Curriculum Details

Course Record ID

682

1. Entry Type

Active

Notes and Special Changes

2. Justification

3. Course Alpha

CHEM

4. Course Number

273L

5. Course Title (long)

Organic Chemistry II Lab

6. Course Title Short

Chem 273L

7. Course Credits

1

8. Course Credit Upper Range

0

Repeatable

Will default to 98
9. Course Description

Laboratory principles of Organic Chemistry II, the second semester course in organic chemistry intended for science majors. Topics to be covered include techniques, synthesis, qualitative organic analysis and applications of spectroscopy. (4 hours laboratory)

10. Course Pre-Requisites

A grade of 'C' or better in CHEM 272L and a grade of ☑️C☑️ or better or registration in CHEM 273 or instructor's consent.

11. Course Co-Requisites

12. Course Recommended Preparation

13. Contact Hours (lecture, lab, lecture/lab)

4 hrs

14. Maximum Credits Towards an AA Degree

1

Grading Options

Will be set to Banner default

15. Department

Natural Sciences

16. Cross-Listing

17. Course Content

The chemistry laboratory allows the student to understand some of the theories discussed in the lecture more thoroughly. In the laboratory you will be involved with the processes of scientific inquiry used to discover chemical principles. It is the only way for the student to learn the techniques that are so important in research and in most laboratories. The student will discover that doing quality work in the laboratory requires a great deal of patience and care.

18. Course Competencies
19. Assessments, Tasks, and Grading

Grades will be based on the following:

- Pre-Labs (six)-----------------------------60 points
- Lab Notebooks (six)-----------------------60 points
- Unknown Analysis Reports (three)-150 points
- Formal Lab Reports (two)------------------100 points
- Lab Technique----------------------------30 points

Total--------------------------------------400 points

Course grades will be assigned as follows:

- A 360-400 points 90-100%
- B 320-359 points 80-89%
- C 280-319 points 70-79%
- D 240-279 points 60-69%
- F 239 points or below 59%

20. Auxiliary Materials and Content

Required Textbook: Instructor CHEM 273L Lab Manual
Course Website: http://laulima.hawaii.edu (use UH email account login and password)

Other Requirements:
- Bound laboratory notebook,
- safety goggles, scientific calculator and internet access

21. Additional Activities outside of class and class time

22. Special Costs connected to the course

23. What are the Student Learning Outcomes?

1. Perform and develop skills in organic chemistry laboratory methods and techniques used in separation and purification.
2. Determine the chemical identity of some organic chemicals through their properties.
3. Keep complete and accurate records, manipulate data for mathematical calculations, including reactant recovery and percent yield.
4. Apply laboratory safety procedures, including safe disposal of waste.
5. Gain experience in organic synthesis and functional group conversion.
6. Interpret experimental data and formulate conclusions as evidenced in laboratory reports.

24. How does the proposal connect to the college's strategic plan?

CHEM 273L supports WCC Strategic Plan Action Outcome 4.1, which states: "Contribute to the development of a high-skilled, high-wage workforce through the establishment of at least one new specific, career-focused degree, certificate or career pathway per year that leads to employment in emerging fields," and Action Outcome 4.8, which states: "Increase the number of degrees and certificates awarded in Science, Technology, Engineering, and Math (STEM) fields."

25. Describe the staff that will be needed

To be taught by existing faculty or lecturer.

26. Describe the facilities that will be needed, including special rooms

Use existing laboratory Imiloa 131.
27. Describe any other resources that will be needed
Start-up organic chemicals will be needed. FT-IR spectrometer is desirable, may be borrowed.

28. How will the staff, facilities, and other resources for the course be secured?
Cost of chemicals are not significant.

29. Certificates
ASCPlant

30. Connection to the AA degree
AADB AADY

31. Connection between the Course SLOs and the College's General Education Outcomes
Draw on knowledge from the liberal arts to succeed in upper division courses.
Recognize and respond to the wonders and challenges of the natural environment, both biological and physical.
Use research and technology skills to access information from multiple sources; use critical thinking and problem-solving skills to evaluate and synthesize information to form conclusions, ideas, and opinions.
Enter and perform effectively in the work force.

