College: Honolulu Community College  
Program: Occupational & Environmental Safety Management

The last comprehensive review for this program was on 2010.

Program Description

Program Mission:
The Occupational & Environmental Safety Management program’s mission is to:

- Provide the community with affordable, flexible, and up-to-date training on occupational and environmental safety and health.
- Promote workplace health & safety and environmental protection through education and training.

Program Description:
Occupational/Environmental Safety and Health is a growing field.

- An October 2011 report from the National Institute for Occupational Safety and Health (NIOSH), Center for Disease Control and Prevention, predicted a shortage of trained safety and health professionals to fill the demand during the next five years. A study by the U.S. Bureau of Labor Statistics reported that employment of safety & health practitioners should increase nine percent during the 2006 - 2016 decade.
- The 2010 CNN Money magazine ranked safety and health profession number twenty-two in its article “The 50 Best Jobs in America”.
- The two-year OESM program is designed to provide practical training in occupational and environmental safety and health.

The curriculum offers a broad background on safety and health program administration, workplace hazard recognition/evaluation/control, emergency preparedness, workers’ compensation principles, hazardous chemical risk assessment, and environmental management. Besides an Associate Degree, the program offers a Certificate of Achievement in OESM. Since the OESM Program is fully articulated with these institutions, its graduates may obtain a baccalaureate degree in the following areas:

- Public Administration, University of Hawaiʻi-West Oʻahu
- Business Administration, University of Hawaiʻi-West Oʻahu

In addition, six OESM courses are articulated with regulatory classes provided by the OSHA Training Institute (OTI) Educational Center at Chabot-Las Positas Community College District. Students who have completed these classes at the “C” grade or better will earn the following OSHA certificates:

- OESM 102: Safety and Health Standards, Codes, and Regulations/ OSHA 511: OSHA Standards for General Industry
- OESM 103: Introduction to Ergonomics/ OSHA 2255: Principles of Ergonomics
- OESM 105: Introduction to Industrial Hygiene/OSHA 521: Industrial Hygiene
- OESM 145: Occupational Safety and Health in Construction/ OSHA 510: OSHA Standard for the Construction Industry
- OESM 147: Electrical Safety/ OSHA 3095: Electrical Low Voltage Standards
- OESM 153: Accident Investigation Techniques/ OSHA #7505 Introduction to Accident Investigation

Graduates from the OESM program are qualified to work as occupational safety and health inspectors, safety officers, and environmental technicians in governmental agencies and private industries including construction, healthcare, utilities, transportation, environmental management, insurance, education, etc. Job placement opportunities are announced throughout the year.
### Part I. Quantitative Indicators

#### Overall Program Health: **Cautionary**

**Majors Included:** OESM  
**Program CIP:** 15.0701

<table>
<thead>
<tr>
<th>Demand Indicators</th>
<th>Program Year</th>
<th>Demand Health Call</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1 New &amp; Replacement Positions (State)</strong></td>
<td>10-11</td>
<td>14</td>
</tr>
<tr>
<td><strong>2 New &amp; Replacement Positions (County Prorated)</strong></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td><strong>3 Number of Majors</strong></td>
<td></td>
<td>70</td>
</tr>
<tr>
<td><strong>3a Number of Majors Native Hawaiian</strong></td>
<td></td>
<td>21</td>
</tr>
<tr>
<td><strong>3b Fall Full-Time</strong></td>
<td></td>
<td>27%</td>
</tr>
<tr>
<td><strong>3c Fall Part-Time</strong></td>
<td></td>
<td>73%</td>
</tr>
<tr>
<td><strong>3d Fall Part-Time who are Full-Time in System</strong></td>
<td></td>
<td>1%</td>
</tr>
<tr>
<td><strong>3e Spring Full-Time</strong></td>
<td></td>
<td>30%</td>
</tr>
<tr>
<td><strong>3f Spring Part-Time</strong></td>
<td></td>
<td>70%</td>
</tr>
<tr>
<td><strong>3g Spring Part-Time who are Full-Time in System</strong></td>
<td></td>
<td>3%</td>
</tr>
<tr>
<td><strong>4 SSH Program Majors in Program Classes</strong></td>
<td></td>
<td>651</td>
</tr>
<tr>
<td><strong>5 SSH Non-Majors in Program Classes</strong></td>
<td></td>
<td>498</td>
</tr>
<tr>
<td><strong>6 SSH in All Program Classes</strong></td>
<td></td>
<td>1,149</td>
</tr>
<tr>
<td><strong>7 FTE Enrollment in Program Classes</strong></td>
<td></td>
<td>38</td>
</tr>
<tr>
<td><strong>8 Total Number of Classes Taught</strong></td>
<td></td>
<td>18</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Efficiency Indicators</th>
<th>Program Year</th>
<th>Efficiency Health Call</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>9 Average Class Size</strong></td>
<td>10-11</td>
<td>21</td>
</tr>
<tr>
<td><strong>10 Fill Rate</strong></td>
<td></td>
<td>75.6%</td>
</tr>
<tr>
<td><strong>11 FTE BOR Appointed Faculty</strong></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>12 Majors to FTE BOR Appointed Faculty</strong></td>
<td></td>
<td>70</td>
</tr>
<tr>
<td><strong>13 Majors to Analytic FTE Faculty</strong></td>
<td></td>
<td>34.4</td>
</tr>
<tr>
<td><strong>13a Analytic FTE Faculty</strong></td>
<td></td>
<td>2.0</td>
</tr>
<tr>
<td><strong>14 Overall Program Budget Allocation</strong></td>
<td></td>
<td>$131,206</td>
</tr>
<tr>
<td><strong>14a General Funded Budget Allocation</strong></td>
<td></td>
<td>$129,977</td>
</tr>
<tr>
<td><strong>14b Special/Federal Budget Allocation</strong></td>
<td></td>
<td>$0</td>
</tr>
<tr>
<td><strong>14c Tuition and Fees</strong></td>
<td></td>
<td>$0</td>
</tr>
<tr>
<td><strong>15 Cost per SSH</strong></td>
<td></td>
<td>$114</td>
</tr>
<tr>
<td><strong>16 Number of Low-Enrolled (&lt;10) Classes</strong></td>
<td></td>
<td>0</td>
</tr>
</tbody>
</table>

