

*Instructor:* Dr. K. Schanze, CRB 428A

*Text:* Carey and Sundberg, Advanced Organic Chemistry, 5<sup>th</sup> Edition, Part A (optional)

Anslyn and Dougherty, Modern Physical Organic Chemistry (optional)

*Lecture:* 012 Matherly Hall, Tu 5<sup>th</sup>/6<sup>th</sup> Per. (11:45 AM – 1:40 PM) Thurs, 5<sup>th</sup>/6<sup>th</sup> Per (11:45 AM – 1:40 PM)\*

*First Exam:* Thursday, Feb. 25

*Second Exam:* Thursday, Apr. 21

*Office Hours:* Monday and Thursday, 2 – 3 pm or by appointment

*e-mail:* schanze.class@gmail.com

*Course www:* on E-Learning link: <http://lss.at.ufl.edu/> (Canvas)

### Course Description

The first one-half of the course will focus on fundamental aspects of physical organic chemistry and organic reaction mechanisms. Topics in this area will include: Structure and bonding, molecular symmetry, stereochemistry, thermodynamics, kinetics and free-energy correlations and concerted reactions. The second one-half of the course will focus on physical aspects of organic materials chemistry and student presentations.

Class periods will be used for lectures and student presentations. Students will be assigned to present the solutions to specific problems. Students will also complete an assignment during the term that will involve an independent research proposal on a topic in physical organic chemistry. The proposal will be presented to the class in a 20 min session and will also be presented in a 5 page written report.

### Textbook and Outside Reading

The course notes will serve as the outline for the course material. Textbooks are suggested, but not required for purchase. If you purchase a book, I recommend Carey and Sundberg (it is in paperback and can be purchased as an e-book for a good price). The book is meant to be a resource to supplement the lectures. Chapters and sections in the book should be read as appropriate to supplement the material discussed in the lecture. Primary references to the literature should be read when they are provided during the lectures or as needed to supplement the reading. When problems from the text are assigned, reading the respective chapters may help you to answer the questions.

### Grading

Course grades will be determined based on the student's performance in the following areas:

Homework and participation in problem sessions : 20%

Proposal : 20%

Exams (mid-term and final): 30% each

\* There will only be three hours of lecture each week. One of the two days we will end at 12:35 PM each week.

**Professor : K. S. Schanze**  
**Tentative Course Schedule**  
**CHM 6225, SP-2016**

<b>Week</b>	<b>Week</b>	<b>Topics</b>	<b>Book Sections*</b>	<b>Problem Sets</b>
<b>1</b>	Jan. 4	MO Theory and Symmetry	Ch. 1	
<b>2</b>	Jan. 11	MO Theory and Symmetry, continued	Ch. 1	1
<b>3</b>	Jan. 18	Stereochemistry and Conformational Analysis	Ch. 2	2
<b>4</b>	Jan. 25	Stereochemistry and Conformational Analysis, continued	Ch. 2	3
<b>5</b>	Feb. 1	Thermodynamics and Kinetics	Ch. 3	4
<b>6</b>	Feb. 8	Thermodynamics and Kinetics, continued	Ch. 3	5
<b>7</b>	Feb. 15	Linear Free Energy Relationships, Isotope and Solvent Effects	Ch. 3	
<b>8</b>	Feb. 22	Linear Free Energy Relationships, Isotope and Solvent Effects, cont'd.	Ch. 3	6
	<b>Feb. 25</b>	<b>Exam 1 in class 5th and 6th periods</b>		
	<b>Feb. 29</b>	<b>Spring Break Week</b>		
<b>9</b>	Mar. 7	Photochemistry	Ch. 12	7
<b>10</b>	Mar. 14	Concerted Reactions	Ch. 10	8
<b>11</b>	Mar. 21	Concerted Reactions		9
<b>12</b>	Mar. 28	Organic Materials		
<b>13</b>	<b>Apr. 4</b>	<b>Props start on Thursday</b>		
<b>14</b>	Apr. 11	Student Presentations - Props		
<b>15</b>	Apr. 18	Student Presentations - Props (Tuesday, Apr. 19)		
	<b>Apr. 21</b>	<b>Exam 2 in class 5th and 6th periods</b>		

\* Refers to Carey and Sundberg