

CHEMISTRY 644

Natural Products Biosynthesis: The organic chemistry of biological pathways

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Monday/Wednesday 2:30 - 3:45 pm.

COURSE DESCRIPTION:

Chem644 will apply mechanistic organic chemistry principles to develop an understanding of the chemical logic used to assemble the molecules found in living systems. Students who complete this course will be able to 1) predict a reasonable mechanism for most biochemical reactions, 2) describe an experimental strategy to test a mechanistic hypothesis for a given biochemical transformation, 3) understand the relationship between enzyme structure and function and 4) understand the chemical and biochemical logic of a wide range of natural product biosynthetic pathways.

Natural products biosynthesis is a logical extension of any two-semester organic chemistry course. Studying Nature's synthetic chemistry tool kit is an ideal way for students to expand their knowledge of reactions and mechanisms to understand biological systems. The course will also be of interest to students interested in the chemical basis of cell biology, the design, and mode of action of antibiotics, anti-cancer drugs, herbicides, pesticides, gene function assignment, and synthetic biology.