I. Locator Information:

Instructor: ____________________________
Course # and Name: CHEM 223  Organic Chem. I   Office Location: TBA
Semester Credit Hours: 3 (Lecture)   Office hours: TBA
Day and Time Class Meets: ___________  Office Phone: TBA
Total Contact Hours for Class: 3hrs/week
Email address: ________________________

FSU Policy on Electronic Mail: Fayetteville State University provides to each student, free of charge, an electronic mail account that is easily accessible via the Internet. The university has established email as the primary mode of communicating with enrolled students about impending deadlines, upcoming events, and other information important to student progression at the university. Students are responsible for reading their email on a regular basis to remain aware of important information disseminated by the university. The university maintains open-use computer laboratories throughout the campus that can be used to access electronic mail. Students making inquiries via email to FSU faculty and staff about academic records, grades, bills, financial aid, and other matters of a confidential nature are required to use their FSU email account.

Rules and regulations governing the use of FSU email may be found at: http://www.uncfsu.edu/PDFs/EmailPolicyFinal.pdf

II. Course Description:
A study of the nomenclature, synthesis, reactions and reaction mechanism, and spectroscopy of hydrocarbons, alkyl halides, and alcohols with laboratory exercises introducing the techniques of isolation, purification, characterization, and synthetic methods in organic chemistry. NOTE: CHEM 161 (previously CHEM 160) with a grade of C or higher (or permission of the instructor) IS PREREQUISITE.

Those students needing only one semester of organic chemistry for their curriculum should consider CHEM 220, which provides a broad survey of the topics in CHEM 223 and CHEM 225 (but at a lower level). (NOTE: BICH 411 prerequisites can be met either by CHEM 220 or by a combination of CHEM 223 and CHEM 225).

III. DISABLED STUDENT SERVICES:
In accordance with Section 504 of the 1973 Rehabilitation Act and the Americans with Disabilities Act (ACA) of 1990, if you have a disability or think you have a disability to please contact the Center for Personal Development in the Spaulding Building, Room 155 (1st Floor); 910-672-1203.

IV. Textbook:

V. Web-Based Learning: Organic Chemistry, 8th edition, by John McMurry- with Sapling Online Web-Based Learning) subscription, Cengage publishers. Please purchase Sapling subscription if not accompanied by your textbook using information provided below. All homework will be assigned in Sapling. Additionally, you will need a Laboratory manual customized for the course that is available at the FSU Bookstore.

VI. SAPLING How to Instruction on how to obtain the online sapling subscription will be placed on the blackboard.
VII. Student Learning Outcomes “Upon completion of this course, students will be able to:”

1. DEMONSTRATE A THOROUGH KNOWLEDGE OF THE FOLLOWING CONCEPTS FROM ORGANIC CHEMISTRY I (a course prerequisite)
   1. Hybridization
   2. Concepts of ionic and covalent bonding.
   3. Molecular geometry
   4. Simple inorganic nomenclature
   5. Relationships between reaction mechanisms and kinetics.

2. DEMONSTRATE KNOWLEDGE OF THE SYSTEMIC (IUPAC) AND COMMON RULES FOR NOMENCLATURE OF ALKANES, CYCLOALKANES, ALKENES, ALKYNES, AND ALKYL HALIDES.

   Deduce either common or systematic (IUPAC) names when a structure is given
   Translate names between the two systems
   Construct structures when either of the types of names is given.

3. DEMONSTRATE AN UNDERSTANDING OF THE PRINCIPLES OF ALKANE, CYCLOALKANE, ALKENE, AND ALKYL HALIDES CONFORMATIONS AND STEREOCHEMISTRY

   Understand concepts of configurational and conformational isomerism.
   Recognize enantiomers and diastereomers.
   Identify as R,S, E, Z, etc.
   Distinguish preferred conformations based on regiochemistry and stereochemistry and the relative steric requirements of various substituents.

4. DEMONSTRATE KNOWLEDGE OF THE REACTIONS THAT VARIOUS CONTAINING COMPOUNDS UNDERGO.

   Predict the gross structural changes expected in the several types of reactions described.
   Predict the appropriate regiochemistry and stereochemistry expected when these types of information are appropriate.
   Predict reagents and any special conditions required to carry out a reaction when reactants and products are both known.
   Design multi-step reaction schemes for the preparation of given products.
   Utilize an understanding of the mechanisms of chemical reactions in order to predict the relative rate (and/or) relative populations of the various products when two (or more) possible reactions are expected to occur simultaneously.

