page 395</b>
April 10	<b>Neutron diffraction (Tu) X-ray (Th)</b>
April 17	<b>Microwave (Tu), ESCA (Th) 2<sup>nd</sup> take home due 4/18</b>
April 24	(Tu)
May 1	Final Exam Tuesday May 2, 10:30 am

Two-person team presentation: two research and prepare PPT and 1 person presents.

ESR, Mossbauer, AFM, SEM/TEM, neutron diffraction, x-ray diffraction, ESCA, Auger, Microwave  
Each presentation will have a full 85 minute period. A PowerPoint presentation mandatory. Follow CHEM7600 guidelines. Exceptions and deviations must be approved prior to the presentation.**Homework:** All homework must be submitted in a Word document. Structure drawing software can be obtained at <http://sitelicense.cambridgesoft.com/sitelicense.cfm?sid=1161>**Academic Integrity and Student Conduct:**Expectations for academic integrity and student conduct are described in detail on the website of the Office of Student Judicial and Ethical Affairs (<http://saweb.memphis.edu/judicialaffairs>). Please take a look, in particular, at the sections about "Academic Dishonesty," "Student Code of Conduct and Responsibilities," and "Disruptive Behaviors." I will expect students to be aware of these guidelines and to conduct themselves accordingly. Reasonable and appropriate accommodations will be provided to students with disabilities who present a memo from Student Disability Services (SDS).