

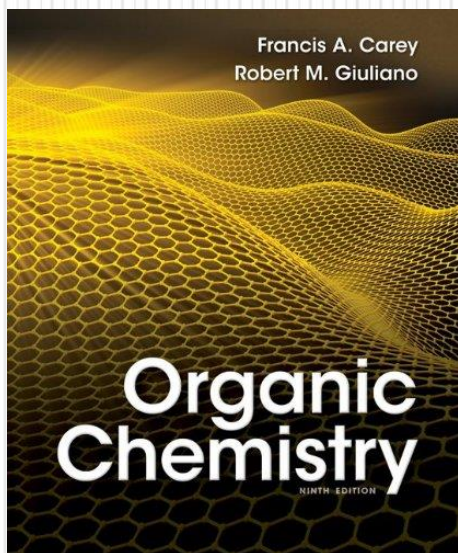


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SC333

Honors Organic Chemistry

Mr. Kevin Conlon



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Mechanism 4.3

Free-Radical Chlorination of Methane

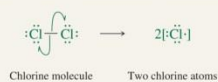
THE OVERALL REACTION:



THE MECHANISM:

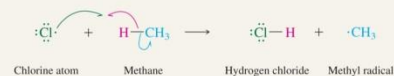
(a) Initiation

Step 1: Dissociation of a chlorine molecule into two chlorine atoms:



(b) Chain propagation

Step 2: Hydrogen atom abstraction from methane by a chlorine atom:



Step 3: Reaction of methyl radical with molecular chlorine:



Steps 2 and 3 then repeat many times.

Organic Chemistry

Course Information:

1. Science Department
2. Year Long Course
3. Seniors
4. Students who have completed CP1 or AP Chemistry
5. Pre-requisites for the course
 1. Received at least a “B” average in CP1 chemistry or a “C” average in AP chemistry
 2. Recommendation by your chemistry teacher
6. Final acceptance is provided by Mr. Conlon.



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Organic Chemistry

Course Description:

Honors Organic Chemistry provides a highly theoretical course that covers one third to one half of a typical college organic chemistry course. Topics covered include alkanes, alkenes, alkynes, cyclic hydrocarbons, chirality & nucleophilic substitution. Special emphasis is placed on reaction mechanisms. Students will participate in lab experiments during the year. The course is designed for those students who are planning to major in medicine, any pure science, pre-dental, or any track that will require organic chemistry in college.



Organic Chemistry

Academic Requirements:

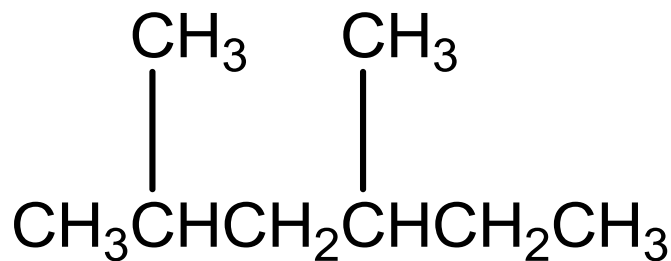
1. Expect to spend at least 30 minutes on homework (some class time will be provided to work on homework).
2. There will be one lab/project for each chapter covered in the textbook.
3. Reading the section or sections covered in class is recommended (20-30 minutes)
4. Students should expect to study for at least 3 hours a week to be successful in organic chemistry.



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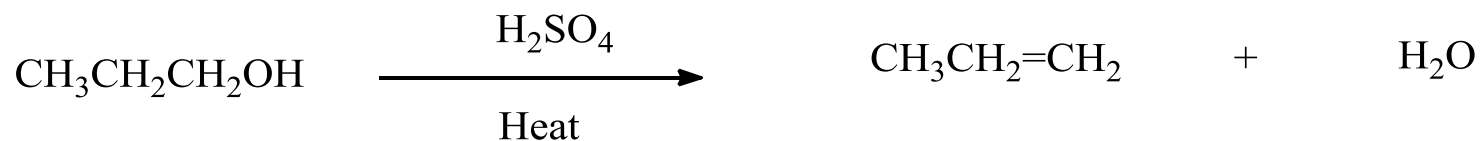
Organic Chemistry

- Additional material on the course:
- One topic discussed in organic chemistry is compound nomenclature. For example the name of the compound below is 2,4-dimethylhexane. Why – because at the 2nd and 4th carbon there is a methyl group (di- because there are 2 of them) and the end part of the name is hexane because the longest chain is a hexane (6 carbon group).



Organic Chemistry

- Additional material on the course:
- Another one of the areas discussed in organic chemistry is reactions. For example, the reaction below is the dehydration of an alcohol. Notice an alcohol molecule (a hydrocarbon with $-OH$ attached to it) is reacted with sulfuric acid and heat. What is produced is a double bonded structure (called an alkene) and water.



Organic Chemistry

- Why should the student take this course??
- Organic chemistry is the “weed out” course for students who want to major in medicine, pharmacy or science. Organic chemistry is taken sophomore year of college – it moves very fast in college and is packed with content.
- What will the student gain from the course??
- Students will have learned 1/3 to 1/2 of what is covered in a college level organic class. This course provides you a foundation to help you be successful at the college level.



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