

2012-2013 Annual Program Assessment Report

Please submit report to your department chair or program coordinator, the Associate Dean of your College and the assessment office by Monday, September 30, 2013. You may submit a separate report for each program which conducted assessment activities.

College: College of Engineering & Computer Science

Department: Civil Engineering & Construction Management

Program: Civil Engineering

Assessment liaison: Rais Ahmad

1. Overview of Annual Assessment Project(s). Provide a brief overview of this year's assessment plan and process.

The CEAM department has a continuous assessment plan that is designed around the accreditation process required by ABET for the Civil Engineering Program. The assessment is done on three levels: (a) course assessment, (b) Outcome assessment and (c) Program assessment. For 2013 ABET visit, program assessment will not be a significant criteria. The Civil Engineering courses are scheduled to be assessed by faculty as part of an on-going process. EBI senior surveys, senior exit interviews, and a Student advisory Board meeting are conducted once a year. Members of our departmental Industry Advisory board provide input to the assessment process as well.

Our department has a single Assessment Coordinator who oversees the assessment process, with significant assistance and guidance by the Department Chair.

2. Assessment Buy-In. Describe how your chair and faculty were involved in assessment related activities. Did department meetings include discussion of student learning assessment in a manner that included the department faculty as a whole?

This year (Fall 2013), the Civil Engineering Department is preparing for the ABET visit. The Department Chair as well as all the faculties of the department worked tirelessly to finalize the assessment reports for all the courses. The department conducted

regular monthly (sometimes bi-weekly) meetings especially designated to prepare for the ABET visit. Numerous discussions were held regarding how to assess the student outcomes, course objectives. The Department Chair, took extreme personal initiative to check, suggest and evaluate regarding the student outcomes.

3. **Student Learning Outcome Assessment Project.** Answer items a-f for each SLO assessed this year. If you assessed an additional SLO, copy and paste items a-f below, BEFORE you answer them here, to provide additional reporting space.

3a. Which Student Learning Outcome was measured this year?

Last year data were collected for all program SLOs so that they can be evaluated this year as part of the ongoing improvement process.

The SLO's are:

- (a) an ability to apply knowledge of mathematics, science, and engineering
- (b) an ability to design and conduct experiments, as well as to analyze and interpret data
- (c) an ability to design a system, component, or process to meet desired needs
- (d) an ability to function on multi-disciplinary teams
- (e) an ability to identify, formulate, and solve engineering problems
- (f) an understanding of professional and ethical responsibilities
- (g) an ability to communicate effectively
- (h) the broad education necessary to understand the impact of engineering solutions in a global and societal context
- (i) a recognition of the need for, and an ability to engage in life-long learning
- (j) a knowledge of contemporary issues
- (k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
- (l) a proficiency in a minimum of four (4) recognized major civil engineering areas
- (m) an ability to perform civil engineering design by means of design experiences integrated throughout the professional component of the curriculum;
- (n) an understanding of professional practice issues such as: procurement of work-, bidding versus quality based selection processes; how the design professionals and the construction professions interact to construct a project; the importance of professional licensure and continuing education; and/or other professional practice issues.

3b. Does this learning outcome align with one or more of the university's Big 5 Competencies? (Delete any which do not apply)

- Critical Thinking (yes)
- Oral Communication (yes)
- Written Communication (yes)
- Quantitative Literacy (yes)
- Information Literacy (yes)

3c. Does this learning outcome align with University's commitment to supporting diversity through the cultivation and exchange of a wide variety of ideas and points of view? In what ways did the assessed SLO incorporate diverse perspectives related to race, ethnic/cultural identity/cultural orientations, religion, sexual orientation, gender/gender identity, disability, socio-economic status, veteran status, national origin, age, language, and employment rank?

At this stage we do not have any specific SLO which directly align with University's commitment to supporting diversity through the cultivation and exchange of a wide variety of ideas and points of views. However, several of our outcomes indirectly support the idea of diversity like socio-economic status, employment rank etc. For the academic year 2013-14, we will discuss the issue in our departmental meetings to check whether we need to act on that.

3d. What direct and/or indirect instrument(s) were used to measure this SLO?

