

# COURSE SYLLABUS

<b>Course Title:</b>	Principles of Organic Chemistry I	<b>Date submitted:</b>	Spring 2016 (AAC: 16-01)
<b>Department:</b>	Mathematics and Science		
<b>Curriculum:</b>	Chemistry		
<b>Course Descriptors:</b> Make certain that the course descriptors are consistent with college and Board of Trustees policies, and the current course numbering system.	<b>Course Code:</b> (eg. ACC 101)	CHE*213	<b>Prerequisites:</b> C- or better in General Chemistry II (CHE*122) or 1 year general college Chemistry; and permission of department chair or instructor
	<b>Course Type:</b>	D/L	
	A: Clinical B: Lab D: Distance Learning I: Individual/Independent L: Lecture N: M: Seminar Internship P: Practicum U: Studio X: Combined Lecture/Lab Y: Combined Lecture/ Clinical/Lab Z: Combined Lecture/Studio		
	<b>Elective Type:</b>	G/LAS/S	
	E: English FA: Fine Arts FL: Foreign Language G: General HI: History HU: Humanities LAS: Liberal Arts & Sciences M: Math S: Science SS: Social Science		
	<b>Credit Hours:</b>	3	<b>Corequisites:</b>  None
	<b>Developmental:</b> (yes/no)	NO	
	Lecture:	3	
	Clinical:	0	
	Lab:	0	
Studio:	0		
Other:	0		
<b>Contact Hours:</b>	TOTAL: 3		
<b>Class Maximum:</b>	20	<b>Other Requirements:</b> Scientific calculator, technology skills, and the student should have already satisfactorily completed one semester of organic chemistry laboratory	
<b>Semesters Offered:</b>	Su/F		
<b>Ability-Based Education (ABE) Statement:</b>	At Tunxis Community College students are assessed on the knowledge and skills they have learned. The faculty identified the General Education Abilities critical to students' success in their professional and personal lives. In every class, students are assessed on course abilities, sometimes program abilities, and, in most classes, at least one General Education Ability. Students will receive an evaluation of the degree to which they have demonstrated or not demonstrated that General Education Ability.		
<b>Catalog Course Description:</b>	A general introduction to organic chemistry, the study of carbon compounds. Topics include: molecular structure and properties, including molecular orbitals and bonding; conjugation and resonance; reaction; thermodynamics, including energy of activation and transition state; stereochemistry; stereoselective and stereospecific reactions; chemistry of aliphatic compounds: alkanes, alkenes, and alkynes and their derivatives; free-radical and electrophilic reactions; and cyclic aliphatic compounds.  Intended for students who have successfully completed Organic Chemistry Laboratory sessions but who wish to review their lecture component without repeating the laboratory requirement. This course is not intended for those students who believe they only need the lecture or do not have time for the laboratory requirements, as the laboratory sessions will not be available later alone. This course is the first of a two-semester sequence.		

<p><b>Topical Outline:</b> List course content in outline format.</p>	<ol style="list-style-type: none"> <li>1. Structure and properties of organic compounds</li> <li>2. Reactions: energy of activation and transition state</li> <li>3. Stereochemistry: stereoselective and stereospecific reactions</li> <li>4. Alkanes</li> <li>5. Alkenes</li> <li>6. Alkynes</li> <li>7. Free-radical addition and substitution reactions</li> <li>8. Nucleophilic addition and substitution reactions</li> <li>9. Alkyl halides</li> <li>10. Solvent effects</li> <li>11. Alcohols</li> <li>12. Ethers</li> <li>13. Conjugation and resonance</li> <li>14. Cyclic aliphatic compounds</li> </ol>
<p><b>Outcomes:</b> Describe measurable skills or knowledge that students should be able to demonstrate as evidence that they have mastered the course content.</p>	<p><b>Upon successful completion of this course, the student will be able to do the following:</b></p> <ol style="list-style-type: none"> <li>1. describe the structure and properties of organic compounds and their reactions</li> <li>2. distinguish between energy of activation and transition state, stereochemistry: stereoselective and stereospecific reactions</li> <li>3. define and give examples of alkanes, alkenes, and alkynes</li> <li>4. explain and give examples of free-radical addition and substitution reactions nucleophilic addition and substitution reactions</li> <li>5. explain and define the solvent effects of alcohols and ethers</li> <li>6. distinguish between conjugation and resonance</li> <li>7. identify the properties of cyclic aliphatic compounds</li> <li>8. explain the relationships of organic molecules, their structures and effects on physical properties and chemical reactivities</li> </ol> <p><b>PROGRAM:</b> <i>(Numbering reflects Program Outcomes as they appear in the college catalog)</i> N/A</p> <p><b>GENERAL EDUCATION:</b> <i>(Numbering reflects General Education Outcomes as they appear in the college catalog)</i></p> <p><b>8. Scientific Knowledge</b> - Students will gain a broad base of scientific knowledge and methodologies in the natural sciences. This will enable them to develop scientific literacy, the knowledge and understanding of scientific concepts and processes essential for personal decision making and understanding scientific issues.</p> <p><b>Demonstrates:</b> Consistently recalls and correctly applies discipline-specific terms, relevant theories, laws, and concepts to analyze and explain scientific information.</p> <p><b>Does Not Demonstrate:</b> Inconsistently recalls or incorrectly applies discipline-specific terms, relevant theories, laws, and concepts to analyze or explain scientific information.</p>
<p><b>Evaluation:</b> List how the above outcomes will be assessed.</p>	<p><b>Assessment will be based on the following criteria:</b></p> <p>quizzes examinations brief report library research reports</p>
<p><b>Instructional Resources:</b> List library (e.g. books, journals, on-line resources), technological (e.g. Smartboard, software), and other resources (e.g. equipment, supplies, facilities) required and desired to teach this course.</p>	<p><b>Desired:</b> Chemical software for modeling, e.g., Spartan Student, Wave Function, Inc.</p>

**Textbook(s)**

Smith, *Organic Chemistry*, 4th ed.; McGraw Hill  
A Student Study Guide/Solutions Manual is available