

## 2014-2015 Annual Program Assessment Report

Please submit report to your department chair or program coordinator, the Associate Dean of your College, and to [james.solomon@csun.edu](mailto:james.solomon@csun.edu), director of assessment and program review, by September 30, 2015. You may, but are not required to, submit a separate report for each program, including graduate degree programs, which conducted assessment activities, or you may combine programs in a single report. Please identify your department/program in the file name for your report.

**College: Health and Human Development (HHD)**

**Department: Environmental Health (EOH)**

**Program: The elements of undergraduate B.S. and graduate M.S. programs assessment are included in this report.**

**Assessment liaison: Brett Koontz, Assistant Professor, Department of EOH**

**1. Please check off whichever is applicable:**

- A.  Measured student work.
- B.  Analyzed results of measurement.
- C.  Applied results of analysis to program review/curriculum/review/revision.

**2. Overview of Annual Assessment Project(s).** On a separate sheet, provide a brief overview of this year's assessment activities, including:

- an explanation for why your department chose the assessment activities (measurement, analysis, and/or application) that it enacted
- if your department implemented assessment **option A**, identify which program SLOs were assessed (please identify the SLOs in full), in which classes and/or contexts, what assessment instruments were used and the methodology employed, the resulting scores, and the relation between this year's measure of student work and that of past years: (include as an appendix any and all relevant materials that you wish to include)
- if your department implemented assessment **option B**, identify what conclusions were drawn from the analysis of measured results, what changes to the program were planned in response, and the relation between this year's analyses and past and future assessment activities
- if your department implemented **option C**, identify the program modifications that were adopted, and the relation between program modifications and past and future assessment activities
- in what way(s) your assessment activities may reflect the university's commitment to diversity in all its dimensions but especially with respect to underrepresented groups
- any other assessment-related information you wish to include, including SLO revision (especially to ensure continuing alignment between program course offerings and both program and university student learning outcomes), and/or the creation and modification of new assessment instruments

**3. Preview of planned assessment activities for next year.** Include a brief description and explanation of how next year's assessment will contribute to a continuous program of ongoing assessment.

## **Overview of Annual Assessment Projects:**

The Department changed assessment coordinators for the 2014-2015 reporting year. Assessment activities incorporated many reporting aspects from the previous reporting year. A second year of data for select aspects provides a deeper understanding of the Department activities. A formidable portion of assessment continued to focus on SLO items identified in the graduate comprehensive exam and undergraduate/graduate internship activity. The undergraduate and graduate student internship program evaluations were amended with direction coming from the College of Health and Human Development Assessment Committee. The new evaluation forms were utilized to assess various student learning outcomes. Select aspects of the preceptor survey instrument were implemented across the College of Health and Human Development. A department committee met during the fall, spring and summer terms to discuss amendments to the master's program curriculum. The changes are intended to further separate and distinguish the masters and bachelors program.

### **Identify which program SLOs were assessed (please identify the SLOs in full)**

**What classes and/or contexts**

**What assessment instruments were used and the methodology employed,**

**Resulting scores, and**

**Relation between this year's measure of student work and that of past years:** (include as an appendix any and all relevant materials that you wish to include)

### **Undergraduate assessment activities**

#### SLO 1

Demonstrate a comprehensive knowledge of the recognition, evaluation and control of biological, chemical and physical factors that can impact human health, safety and the environment.

Direct assessment utilized the results of the State of California REHS certification exam for BS graduates and indirectly using MS graduates. This SLO was also evaluated indirectly through the graduate comprehensive exam. The comprehensive exam draws content from core courses in the undergraduate program.

#### SLO 2

Demonstrate knowledge of how to work in interdisciplinary teams to promote public and private action to protect public health and the environment.

Analysis relied on the use of internship preceptor survey data and EOH 494B internship reports.

#### SLO 3

Communicate environmental and occupational health concepts and programs to a variety of audiences, using both written and verbal forms of communication.

This item was assessed and will continue to be assessed using student written completion reports from internships (EOH 494B). Discussion continues on the topics of how to increase and assess verbal and written communication skills across the undergraduate curriculum.

