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 1: Technical Specialization
(Specialization) Synthesize advanced technical knowledge in a traditional or emerging area of specialization.

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Related Measures

M 1: Comprehensive Exam
Performance on comprehensive exam
Source of Evidence: Comprehensive/end-of-program subject matter exam
Target:
All students pass the comprehensive exam

M 2: Tools - CE 573
Satisfactory performance on standardized content in CE 573
Source of Evidence: Performance (recital, exhibit, science project)
Target:
Instructor evaluation of student performance based on grades and application of tools with applications within the disciplines. Average student grade of 3.3 or better.

M 7: Committee Evaluations
Committee evaluation of student achievements using a 5-point Likert Scale
Source of Evidence: Academic direct measure of learning - other
Target:
An average evaluation of 3 or better on a 5-point Likert scale

SLO 2: Tools and Problem Solving
(Problem Solving) Identify, formulate, and solve complex relevant engineering problems by selecting and applying appropriate tools and techniques.

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Related Measures

M 1: Comprehensive Exam
Performance on comprehensive exam
Source of Evidence: Comprehensive/end-of-program subject matter exam
Target:
All students pass the comprehensive exam

M 7: Committee Evaluations
Committee evaluation of student achievements using a 5-point Likert Scale
Source of Evidence: Academic direct measure of learning - other
Target:
An average evaluation of 3 or better on a 5-point Likert scale

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

OthOtcm 6: Program Value
The program will be highly valued by its program graduates and other key constituencies it serves.

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Related Measures

M 14: Engineering Career Services
Employers indicate their respect for the program by scheduling on-campus interviews. The Engineering Career Services office schedules and monitors these visits. The number of interview opportunities for CCE MS graduates will
be monitored annually.

Source of Evidence: Academic indirect indicator of learning - other

**Target:**
Increase companies seeking MS graduates through the Career Center.
Mission / Purpose
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Student Learning Outcomes, with Any Associations and Related Measures, Targets, Findings, and Action Plans

SLO 4: Technical Specialization
Synthesize advanced technical knowledge in a specialized area of civil or environmental engineering.

Related Measures

M 2: Performance on MS Project
Evaluation of the quality of work presented by students as part of their thesis or non-thesis project as evaluated the advisor and, as appropriate, committee.
Source of Evidence: Capstone course assignments measuring mastery
Target: A command of the technical specialization outcome is required to pass the thesis or non-thesis project requirement. Target is to have the majority of student pass on their first attempt.
Finding (2012-2013) - Target: Met
All students passed the project requirement their first attempt.

M 7: MS Project
Performance on MS project, evaluated using a five-point Likert scale.
Source of Evidence: Project, either individual or group
Target: An average score of at least 3 (meeting expectation) on the technical specialization assessment.
Finding (2012-2013) - Target: Met
An average of 3.9 was reported, exceeding the target.

SLO 5: Tools and Problem Solving
Identify, formulate, and solve complex civil or environmental engineering problems.

Related Measures

M 7: MS Project
Performance on MS project, evaluated using a five-point Likert scale.
Source of Evidence: Project, either individual or group
Target: An average score of at least 3 on the tools and problem solving assessment is targeted.
Finding (2012-2013) - Target: Met
An average assessment of 4.1 was reported, exceeding the target.

M 8: CE 573
CE 573 Statistical Applications is a required course for all MS students.
Source of Evidence: Written assignment(s), usually scored by a rubric
Target: Instructor evaluation of student performance based on grades and application of tools to solve problems. A average grade of at least 3.3
Finding (2012-2013) - Target: Met
Average grade was 3.6, exceeding the target.

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

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

Related Measures

M 1: Refereed Publications
The number of refereed publications produced and appearing in print each year, using FAR data
Source of Evidence: Existing data
Target: The faculty should publish, on average, at least 2 refereed publications per year.
Finding (2012-2013) - Target: Met
During the FAR reporting period of April-March, the faculty reported 67 refereed publications. With a faculty of 20, this results in 3.4 publications per year.

**M 2: Performance on MS Project**
Evaluation of the quality of work presented by students as part of their thesis or non-thesis project as evaluated the advisor and, as appropriate, committee.

Source of Evidence: Capstone course assignments measuring mastery

**Target:**
An average of 3 or higher on a five point Likert scale on the thesis or non-thesis project, as evaluated by the advisor and, as appropriate, committee.

**Finding (2012-2013) - Target: Met**
An average of 3.5 was reported for all graduating students, exceeding the target.

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

**Related Measures**

**M 3: MS Enrollment**
Annual enrollment and trends.

Source of Evidence: Academic indirect indicator of learning - other

**Target:**
Maintain or increase MS enrollment to 60 by 2020.

**Finding (2012-2013) - Target: Not Met**
Current enrollment is 19, down 6 from the prior year.

**Increase MS enrollment**
*Established in Cycle: 2012-2013*
While emphasis is on PhD enrollment, the faculty will target increasing the number of MS.