*Data element used in health call calculation*

**Last Updated: October 3, 2013**

#### Effectiveness Indicators

**Successful Completion (Equivalent C or Higher)**

**Withdrawals (Grade = W)**

**Persistence Fall to Spring**

**Persistence Fall to Fall**

**Unduplicated Degrees/Certificates Awarded**

**Degrees Awarded**

**Certificates of Achievement Awarded**

**Advanced Professional Certificates Awarded**

**Other Certificates Awarded**

**External Licensing Exams Passed**

**Transfers to UH 4-yr**

**Transfers with credential from program**

**Transfers without credential from program**

**Distance Education:**

<table>
<thead>
<tr>
<th>Completely On-line Classes</th>
<th>Program Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Distance Education Classes Taught</td>
<td>10-11</td>
</tr>
<tr>
<td>Enrollments Distance Education Classes</td>
<td>11-12</td>
</tr>
<tr>
<td>Fill Rate</td>
<td>12-13</td>
</tr>
</tbody>
</table>

www.hawaii.edu/offices/cc/arpd/preview.php?rev_key=669
Successful Completion (Equivalent C or Higher)  | N/A   | N/A   | N/A   
Withdrawals (Grade = W)                          | N/A   | N/A   | N/A   
Persistence (Fall to Spring Not Limited to Distance Education)  | N/A   | N/A   | N/A   

<table>
<thead>
<tr>
<th>Perkins IV Core Indicators</th>
<th>Goal</th>
<th>Actual</th>
<th>Met</th>
</tr>
</thead>
<tbody>
<tr>
<td>29 1P1 Technical Skills Attainment</td>
<td>90.00</td>
<td>100.00</td>
<td>Met</td>
</tr>
<tr>
<td>30 2P1 Completion</td>
<td>50.00</td>
<td>28.57</td>
<td>Not Met</td>
</tr>
<tr>
<td>31 3P1 Student Retention or Transfer</td>
<td>74.25</td>
<td>68.33</td>
<td>Not Met</td>
</tr>
<tr>
<td>32 4P1 Student Placement</td>
<td>60.00</td>
<td>92.31</td>
<td>Met</td>
</tr>
<tr>
<td>33 5P1 Nontraditional Participation</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>34 5P2 Nontraditional Completion</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Performance Funding</th>
<th>Program Year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>10-11</td>
</tr>
<tr>
<td>35 Number of Degrees and Certificates</td>
<td>18</td>
</tr>
<tr>
<td>36 Number of Degrees and Certificates Native Hawaiian</td>
<td></td>
</tr>
<tr>
<td>37 Number of Degrees and Certificates STEM</td>
<td>18</td>
</tr>
<tr>
<td>38 Number of Pell Recipients</td>
<td>25</td>
</tr>
<tr>
<td>39 Number of Transfers to UH 4-yr</td>
<td>1</td>
</tr>
</tbody>
</table>

*Data element used in health call calculation

Glossary | Health Call Scoring Rubric

Last Updated: October 3, 2013

Part II. Analysis of the Program

PROGRAM HEALTH

This section provides explanations and analysis of the key health indicators: Demand, Efficiency, Effectiveness, and Perkin Core IV Indicators. In order to provide a broader picture of the program assessment, the following analysis includes quantitative indicators from the previous two academic years of 2010 and 2011.

