Mission / Purpose

The Department of Civil, Construction, and Environmental Engineering is dedicated to advancing the profession through its innovative, student-centered education and research programs. The faculty and staff are committed to preparing graduates for entry into the profession, educating future leaders of the profession, and conducting and disseminating meaningful basic and applied research for the betterment of the state, nation, and global communities.

Goals

G 1: Program Quality
The program will improve and sustain a high quality of recognized quality.

Student Learning Outcomes, with Any Associations and Related Measures, Targets, Findings, and Action Plans

SLO 4: Tools and Engineering Problems (T3; ABET 3e,k)
Apply relevant knowledge, techniques, skills, and modern tools to identify, formulate, and solve engineering problems, including problems within the discipline.

SLO 5: Experiments and Data Analysis (T2; ABET 3b)
Select and conduct engineering experiments, and analyze and evaluate the resulting data.

SLO 6: Design (T6; ABET 3c)
Design a system or process in more than one area within the discipline to meet desired needs, including sustainability and within other realistic constraints such as environmental, social, political, ethical, health and safety, and constructability.

SLO 7: Communication (P2; ABET 3g)
Organize and deliver effective written, verbal, and graphical communications.

Other Outcomes, with Any Associations and Related Measures, Targets, Findings, and Action Plans

OthOtcm 1: Program Quality
The program will improve and sustain a high level of recognized quality.

OthOtcm 2: Program Optimal Enrollment
The program will build and sustain an optimal level of annual program enrollments and degree completions.

OthOtcm 3: Program Highly Valued
The program will be highly valued by its program graduates and other key constituencies it serves.

Details of Action Plans for This Cycle (by Established cycle, then alpha)

FE Exam Support
The FE exam is changing effective January 2014. The faculty will assess the changes and implement a new review and support program for students to improve FE performance.

Established in Cycle: 2012-2013
Implementation Status: Planned
Priority: High
Mission / Purpose

The Department of Civil, Construction, and Environmental Engineering is dedicated to advancing the profession through its innovative, student-centered education and research programs. The faculty and staff are committed to preparing graduates for entry into the profession, educating future leaders of the profession, and conducting and disseminating meaningful basic and applied research for the betterment of the state, nation, and global communities.

Student Learning Outcomes, with Any Associations and Related Measures, Targets, Findings, and Action Plans

SLO 4: Tools and Engineering Problems (T3; ABET 3e,k)

Apply relevant knowledge, techniques, skills, and modern tools to identify, formulate, and solve engineering problems, including problems within the discipline.

Related Measures

M 1: Graduation Portfolios

Students submit a portfolio documenting their attainment of all student learning outcomes. Portfolios are evaluated by external constituencies (alumni, employers, etc.) as well as faculty. Each outcome is assessed on a five-point Likert scale.

Source of Evidence: Portfolio, showing skill development or best work

Target:

An average > 3.0 on a five-point Likert scale for this outcome (average is at least meeting expectations).

Finding (2012-2013) - Target: Met

Overall average = 3.4
Tools and Problem Solving = 3.4
Design = 3.5
Professional, Ethical, and Legal Aspects = 3.5
Communication = 3.7

M 2: FE Exam Performance

The Fundamentals of Engineering (FE) Exam is the first of two exams for licensure as a professional engineer. The overall pass rate as well as percent correct of various sections are considered assessment measures for the program.

Source of Evidence: Certification or licensure exam, national or state

Target:

Exceed national average for percent correct on related sections of FE exam.

Finding (2012-2013) - Target: Partially Met

Except for environmental, transportation, and structural design, student performance fell slightly short of the national average.

Related Action Plans (by Established cycle, then alpha):

For full information, see the Details of Action Plans section of this report.

FE Exam Support

Established in Cycle: 2012-2013

The FE exam is changing effective January 2014. The faculty will assess the changes and implement a new review and support prog...

