I. Course Title
   Introductory Organic and Biological Chemistry

II. Course Prefix/Number
   CHEM 112

III. Credit Hours
   4

IV. Prerequisites
   Chemistry 111, minimum grade C OR Chemistry 131, minimum grade C and Chemistry 132, minimum grade C

V. Catalog Description
   A study of the fundamental concepts of organic chemistry and biochemistry. It will not satisfy the requirements for a chemistry major, minor or pre-professional studies (pre-med, etc. The course is satisfactory for biology majors who take only one year of chemistry and for EPLS advanced track. Four lectures per week.

VI. Curricular Relationships
   This course may be used for the BA in Biology, the BA in Biology (Secondary Education emphasis), the BS in Biology (Wildlife emphasis), the BA in Exercise Physiology and Leisure Science, pre-nursing, and pre-physical therapy.

VII. Student Learning Outcomes
   • Students will demonstrate an ability to solve problems, think critically, and draw analogies.
   • Students will demonstrate an ability to write effectively, particularly with respect to technical subjects.
   • Students will be able to classify organic molecules and biomolecules according to structural features and functional groups, and to predict physical and chemical properties of these molecules based on these structural features and functional groups.
   • Students will be able to name simple organic molecules and small biomolecules.
   • Students will learn the basic functions and roles of biomolecules in the human body.
   • Students will be able to recognize chiral molecules and understand the importance of chirality in organic and biochemistry.
   • Students will demonstrate a basic knowledge of how organic chemistry and biochemistry impacts their everyday lives.

VIII. Content Outline
1. Saturated Hydrocarbons
2. Unsaturated Hydrocarbons
3. Alcohols, Phenols, Ethers and their Sulfur Analogues
4. Aldehydes and Ketones
5. Carboxylic Acids, Esters, and other Acid Derivatives
6. Amines and Amides
7. Stereoisomerism
8. Carbohydrates
9. Lipids
10. Proteins
11. Nucleic Acids
12. Metabolism and Enzymes: An Overview
13. Carbohydrate Metabolism
14. Fatty Acid Metabolism (if time permits)
15. Hormones and the Control of Metabolic Interrelations (if time permits)

IX. Course Procedures/Policies/Grading Scale
Students are expected to attend all lecture sessions. Homework is assigned and graded. On average, bluebook quizzes are given at the start of class twice a week. Typically, four or five hour exams and a comprehensive final exam (standardized ACS examination) are given in this course.

Normal grading is used for this course.
Grading Scale: $\geq 90 = A; 80-89 = B; 70-79 = C; 60-69 = D; <60 = F$

X. Required/Recommended Readings
A typical text for this course is *Organic and Biochemistry: Connecting Chemistry to Your Life*, by Blei and Odian.

XI. Issues Unique to this Course
Corequisite of CHEM 112L, unless the student has successfully completed the laboratory in a previous semester.

XII. Additional Departmental Issues
None