Demand (“Unhealthy”):
The data provided show a low demand for the safety and health professionals during the 2012 academic year. However, this has not been consistent with Ms Grove’s experiences.
The OESM Program’s Demand of 5.6 (62 OESM Majors divided by 11 Job Vacancies) was considered “Unhealthy”, meaning that there were too few available employment vacancies for the number of OESM majors during the assessment period. However, the “Unhealthy” rating appeared to be inaccurate for two reasons:

1. The “Number of Majors” figure did not take into account that about 30% of the OESM majors were fully-employed safety professionals. These students, many of whom college graduates, were attending schools to improve their technical skills and to advance their career, but not necessarily to obtain a degree or certificate. If this group of students was excluded from the count, the number of major would be 43 instead of 62.
2. The provided employment data (eleven vacancies) were grossly underestimated. Ms Grove has documented at least 50 employment openings between August 2012 and July 2013. The employers included federal and state government as well as private corporations. The actual number of job openings was probably larger, since not all employers recruited through Ms Grove.

Using the more accurate figures, the OESM Program’s Demand should read 0.9 (43 OESM Majors divided by 50 Job Vacancies). The Demand should be rated as “Healthy”. There were more job openings than the number of OESM majors.

The employment data provided were also in conflict with a workforce study conducted by the U.S. National Institute for Occupational Safety and Health (NIOSH). The Study has projected a shortage of trained safety professionals to fill the future employment demand during the next five years. (National Assessment of the Occupational Safety and Health Workforce, October 2011. http://www.cdc.gov/niosh/oshworkforce/).

In addition, a study by the U.S. Bureau of Labor Statistics indicated that employment of safety & health practitioners would increase nine percent during the 2006 through 2016 decade.

In 2010, the CNN Money magazine ranked safety and health profession number twenty-two in its article “The 50 Best Jobs in America”.

Efficiency (“Unhealthy”):
Efficiency is evaluated based on two factors: Class Fill Rate and Ratio of Majors to FTE BOR Appointed Faculty.

- The Class Fill Rate dropped from 80% during the previous academic year to 30% in the 2012 academic year.
- The Majors to FTE BOR Appointed Faculty ratios dropped to 61.5 in comparison to 78.5 during the previous academic year.

www.hawaii.edu/offices/cc/arpd/preview.php?rev_key=669
Several factors affect enrollment numbers. These include economic situation as well as students’ individual obligations. Majority of the OESM majors are working adults with personal responsibilities that may not allow them to attend school continuously. Enrollment fluctuation is a reflection of these factors. Unless students are regularly tracked, the reasons for not continuing with school cannot be systematically documented.

The strict enforcement of pre-requisite requirements could have also affected a drop in enrollment and class fill rate. However, this effect should be temporary.

As a condition of employment since 1991, Ms Grove is required to spend approximately half of her time assisting the College with workplace safety compliance and another half on instructional activities. Taken into account of Ms Grove’s 13-credit teaching load annually, the Ratio of Majors to FTE BOR Appointed Faculty major/FTE faculty count would be approximately 124.

The entire APRD process is managed by the UHCC system in order to standardize the data and health calls. However, this allows little flexibility and adjustment for the individual college. For this instance, the data provided were not adjusted for Ms Grove’s instructional workload since the situation is specific only to the Honolulu Community College. The data and measures would likely to be more meaningful if the APRD process is administered by respective campus IR offices.

**Effectiveness (“Healthy”):**

The program was assigned the “Healthy” designation for effectiveness, meaning that these indicators are acceptable: *Persistence Fall to Spring, Ratio of Unduplicated Degrees/Number of Majors, and Ratio of Degrees/Certificates Awarded/New & Replacement Positions (County Prorated).*

**Perkin IV Core Indicators:**

Goals for Completion (2P1) and Student Retention (3P1) were not met. As stated above, OESM majors are non-traditional adult students. They work full-time and have family obligations that may keep them from attending school continuously. These are possible reasons for the lower retention rate.