Direct

Student Course Work & Materials

Student course evaluations

Faculty evaluation of course material

Fundamentals of Engineering Examination Results

Indirect

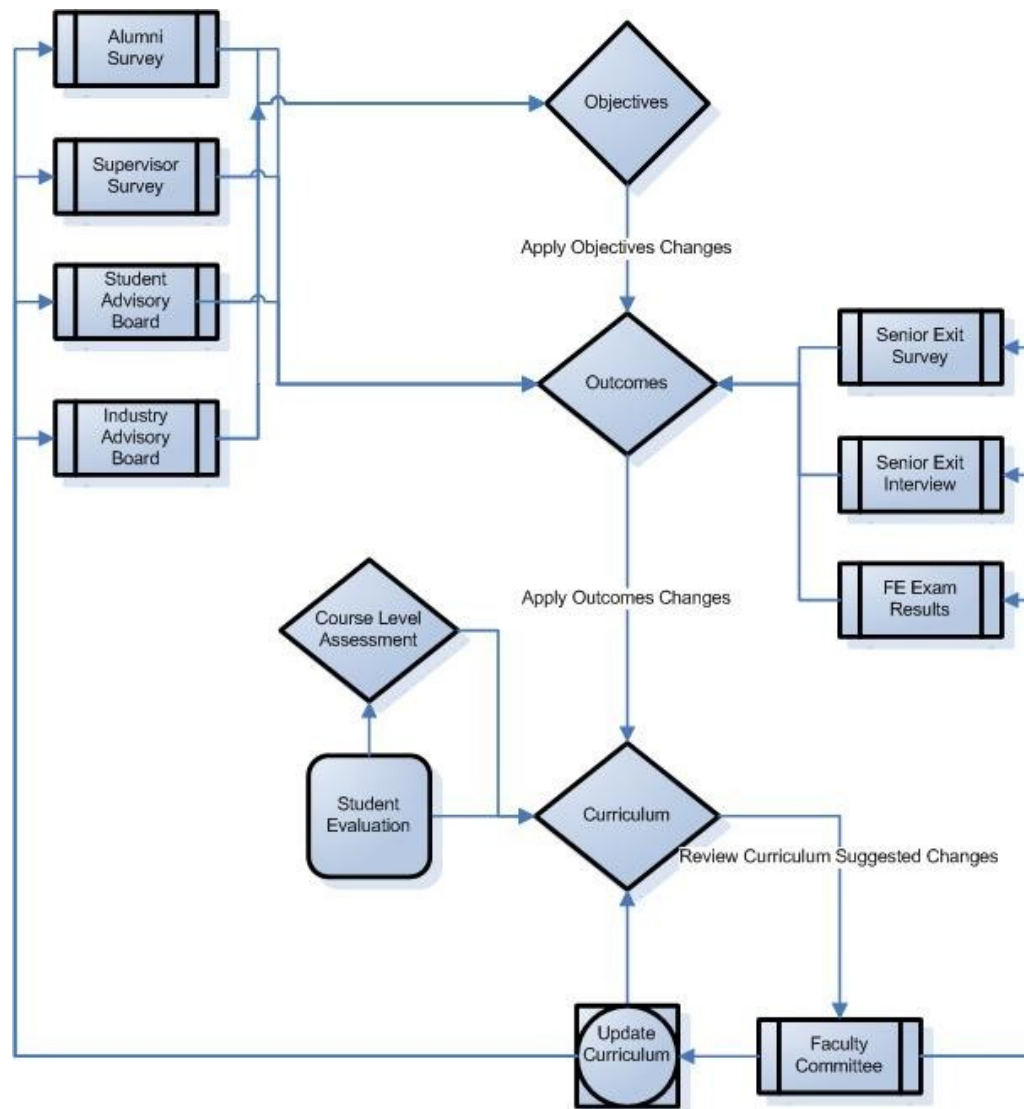
Senior Exit interviews

EBI Exit Survey

3e. Describe the assessment design methodology: For example, was this SLO assessed longitudinally (same students at different points) or was a cross-sectional comparison used (Comparing freshmen with seniors)? If so, describe the assessment points used.

Our course assessment is based on ensuring that all courses are assessed at least once during our 6 year accreditation cycle. Please check the attached Figure 1 for methodology of assessment.

Figure 1 Assessment, Evaluation and Improvement Process Flow Chart for the Civil Engineering Program



3f. Assessment Results & Analysis of this SLO: Provide a summary of how the results were analyzed and highlight findings from the collected evidence.

At the time this report was written, the results were still being compiled and analyzed to fulfill ABET requirements.
Please See Table 1 for our benchmark to compare the results obtained from our assessment.