#### SLO 4

Apply mathematical and critical reasoning to understand and incorporate new concepts in the field. This SLO is assessed using embedded questions in three EOH core undergraduate courses: 356A, 356B and 466A.

### **Graduate Assessment Activities**

#### SLO 1

Research design and analytical skills needed to critically evaluate scientific, technical and regulatory documents.

These skills were assessed using EOH 697 comprehensive exam questions related to skills developed in EOH 696A, 696B, 554 and 555.

#### SLO 2

Oral, written and electronic communication skills to present information to professional groups, regulatory agencies and lay audiences.

This item was assessed and will continue to be assessed using student written completion reports for EOH 693A field training.

#### SLO 3

Sufficient level of technical expertise in environmental and occupational health to competently solve general EOH problems.

This topic was assessed and will continue to be assessed by analyzing all of the scores from the 5 different technical sections of the EOH 697 comprehensive exams.

#### SLO 4

A broad set of management skills to initiate program planning and critical analysis of environmental or occupational health and safety programs.

This set of skills was assessed and will continue to be assessed by analyzing the responses to questions in the comprehensive exam (EOH 697).

#### **Assessment involvement with the chair and faculty**

Assessment items or updates from college or university assessment meetings were discussed at staff meetings. Additionally, assessment items were captured in various classes and led by a few different instructors. Informal discussions continue on the topics of student writing and curriculum development. Particular attention is being devoted to the graduate curriculum in recent months with anticipated changes going forward.

## Undergraduate assessment results and discussion

### **SLO 1**

Demonstrate a comprehensive knowledge of the recognition, evaluation and control of biological, chemical and physical factors that can impact human health, safety and the environment.

#### **What classes and/or contexts**

This item was directly measured at the undergraduate level by reviewing the student pass rate on the State of California Registered Environmental Health Specialist (REHS) Exam. Furthermore it was measured indirectly by analyzing the graduate student pass rate on the REHS and the student pass rate on the department comprehensive exam.

#### **What assessment instruments were used and the methodology employed?**

Direct: EOH BS and MS students with an interest in federal, state, municipal or private sector environmental health employment are likely to take the REHS exam within 9 months of graduation. A previously established target pass rate of 75% was used this year.

Indirect: The EOH MS students took the comprehensive exam in the last semester of their program. The exam is partially based on content relating to SLO 1 and present in the undergraduate program.

#### **Resulting scores, and relation between this year's measure of student work and that of past years:**

Indirect: The reported pass rate for graduate students taking the comprehensive exam was greater than 75%. This trend was consistent with previous reporting data.

Direct: The State reported that 29 CSUN students took the REHS exam during the assessment reporting period for 2014-2015. The data indicated that 10/29 CSUN students passed the exam. It should be noted that one of the reported passing BS students did not show up in a preliminary search of CSUN student records. The data also indicated that at the MS level, 1/3 candidates passed the exam. According to the data, in November 2014, 65% of the non-CSUN students passed the exam, in March 2015, 73% of the non-CSUN students passed the exam, and then in July 2015, 65% of the non-CSUN students passed the exam.

The evolution of exam questions in recent years concerns academic program representatives. The test is currently being amended and analyzed by the State with assistance from a private contractor and input from various stakeholders. Some questions have already been identified as problematic. Academics continue to argue that the exam should emphasize the scientific foundations and theoretical foundations that are integral to the required courses found in State accredited programs. Practitioners providing input to the exam are likely to support questions pertaining to inspection paradigms which may not be well-aligned with curriculum dictated by State legislation.

The analysis did not assess the professional or academic backgrounds of the non-CSUN students who passed the exam. Additionally, the breakdown did not assess the number of candidates taking the exam for the second or third time. Anecdotal accounts indicate that the ability to pass increases for candidates that repeat the exam.

Moreover, the intentions of those that took the test are not well understood at this point in time. Two of the students taking the exam maintained an industrial hygiene emphasis noted on their transcripts. Finally, the indicator may not be well aligned with the SLO and the Department may need to look at other possible indicators going forward.