32. List any similar classes taught at outside of the UH system
Chem 3341 Laboratory in Organic Chemistry 2 (University of Colorado)

33. List any similar classes taught at campuses in the UH System.

34. How, if at all, is the course intended to count in lieu of a course taught at a four-year campus.
Chem 273L (UHM) intended for science majors Chem 242L (UHH) intended for science majors

35. How, if at all, is the course similar to upper-division courses in the UH System.
none

36. How does the course articulate with four-year programs (Gen Ed)?
Chem 273L (UHM) BS Biology, BS Chemistry, etc. Chem 242L (UHH) BS Biology, BS Chemistry
Chem 273L meets the DY hallmarks: DY1. Uses the laboratory methods of the biological or physical sciences. This course meets this hallmark requirement through the conduct of hands-on activities in physical sciences in the areas of separation, purification and identification of organic chemicals. DY2. Involves processes and issues of design, testing, and measurement. This course meets this hallmark requirement in laboratory organic synthesis and determination of percent yield, as well as in separation and identification of organic chemicals. DY3. Demonstrates the strengths and limitations of the scientific method. This course meets this hallmark requirement in the use of the scientific method in determining the identity of unknown substances and functional group conversion.

37. List any articulations between this course and any four-year program.

End of Proposal
<table>
<thead>
<tr>
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<th>L. Colmenares</th>
<th>Signatures</th>
<th>Date</th>
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<tbody>
<tr>
<td>Departmental Review by:</td>
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<td>Member:</td>
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<td>Chair:</td>
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<tr>
<td>Was the proposal discussed in a department meeting?</td>
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<tr>
<td>Division Dean:</td>
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<tr>
<td>IEC (for SLOs)</td>
<td>Malia Lau Kong</td>
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<td>Approved by:</td>
<td></td>
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<tr>
<td>Curriculum Committee Chair:</td>
<td>Kathleen French</td>
<td></td>
<td></td>
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<tr>
<td>Faculty Senate Chairperson:</td>
<td>Ross Langston</td>
<td></td>
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<tr>
<td>Vice-Chancellor for Academic Affairs</td>
<td>Richard Fulton</td>
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<tr>
<td>Chancellor:</td>
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## Curriculum Details for CHEM 273L

Return to the Course List

This proposal can only be edited by leticia - log in

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<th>Entry Type</th>
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Before you Submit, make sure to copy all of your text into a Word Document and save it

Jump to question 5 • 7 • 9 • 11 • 13 • 15 • 17 • 19 • 21 • 23 • 25 • 27 • 29 • 31 • 33 • 35

### General Information

<table>
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<tr>
<th>1. Justification for the change</th>
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<tr>
<td>Notes or Special Changes</td>
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### Basic Banner Information

The purpose of this section is to detail the basic information necessary for the course, most of which will appear in Banner and the college's catalog.

<table>
<thead>
<tr>
<th>2. Course Alpha</th>
<th>CHEM - contact <a href="mailto:wccweb@hawaii.edu">wccweb@hawaii.edu</a> to change this</th>
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<tbody>
<tr>
<td>3. Course Number</td>
<td>273L - contact <a href="mailto:wccweb@hawaii.edu">wccweb@hawaii.edu</a> to change this</td>
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<tr>
<td>4. Course Title</td>
<td>Organic Chemistry II Lab</td>
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<tr>
<td>5. Short Course Title (for Banner)</td>
<td>CHEM 273L</td>
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<tr>
<td>6. Course Credits (or lower limit)</td>
<td>1</td>
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<tr>
<td>7. Course Credits (upper limit)</td>
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</tbody>
</table>
## Course Details

### 8. Catalog Description
Laboratory principles of Organic Chemistry II, the second semester course in organic chemistry intended for science majors. Topics to be covered include techniques, synthesis, qualitative organic analysis and applications of spectroscopy. (4 hours laboratory)

### 9. Pre-Requisites:
A grade of 'C' or better in CHEM 272L and a grade of $\diamondsuit C\diamondsuit$ or better or registration in CHEM 273 or instructor's consent.

### 10. Co-Requisites:

### 11. Recommended Preparation:

### 12. Contact Hours (lecture, laboratory, lecture/lab):
4 hrs

### 13. Which department is sponsoring the course?
Natural Sciences

### 14. Which course is this course cross-listed with?

### Generic Syllabus
The purpose of this section is to expand on the course content to give the Windward CC curriculum committee and people in other campuses a sense of how the course will proceed.

### 15. Course Content.
The chemistry laboratory allows the student to understand some of the theories discussed in the lecture more thoroughly. In the laboratory the student will be involved with the processes of scientific inquiry used to discover chemical principles. It is the only way for the student to learn the techniques that are so important in research and in most laboratories. The student will discover that doing quality work in the laboratory requires a great deal of patience and care.

