# COURSE SYLLABUS

<table>
<thead>
<tr>
<th>Course Title:</th>
<th>Principles of Organic Chemistry II</th>
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<tbody>
<tr>
<td>Department:</td>
<td>Mathematics and Science</td>
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<tr>
<td>Curriculum:</td>
<td>Chemistry</td>
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<tr>
<td>Date submitted:</td>
<td>Spring 2016 (AAC: 16-02)</td>
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**Course Code:** CHE*214  
**Course Type:** D/L  
**Elective Type:** G/LAS/S  
**Credit Hours:** 3  
**Developmental:** NO  
**Lecture:** 3  
**Clinical:** 0  
**Lab:** 0  
**Studio:** 0  
**Other:** 0  
**TOTAL:** 3  
**Class Maximum:** 20  
**Semesters Offered:** Sp/Su  

**Course Descriptors:**  
Make certain that the course descriptors are consistent with college and Board of Trustees policies, and the current course numbering system.

**Prerequisites:**  
C- or better in Organic Chemistry I (CHE*211) or Principles of Organic Chemistry I (CHE*213); and permission of department chair or instructor

**Corequisites:**  
None

**Other Requirements:**  
scientific calculator, technology skills, and the student should have already satisfactorily completed one semester of organic chemistry laboratory

**Ability-Based Education (ABE) Statement:**  
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.

**Catalog Course Description:**  
Continuation of Organic Chemistry I. Topics include: aromatic compounds, aldehydes, ketones, carboxylic acids and their derivatives, amines, phenols and aryl halides. Reaction mechanism studies include carbanions, electrophilic substitutions and nucleophilic additions and nucleophilic substitutions. This course is 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 second of a two-semester sequence.
### Topical Outline:
List course content in outline format.

<table>
<thead>
<tr>
<th>Lecture</th>
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<tbody>
<tr>
<td>1. Aromatic compounds, including halides and aryl alkanes</td>
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<td>2. Conjugation, resonance and dienes: Diels Alder Reaction</td>
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<td>3. Aldehydes and ketones</td>
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<td>4. Carboxylic acids and derivatives</td>
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<td>5. Carbonyl Condensation Reactions: Aldol, Claisen</td>
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<td>6. Amines</td>
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<td>7. Phenols</td>
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<td>8. Heterocyclic compounds</td>
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<td>9. Condensed ring systems</td>
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<tr>
<td>10. Electrophilic aromatic substitution reactions</td>
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<tr>
<td>11. Nucleophilic addition and substitution reactions</td>
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### Outcomes:
Describe measurable skills or knowledge that students should be able to demonstrate as evidence that they have mastered the course content.

**Upon successful completion of this course, the student will be able to do the following:**

**Lecture:**
1. identify aromatic compounds, including halides and aryl alkanes
2. explain conjugation, resonance and dienes: Diels Alder reaction
3. identify and predict reactions of aldehydes and ketones
4. identify, give examples and discuss reactivity of carboxylic acids and derivatives
5. discuss the carbonyl condensation reactions: e.g., aldol, claisen
6. identify and discuss Amines and reactions
7. identify phenols and discuss phenolic chemistry
8. identify heterocyclic compounds and illustrate their chemistry
9. explain condensed ring systems
10. discuss electrophilic aromatic substitution reactions
11. discuss nucleophilic addition and substitution reactions

### Evaluation:
List how the above outcomes will be assessed.

**Assessment will be based on some or all of the following criteria:**
- quizzes
- examinations
- brief reports
- library research reports

### Instructional Resources:
**Desired:** Software for molecular modeling
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<th>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.</th>
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A Student Study Guide/Solutions Manual is available |