5. DEMONSTRATE THE ABILITY TO WRITE TECHNICAL PAPERS UTILIZING COMMON WORD PROCESSORS.

   The format of journal articles, projects, and laboratory reports will be submitted in WordPerfect format. Students are expected to conform to this format for all reports submitted to the instructor. The laboratory report must be submitted as both hard-copy and/or as email attachments only. The report must be prepared utilizing either WordPerfect for Windows or
Upon completion of this course, students will be able to:

1. Demonstrates knowledge of types of properties of chemical bonds. (1.1)
2. Demonstrates knowledge of the types of chemical reactions. (1.20)
3. Demonstrates knowledge of the energy conservation principles with emphasis on endothermic and exothermic reactions, and influence on reaction rates. (1.6)
4. Demonstrates the ability to relate the concepts and principles of chemistry to contemporary, historical, environmental, technological, and societal issues. (4.0)
5. Demonstrates the ability to locate resources; design and conduct inquiry-based, open-ended investigations in chemistry; interpret findings, communicate results and make judgments based on evidence. (5.0)
6. Demonstrates the ability to employ appropriate and safe methods of handling chemicals and their appropriate disposal. (6.0)

VIII. COURSE REQUIREMENTS AND EVALUATION CRITERIA:

A. COURSE REQUIREMENTS

The instructor will respect all students and will make every effort to maintain a classroom climate that promotes learning for all students. Students must accept their responsibility for maintaining a positive classroom environment by abiding by the following rules:

1. Attend all lecture sessions, except in cases of illness and other unforeseen emergencies. It is the student's responsibility to contact the instructor about the steps that must be taken for making up any and all missed work. It is recommended that contact with the instructor take place within twenty-four (24) hours of having missed class. The University policy concerning absences from class will be strictly enforced. Absences exceeding 10% of the total contact hours the course meets during the semester (that amounts to approximately five (5) total hours of unexcused absences) will fall in the category of 'EXCESSIVE ABSENCES-EA'. As per new guidelines, ‘WN’ grade has been eliminated and it is the STUDENT'S RESPONSIBILITY TO WITHDRAW FROM THE CLASS. Please refer to 'Revision of Grades-Student Responsibilities' at www.uncfsu.edu/fsuretension/policiesprocedures.htm (a copy of which is given below under Revision of Grades-Student Responsibilities).

2. Be punctual. Attendance will be taken promptly at the beginning of each session. Any student coming in after the roll has been called will have been marked absent. It is the student's responsibility to see that all tardies have been duly noted. Students will also be charged with a tardy for departure from the class before the specified end of class. The accumulation of three (3) tardies will result in the student being charged with one (1) absence.

3. Participate actively in classroom discussions and activities. Two key ingredients of every student's learning are sharing opinions and experiences with others, and interacting with others in the teaching-learning situation.

4. Read over and take notes on the indicated chapters BEFORE they are presented in class. This activity mentally prepares one for the learning experience. It also is important because it raises questions that one needs to have answered in order to fully understand concepts presented.

5. Take notes in class. Recopy these notes at the first opportunity after class and certainly the
same day as the class in which the notes were taken. Reconcile any discrepancies in the notes taken in class as well as with notes taken in initial reading. Add explanations or drawings or other examples for clarity.

6. Study about two hours for each hour of lecture. This is an absolute minimum for maximum success in a class.

7. Avail yourself of all pertinent audiovisual and computer-assisted instructional materials.

8. Take examinations ON THE SCHEDULED DATES. No make-up examinations will undertake. An automatic grade of ZERO is recorded for any exam missed for any reason.

9. Be in compliance with the university policy on drugs which prohibits the possession or use of alcoholic beverages or illegal drugs on any part of the campus.

10. Students are permitted to use calculators in the class.

11. Students are not permitted to wear paraphernalia that may be distracting to the classroom environment.

12. Students must refrain from any activity that will disrupt the class

13. Students are not permitted to use profanity in the classroom. They must not pass notes or carry on private conversations while class is being conducted.

14. An additional lab syllabus will be provided for the lab portion of the course.

15. SEE THE INSTRUCTOR IMMEDIATELY WHEN SPECIFIC DIFFICULTIES ARE ENCOUNTERED.

B. Evaluation Criteria

<table>
<thead>
<tr>
<th>EXAMINATIONS:</th>
<th>Component</th>
<th>Points</th>
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<tbody>
<tr>
<td>EXAM I</td>
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<tr>
<td>EXAM II</td>
<td>100</td>
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<td>EXAM III</td>
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<td>EXAM IV</td>
<td>100</td>
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<tr>
<td>FINAL EXAM</td>
<td>100</td>
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<tr>
<td>DROP LOWEST EXAM</td>
<td>-100</td>
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| HOMEWORK       | 100                 |
| ACS PROBLEM SOLVING | 50                 |
| JOURNAL ARTICLE | 50                 |
| TOTAL POINTS    | 600                 |

Grades: The grading scale is:

A = 549 – 600  B = 489 – 548  C = 429 – 488

D = 369 – 428  F = Below 369
**INTERIM GRADES**

- **INTERIM GRADE X = NO SHOW** – Assigned to students who are on a class roster, but never attend class. For warning purposes only; NOT a final grade.

