Course Number: CSC 858  
Course Title: Foundations of Biotechnology and Life Sciences  
Number of Credits: 3  
Grading: Letter grade and Credit/No credit  
Prerequisite: Graduate standing in Science

Catalog Description
Covers foundations of biotechnology and life sciences in order to prepare students for further study and for careers in biotechnology and computational life sciences R&D and industry. Students do not need background in life sciences or biology.

Expanded Description
- Foundations of biology and genetics
- Foundations of biotechnology
- Data acquisition, storage and processing in life sciences and biotechnology
- Data standards
- Privacy and legal issues
- Selected applications

Course Objectives and Role in Program
The objective of this course is to provide basic foundational knowledge in life science and biotechnology in order to: prepare students for more advanced courses in computational biology, medical informatics and life sciences; to be effective in working in computational life sciences and biotech R&D and industry; and to prepare students for related Ph. D. programs. No prior background required.

Learning Outcomes
At the end of this course students will be able to
- Understand basic terms and concepts of biology, genetics and life sciences sufficient to be effective in working or studying the field of computational life sciences and biotechnology
- Understand basic applications, concepts and terms related to biotechnology
- Understand basic concepts and terms related to medical data acquisition, processing, storage and retrieval
- Understand basic data standards used in life science and medical industry
- Understand basic issues related to privacy and legal standards in handling medical data
- Be exposed to main software applications used in life sciences and biotechnology

Method of Evaluation
Student learning will be evaluated on the basis of several written assignments.

Required Textbooks
None; most materials will be provided as on-line resources