



**MB305 Jan 3:0**

## **Biomolecular NMR Spectroscopy**

### **Instructor**

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### **Teaching Assistant**

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**Department: Molecular Biophysics Unit**

Course Time: Mon., Wed., Fri., 9 - 10 am

Lecture venue: MBU Lecture Hall

Detailed Course Page:

## **Announcements**

### **Brief description of the course**

The course is designed to convey to the NMR practitioner the basic theory that governs NMR spectroscopy.

The course Students who wish to use NMR spectroscopy to address problems related to physical and chemical properties of biomolecules may find the course useful.

### **Prerequisites**

MB 204

### **Syllabus**

Basic theory of NMR spectroscopy. Classical and theoretical descriptions of NMR spectroscopy. Product operator formalism for description of multipulse homonuclear and heteronuclear NMR experiments.

Multidimensional NMR spectroscopy. Description of basic homonuclear two dimensional NMR experiments useful for structure determination of biological macro-molecules. Experimental aspects of homonuclear

NMR spectroscopy: data acquisition, processing and interpretation of 2D homonuclear spectra. Principles of heteronuclear NMR spectroscopy. Analysis of 3D and 4D heteronuclear isotope edited NMR pulse sequences. Introduction to relaxation and dynamic processes (chemical and conformational processes) that

affect NMR experiments.

### **Course outcomes**

The student will learn the basic theory of NMR spectroscopy. Furthermore, they will learn the theoretical and practical aspects of NMR data acquisition and the details of analysis of Pulsed NMR methodology. The course is intended to train students to become independent users of the NMR instruments.

### **Grading policy**

50% mid-term; 50% Final

### **Assignments**

### **Resources**