

Course Number PHA 6356

Course Title Structure Determination of Complex Natural Products

Instructor Ranjala Ratnayake, Ph.D.; HSC P5-27, 627-9220; rratnayake@cop.ufl.edu
(+ maybe guest lecturers at times)

Course Description

This course is designed for graduate students in the field of natural products chemistry. The rigorous structure determination of natural products using modern spectroscopic methods will be discussed.

Learning objective

The major objective is for students to be able to elucidate the structure of any organic small molecule at the end of the course.

Meets Tuesdays and Thursdays 8:00-9:30 am (3 credits); Communicore: C1-007
January 12th and 17th will be 8:00-8:55 am due to faculty candidate seminars
There will be no class on Tuesday Feb 8th due to COP research showcase

Text Reading material and notes will be distributed in class

Course prerequisites

Student is expected to have a basic knowledge of the use of MS, NMR, IR and UV.

Tentative Lecture Schedule

<u>Date</u>	<u>Topic</u>
Week 1	Introduction: Comparison of classical and modern structure determination; determination of molecular weight and formula: mass spectrometry, Familiarization of a JNP style reporting of a structure.
Week 2	Nature of unsaturation and functional groups: ultraviolet and infrared spectroscopy
Weeks 3-4	NMR basics
Week 5	Application of NMR basics for structure determination
Weeks 6-12	Determination of partial structures and assemblage of units into a total gross structure: proton and carbon-13 NMR spectroscopy, two-dimensional NMR
Week 13	Methods for determining relative and absolute stereochemistry
Week 14	Discussion and take-home exam.

A week of guest lectures may be scheduled when lecturers' availability is confirmed (approximate 10H)

Format:

The format of the course will involve lectures using combinations of powerpoint, chalk-board presentations, overhead projection and handouts to deliver the materials.

Exams and Grading:

The students will be evaluated through homework (30% of grade), a midterm exam (30% of grade) and a final take-home exam (40% of grade). Students will be allowed to inspect their exams to verify their scores, but exams will be kept by the faculty.

Miscellaneous

Class attendance is not mandatory. However, the student will be tested on the lecture material, thought process developed in class and in-class handouts, which, for the most part, are not covered in precisely the same way in any available textbook.

Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.

Students are expected to complete assignments and take exams with integrity. Homework should be carried out independently by each student. Academic dishonesty will not be tolerated. If a student commits academic dishonesty, the academic penalty will be a failing grade in the course. The UF policies and procedures on academic dishonesty will be followed.