

Prerequisites: A grade of "C-" or better in CHEM& 262.

This course is a continuation of CHEM& 262, for students desiring three quarters of organic chemistry. Reactions, structure and synthesis of aldehydes and ketones, enols and enolates, carboxylic acids and their derivatives will also be examined. Ester enolates, amines, aryl halides, carbohydrates, lipids, and amino acids, peptides and proteins, as well as nucleosides, nucleotides and nucleic acids. 3 lecture hours; Satisfies specified elective requirement for the AA degree.

Textbook: *Organic Chemistry, 7th ed.*, by Francis Carey

Lab Text: **Experiments in Organic Chemistry, Hill & Barbaro, 3rd Ed.**

Desired Student Abilities in Relation to CHEM& 263

The Grays Harbor College General Education program is designed to help students become intellectually free, able to make informed, enlightened decisions. Courses offered throughout the Humanities, the Social Sciences, the Natural Sciences, and the professional/technical fields emphasize the valuable and remarkable achievements of humankind. The program provides students the opportunity to integrate knowledge and skills, encouraging them to develop in the following competencies:

* **Disciplinary Learning (4)**

Knowledge of content in prerequisite or transfer courses, as well as preparation for a career.

The knowledge and skills specific to the discipline of Organic Chemistry will be assessed through all of the graded materials. Your best reference for the goals of the course is your textbook. Every section has the learning goals that you are responsible for. Chapters 8-16 are covered the second quarter.

* **Literacy (4)**

Skills in reading, writing, speaking, listening, and quantifying, as well as awareness and appreciation of learning styles and lifelong learning options. This applies to Organic Chemistry in the following ways: Nomenclature, definitions, mathematical manipulations, structure drawing.

* **Critical Thinking (4)**

Competency in analysis, synthesis, problem solving, decision making, creative exploration, and formulation of an aesthetic response. Obviously, this is a core part of any physical science course and you will have a great deal of practice in lecture and lab. Exams, quizzes and lab reports will involve critical thinking. Structure determination, identification of unknowns, and mechanistic reasoning are a few examples

* **Social and Personal Responsibility (1)**

Awareness of and responsiveness to diversity and commonality among cultures, multiplicity of perspectives, ethical behaviors, and health and wellness issues. The historical discussions, health science and medical topics, and environmental topics are a part of this.

* **Information Use (2)**

Skills in accessing and evaluating information resources including campus resources, awareness of the role of information resources in making sound decisions, and command of the skills required to use appropriate technologies effectively. The use of data tables and handbooks and the internet based resources associated with your textbook are a part of this.

These student abilities above will be labeled as **D, L, C, S, I** when applicable.

Other Course Information

Methods of Assessment:

200 points: Two 100 point exams: Chap. 17-20, Chap. 21-24

100 points: 3 - 50 point quizzes, the best two count.

200 points: ACS Final Exam

Exams may be any combination of multiple choice, short answer, or essay formats. Exam topics may include, but are not limited to: definitions, nomenclature, structure drawing, descriptions of concepts, statements of and uses of specific model systems, calculations, and hypothesis construction. Any material in the text, lab assignments, or presented in lecture is suitable exam material. Essays and short answers are judged on their completeness and correctness. Short answer responses to exam and lab questions should be written in complete sentences. Correct spelling may be a criterion for grading depending on the context. The ACS Exam is a standardized exam that covers the entire organic chemistry sequence. It consists of 50 multiple choice questions that must be completed in one hour.

Grading Scale:

94-100%	A	87-89%	B+	77-79%	C+	67-69%	D+
90-93%	A-	84-86%	B	74-76%	C	60-66%	D
		80-83%	B-	70-73%	C-	Below 60%	F

Special Supplies: Scientific Calculator, #2 pencil (HB). A molecular model kit is required.

Students may share a kit as described in class.

Methods of Instruction: Students are encouraged to ask questions at the beginning of the hour. Previous material or individual interests regarding the broad areas of chemistry, organic chemistry, biochemistry, or physical science are suitable topics for discussion. New material will be presented in a lecture format. Students will have access to copies of any overheads used. Homework problems will be suggested as a part of the overall learning process and will be discussed in class if requests are made by students. Students should take notes during lecture.

Homework problems: Students should work all of the 'inside the chapter' problems as they are working through the text. Selected 'end of chapter' problems will be assigned. Many problems will be worked in class. It is important to thoroughly answer the questions with pencil and paper and not just quickly arrive at an unwritten conclusion. The major organizing principle of organic chemistry is the Structural Theory- Chemical structures are the basic logical elements that we need to understand and manipulate in order to form hypotheses, predict results, design experiments. It is important to practice structure drawing required by the homework problems. Organic molecules are three-dimensional objects and molecular model kits are an invaluable tool for the beginning student. It is necessary that the student become competent in representing these 3D structures on paper. Various projection techniques will be taught during lecture as they are needed.

Material covered: The pace of the course is approximately 20-30 pages/week. It is highly recommended that the student read the text before the material is covered in lecture. After the lecture the student should study the material and work problems.

The content of this syllabus may be changed at the instructor's discretion.