  **STUDENTS:** Check interim grades early in the semester. If you have an X grade, either begin attending the class or withdraw* from it. *See warning below about class withdrawals. If you do not take action in response to an X grade, you will receive a final grade of FN. (See “FN” below)

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**FSU Policy on Disruptive Behavior in the Classroom (Optional)**

The *Code of the University of North Carolina* (of which FSU is a constituent institution) and the *FSU Code of Student Conduct* affirm that all students have the right to receive instruction without interference from other students who disrupt classes.

FSU Core Curriculum Learning Outcome under Ethics and Civic Engagement (6.03): All students will “prepare themselves for responsible citizenship by fulfilling roles and responsibilities associated with membership in various organizations.” Each classroom is a mini-community. Students learn and demonstrate responsible citizenship by abiding by the rules of classroom behavior and respecting the rights all members of the class.

The FSU Policy on Disruptive Behavior (see FSU website for complete policy) identifies the following behaviors as disruptive:

1. Failure to respect the rights of other students to express their viewpoints by behaviors such as repeatedly interrupting others while they speak, using profanity and/or disrespectful names or labels for others, ridiculing others for their viewpoints, and other similar behaviors;
2. Excessive talking to other students while the faculty member or other students are presenting information or expressing their viewpoints.
3. Use of cell phones and other electronic devices
4. Overt inattentiveness (sleeping, reading newspapers)
5. Eating in class (except as permitted by the faculty member)
6. Threats or statements that jeopardize the safety of the student and others
7. Failure to follow reasonable requests of faculty members
8. Entering class late or leaving class early on regular basis
9. Others as specified by the instructor.

The instructor may take the following actions in response to disruptive behavior. Students should recognize that refusing to comply with reasonable requests from the faculty member is another incidence of disruptive behavior.

1. Direct student to cease disruptive behavior.
2. Direct student to change seating locations.
3. Require student to have individual conference with faculty member. At his meeting the faculty member will explain the consequences of continued disruptive behavior.
4. Dismiss class for the remainder of the period. (Must be reported to department chair.)
5. Lower the student’s final exam by a maximum of one-letter grade.
6. File a complaint with the Dean of Students for more severe disciplinary action.

Students who believe the faculty member has unfairly applied the policy to them may make an appeal with the faculty member’s department chair.
INTERIM GRADE EA = EXCESSIVE ABSENCES - Assigned to students whose class absences exceed 10% of the total contact hours. For warning purposes only, NOT a final grade.

STUDENTS: Check your interim grades often. If you have an “EA” grade for a class, you are in jeopardy of failure if you do not take immediate actions. Either resume attending the class or withdraw from it. *See warning below about class withdrawals.

FINAL GRADE:

FN = FAILURE DUE TO NON-ATTENDANCE – Assigned to students who are on class roster, but never attend the class. An FN grades is equivalent to an F grade in the calculation of the GPA.

STUDENTS: You must attend (or withdraw* from) all the classes for which you are enrolled. *See warning below about class withdrawals.

WARNING ABOUT CLASS WITHDRAWALS:

- When you withdraw from a class, you are wasting your money and time. You receive no refund for withdrawing from individual classes and you slow your progress toward degree completion.
- If you withdraw from or fail more than one-third of your classes, you will no longer be eligible for financial aid.
- STRIVE TO EARN CREDIT FOR ALL THE CLASSES IN WHICH YOU ENROLL; WITHDRAW FROM CLASSES ONLY WHEN IT IS ABSOLUTELY NECESSARY!

VII. Academic Support Resources – Smarthinking Online Tutoring (Instructions given in Smarthinking Student Handbook), Supplemental Instruction Program (SI Instructors), and Student Support Services (HTC 108, Tel. 672-1867 provide a one-on-one tutoring for students enrolling in the program- website: http://www.uncfsu.edu/sss/). The Learning Center in the H.T. Chick Building is available to assist students with writing, mathematics, and reading. Students can also get assistance from the instructor during the instructor’s office hours.

