1. Please explain how the course SLOs align with the diversification area’s hallmarks.

Explanatory notes. The hallmarks (three for each designation) are posted on the HCC Intranet. In the text-box below, state the hallmarks for the diversification designation you are seeking and explain how the course SLOs meet each hallmark. For example, an SLO for Hallmark #3 for a DS designation would be to understand how descriptive and inferential statistics are used to summarize and evaluate results from psychological studies.

SLOs:
Upon successful completion of the course, a student will be able to:

1. Demonstrate competence in manipulating organic compounds
2. Demonstrate the methods of purifying, separating, preparing, and identifying organic compounds using microscale laboratory techniques.

Hallmarks:

DY. 1 To satisfy the Laboratory requirement, a course uses the laboratory methods of the biological or physical sciences;
DY. 2 involves processes and issues of design, testing, and measurement;
DY.3 demonstrates the strengths and limitations of the scientific method.

DY1. This being a laboratory course, the laboratory methods must be used. Both course SLOs reflect the need for laboratory techniques. For instance, in order to manipulate an organic compound, laboratory techniques will be needed to accomplish this. An example of this would be the Diels-Alder reaction where a conjugated molecule will engage in a ring expansion in particular circumstances. Due to the scale of the laboratory, microscale will be performed rather than millions of metric tones of organic molecules formed at oil refineries.
DY2. Again, the need for experimental design is included in both course SLOs. The student will need to design an experiment, use methods of scientific testing and use measurements. For instance, in using a Fourier Transform Infrared Spectrometer (FTIR), the student will need to put the sample that will be tested in a salt window, operate the FTIR, obtain a spectrum and identify the functional groups in the spectrum. This example illustrates how these hallmarks are met with the SLOs.
DY3. As the student completes the experiment, he or she will have error to deal with. This will show the limitation of the scientific process. Management of error is a part of all scientific investigations. Also, the students will have an appreciation for the strength and limitations of spectroscopic techniques. For instance, comparing ammonia to the hydroxyl radical in a mass spectrometer will yield identical results; however, an FTIR will clearly identify the difference between these two molecules. A student is expected to understand the difference and limitations of those two spectroscopic methods.

2. Explain assessment strategies you plan to use (or have used, in the case of recertification) to measure the degree to which students exit the course with the expected SLOs. If there are multiple sections of the course, please discuss how assessment will be carried through all sections.

Assessment strategies will be completed by formative and summative methods. The assessment of the student's grade is as follows:

Lab notebooks/Handout questions (due every week): 50%
Quizzes (every week): 40%
Instructor evaluation (organization, preparation, technique): 10%

The lab notebook/Handout questions and quizzes will mostly employ summative methods. This will specifically verify that the students have in fact gained experience in manipulating organic compounds (SLO 1) and did purify, separate, prepare, and identify organic compounds using microscale laboratory techniques (SLO 2). These will be adequately covered by questions dealing with the methodology used and from data the student provides. For instance, if the proper product
is formed, certain qualities can be reported on such as physical properties like color or melting points and spectroscopic methods such as FTIR. Those assessments will ensure that the SLOs were met. The instructor evaluation representing 10% of the course grade is a formative method that the instructor will perform on the student as he or she is actively involved in the course. This will focus on specific laboratory techniques including and emphasis on safety.

Explanatory notes. The applicant should clearly connect assessment strategies to the course SLOs stated in Question #1. For example, an assessment strategy for an SLO would be to have a set of questions on an exam, which requires students to evaluate a hypothetical study in terms of research methodology, and descriptive statistics (calculate the mean, median, mode of a data set).

3. How have you used the assessment findings to modify or improve this course?

N/A

Explanatory notes. If this is a new course, enter “N/A” as an answer. Courses being re-certified should include a summary of how assessment strategies and measures (Question #2) were used to modify or improve the course.

Reminder: Please attach a copy of your course syllabus that includes information described in the instruction part of this form.

DIVERSIFICATION BOARD DECISION:

☑ Approved
Re-Certification Due: Fall 2015

☐ Not approved
If not approved, reasons for disapproval:

Diversification Chair Signature: Date: 11/19/10
Chem 272L  
Fall 2011  
Course Outline

Instructor: Evelyn McClure  
Office: 5-101E  
e-mail: mccluree@hawaii.edu


General Description of Course:

Chem 272L is a comprehensive introduction to laboratory principles of organic chemistry including molecular structure, nomenclature, stereochemistry, spectroscopy, reactions and reaction mechanisms, synthesis, and applications to biology.

Course Objectives:

- To gain practical experience in manipulating organic compounds
- To learn how to purify, separate, prepare, and identify organic compounds using microscale laboratory techniques.

Grading:

Lab notebooks/Handout questions (due every week): 50%  
Quizzes (every week): 40%  
Instructor evaluation (organization, preparation, technique): 10%

Laboratory reports are due a week after the experiment at the beginning of lab. Late labs will be docked a letter grade per day late. Any types of academic dishonesty including cheating or plagiarism will result in the failure of the course.

