**New Course**

**Program Affected?**  Y  

**Program Change Form Submitted?**  Y  

**Subject/Course/Term**  CHEM 332  
- one term  

**Credit Weight or CEU's**  3 credits  

<table>
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<th>Course Activities</th>
<th>Schedule Type</th>
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<td>EM - Examination</td>
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Total Hours per Week : 3  
Total Number of Weeks : 13  

**Course Title**  
- Official Course Title : Biological Chemistry  
- Course Title in Calendar : Biological Chemistry  

**Rationale**  
This course fills a current hole in our curriculum. We have three Chemical Biology courses at the 500 level targeted at graduate students and advanced undergraduates, but nothing in Chemical Biology at the undergraduate level. In addition, accreditation by the CSC requires a one semester course in biochemistry/chemical biology. This course will fulfill this programmatic requirement.  

**Responsible Instructor**  

**Course Description**  
An introduction to biological chemistry. Topics will include chemistry and structure of proteins, nucleic acids, and lipids; protein and nucleic acid biosynthesis; enzyme kinetics and mechanisms; membranes and membrane transport; bioenergetics; and redox reactions in biological chemistry.  

**Teaching Dept.**  
0287 : Chemistry  

**Administering Faculty/Unit**  
SC : Faculty of Science  

**Prerequisites**  
- CHEM 222  
- CHEM 243  
- Web Registration Blocked? : Y  
- Minimum Grade or Test Scores : C  
- Prereq course or test taken at the same time? : N  

**Corequisites**  
- CHEM 302  
- Web Registration Blocked? : Y
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**Approvals Summary**

**Show all comments**

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<th>Departmental Curriculum Committee</th>
<th>Departmental Meeting</th>
<th>Departmental Chair</th>
<th>Other Faculty</th>
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Meeting Date: Oct 17 2013
Approval Date: Oct 17 2013
View Comments

Meeting Date: Oct 11 2013
Approval Date: Oct 16 2013
View Comments

Approved by Departmental Curriculum Committee
Created on: Oct 16 2013
CHEM 332: Biological Chemistry

Prerequisites: CHEM 243, CHEM 222

Corequisite: CHEM 302

Restrictions: Restricted to Chemistry Majors or by permission of instructor

Grading: 10% assignments, 40% midterms, 50% final

Rationale for the course:

This course fills a current hole in our curriculum. We have three Chemical Biology courses at the 500 level targeted at graduate students and advanced undergraduates, but nothing in Chemical Biology at the undergraduate level. In addition, accreditation by the CSC requires a one semester course in biochemistry/chemical biology. This course will fulfill this programmatic requirement.

Topics:

1. Chemistry of Amino Acids, Peptides, and Proteins
2. Three-Dimensional Structure of Proteins
3. Protein Function
4. Chemistry of Nucleotides and Nucleic Acids
5. DNA Replication, Repair and Recombination
6. RNA Biosynthesis and Chemical Processes
7. Protein Synthesis (Central Dogma)
8. Enzyme Kinetics and Catalysis Mechanisms
9. Chemistry of Lipids
10. Biological Membranes and Transport
11. Bioenergetics and Thermodynamics
12. Redox Reactions in Chemical Biology: Oxidative Phosphorylation and Photophosphorylation
APPENDIX A
CONSULTATION REPORT FORM

DATE: October 18, 2013

TO: Prof. Albert Berghuis

FROM: Amy S. Blum, Department of Chemistry

The attached proposal has been submitted to the Curriculum/Academic Committee, and it has been decided that your department should be consulted.

Course Subject Code + #, Title, Credit Weight: CHEM 332, 3 credits

Would you be good enough to review this proposal and let me know as soon as possible, on this form, whether or not your department has any objections to, or comments regarding, the proposal.

X NO OBJECTIONS		SOME OBJECTIONS

COMMENTS:

Biochemistry and Anatomy and Cell Biology (which teaches ANAT/BIOC 212 together with Biochemistry, and with whom we have consulted on this matter) have no objection to the proposed course, noting that we teach no comparable one-semester, terminal survey course on structure/function of biological molecules.

Signature: [Signature]

Date: Oct 21, 2013
APPENDIX A

CONSULTATION REPORT FORM

DATE: October 18, 2013

TO: Prof. Graham Bell

FROM: Amy S. Blum, Department of Chemistry

The attached proposal has been submitted to the Curriculum/Academic Committee, and it has been decided that your department should be consulted.

Course Subject Code + #, Title, Credit Weight: CHEM 332, 3 credits

Would you be good enough to review this proposal and let me know as soon as possible, on this form, whether or not your department has any objections to, or comments regarding, the proposal.

[Signature]

Signature: [Signature]

Date: Oct 25, 2013

COMMENTS:

The topics overlap with that of Biology 200 and 201. Specifically topics 1-8 are covered in Bio 200 and topics 8-12 in Bio 201 (according to the instructors consulted). It could be that these topics are covered in more depth than the Biology courses mentioned but this could not be ascertained from the information provided.