## **SLO2**

Demonstrate knowledge of how to work in interdisciplinary teams to promote public and private action to protect public health and the environment.

### **What classes and/or contexts?**

Analysis of this item utilized preceptor data from the EOH 494 internship reports.

### **What assessment instruments were used and the methodology employed?**

A scale of 1-5 (1=strongly agree, 5=strongly disagree) was applied to a 42 item instrument that captured Health and Human Development SLO 1 pertaining to ethical and professional standards and SLO 2 pertaining to cultural competencies. If a preceptor scored a student as a 4 (agree) or 5 (strongly agree), then the Department maintains limited concern for the work of the student or the preparation of the individual as provided by the core curriculum.

Nine preceptor evaluations were received on the updated 2015 EOH/HHD preceptor evaluation form. The forms were provided to preceptors in spring 2015 and could be returned via email or traditional mail. Data on the selected forms appeared to be hand written or filled out electronically. The form was modified just prior to this reporting period as a result of HHD assessment committee activity. Older versions were received from some preceptors, but not used for reporting purposes due to the differences in question sets from year to year.

### **Resulting scores, and relation between this year's measure of student work and that of past years:**

Last year students were evaluated in the areas of relationships with other workers, taking initiative on the job and overall attitude. Above average scores were reported for the 2013-2014 assessment report.

There were no instances of a student receiving a 1 (strongly disagree). There were occasional instances of N/A which may mean that the item was not possible to evaluate during the internship or that the preceptor did not understand the item being measured. In one instance a preceptor chose N/A for seven items relating to cultural competencies. This finding may demonstrate the ongoing need to help preceptors understand the items on the evaluation prior to implementation.

Two preceptors reported all categories at the top end of the scale (5). If the values are reflective of the candidates, then it suggests that these two candidates were well aligned with HHD SLOs. In general, most students received values of 4 or 5 with occasional N/A values. For the 378 possible responses, there were 11 reported items scored with a 3 (somewhat agree). The 'somewhat agree' values mostly resided in the evaluations of two individuals. The scores for these individuals are not consistent with the other seven evaluations.

The results are similar to previous years and do not reflect broad trends of concern with respect to the core curriculum. In the year ahead, the College will begin to focus on a new SLO to be assessed by preceptors.

## **SLO 3**

Communicate environmental and occupational health concepts and programs to a variety of audiences, using both written and verbal forms of communication.

### **What classes and/or contexts**

Undergraduate internship (EOH 494B) student reports are used to measure this SLO.

**What assessment instruments were used and the methodology employed**

These student reports are written by the students to summarize their internship experience and are graded by the department internship coordinator. Most undergraduate students take their internship in their last academic year. At the end of their internship each student is required to write a summary of their internship experience. These written papers are turned into the department internship coordinator and graded on a scale of 1 to 10 using a grading rubric. The larger numbers indicate better performance. The target for this evaluation is 7.0 or above, which indicates an 'above average' evaluation in terms of writing proficiency.

**Resulting scores, and relation between this year's measure of student work and that of past years:**

Data from the 2013-2014 assessment report (n=55) revealed an average score of 8.0 which is above the target score of 7.0. In 2014-2015 the internship reports were not scored, rather a pass/fail approach was utilized by the coordinator. Students continued to write reports that described the activities of their internship. The reports were generally recognized as acceptable and students were not asked to repeat or edit any of the submittals. The target pass rate of 70% was exceeded and this value is consistent with previous years.

**SLO 4**

Apply mathematical and critical reasoning to understand and incorporate new concepts in the field.

**What classes and/or contexts**

This SLO is assessed using embedded questions in three EOH core undergraduate courses: 356A, 356B and 466A.

**What assessment instruments were used and the methodology employed**

All EOH undergraduate students must take these 3 core courses. Since these courses are offered each year, the results of this assessment provide an understanding of how all students (generally junior-standing) are performing in terms of quantitative problem-solving. Quantitative problems are embedded into exams into EOH 356A, 356B, and 466A and the average scores compiled. A target of 75% correct responses applies to this item.