Special note on safety: this is a laboratory course; so safe lab practices must always be in effect. Students participating in unsafe lab practices like improper personal protective equipment or mishandling of chemicals may either be docked 1-5% of the semester grade, be expelled from the lab with no chance of a make up and/or face other sanctions decided by the instructor. Every participant in the lab must have personal protective equipment when chemicals are present in the laboratory. If a student does not have proper personal protective equipment at the start of class he or she will be asked to leave the laboratory. Personal protective equipment includes safety glasses, closed toe shoes, pants (covering the knee) and shirts with sleeves.

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Student ACCESS:

Web Site: http://honolulu.hawaii.edu/disability

Student ACCESS provides coordinated services to help students with documented disabilities achieve their educational goals. Students requiring disability accommodations should submit requests in advance to HCC's Student ACCESS Office with appropriate disability documentation. For more information visit the Student ACCESS web site or call 844-2392 (voice/text).

Academic Dishonesty:

Academic Dishonesty: Academic dishonesty cannot be condoned by the University. Such dishonesty includes cheating and plagiarism (examples of which are given below), which violate the Student Conduct Code and may result in expulsion from the University.

Cheating includes, but is not limited to:

- giving or receiving unauthorized assistance during an examination;
- obtaining unauthorized information about an examination before it is given;
- using inappropriate or unallowable sources of information during an examination;
- falsifying data in experiments and other research;
- altering the record of any grade;
- altering answers after an examination has been submitted;
- falsifying any official University record; or,
- misrepresenting the facts in order to obtain exemptions from course requirements.

Plagiarism includes, but is not limited to:

- submitting, in fulfillment of an academic requirement, any document that has been copied in whole or in part from another individual’s work without attributing that borrowed portion to the individual;
- neglecting to identify as a quotation another’s idea and particular phrasing that was not assimilated into the student’s language and style or paraphrasing a passage so that the reader is misled as to the source;
- submitting the same written or oral material in more than one course without obtaining authorization from the instructors involved; or,
- drylabbing, which includes obtaining and using experimental data and laboratory write-ups from other sections of the course or from previous terms, or fabricating data to fit the desired or expected results.

Copies of the Student Conduct Code are available at the HCC Office of the Dean of Student Services.

Native Hawaiian Values

An understanding within the course is that the instructor and students will form a community where the following values will be upheld:
Aloha – Love, compassion, charity etc.

Laulima – To work together, Cooperation. "Many hands make light work"

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Chem 272L
Fall 2011
Course Outline

Instructor: Evelyn McClure
Office: 5-101E
e-mail: mccluree@hawaii.edu


General Description of Course:

Chem 272L is a comprehensive introduction to laboratory principles of organic chemistry including molecular structure, nomenclature, stereochemistry, spectroscopy, reactions and reaction mechanisms, synthesis, and applications to biology.

Course Objectives:

- To gain practical experience in manipulating organic compounds
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Kuleana – Responsibility, Rights, Privilege etc.

'Ike – Knowledge, Awareness and/or Understanding
PROPOSAL SUMMARY (Include reasons for adding course, and similar courses offered elsewhere, i.e. college, alpha, number, title):
This is the next course is the next level of chemistry courses. Similar courses are offered at Manoa, Leeward and Kapiolani. All courses have the same course number, Chem 272 and lab. The name of the course is Organic Chemistry I Lab.
**CURRICULUM ACTION PROPOSAL**

**ADD a New Course**

**INSTRUCTIONS:** Complete all applicable fields. Continue overflow text on p. 3 under "Additional Information".

<table>
<thead>
<tr>
<th>Course Alpha &amp; No.:</th>
<th>Chem 272L</th>
<th>Effective Term:</th>
<th>Fall 2011</th>
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<tr>
<td>Course Type:</td>
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<tr>
<td>Banner Title (30 characters):</td>
<td>Organic Chemistry I Lab</td>
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**Does this course satisfy Career & Technical Education GEN ED Requirements (A.S./A.A.S.)?**

- ☑ YES ☐ NO
- If "YES", select GEN ED requirement: 2a. Understanding the Natural Environment (ASGA)

**Does this course satisfy Liberal Arts A.A. GEN ED Requirements &/or UHM GEN ED Core Articulation?**

- ☑ YES ☐ NO
- If "YES", select GEN ED requirement below.

<table>
<thead>
<tr>
<th>FOUNDATION</th>
<th>DIVERSIFICATION</th>
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<th>OTHER</th>
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<td>A.A. UHM</td>
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<td>Arts (DA)</td>
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<td>☐ ☐</td>
<td>Literature (DL)</td>
<td>☐ ☐</td>
</tr>
<tr>
<td>Social Sciences (DS)</td>
<td>☐ ☐</td>
<td>Physical Sciences Lab (DY)</td>
<td>☐ ☐</td>
</tr>
</tbody>
</table>

**Class Length (weeks):**

- 17

**Credits:**

- 2

**Repeat & Credit Limit:**

- May be repeated __ time(s) for a maximum of __ credits

**Schedule Type:**

- LAB (Laboratory)

