Institutional Syllabus

___ New Course  Date of Last Review  ________
__X_ Substantive Change in Existing Course  Date of Most Recent Approval  ________

I. **Course Title**
Biochemistry II

II. **Course Prefix/Number**
CHEM 402

III. **Credit Hours**
3

IV. **Prerequisites**
CHEM 401 with C or better

V. **Catalog Description**
A study of biochemical metabolism. Topics include signal transduction, catabolism, anabolism, and metabolic control. Three hours of lecture per week.

VI. **Curricular Relationships**
1. Curricular Relationships:
   Required for BS Biochemistry degree, BA Chemistry (Allied Health) degree, and for BS Biology (Cellular and Molecular Biology). Chemistry 401,401L, 402 is one of two optional sequences for the BS Chemistry degree. Many pre-professional students interested in the health sciences take this course.

VII. **Student Learning Outcomes**
- Students will demonstrate the ability to solve problems, think critically, and draw analogies.
- Students will demonstrate an ability to write effectively and to evaluate the writing of others, particularly with respect to technical subjects.
- Students will demonstrate a solid foundation in structural biochemistry.
- Students will be able to discuss and describe, from a historical perspective, the development of biochemistry as a science.
- Students will be able to critically examine the role of biochemistry in the health sciences.
- Students will be able to demonstrate the ability to read and interpret technical literature.

- Students will be able to work effectively as members of groups..

VIII. **Content Outline**
- Metabolism: basic concepts and design
- Signal transduction
- Glycolysis and Gluconeogenesis
- Glycogen metabolism
• Citric acid cycle
• Oxidative phosphorylation
• Fatty acid metabolism
• Protein turnover and amino acid catabolism
• The integration of metabolism

IX. Course Procedures/Policies/Grading Scale
Students are expected to attend all lecture sessions. Homework is assigned and graded. Students read biochemistry research articles for in-class discussion. Typically, three hour exams and a comprehensive final exam (standardized ACS examination in biochemistry) are given

Normal grading is used for this course.

Grading Scale:  >90 = A; 80-89 = B; 70-79 = C; 60-69 = D; <60 = F

X. Required/Recommended Readings

The typical text for the course is Biochemistry, by Berg, Tymoczko, and Stryer.

XI. Issues Unique to this Course
None

XII. Additional Departmental Issues
None