

PSE797DD – Introduction to 1D and 2D NMR Spectroscopy

Syllabus (Outline)

1/12/2021

Instructor: Weiguo Hu

(i) Class Content and Related Materials

Class Content:

1. Basic physics of NMR phenomenon and simple NMR experiments.
2. T_1 and T_2 relaxations and how they affect NMR results.
3. Molecular dynamics and how it governs NMR phenomena.
4. Quantitative NMR.
5. Diffusion NMR and its application in studying aggregation, self-assembly, and polymer molecular weight.

Class Materials:

1. Power Point slides for the classes can be found in my blog at blogs.umass.edu/weiguoh/?p=248
2. Reading material: *A Brief Introduction to NMR*.
<https://blogs.umass.edu/weiguoh/?p=771>

(ii) Expectations and Requirements

Class meets once (50 minutes) every week.

There will be 2 – 3 in-class quizzes to help the students assess their understanding of the material, and to help the instructor assess the effectiveness of teaching.

There will be one lab report required. Students will choose a sample which they want to understand in depth, and form teams to investigate using an advanced NMR technique, and write up the report.

There will be a final exam of ca. 30 minutes held in the last class of the semester.

(iii) Attendance Policies

Attendance is required. Excuses must be submitted ahead of time.

(iv) Grading Criteria

Quizzes: 30%

Report: 40%

Final exam: 30%

(v) Examination Schedule

A final exam of ca. 30 minutes length will be held in the last class of the semester. Make up or rescheduling is to be handled case-by-case by discussing with the instructor.

(vi) Accommodation Statement

The University of Massachusetts Amherst is committed to providing an equal educational opportunity for all students. If you have a documented physical, psychological, or learning disability on file with Disability Services (DS), you may be eligible for reasonable academic accommodations to help you succeed in this course. If you have a documented disability that requires an accommodation, please notify me within the first two weeks of the semester so that we may make appropriate arrangements. For further information, please visit Disability Services (<https://www.umass.edu/disability/>)

(vii) Academic Honesty Statement

Since the integrity of the academic enterprise of any institution of higher education requires honesty in scholarship and research, academic honesty is required of all students at the University of Massachusetts Amherst. Academic dishonesty is prohibited in all programs of the University. Academic dishonesty includes but is not limited to: cheating, fabrication,

plagiarism, and facilitating dishonesty. Appropriate sanctions may be imposed on any student who has committed an act of academic dishonesty. Instructors should take reasonable steps to address academic misconduct. Any person who has reason to believe that a student has committed academic dishonesty should bring such information to the attention of the appropriate course instructor as soon as possible. Instances of academic dishonesty not related to a specific course should be brought to the attention of the appropriate department Head or Chair. Since students are expected to be familiar with this policy and the commonly accepted standards of academic integrity, ignorance of such standards is not normally sufficient evidence of lack of intent (http://www.umass.edu/dean_students/codeofconduct/acadhonesty/).

(viii) contact information

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