SLO 5: Design (T6; ABET 3c)

Design a system or process in more than one area within the discipline to meet desired needs, including sustainability and within other realistic constraints such as environmental, social, political, ethical, health and safety, and constructability.

Related Measures

M 1: Graduation Portfolios

Students submit a portfolio documenting their attainment of all student learning outcomes. Portfolios are evaluated by external constituencies (alumni, employers, etc.) as well as faculty. Each outcome is assessed on a five-point Likert scale.

Source of Evidence: Portfolio, showing skill development or best work

Target:

An average > 3.0 on a five-point Likert scale for this outcome (average is at least meeting expectations).

Finding (2012-2013) - Target: Met

Overall average = 3.4
Tools and Problem Solving = 3.4
Design = 3.5
M 3: Capstone Design Project
Students must complete, in a team, a large design project and present it to an external jury for review and evaluation. Projects are provided by consulting firms, employers, etc. Also, representatives from these constituencies also participate in the instructional effort of the course.

Source of Evidence: Capstone course assignments measuring mastery

Target:
An average of at least 3.0 on a five-point Likert scale for the design assessment (an average of at least meeting expectation).

Finding (2012-2013) - Target: Met
Average on the design assessment = 3.9 > 3.0

SLO 6: Professional and Ethical Aspects (P1; ABET 3f)
Analyze a situation involving multiple conflicting professional, legal, and ethical interests, and determine an appropriate course of action.

Related Measures

M 1: Graduation Portfolios
Students submit a portfolio documenting their attainment of all student learning outcomes. Portfolios are evaluated by external constituencies (alumni, employers, etc.) as well as faculty. Each outcome is assessed on a five-point Likert scale.

Source of Evidence: Portfolio, showing skill development or best work

Target:
An average > 3.0 on a five-point Likert scale for this outcome (average is at least meeting expectations).

Finding (2012-2013) - Target: Met
Overall average = 3.4
Tools and Problem Solving = 3.4
Design = 3.5
Professional, Ethical, and Legal Aspects = 3.5
Communication = 3.7

M 2: FE Exam Performance
The Fundamentals of Engineering (FE) Exam is the first of two exams for licensure as a professional engineer. The overall pass rate as well as percent correct of various sections are considered assessment measures for the program.

Source of Evidence: Certification or licensure exam, national or state

Target:
Exceed national average for percent correct on this portion of the FE.

Finding (2012-2013) - Target: Met
Students slightly exceeded the national average on this portion of the exam.

SLO 7: Communication (P2; ABET 3g)
Organize and deliver effective written, verbal, and graphical communications.

Related Measures

M 1: Graduation Portfolios
Students submit a portfolio documenting their attainment of all student learning outcomes. Portfolios are evaluated by external constituencies (alumni, employers, etc.) as well as faculty. Each outcome is assessed on a five-point Likert scale.

Source of Evidence: Portfolio, showing skill development or best work

Target:
An average > 3.0 on a five-point Likert scale for this outcome (average is at least meeting expectations).

Finding (2012-2013) - Target: Met
Overall average = 3.4
Tools and Problem Solving = 3.4
Design = 3.5
Professional, Ethical, and Legal Aspects = 3.5
Communication = 3.7

M 3: Capstone Design Project
Students must complete, in a team, a large design project and present it to an external jury for review and evaluation. Projects are provided by consulting firms, employers, etc. Also, representatives from these constituencies also participate in the instructional effort of the course.

Source of Evidence: Capstone course assignments measuring mastery

Target:
An overall average of at least 3.0 on a five-point Likert scale for the communication assessment (an average of at least meeting expectation).

Finding (2012-2013) - Target: Met
Average on the communication assessment = 3.3 > 3.0
Finding (2012-2013) - Target: Met
Average on the communication assessment = 3.3 > 3.0
Other Outcomes, with Any Associations and Related Measures, Targets, Findings, and Action Plans

OthOtcn 1: Program Quality
The program will improve and sustain a high level of recognized quality.

