

FLORIDA STATE COLLEGE AT JACKSONVILLE

COLLEGE CREDIT COURSE OUTLINE

COURSE NUMBER: CHM 2211C

COURSE TITLE: Organic Chemistry II

PREREQUISITE(S): CHM 2210C

COREQUISITE(S): None

CREDIT HOURS: 4

CONTACT HOURS/WEEK: 6

CONTACT HOUR BREAKDOWN:

Lecture/Discussion: 3

Laboratory: 3

Other _____:

FACULTY WORKLOAD POINTS: 5.1

STANDARDIZED CLASS SIZE ALLOCATION: 18

CATALOG COURSE DESCRIPTION: This course, a continuation of Organic Chemistry I includes mechanisms of organic reactions, carbohydrates and macromolecules.

SUGGESTED TEXT(S): Organic Chemistry Latest edition, Brown and Foote Harcourt,
Organic Chemistry, Latest Ed., Smith, McGraw-Hill

Microscale and Macroscale Organic Experiments, Latest edition, Williamson Hart Crain, Houghton-Mifflin.

Organic Chemistry, Latest Ed., Morrison-Boyd, Prentice Hall

Organic Chemistry, Latest Ed., McMurry, Brooks/Cole

IMPLEMENTATION DATE: Fall Term, 1993 (941)--Reactivation

REVIEW OR MODIFICATION DATE: Fall Term, 2002 (20031)
Fall Term, 2006 (20071)
Fall Term, 2008 (20091) - Outline Review 2007

| COURSE TOPICS | <u>CONTACT HOURS PER TOPIC</u> |
|---|------------------------------------|
| I. Organometallic Compounds A. Structure and Nomenclature B. Preparations C. Reactions and Properties D. Uses | 2 |
| II. Aldehydes and Ketones A. Structure and Nomenclature B. Preparations C. Reactions and Properties D. Uses | 6 |
| III. Carboxylic Acids A. Structure and Nomenclature B. Preparations C. Reactions and Properties D. Uses | 4 |
| IV. Carboxylic Acid Derivatives A. Structure and Nomenclature B. Preparations C. Reactions and Properties D. Uses | 5 |
| V. Enolate Anions and Similar Structures A. Aldol Reaction B. Claisen & Dieckmann reactions C. Micheal additions D. Related synthetic applications | 6 |
| VI. The Structure of Aromatic Compounds A. Nomenclature B. Structure C. Spectroscopic properties | 4 |
| VII. Aromatic Compounds A. Electrophilic Aromatic Substitution B. Substituent Effects C. Nucleophilic Aromatic Substitution D. Related synthetic applications | 6 |
| VIII. Amines A. Structure and Nomenclature B. Preparations C. Reactions and Properties D. Uses | 4 |

| COURSE TOPICS (Continued) | <u>CONTACT HOURS PER TOPIC</u> |
|---|------------------------------------|
| IX. Conjugated Systems A. Structure B. Spectroscopic properties C. The Diels Alder Reaction D. Pericyclic reactions, The Claisen and Cope Rearrangements E. Related synthetic applications | 4 |
| X. Special Topics | 4 |

LABORATORY EXPERIMENTS

The laboratory associated with the chemistry major course in organic chemistry should provide a thorough grounding in the following experimental techniques:

| | Hours |
|--|-------|
| A. Isolation and Purification Techniques - including extraction, distillation, sublimation, crystallization, and chromatography (column, thin layer, gas-liquid, HPLC). | 9 |
| B. Analytical Techniques - including chromatography (see above) and spectrophotometry (UV.Vis, IR, NMR, mass spectra). | 9 |
| C. Synthesis Techniques - including the synthesis of an appropriately selected group of "simple" organic compounds. | 9 |
| D. Identification Techniques - including the application of analytical techniques (see above) and synthesis techniques (see above) to the identification of appropriately chosen "unknown" compounds. | 9 |
| E. Library Techniques - including instruction in how to locate information pertinent to organic analysis and synthesis in the library. | 9 |



NOTE: Use either the Tab key or mouse click to move from field to field. The box will expand to accommodate your entry.

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| <i>Section 1</i> | |
| COURSE PREFIX AND NUMBER: <u>CHM 2211C</u> | SEMESTER CREDIT HOURS: <u>4</u> |
| COURSE TITLE: <u>Organic Chemistry II</u> | |

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| <i>Section 2</i> | |
| TYPE OF COURSE: (Click on the box to check all that apply) | |
| <input checked="" type="checkbox"/> AA Elective | <input type="checkbox"/> AS Required Professional Course |
| <input type="checkbox"/> AS Professional Elective | <input type="checkbox"/> AAS Required Professional Course |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> College Prep |
| <input type="checkbox"/> General Education: (For General Education courses, you must also complete Section 3 and Section 7) | <input type="checkbox"/> Technical Certificate |

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| <i>Section 3 (If applicable)</i> | |
| INDICATE BELOW THE DISCIPLINE AREA FOR GENERAL EDUCATION COURSES: | |
| <input type="checkbox"/> Communications | <input type="checkbox"/> Social & Behavioral Sciences |
| <input checked="" type="checkbox"/> Natural Sciences | <input type="checkbox"/> Humanities |
| | <input type="checkbox"/> Mathematics |

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| <i>Section 4</i> | |
| INTELLECTUAL COMPETENCIES: | |
| <input checked="" type="checkbox"/> Reading | <input checked="" type="checkbox"/> Speaking |
| <input checked="" type="checkbox"/> Writing | <input checked="" type="checkbox"/> Listening |
| <input checked="" type="checkbox"/> Critical Analysis | <input checked="" type="checkbox"/> Information Literacy |
| <input checked="" type="checkbox"/> Quantitative Skills | <input checked="" type="checkbox"/> Ethical Judgment |
| <input checked="" type="checkbox"/> Scientific Method of Inquiry | <input checked="" type="checkbox"/> Working Collaboratively |

| <i>Section 5</i> | |
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| LEARNING OUTCOMES | METHOD OF ASSESSMENT |
| <ul style="list-style-type: none"> Explain and apply major concepts in organic chemistry including mechanisms of organic reactions, carbohydrates and macromolecules. | Written tests, reports and/or use of equipment to demonstrate student competency in field. |
| <ul style="list-style-type: none"> Demonstrate knowledge of scientific method. | Formulate problem, make observations, derive and test hypothesis and make conclusions. |
| <ul style="list-style-type: none"> Communicate scientific ideas through oral or written assignments. | Students use analytical reasoning skills to solve problems on written tests and/or laboratory work. |
| <ul style="list-style-type: none"> Interpret scientific models such as formulas, graphs, tables and schematics, draw inferences from them and recognize their limitations. | Written reports of lab experiments and/or written tests demonstrate student competency in the application of scientific knowledge. |
| <ul style="list-style-type: none"> Demonstrate problem solving methods in situations that are encountered outside of the classroom. | Students use demonstrations, group discussions, written tests, laboratory reports, research projects and/or field experiences to illustrate competence in recognizing and evaluating various scientific processes. |
| <ul style="list-style-type: none"> Demonstrate proper laboratory technique including safety in the use and care of laboratory equipment and materials. | Results from laboratory work and experiments demonstrate student awareness of science and society. |

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| <i>Section 6</i> | |
| Name of Person Completing This Form: Steve Milczanowski | Date: <u>03/07/2005</u> |