- As stated previously, 30% of OESM majors are practicing safety professionals. For this group of students, obtaining a degree or certificate is not necessarily their primary goal since they are already employed in the field. Many take only certain OESM classes to improve specific technical skills required for the job or to pursue national safety certifications.
- OESM students’ primary objective is to obtain employment in the safety and health area. For students who are able to obtain employment while in school, graduation can become a lower priority due to professional and personal obligations.
- Majority of OESM students work full-time while attending school at nights or on Saturdays. Most enroll in one to three classes each semester. It takes most students four to five years to earn a degree, if enrolling continuously. During these four or five years, priorities could change and students may never graduate.
- A number of OESM students do not attend classes every semester. Some skip several semesters or a few years before returning. This group of students has been inaccurately classified as “new”, but not as “returned” students. A long-term tracking of this group of students will be helpful in providing an accurate picture of the Program’s Effectiveness.

**Part III. Action Plan**

The UHCC’s current means of assessing Program’s performance appears to be inappropriate for the OESM Program. Data that can more reflective of the Program’s performance should include:

- Students’ primary reason for attending the OESM Program,
- Rate of students who have completed their goals,
- Accurate classifications of “new” and “returned” students,
- Students’ success in obtaining and maintaining employment,
- Reasons for not completing the certificate/degree requirements,
- Students’ opinion on whether the training has adequately and appropriately prepared them for employment,
- Students’ salaries, job duties, and professional advancement, and,
- Employers’ satisfaction/feedback.

**Recommendations:**

1. The College systematically conducts annual OESM students’ tracking and employer surveys. The information obtained will be used to evaluate the Program’s performance including its strength and areas needing improvements.
2. The College continues to provide funding to replace and upgrade environmental monitoring instruments and safety equipment that meet the current industry need. The instruments and equipment are an integral part of ensuring that the student’s learning outcome are achieved.
3. To improve the Program’s *Efficiency*, the College should establish a permanent full-time non-instructional faculty position whose sole responsibility is to implement the College’s health, safety, and environmental management system. This position should report directly to the Vice Chancellor of Administrative Services.

**Part IV. Resource Implications**

All recommended actions listed above require additional financial and staff support. The “Budget and Request Proposal” form will be...
Program Student Learning Outcomes

For the 2012-2013 program year, some or all of the following P-SLOs were reviewed by the program:

<table>
<thead>
<tr>
<th>Assessed this year?</th>
<th>Program Student Learning Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>Recognize and evaluate workplace and environmental hazards</td>
</tr>
<tr>
<td>Yes</td>
<td>Recommend control measures and accident prevention strategies</td>
</tr>
<tr>
<td>Yes</td>
<td>Identify and apply appropriate OSHA/MSHA and EPA regulatory requirements</td>
</tr>
<tr>
<td>Yes</td>
<td>Analyze proximate and root causes of work-related accidents</td>
</tr>
<tr>
<td>Yes</td>
<td>Develop a written accident prevention and safety management program</td>
</tr>
<tr>
<td>Yes</td>
<td>Conduct training and presentations on occupational/environmental safety &amp; health topics</td>
</tr>
<tr>
<td>Yes</td>
<td>Exercise choices, explain reasons for choices, and analyze potential consequences when dealing with ethical dilemmas concerning health and safety professionals</td>
</tr>
<tr>
<td>Yes</td>
<td>Demonstrate necessary knowledge and skills for employment in the field of occupational and environmental safety and health</td>
</tr>
</tbody>
</table>

A) Evidence of Industry Validation

The OESM Program Student Learning Outcomes (SLOs) were originally approved by the Advisory Board in May 2005. In 2009, it was agreed that the Program SLOs be revisited. The Board reviewed the existing Program SLOs and provided suggestions via Email during the Spring 2009 semester. The comments and approval of the Program SLOs were documented in Email communications and minutes of the Spring 2009 meeting on March 5th.

B) Expected Level Achievement

Unlike some of the CTE programs at the College, there are no external national certification bodies for occupational & environmental safety curriculum and graduates. The expected level of competencies for the Program SLOs is determined by the instructors. All OESM instructors are highly qualified safety and health professionals with years of experience in various industries. Students are expected to achieve 100% of the Program SLOs in order to graduate with an associate degree.

C) Courses Assessed

All OESM course SLOs are mapped to the Program SLOs (Program Mapping is available upon request). The Program SLOs are assessed through various methods of course SLO assessments including exam, quiz, essay, report, research paper, group project, homework assignment, presentation, and practical skill demonstration. Except for OESM 101, all OESM required classes are offered every other semester while OESM electives are rotated every 2-3 semesters. Approximately, 45% of OESM courses are taught and assessed each semester.

