

## Goals and Expectations

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### Course Objectives

*What you should get out of this class:*

- know basic terminology for organic chemistry
  - recognize and name the major functional groups
  - write systematic names
  - draw accurate structures
  - correlate molecular structure with physical and chemical properties
  - categorize reactions by type
  - write reaction mechanisms
  - correlate energy changes with molecular structure changes
  - recognize the structures and functions of the main classes of biomolecules
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### Expectations for Students

*In order to succeed in the course objectives,*

*\*\* you must participate:*

- attend class regularly
- read the text and lecture notes before the corresponding class meeting
- take an active part in class, answer and ask questions

*\*\* you must solve problems:*

- work through all the assigned homework
- try additional textbook problems
  - the Study Guide answers all text problems
  - the home pages will answer problems I assign
- make lists of concepts and problems you don't understand
  - bring your list to my office or the study room
  - if problems remain unresolved after that, e-mail them to our discussion list

***\*\* you must use technology:***

- consult the class home pages
    - new information will be added typically several times a week
  - use e-mail to communicate with the instructor and with fellow students
    - some assignments will be distributed and returned by e-mail
    - a class discussion list will collect questions, answers, and other discussion
  - learn to use WebCT to take online quizzes each week
    - there will be a new quiz posted for lecture and lab each week
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## **Expectations for the Instructor**

*In order to help you succeed in the course objectives,*

***\*\* I will participate:***

- attend class regularly
- coordinate in-class activities
  - clarify and reinforce the concepts that you encounter in the text and in the lecture notes

***\*\* I will provide appropriate resources:***

(all available on the class home pages)

- details of how the class works
- lecture handouts
- homework assignments
- quizzes
- exams
- suggestions and outside resources

***\*\* I will give you feedback:***

- respond promptly to e-mail questions
  - promptly return quizzes and exams
  - provide regular assessment of your progress in the course
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# "How Am I Supposed to Know That?"

This is a common question students have when confronted with new material.

The answer depends on what is being asked of you and what **skills** are called for to work out an appropriate response.

Success in organic chemistry is considered an important indicator by professional schools because organic chemistry is often the student's first contact with a large body of interrelated knowledge and concepts that CANNOT be mastered by sheer memorization.

## *Skills Objectives*

The kinds of skills you will develop in this class include:

### 1. **Knowledge**

e.g., use appropriate terminology, identify functional group structures and names

### 2. **Comprehension**

e.g., draw 3-dimensional structures from various perspectives

### 3. **Application**

e.g., use nomenclature rules to develop systematic names for complex organic structures

### 4. **Analysis**

e.g., select the most appropriate reaction mechanism for a given situation

### 5. **Synthesis**

e.g., use a knowledge of many organic reactions to assemble a pathway that converts one molecule into another

### 6. **Evaluation**

e.g., assess the significance of recent developments on social or political issues

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### *The Six Cognitive Levels*

The six numbered skills correspond to six cognitive levels that have been well-studied by psychologists.

- 1) Knowledge
- 2) Comprehension
- 3) Application
- 4) Analysis
- 5) Synthesis
- 6) Evaluation

### *Using Your Cognitive Levels*

One goal of a university education is to improve your intellectual skills at all of these levels.

Simply recognizing what level of skill is required for a good answer to a particular question often gets you a long way towards that good answer.

### *Select the right level of skill*

Can you memorize your way through organic chemistry?

- Can you rely solely on a level 1 skill for everything you need?

When using nomenclature rules, criticizing the nomenclature system (even though it's a higher level skill) does not address your ability to apply rules accurately.

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## **"Why Am I Supposed to Know That?"**

Success in any class depends substantially on your motivation to succeed.

You should spend some time to address what you would like to get out of this class.

- "... at least a B so I can get into XYZ program ..."

- An oversimplified answer like this may prevent you from properly addressing all the skills that you could (and should) obtain from this course.

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## **Why is organic chemistry important?**

Organic chemistry is the chemistry of life

Since most of you are planning to enter one of the health professions, you should find the material relevant to understanding the way that biological systems operate.

This relevance should become increasingly apparent as the course progresses and we develop the tools to study increasingly complex molecules.

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## **Why are these skills important?**

In whatever career you aim for, you will find that highly valued traits include well-developed intellectual skills at all levels.

Even more valuable is the ability to continue your development of skills on your own.