**Weekly Student Contact Hrs:**

- 0 Hours Lecture per Week
- 4 Hours Lab per Week
- 4 Total Contact hrs per Week

**Grading Option:**

- Letter Grade Only

**Enrollment Maximum:**

- 24

**Special Approval:**

- Click To Select

**Major Restriction:**

- Prerequisite: Chem 162L
- Prerequisite or Corequisite: Chem 272
- Corequisite: 
- Bracket Course with: 
- Recommended Prep: 
- Cross-Listed Courses: 
- Comment for online SOC:
### CURRICULUM ACTION PROPOSAL
#### ADD a New Course

<table>
<thead>
<tr>
<th>COURSE</th>
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<tr>
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<td>CHEM 272L is a comprehensive introduction to laboratory principles of organic chemistry including molecular structure, nomenclature, stereochemistry, spectroscopy, reactions and reaction mechanisms, synthesis, and applications to biology.</td>
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</tbody>
</table>

#### Additional Information to print with Course Description:

- [ ] YES [ ] NO Does this proposal affect Programs and/or Courses? (If "Yes" continue below.)
  - [ ] YES [ ] NO Were the affected Programs/Departments consulted and notified?

#### This Proposal affects Program requirements:
- The number of Credits for these Programs: _____ *
- Prerequisite for these Programs: _____ *
- Requirement for these Programs: _____ *
- Elective for these Programs: _____
- Other
  - * Attach Program Modification Forms

#### This Proposal affects other Courses:
- Prerequisite for these Courses: _____ **
- Prerequisite or Co-requisite for these Courses: _____ **
- Co-requisite for these Courses: _____ **
- Recommended Prep for these Courses: _____ **
- Cross-list for these Courses: _____ **
- Other **
  - ** Attach Course Modification Forms

#### Describe changes marked above:

- [ ] YES [ ] NO Does this proposal require additional resources? (Such as staff, equipment, facilities, etc.)
  - If yes, provide details and indicate whether or not resources are available.

  There needs to be the addition of glassware kits, chemicals, engineering controls and instrumentation. These resources are currently unavailable in the Natural Sciences and Mathematics Department.

#### Additional Information:

- [ ] YES [ ] NO Does this proposal require additional resources? (Such as staff, equipment, facilities, etc.)
  - If yes, provide details and indicate whether or not resources are available.

  There needs to be the addition of glassware kits, chemicals, engineering controls and instrumentation. These resources are currently unavailable in the Natural Sciences and Mathematics Department.
Honolulu Community College
Course Outline

See Instructions for information on each item.

<table>
<thead>
<tr>
<th>Course Alpha &amp; No.: Chem 272L</th>
<th>Semester Credit Hours: 2</th>
<th>Effective Term: Fall 2011</th>
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</table>

**Course Title:** Organic Chemistry I Lab

**Prerequisites:** Chem 162L

**Co-requisites:** Chem 272

**Prerequisites or Co-requisites:**

**Recommended Prep:**

**Major Restrictions:**

**Instructor Approval or other Approval:**

1. **Catalog Course Description:**
   CHEM 272L is a comprehensive introduction to laboratory principles of organic chemistry including molecular structure, nomenclature, stereochemistry, spectroscopy, reactions and reaction mechanisms, synthesis, and applications to biology.

2. **Student Learning Outcomes:**
   Upon successful completion of this course, a student will be able to:
   - To gain practical experience in manipulating organic compounds
   - To learn how to purify, separate, prepare, and identify organic compounds using microscale laboratory techniques.

3. **Means by which the assessment of the SLOs will be accomplished:**
   Assessment will be accomplished by evaluating the performance of the students in exam evaluation. Formative and summative assessment techniques will be used.

4. **Program Learning Outcomes addressed by this course:**

5. **Method(s) of Instruction:**
   Lecture (prelab) and laboratory

6. **Method(s) of Evaluation:**
   Quiz, notebook, instructor assessment of laboratory technique

7. **Course Content:**
   1. Structure and Bonding
   2. Acids and Bases
   3. Introduction to Organic Molecules and Functional Groups
   4. Alkanes
   5. Stereochemistry
   6. Understanding Organic Reactions
   7. Alkyl Halides and Nucleophilic Substitution
   8. Alkyl Halides and Elimination Reactions
   9. Alcohols, Ethers, and Epoxides
   10. Alkenes
   11. Alkynes
   12. Oxidation and Reduction
   13. Mass Spectrometry and Infrared Spectroscopy
   14. Nuclear Magnetic Resonance Spectroscopy
   15. Radical Reactions

8. **Possible Texts:**

9. **Reference and/or Auxiliary Materials (if any):**
   Proposed syllabus

10. **Resource Requirements (if applicable):**
11. Relationship to other courses in the program (If applicable):

12. General Education or other requirement(s) satisfied:

13. Articulation (If applicable):
   Currently offered at Leeward CC, Kapiolani CC, and Manoa

14. Additional Information of importance:
   This course will expand the number of chemistry courses available at Honolulu CC. This is the next chemistry course in the series of chemistry courses after Chem 162. The course is a prerequisite for many programs including chemistry and biology degrees and for all premedical programs.