Course Inventory Change Request

New Course Proposal

Date Submitted: 01/04/16 12:10 pm

Viewing: CHEM 3065: Physical Chemistry I Lab

Last edit: 01/05/16 10:44 am

Changes proposed by: D00003473

Catalog Pages referencing this course

Bachelor of Science in Chemistry

<table>
<thead>
<tr>
<th>Course Prefix:</th>
<th>CHEM</th>
<th>Course Number:</th>
<th>3065</th>
</tr>
</thead>
<tbody>
<tr>
<td>Effective Semester:</td>
<td>Fall 2016</td>
<td></td>
<td></td>
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<tr>
<td>Department:</td>
<td>Physical Sciences (PS)</td>
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<tr>
<td>School:</td>
<td>School of Science &amp; Technology</td>
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<tr>
<td>Course Title:</td>
<td>Physical Chemistry I Lab</td>
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<td>Short Course Title:</td>
<td>Physical Chemistry I Lab</td>
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<tr>
<td>Credits:</td>
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<td></td>
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<tr>
<td>Workload Factors:</td>
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</table>

In Workflow

1. PS Chair
2. SC Dean
3. University Curriculum Committee Chair
4. Banner

Approval Path

1. 01/04/16 12:13 pm
   Kelly Brinthurst (kbringhurst): Approved for PS Chair
2. 01/04/16 3:27 pm
   Ruth Bruckert (bruckert): Approved for SC Dean
Primary Grade Type: Standard Letter
Secondary Grade Type:
Instructor Permission Required: No
Repeatable for Credit: No
Schedule Type: Lab with Credit Hrs/Wk: 3
Catalog Prerequisites? Yes
Catalog Prerequisites: CHEM 2320 and CHEM 2325 (both Grade C or higher), and PHYS 2210 and PHYS 2215 (both Grade C or higher).
Grade Required on Prerequisite(s): C
Corequisites? Yes
Corequisite(s): CHEM 3060.
Course/Lab Fee? Yes

<table>
<thead>
<tr>
<th>Fee Amount</th>
<th>Fee Deposit Index Code</th>
<th>Fee Justification</th>
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<tbody>
<tr>
<td>100</td>
<td>NAT308</td>
<td>Necessary for purchasing chemicals and instrumentation wear and tear.</td>
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Instruction Index: NAT202

GE Status Requested: No

Catalog Description: A problem-oriented course in atomic and molecular structure, states of matter, and chemical kinetics. Introduction to efficient retrieval of information from the physical chemical literature and thinking critically about the material. Students will understand the difference between classical and quantum mechanics, understanding the time, length, and energy scales on which chemical processes occur, and connect common approximation methods to standard chemical frameworks.

Course Rotation: Fall (odd)

Justification for course/change: This course will be an elective for the Minor in Chemistry. This course is appropriate for students wishing to learn the underlying concepts behind the chemical theories learned in both the general chemistry and organic chemistry series.

Library Resources Adequate: Yes

Tech Resources Adequate: Yes

Comparable Courses:

<table>
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<th>Institution</th>
<th>Prefix/Number</th>
<th>Credit(s)</th>
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<tbody>
<tr>
<td>Utah State University</td>
<td>CHEM 3080</td>
<td>1</td>
<td>Physical Chemistry I Lab</td>
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<td>Southern Utah University</td>
<td>CHEM 3615</td>
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<td>Physical Chemistry I Lab</td>
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<tr>
<td>Colby College</td>
<td>CHEM 342</td>
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<td>Physical Chemistry I Lab</td>
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</table>

Course Learning Outcomes:
- understanding the time, length, and energy scales on which chemical processes occur
- understanding the differences between classical and quantum mechanics
- connecting operators to observables
- distinguishing probabilities, amplitudes, averages, expectation values, and observables
• understanding the origin and implications of quantum coherence
• interpreting spectra
• connecting common approximation methods to standard chemical frameworks (Born-Oppenheimer, molecular orbitals)
• developing molecular-level critical thinking skills

Course Reviewer Comments

D00002376 (12/18/15 10:24 am): Rollback: needs the (Grade C or higher) notation on the prerequisite courses.
D00002376 (12/31/15 3:01 pm): Rollback: You need to add the comment (Grade C or higher) on your prerequisites. Happy New Year!
D00072043 (01/05/16 10:29 am): updated prerequisite field per email from Kelly Bringhurst.
D00002376 (01/05/16 10:44 am): changed prereq's. removed Math 1210 because it is already a prerequisite to PHYS 2210 so it doesn't need to be on this course.