UNIVERSITY OF MICHIGAN-FLINT
COURSE CHANGE REQUEST for GenEd Distribution

* * * This change is not effective for registration or publication until this request has been reviewed by the Provost.* * *

Change Effective for Term: Fall 2010 School/College: College of Arts and Sciences (CAS)
Department: Chemistry and Biochemistry (CBM)

Subject: CHM Course Number: 443 Check here for NO CHANGE: □

□ INACTIVATE Course □ INACTIVATE Crosslisting(s)

INSTRUCTIONS: Only where a change is requested, please complete the Requested Change column below, leave other lines blank. Add separate page(s) if space provided is not sufficient for your response.

AS CURRENTLY OFFERED

1. Title: Introduction to Computational Chemistry

2. Credit Hours: (1).

3. Repeat Status: (see CURRENT Course Description below)

4. Crosslisting(s):

5. GE Distribution:

REQUESTED CHANGE

to:

to: Total ____ or- Variable ____ to ____

to: Max of ____ credits -or- ____________

to:

to: FYE First Year Experience CAP Capstone

H Humanities S Social Science

GB Global Studies F Fine Arts

HW Health&Well Being FQ Finance&Qnt Lit

N Nat Science and/or NL Nat Sci Lab

T Technology

CURRENT Course Description:

Introduction to use of computational chemistry software packages. Topics include the introduction to common quantum mechanics/molecular mechanics methods, elementary computational procedures, graphical methods, basic molecular modeling. No computer programming experience is required.

NEW Course Description (as it should appear in the Catalog):

UM-FLINT
RECEIVED
OCT 23 2009

College of Arts & Sciences
Dean’s Office

REQUESTED BY:

REVIEWED BY:

Catalog Editor Date

Provost Date

Catalog Coordinator (Registrar’s Office) Date

Department Chair Date

Department Chair of Crosslist(s) or Prerequisite(s) Date

Dean Date

as of Crosslist(s) or Prerequisite(s) Date

GECAC Date
# REQUEST FOR GENERAL EDUCATION DISTRIBUTION DESIGNATION

Directions: Please indicate which learning outcomes will be addressed in this course (place the corresponding number and outcome where indicated). A minimum of five learning outcomes must be addressed for a course to be eligible for general education distribution designation. Please provide a brief narrative as to how the course objectives/key concepts address each learning outcome selected, and indicate what tools for assessment will be used.

## Course Title: Introduction to Computational Chemistry

<table>
<thead>
<tr>
<th>No.</th>
<th>Learning Outcome</th>
<th>Narrative:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Demonstrate the ability to think critically and creatively.</td>
<td>This laboratory intensive course will critically assess the applicability of computational methods (software packages, graphing, and molecular modeling) to problems related to industries and society. It will provide students with the essential theoretical background and practical skills required to perform computational analysis used to solve technical problems for the betterment of humankind. Upon completion of the course students should be able to conduct basic computational analysis, analyze the results, interpret the results, and report the results in a professional manner.</td>
</tr>
<tr>
<td>2</td>
<td>Develop manipulative and problem-solving skills.</td>
<td>This laboratory intensive course will critically assess the applicability of computational methods (software packages, graphing, and molecular modeling) to problems related to industries and society. It will provide students with the essential theoretical background and practical skills required to perform computational analysis used to solve technical problems for the betterment of humankind. Upon completion of the course students should be able to conduct basic computational analysis, analyze the results, interpret the results, and report the results in a professional manner.</td>
</tr>
<tr>
<td>3</td>
<td>Demonstrate the ability to use appropriate electronic tools for data collection, analysis of results and presentation of results.</td>
<td>This laboratory intensive course will critically assess the applicability of computational methods (software packages, graphing, and molecular modeling) to problems related to industries and society. It will provide students with the essential theoretical background and practical skills required to perform computational analysis used to solve technical problems for the betterment of humankind. Upon completion of the course students should be able to conduct basic computational analysis, analyze the results, interpret the results, and report the results in a professional manner.</td>
</tr>
</tbody>
</table>
| 4   | Produce professional reports. | This laboratory intensive course will critically assess the applicability of computational methods (software packages,
graphing, and molecular modeling) to problems related to industries and society. It will provide students with the essential theoretical background and practical skills required to perform computational analysis used to solve technical problems for the betterment of humankind. Upon completion of the course students should be able to conduct basic computational analysis, analyze the results, interpret the results, and report the results in a professional manner.

**Assessment tools:** Assessment will include laboratory class observation, pre- and post-laboratory questions, laboratory reports and final practical exam.

<table>
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<tr>
<th>No. 5</th>
<th>Learning Outcome: Demonstrate ability to use computational methods to solve hypothetical or real-world problem.</th>
</tr>
</thead>
</table>

**Narrative:**

This laboratory intensive course will critically assess the applicability of computational methods (software packages, graphing, and molecular modeling) to problems related to industries and society. It will provide students with the essential theoretical background and practical skills required to perform computational analysis used to solve technical problems for the betterment of humankind. Upon completion of the course students should be able to conduct basic computational analysis, analyze the results, interpret the results, and report the results in a professional manner.

**Assessment tools:**

Assessment will include laboratory class observation, pre- and post-laboratory questions, laboratory reports and final practical exam.