Since the program is staffed by only one full-time faculty member, most OESM classes are taught by part-time lecturers. Although SLOs are assessed in all classes, documentation of the assessment has not been systematically documented. Attempts to encourage and acquire documentation for course SLO assessments started in the Spring 2013 semester and will continue.

So far, documentation of course SLO assessments are available for these classes: OESM 101, OESM 102, OESM 106, OESM 145, OESM 153, OESM 160, OESM 200, OESM 210, and OESM 218.
D) Assessment Strategy/Instrument

The OESM Program SLOs:

1. Recognize and evaluate workplace and environmental hazards
2. Recommend control measures and accident prevention strategies
3. Identify and apply appropriate OSHA/HIOSH and EPA regulatory requirements
4. Analyze proximate and root causes of work-related accidents
5. Develop a written accident prevention and safety management program
6. Conduct training and presentations on occupational/environmental safety & health topics
7. Exercise choices, explain reasons for choices, and analyze potential consequences when dealing with ethical dilemmas concerning health and safety professionals
8. Demonstrate necessary knowledge and skills for employment in the field of occupational and environmental safety and health

The Program SLOs are assessed through the assessment of course SLOs. Below is a list of Program SLOs assessed, assessment strategies used, and OESM classes that address the specific Program SLOs.

Program SLOs Assessed:

1. Recognize and evaluate workplace and environmental hazards
2. Recommend control measures and accident prevention strategies
3. Identify and apply appropriate OSHA/HIOSH and EPA regulatory requirements

Assessment Strategies Used:

- Develop a site-specific safety inspection checklist in compliance with HIOSH/OSHA regulatory requirements; conduct a safety inspection using the checklist; and provided recommendations for hazard controls.
- Conduct an industrial hygiene survey & exposure monitoring; interpret the monitoring results; and provide recommendations on exposure controls.
- Prepare a group project research paper on certain occupational group; describe nature of operation; identify workplace hazards and relevant HIOSH/OSHA standards; recommend accident prevention strategies.

OESM Courses Assessed:

- All OESM classes.

Program SLOs Assessed:

4. Analyze proximate and root causes of work-related accidents

Assessment Strategies Used:

- Conduct an accident investigation based on the given accident scenario. The investigation includes all various phases such as record reviews, witness interviews, and analysis for the proximate and root causes of the accident.

OESM Courses Assessed:

- 101, 145, 147, 153

Program SLOs Assessed:

5. Develop a written accident prevention and safety management program

Assessment Strategies Used:

- A written health and safety plan of an actual business. The plan must be in compliance with HIOSH/OSHA standards.

OESM Courses Assessed:

- 210, 193V (depending on the employer)

Program SLOs Assessed:

6. Conduct training and presentations on occupational/environmental safety & health topics

Assessment Strategies Used:
Develop a lesson plan with measurable learning outcomes and evaluation methods. Conduct presentations.

**OESM Courses Assessed:**
- All OESM classes, except OESM 193V

**Program SLOs Assessed:**
7. Exercise choices, explain reasons for choices, and analyze potential consequences when dealing with ethical dilemmas concerning health and safety professionals

**Assessment Strategies Used:**
- Review cases with potential ethical issues; write an assay addressing the possible ethical violations by safety professionals
- Discuss various examples of workplace scenarios with possible ethical dilemma for safety professionals.

**OESM Courses Assessed:**
- 101, 105, 145, 160, 208

**Program SLOs Assessed:**
8. Demonstrate necessary knowledge and skills for employment in the field of occupational and environmental safety and health

**Assessment Strategies Used:**
- All the above assessment methods are used as well as quizzes, tests, exams, and class presentations.

**OESM Courses Assessed:**
- All OESM courses.

**E) Results of Program Assessment**

OESM graduates are able to achieve all of the Program SLOs.

Though not all PLO assessments have been formally documented, employers express satisfaction with the OESM graduates and alumni. Feedbacks from the OESM graduates and alumni have also been positive. They feel that what they learn are relevant and help them succeed. Surveys of employers and OESM graduates/alumni could document the results of the Program SLOs assessment. Feedback obtained can also be used to further improve the Program SLOs.

**F) Other Comments**

A long-term solution must be developed to assist part-time OESM lecturers on assessment methods and documentation. These lecturers are full-time safety professionals who teach the OESM classes in the evening and on Saturdays. Some do not teach continually since the OESM electives are offered every three or four semesters. Additional documentation requirements could drive these lecturers away. The OESM Program cannot afford to lose these highly qualified lecturers.

**G) Next Steps**

Ms Grove will continue to advise the OESM lecturers to document the assessment of course SLOs. Understanding Ms Grove's heavy work load, administration has been providing assistance to the lecturers via personal contacts and electronic communications.