**Resulting scores, and relation between this year's measure of student work and that of past years**

The results from fall 2013 indicated that undergraduate students on average performed quantitative problem solving with the percentage of correct answers at 71% in EOH 466A. The result was below the target criterion of 75%, but above 50%. It is likely that a few low scores have skewed the average. The reported value for this item was 71.7% in fall 2014.

No results were collected in 356A or 356B during this assessment period. Qualitative reporting indicated that the results of quantitative questions in the 356A/B series have been consistent for more than 25 years.

**GRADUATE ASSESSMENT****SLO 1**

Research design and analytical skills needed to critically evaluate scientific, technical and regulatory documents.

**What classes and/or contexts**

Graduate students must take and pass the graduate comprehensive exam, also known as EOH 697.

**What assessment instruments were used and the methodology employed**

Direct measure: Graduate pass rate on the quantitative sections of the graduate comprehensive exam. A multi-part question with environmental and occupational data tests skills developed in EOH 696A and 696B. The average pass rate on the first attempt was measured and compared to a target rate of 75%.

**Resulting scores, and relation between this year's measure of student work and that of past years**

The pass rate was verbally reported as approximately 90% and above the target rate of 75%. The continued success in this aspect demonstrates a degree of competency for the learning objective. Going forward the test may need to be refined in order to protect against a skew from year to year transfer of questions and answers.

**SLO 2**

Oral, written and electronic communication skills to present information to professional groups, regulatory agencies and lay audiences.

**What classes and/or contexts**

This item was measured within the context of the graduate internship experience (EOH 693A).

**What assessment instruments were used and the methodology employed,**

Student internship reports provide the basis for this measure. The reports summarize their internship experience and are subsequently graded by the internship coordinator. A target pass rate of 70% was historically used for target for this item.

**Resulting scores, and relation between this year's measure of student work and that of past years**

This year the internship reports were not scored, rather a pass/fail approach was utilized by the coordinator. Students continued to write reports that described the activities of their internship. The reports were generally recognized as acceptable and students were not asked to repeat or edit any of the submittals. The target pass rate of 70% was exceeded and this was consistent with previous years.

**SLO 3**

Sufficient level of technical expertise in environmental and occupational health to competently solve general EOH problems.

**What classes and/or contexts**

Graduate students must take and pass the graduate comprehensive exam, also known as EOH 697.

**What assessment instruments were used and the methodology employed,**

The graduate student pass rate on comprehensive exam sections relating to environmental problem-solving provides the measure for this item. The exam is taken during their last semester in the program. The exam requires students to write an evaluation of a given environmental or occupational health problem. The exercise requires students to identify, retrieve and incorporate information from relevant web sites. A target pass rate of 70% on the first attempt was used for this item.

**Resulting scores, and relation between this year's measure of student work and that of past years**

The reported pass rate for this element was greater than 85% for this item. This number is consistent with previous years and above the target pass rate of 70% on the first attempt. Going forward the test may need to be refined in order to protect against a skew from year to year transfer of questions and responses.

**SLO4**

Management skills to competently manage an environmental or occupational program

**What classes and/or contexts**

Graduate students must take and pass the graduate comprehensive exam, also known as EOH 697.

**What assessment instruments were used and the methodology employed,**

The graduate student pass rate on the section of the graduate exam relating to environmental and occupational program administration was used for this measure. A target pass rate of 70% was used for this item.

**Resulting scores, and relation between this year's measure of student work and that of past years**

The reported pass rate was greater than 90% for this section. This number is consistent with previous years and above the target pass rate of 70% on the first attempt. Going forward the test may need to be refined in order to protect against a skew from year to year transfer of questions and/or responses.

**Planned assessment activities for next year**

At this point in time the assessment activities for the coming year will include ongoing use of preceptors to evaluate students participating in the internship experience. This activity is partially driven by College assessment initiatives. The Department is also working towards the development and use of a survey to be administered to recent graduates. This assessment item is partially driven by accreditation from the National Environmental Health Science & Protection Accreditation Council (EHAC). Recent years have focused on all Departmental SLOs at the BS and MS level. Going forward there may be value in focusing time and attention to University core competencies or select SLOs.