Related Measures

M 1: Graduation Portfolios
Students submit a portfolio documenting their attainment of all student learning outcomes. Portfolios are evaluated by external constituencies (alumni, employers, etc.) as well as faculty. Each outcome is assessed on a five-point Likert scale.

Source of Evidence: Portfolio, showing skill development or best work

Target:
An overall average > 3.0 on a five-point Likert scale (average is at least meeting expectations).

Finding (2012-2013) - Target: Met
Overall average = 3.4
Tools and Problem Solving = 3.4
Design = 3.5
Professional, Ethical, and Legal Aspects = 3.5
Communication = 3.7

M 2: FE Exam Performance
The Fundamentals of Engineering (FE) Exam is the first of two exams for licensure as a professional engineer. The overall pass rate as well as percent correct of various sections are considered assessment measures for the program.

Source of Evidence: Certification or licensure exam, national or state

Target:
Exceed the national average for pass-rate.

Finding (2012-2013) - Target: Not Met
The program's pass rate was slightly below the national average.

Related Action Plans (by Established cycle, then alpha):
FE Exam Support
Established in Cycle: 2012-2013
The FE exam is changing effective January 2014. The faculty will assess the changes and implement a new review and support program...

For full information, see the Details of Action Plans section of this report.

M 3: Capstone Design Project
Students must complete, in a team, a large design project and present it to an external jury for review and evaluation. Projects are provided by consulting firms, employers, etc. Also, representatives from these constituencies also participate in the instructional effort of the course.

Source of Evidence: Capstone course assignments measuring mastery

Target:
An overall average of at least 3.0 on a five-point Likert scale (an average of at least meeting expectation).

Finding (2012-2013) - Target: Met
Overall average = 3.5 > 3.0, target met.

OthOtcn 2: Program Optimal Enrollment
The program will build and sustain an optimal level of annual program enrollments and degree completions.

Related Measures

M 4: Undergraduate Enrollment
Annual undergraduate enrollment in the program and trend

Source of Evidence: Academic indirect indicator of learning - other

Target:
Maintain or increase total enrollment.

Finding (2012-2013) - Target: Met
Total enrollment = 671 (up from last year's 516)

M 5: Undergraduate Degrees Awarded
Annual number of undergraduate degrees awarded and trend.

Source of Evidence: Academic indirect indicator of learning - other

Target:
Award at least as many degrees as previous year.

Finding (2012-2013) - Target: Met
Awarded 114 degrees, up from 98 last year.

OthOtcn 3: Program Highly Valued
The program will be highly valued by its program graduates and other key constituencies it serves.

Related Measures

M 6: Employment/G Graduate School Rates
Employment or graduate school admission rates/placement for program graduates.
Target: At least 80% of the graduates surveyed receive offers of employment within the profession or offers for admission to graduate school. 

Finding (2012-2013) - Target: Met
Nearly 85% of graduates reported receiving employment offers or gaining admission to graduate school.

**M 7: Senior Surveys**
Senior surveys are conducted as part of the senior exit interview process. A five-point Likert scale is used to evaluate students' consideration of program value.

Source of Evidence: Exit interviews with grads/program completers

**Target:** Overall average > 3.0 (at least meeting expectations)

Finding (2012-2013) - Target: Met
Average survey value = 3.8 > 3.0, target exceeded.

**Details of Action Plans for This Cycle (by Established cycle, then alpha)**

**FE Exam Support**
The FE exam is changing effective January 2014. The faculty will assess the changes and implement a new review and support program for students to improve FE performance.

Established in Cycle: 2012-2013
Implementation Status: Planned
Priority: High

Relationships (Measure | Outcome/Objective):
Measure: FE Exam Performance | Outcome/Objective: Program Quality |
Tool and Engineering Problems (T3; ABET 3e,k)