Table 1– Outcomes, Assessments, and Tools for Program Improvement

Outcomes	Assessments	Assessment Tools for Program Improvement
(a) Graduates have proficiency (ability to apply knowledge) in mathematics through differential equations, probability and statistics, calculus-based physics, and general chemistry.	1) Grade of C or better in Math 150A and Math 150B; a C- or better in all other math and science courses and MSE 362. 2) Performance of math skills in engineering courses. 3) Performance on FE exam.	1. Student Course Evaluations. 2. Senior Exit Interview 3. EBI Exit Survey 4. Alumni Survey 5. Supervisor Survey 6. CE Faculty
(b) Graduates have an ability to conduct laboratory experiments and to critically analyze and interpret data in more than one of the recognized major civil engineering areas	1. Grade of C- or better in laboratory courses (PHYS 220AL, PHYS 220BL, AM317, CE308L, CE335L, CE 408L, CE426L, CE460L, and MSE227L)	1. Student Course Evaluations 2. Senior Exit Interview 3. EBI Exit Survey 4. Alumni Survey 5. Supervisor Survey 6. CE Faculty

(c) Graduates have an ability to design a civil engineering system, component, or process to meet desired needs	<ol style="list-style-type: none"> 1) Performance on senior design project. (CE488A/B) 2) Grade of C- or better in engineering design courses (CE438, CE439) 3) Performance in ASCE design competitions. 	<ol style="list-style-type: none"> 1. Student Course Evaluations 2. Senior Exit Interview 3. EBI Exit Survey 4. Alumni Survey 5. Supervisor Survey 6. CE Faculty
(d) Graduates have an ability to function on multi-disciplinary teams.	<ol style="list-style-type: none"> 1. Performance on senior project. 2. Performance in Laboratory courses. 3. Performance in ASCE design competitions 	<ol style="list-style-type: none"> 1. Senior Exit Interview 2. EBI Exit Survey 3. Alumni Survey 4. Supervisor Survey 5. CE Faculty
(e) Graduates have an ability to identify, formulate, and solve engineering problems.	<ol style="list-style-type: none"> 1. Performance on senior design project. (CE488A/B) 2. Grade of C- or better in engineering design courses (CE438, CE439) 3. Performance in ASCE competitions. 	<ol style="list-style-type: none"> 1. Student Course Evaluations 2. EBI Exit Survey 3. Alumni Survey 4. CE Faculty
(f) Graduates have an understanding of professional and ethical responsibility	<ol style="list-style-type: none"> 1. Participation in student professional clubs and activities. 2. Performance on Ethics portion of FE exam. 3. Mead paper assigned in CE 488A 	<ol style="list-style-type: none"> 1. Senior Exit Interview 2. EBI Exit Survey 3. Alumni Survey 4. Supervisor Survey 5. CE Faculty

(g) Graduates have an ability to communicate effectively	<ol style="list-style-type: none"> 1. Evaluation of Laboratory Reports. 2. Evaluation of written reports and oral presentations in Senior Design 3. Completion of Lower and Upper Division writing proficiency exams. 4. 4) Passing grade in GE Oral Communication 	<ol style="list-style-type: none"> 1. Senior Exit Interview 2. EBI Exit Survey 3. Alumni Survey 4. Supervisor Survey 5. CE Faculty
(h) Graduates have the broad education necessary to understand the impact of engineering solutions in a global and societal context.	<ol style="list-style-type: none"> 1. Passing grades in GE courses. 2. Performance on senior design project. (CE488A/B) 	<ol style="list-style-type: none"> 1. Senior Exit Interview 2. EBI Exit Survey 3. Alumni Survey 4. Supervisor Survey 5. CE Faculty
(i) Graduates have recognition of the need for, and an ability to engage in life-long learning.	<ol style="list-style-type: none"> 1. Discussion in course work. 2. Planned enrollment in grad school. 3. Taking of FE and PE exams 4. ASCE/SEAOSC membership 	<ol style="list-style-type: none"> 1. Senior Exit Interview 2. EBI Exit Survey 3. Alumni Survey 4. Supervisor Survey 5. CE Faculty
(j) Graduates have knowledge of contemporary issues.	<ol style="list-style-type: none"> 1. Passing grades in GE courses. 2. Passing grade in Senior Design 	<ol style="list-style-type: none"> 1. Senior Exit Interview 2. Alumni Survey 3. CE Faculty
(k) Graduates have an ability to use the techniques, skills and modern engineering tools necessary for engineering practice.	<ol style="list-style-type: none"> 1. Grades of C- or better in all 400 level engineering courses. 2. Evaluation by Honors Co-op 	<ol style="list-style-type: none"> 1. Student Course Evaluations 2. Senior Exit Interview