### 16. What are the Course Competencies?

### 17. Overview of Assessments, Tasks, and Grading.
Grades will be based on the following: Pre-Labs (six)-----------------------
-60 points Lab Notebooks (six)---------------------60 points Unknown Analysis Reports (three)-150 points Formal Lab Reports (two)---------------------
-100 points Lab Technique-------------------------30 points Total---------------------
-----------------400 points Course grades will be assigned as follows: A
### Course Details

135 points Course grades will be assigned as follows: A: 360-400 points 90-100% B 320-359 points 80-89% C 280-319 points 70-79% D 240-279 points 60-69% F 239 points or below 59% or below

### 18. Auxiliary Materials and Content.

Required Textbook: Instructor CHEM 273L Lab Manual Course Website: [http://laulima.hawaii.edu](http://laulima.hawaii.edu) (use UH email account login and password) Other Requirements: Bound laboratory notebook, safety goggles, scientific calculator and internet access

### 19. Required Additional Activities outside of class and class time.

### 20. Special Costs Connected to the Course.

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### Learning Outcomes and Strategic Plan

The purpose of this section is to detail the course Student Learning Outcomes and to tie the course to the college’s strategic plan.

### 21. What are the Student Learning Outcomes?

1. Perform and develop skills in organic chemistry laboratory methods and techniques used in separation and purification.
2. Determine the chemical identity of some organic chemicals through their properties.
3. Keep complete and accurate records, manipulate data for mathematical calculations, including reactant recovery and percent yield.
4. Apply laboratory safety procedures, including safe disposal of waste.
5. Gain experience in organic synthesis and functional group conversion.
6. Interpret experimental data and formulate conclusions as evidenced in laboratory reports.

### 22. What is the Connection between the Course SLOs and the College’s General Education Outcomes?

CHEM 273L supports WCC Strategic Plan Action Outcome 4.1, which states: "Contribute to the development of a high-skilled, high-wage workforce through the establishment of at least one new specific, career-focused degree, certificate or career pathway per year that leads to employment in emerging fields," and Action Outcome 4.8, which states: "Increase the number of degrees and certificates awarded in Science, Technology, Engineering, and Math (STEM) fields."

### 23. How does the proposal connect to the college's strategic plan?

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Resources

The purpose of this section is to detail the resources needed for the course.

<table>
<thead>
<tr>
<th>24. Describe the staff that will be needed</th>
<th>To be taught by existing faculty or lecturer.</th>
</tr>
</thead>
<tbody>
<tr>
<td>25. Describe the facilities that will be needed, including special rooms</td>
<td>Use existing laboratory Imiloa 131.</td>
</tr>
<tr>
<td>26. Describe any other resources that will be needed</td>
<td>Start-up organic chemicals will be needed. FT-IR spectrometer is desirable, may be borrowed.</td>
</tr>
<tr>
<td>27. How will the staff, facilities, and other resources for the course be secured?</td>
<td>Cost of chemicals will be covered within current budget.</td>
</tr>
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</table>

Connections to Programs

The purpose of this section is to detail how the course connects to certificates and programs at Windward CC.

<table>
<thead>
<tr>
<th>28. What Certificates are Connected to the Course?</th>
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</thead>
<tbody>
<tr>
<td>29. What Specific A.A. does the Course Fulfill?</td>
<td>Associate in Arts: Natural Sciences Lab (DY)</td>
</tr>
<tr>
<td>30. Maximum Number of Credits acceptable towards the AA Degree:</td>
<td>1</td>
</tr>
</tbody>
</table>

Similar Courses Elsewhere

The purpose of this section is to detail how the course is similar to other courses in the UH system and how the course might be included in articulation agreements.

<p>| 31. List any similar classes | Chem 3341 Laboratory in Organic Chemistry 2 (University of Colorado) |</p>
<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>33. How, if at all, is the course intended to count in lieu of a course taught at a four-year campus?</td>
<td>Class is intended to be equivalent to these: Chem 273L (UHM) intended for science majors Chem 242L (UHH) intended for science majors</td>
</tr>
<tr>
<td>34. How, if at all, is the course similar to upper-division courses in the UH System?</td>
<td>none</td>
</tr>
<tr>
<td>35. How, if at all, is the course appropriate for articulation with the UH Manoa general education core?</td>
<td>Chem 273L (UHM) BS Biology, BS Chemistry, etc. Chem 242L (UHH) BS Biology, BS Chemistry Chem 273L meets the DY hallmarks: DY1. Uses the laboratory methods of the biological or physical sciences. This course meets this hallmark requirement through the conduct of hands-on activities in physical sciences in the areas of separation, purification and identification of organic chemicals. DY2. Involves processes and issues of design, testing, and measurement. This course meets this hallmark requirement in laboratory organic synthesis and determination of percent yield, as well as in separation and identification of organic chemicals. DY3. Demonstrates the strengths and limitations of the scientific method. This course meets this hallmark requirement in the use of the scientific method in determining the identity of unknown substances and functional group conversion.</td>
</tr>
</tbody>
</table>
| 36. How, if at all, is the course appropriate for articulation with other department or college requirements on a UH four-year campus? | }