

CHEM 6353: PHYSICAL ORGANIC CHEMISTRY

Spring 2016 (January 19th–May 9th 2016)

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www.chem6353.com

CHEM 6353 is a graduate-level physical organic chemistry course, and a logical extension of another mechanistic course, CHEM 6311. The course will apply the principles of thermodynamic and kinetic analysis onto the problems in modern organic chemistry. The first third of the course will cover the much debated concept of aromaticity and its application to the analysis of pericyclic reactions. Following discussion of organic polymers, electronic materials, and photochemistry, the final third of the course will deal with the crucial role physical organic chemistry plays in the studies of molecular recognition, supramolecular chemistry, and dynamic thermodynamically controlled chemistry.

<u>Prerequisites</u>	CHEM 6311: MECHANISMS OF REACTIONS or Prof. Miljanić's consent.	
<u>Class Meetings</u>	<u>Lectures</u>	
	9:00a–10:00a Mon/Wed/Fri, 206 SEC Building	
	No class on 02/08, 02/10, 02/26, 03/14–03/18 (Spring Break).	
	<u>Office Hours</u>	
	By appointment, please email Prof. Miljanić to schedule a meeting.	
<u>Exams and Grading</u>	<u>Midterms</u>	
	February 29th 2016, 9:00a–10:00a, 206 SEC Building	200 pts
	April 8th 2016, 9:00a–10:00a, 206 SEC Building	200 pts
	<u>Production of a 3D Printed Model</u>	200 pts
	Students will be required to produce a 3D printed model illustrating a concept of interest to physical organic chemistry (cost of printing will be covered by UH).	
	<u>Final Exam</u>	
	May 9th 2016, 8:00a–11:00a, 206 SEC Building	350 pts
	<u>Class Attendance</u>	50 pts
	Total number of points is 1000.	
	There are no makeups for the midterms and the final exam. <u>In extreme emergencies, the midterm/final you missed will not be counted towards the final grade.</u> In such cases, contact Prof. Miljanić immediately to discuss your options.	
<u>Textbook</u>	Eric Anslyn and Dennis Dougherty: <i>Modern Physical Organic Chemistry</i>	
	You will find lecture notes and the course website extremely useful too.	

* Prof. Miljanić's name is phonetically pronounced as: Ogg•nyen Meel•yan•ich.

Topics and Timeline

—tentative—

Aromaticity

Textbook sections 2.4, 14.2, 14.3.
Covered in class on 01/20, 01/22, 01/25.

Aromatic Substitutions

Textbook sections 10.18–10.22.
Covered in class on 01/27, 01/29, 02/01.

Pericyclic Reactions

Textbook sections 15.1–15.7.
Covered in class on 02/03, 02/05, 02/12, 02/15, 02/17, 02/19.

—**First Midterm on February 29th 2016**—

(first midterm includes only material covered until 02/19)

Organic Photochemistry & Radical Clocks

Textbook sections 8.8.8, 16.1–16.5.
Covered in class on 02/22, 02/24, 03/02.

Organic Polymers

Textbook sections 13.1–13.2
Covered in class on 03/04, 03/07, 03/09, 03/11, 03/21, 03/23.

Electronic Organic Materials

Textbook sections 17.1–17.6.
Covered in class on 03/25, 03/28, 03/30, 04/01.

Molecular Recognition

Textbook sections 3.2, 4.1, 4.2.
Covered in class on 04/04, 04/06, 04/08.

—**Second Midterm on April 11th 2016**—

Supramolecular Chemistry

Textbook sections 4.3 + outside reading (see website).
Covered in class on 04/13, 04/15, 04/18, 04/20, 04/22, 04/25.

Dynamic Covalent Chemistry

Outside reading (see website).
Covered in class on 04/27, 04/29.

—**Final Exam on May 9th 2016**—

Miscellaneous Info

Students with disabilities are entitled to additional time and/or alternative accommodations under the *Americans with Disabilities Act*. If you are one of them, please contact Prof. Miljanić as soon as possible to discuss arrangements.