	supervisors (Presently we have no Honor Co-op Students)	3. EBI Exit Survey 4. Alumni Survey 5. Supervisor Survey 6. CE Faculty
(l) Graduates have proficiency in a minimum of four recognized major civil engineering areas	1. Grades of C- or better in courses in senior program. (Areas: Structures, Geotechnical, Hydraulics/Hydrology, and Surveying/Measurements.)	1. Student Course Evaluations 2. Senior Exit Interview 3. Alumni Survey 4. CE Faculty
(m) Graduates will have an ability to perform civil engineering design by means of design experiences integrated throughout the professional component of the curriculum.	1. See Table B.8.1 for a summary of the design activities for each of the courses for which design units are claimed.	1. Student Course Evaluations 2. Senior Exit Interview 3. EBI Survey 4. Alumni Survey 5. CE Faculty
(n) Graduates have an understanding of professional practice issues such as: procurement of work; bidding versus quality based selection processes; how the design professionals and the construction professionals interact to construct a project; the importance of professional licensure and continuing education: and/or other professional practice issues	1. Performance in CE488A/B 2. Percent taking FE exam. 3. Graduate school admits.	1. Senior Exit Interview 2. EBI Exit Survey 3. CE Faculty

3g. Use of Assessment Results of this SLO: Describe how assessment results were used to improve student learning. Were assessment results from previous years or from this year used to make program changes in this reporting year? (Possible changes include: changes to course content/topics covered, changes to course sequence, additions/deletions of courses in program, changes in pedagogy, changes to student advisement, changes to student support services, revisions to program SLOs, new or revised assessment instruments, other academic programmatic changes, and changes to the assessment plan.)

course sequence: No _____

addition/deletion of courses in program: No _____

describe other academic programmatic changes: No changes _____

student support services: There has been more tutoring session dedicated to classes where students have problems

revisions to program SLOs: No _____

assessment instrument: Assessment methodology was changed last year and it is implemented this year

describe other assessment plan changes: No changes in the assessment plan _____

Since the Civil Engineering Department is preparing for the ABET visit in October 2013 (this year), there have been few recommendations and discussions regarding changing few SLO's for different courses. With view of the incoming ABET visit, the Department is not making any changes from last at this moment. The Civil Engineering Department will review its course by course SLO's after the ABET visit. The department will also implement if ABET recommends any change in SLO's.

4. Assessment of Previous Changes: Present documentation that demonstrates how the previous changes in the program resulted in improved student learning.

There has been no changes in SLO's from last year (2011-2012).

5. Changes to SLOs? Please attach an updated course alignment matrix if any changes were made. (Refer to the Curriculum Alignment Matrix Template, http://www.csun.edu/assessment/forms_guides.html.)

There has been no changes in SLO's from last year (2011-2012).

6. Assessment Plan: Evaluate the effectiveness of your 5 year assessment plan. How well did it inform and guide your assessment work this academic year? What process is used to develop/update the 5 year assessment plan? Please attach an updated 5 year assessment plan for 2013-2018. (Refer to Five Year Planning Template, plan B or C, http://www.csun.edu/assessment/forms_guides.html.)

The Civil Engineering Department is preparing for the ABET visit this year (October 2013). A new 5 (five) year strategic plan for Assessment will be discussed and reviewed after the ABET visit, taking considerations that ABET might have some suggestions/recommendations or directions for future assessment techniques as well as outcomes. At this moment the Civil Engineering Department will not provide any 5 (five) year Assessment Plan. We will prepare and provide the plan after the ABET visit.

7. Has someone in your program completed, submitted or published a manuscript which uses or describes assessment activities in your program? Please provide citation or discuss.

Nothing for the past year. However, the Civil Engineering & Applied Mechanics Department is always striving to improve the student's learning process.

8. Other information, assessment or reflective activities or processes not captured above.

ABET accreditation is for the civil engineering program is Fall 2013 (October 6-8, 2013). A full set of assessment report will be available after the ABET visit and will be ready when next year report is due.