

**Molecular Spectroscopy Lab**

<http://www.memphis.edu/chem/faculty-burkey/tjb-4416.php>

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Instructors: Sara Brady [sbrady1@memphis.edu](mailto:sbrady1@memphis.edu), Scott Powers [srpowers@memphis.edu](mailto:srpowers@memphis.edu)

Tu 1-4 PM, Prelab: Smith 222. Labs: Smith 027b, 203a, and 317a

**A mostly paperless course:** Homework and links to Course Notes will be submitted by email.

Texts: "Spectrometric Identification of Organic Compounds", Silverstein, Webster, Kiemle 7<sup>th</sup> Ed. (SWK)

**Problem Sessions:** to be announced. **Grade:** Lab reports

Day	Experiments
January 17	Introduction – check in, safety review
January 24	GC/MS training <b>reserved Jan 24 and 31</b>
January 31	Preparation of samples of known/unknown compounds, analysis of spectra, use of internal standard
February 7	Electrospray demonstration <b>LTQMS and GCMS reserved Feb 7</b>
February 14	IR training, prep and spectral analysis of known/unknown compounds,
February 21	concentration dependence
February 28	PNMR/CNMR: demonstration analysis of known/unknown compounds <b>JEOL reserved Feb 28</b>
March 7	<b>Spring Break</b>
March 14	Further analysis of known/unknown compounds <b>JEOL reserved March 14 and</b>
March 21	<b>21</b> , 2D NMR demo and sample analysis
March 28	Structure determination of two new unknowns <b>JEOL reserved March 28 and April 4</b>
April 4	2:45-4:00: Demonstration of confocal fluorescence microscopy using cells stained with 4 fluorophores
April 11/13	April 11, Tuesday 2:45-4:00: Demonstration of the scanning electron microscope April 13 <b>Thursday</b> 1:30-2:30 PM
April 18	CD/ORD DEMO, Electronic spectroscopy?
April 25	Turn in unknown reports April 26
May 2	

**Homework:** All homework must be submitted in a Word document. Structure drawing software can be obtained at Or <http://www.nmrsoftware.com/download/chemsk.html>

**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).