VIII. Course Outline and Assignment Schedule

<table>
<thead>
<tr>
<th>Week #</th>
<th>Topic(s)</th>
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<tbody>
<tr>
<td>Week 1</td>
<td>Introduction/ Course Outline/Chapter 1</td>
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<tr>
<td>Week 1</td>
<td>Chapter 1-Structure and Bonding</td>
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<tr>
<td>Week 1</td>
<td>Chapter 1 /Chapter 2</td>
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<tr>
<td>Week 2</td>
<td>No Classes – Dr. Martin Luther King Jr’s Holiday</td>
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<td>Week 2</td>
<td>Chapter 2- Polar Bonds</td>
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<td>Week 2</td>
<td>Chapter 2- Polar Bonds</td>
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<tr>
<td>Week 3</td>
<td>Chapter 2/Chapter 3/HW CH. 1 – Due</td>
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<tr>
<td>Week 3</td>
<td>Chapter 3-Alkanes</td>
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<tr>
<td>Week 3</td>
<td>Chapter 3</td>
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<tr>
<td>Week 4</td>
<td>Chapter 3/Review/HW CH. 2 – Due</td>
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<tr>
<td>Week 4</td>
<td>Exam 1 – CH. 1, 2, &amp; 3</td>
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<tr>
<td>Week 4</td>
<td>Chapter 4- Cycloalkanes</td>
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</tbody>
</table>
Week 5  Chapter 4/HW CH. 3 – Due
Week 5  Chapter 4/Problem Solving
Week 5  Chapter 5- Organic Reactions

Week 6  Chapter 5/HW CH. 4 - Due
Week 6  Chapter 5/Review
Week 6  Chapter 6-Alkenes

Week 7  Chapter 6/Problem Solving
Week 7  Chapter 6/ Review
**Week 7**  **Exam II- Chapter 4, 5, & 6**

Week 8  Chapter 7-Reactions of Alkenes
Week 8  Chapter 7/ Problem Solving/HW CH. 6 – Due
Week 8  Chapter 7

Week 9  No Classes – Spring Break
Week 9  No Classes – Spring Break
Week 9  No Classes – Spring Break

Week 10  Chapter 7/Chapter 8
Week 10  Chapter 8- Alkynes
Week 10  Chapter 8

Week 11  Chapter 8/HW CH. 7 – Due
Week 11  Chapter 8- Alcohols and Phenols
Week 11  Chapter 8

**Week 12**  **Exam III – CH. 7 and 8**
Week 12  Chapter 9 Stereochemistry
Week 12  Chapter 9/Problem Solving/CH. 8 – Due

Week 13  No Classes- Veteran’s Day
Week 13  Holiday  Chapter 10- Alkyl halides
Week 13  Chapter 10/Journal Article - Due

Week 14  Chapter 11- Rxns of Alkyl halides
Week 14  Chapter 11/HW CH. 9 – Due
Week 14  No Classes – Spring Holiday

Week 15  Chapter 11
Week 15  Chapter 11
**Week 15**  **Exam IV – CH. 9, 10, & 11**

Week 16  Review/Problem Solving/HW CH. 11 – Due
Week 16  Review
Week 16  Review/Last Day of Regular Classes

Week 17  Final Exam Week
IX. Teaching Strategies

There will be lecture and laboratory sessions. Various teaching techniques will be applied to improve the teaching efficiency. Teamwork and group study, as well as, individual study are recommended. Teaching aids such as audio-visual supplements and computer-assisted instruction are available for many topics to assist you if you need additional study. Appropriate materials for each week of class are listed in the class schedule with more complete information in Section X-Bibliography and Study Aids and Appendices.

XI. Bibliography

Other than different Organic Chemistry textbooks, students are encouraged to use the audio-visual programs that are housed in the Media Center on the second floor of Chestnut Library and the computer-assisted-instruction programs available on the chil server. The audio-visual programs are available as film-strip/audio-cassette or slide/audio cassette programs. A listing of AV program numbers and titles appropriate for this and the following course is given as an appendix to this syllabus.

- ChemPlus, HyperCube Inc., Waterloo, Ont., Canada, 1993
- HyperNMR, HyperCube Inc., Waterloo, Ont., Canada, 1994
- PCModel V 5.0, Serena Software, Bloomington, IN., 1993-94

The vast majority of the AV programs were developed by Communication Skills Corporation (CSC). Those which carry numbers in the 700’s are basically at high school level, which those at the 800-level (or above) are college level. The Computer programs available were developed by Compress, Inc.

- CSC 9102 INTRODUCTION TO NOMENCLATURE
- CSC 9103 NOMENCLATURE OF COMPOUNDS WITH ONE OR MORE FUNCTIONAL GROUPS
- CSC 9112 & 9113 THE SN1 REACTION
- CSC 9114 & 9115 THE SN2 REACTION
- CSC 9121-9123 ELECTROPHILIC ADDITION REACTIONS
- CSC 9152 PRACTICAL ASPECTS OF BASIC CONCEPTS (deals with the effect of intermolecular forces on melting and boiling points, solubility, vapor pressure, etc).

XII. DISCLAIMER

To accommodate emergent circumstances, the professor reserves that right to make reasonable changes in the syllabus while the course is in progress. Any understanding between a student and the professor including, but not limited to, changes, expectations, or modifications to course requirements or procedures must be in writing and must be signed by both parties. Any questions of interpretation of course requirements or of understandings between a student and the professor will be at the discretion of the professor.