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

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

**Related Measures**

**M 4: MS Degrees Awarded**
Annual MS degrees awarded and trend.

Source of Evidence: Academic indirect indicator of learning - other

**Target:**
Increase degrees awarded to 55 by 2020.

**Finding (2012-2013) - Target: Not Met**
19 MS degrees were awarded, down from 22 the year prior.

**Increase MS enrollment**
*Established in Cycle: 2012-2013*
While emphasis is on PhD enrollment, the faculty will target increasing the number of MS.

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

**M 5: MS Placements**
MS graduate placement in profession or graduate school.

Source of Evidence: Job placement data, esp. for career/tech areas

**Target:**
Nearly all graduates find employment in the profession or gain admission to continue their education in graduate school.

**Finding (2012-2013) - Target: Met**
18 of the 19 MS graduates had offers of employment or graduate school upon graduation.

**M 6: MS Student Survey**
AN annual survey of MS students is conducted to assess, from their perspective, the quality of their experience.

Source of Evidence: Exit interviews with grads/program completers

**Target:**
An average score of 3 (meeting expectation) is targeted. Anything below is a cause for concern.

**Finding (2012-2013) - Target: Met**
The average score was 3.8; target met.

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

**Increase MS enrollment**
While emphasis is on PhD enrollment, the faculty will target increasing the number of MS.

*Established in Cycle: 2012-2013*

**Implementation Status:** Planned

**Priority:** High

**Relationships (Measure | Outcome/Objective):**
| Measure: MS Degrees Awarded | Outcome/Objective: Program Optimal Enrollment |
| Measure: MS Enrollment | Outcome/Objective: Program Optimal Enrollment |

**Implementation Description:** Focus will be on recruiting qualified students into the Scholars program.

**Responsible Person/Group:** All faculty

**Additional Resources:** None
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Student Learning Outcomes, with Any Associations and Related Measures, Targets, Findings, and Action Plans

SLO 1: Synthesize
(Synthesize) Synthesize advanced technical knowledge in a specialized area of Civil or Environmental Engineering.

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Related Measures
M 1: Synthesize - Exam
Performance on comprehensive exam
Source of Evidence: Comprehensive/end-of-program subject matter exam

M 2: Synthesize - CE 573
Satisfactory performance on standardized content in CE 573
Source of Evidence: Performance (recital, exhibit, science project)

M 3: Synthesize - Survey
Student survey on ability to synthesize advanced technical knowledge in a specialized area of civil or environmental engineering
Source of Evidence: Academic indirect indicator of learning - other

M 5: Solve - 573
Satisfactory performance on standardized content in CE 573
Source of Evidence: Performance (recital, exhibit, science project)

SLO 2: Solve
(Solve) Identify, formulate, and solve complex civil or environmental engineering problems

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Related Measures
M 4: Solve - Exam
Performance on comprehensive exam
Source of Evidence: Comprehensive/end-of-program subject matter exam

M 6: Solve - Survey
Student survey on ability to identify, formulate, and solve complex civil or environmental engineering problems
Source of Evidence: Academic indirect indicator of learning - other

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

OthOtcn 3: Comprehensive Exam Tool
(An Improvement Outcome Derived From their 2010-11 Assessment Findings) Comprehensive Exam: The department will develop a standardized method of assessing, recording and disseminating comprehensive exam data.

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Related Measures
M 7: Comprehensive exam
Comprehensive exam assessment tool development and deployment
Source of Evidence: Academic direct measure of learning - other

OthOtcn 4: Recognized quality
The program will improve and sustain a high level of recognized quality.

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Related Measures
**M 9: Graduate applications**
Trend in the number of graduate applications, both external and internal
Source of Evidence: Academic indirect indicator of learning - other

**M 10: GRE scores**
Trend in the GRE scores and/or GPA of accepted applicants
Source of Evidence: Academic indirect indicator of learning - other

**OtOtcn 5: Optimal level**
The program will build and sustain an optimal level of annual program enrollments and degree completion

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**Related Measures**

**M 11: Departmental MS enrollment**
Trend in CCE departmental MS enrollment
Source of Evidence: Academic indirect indicator of learning - other

**M 12: Departmental MS graduation rate**
Trend in CCE departmental MS graduation rate
Source of Evidence: Academic indirect indicator of learning - other

**OtOtcn 6: Program Value**
The program will be highly valued by its program graduates and other key constituencies it serves.

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**Related Measures**

**M 13: Capstone Engineering Society**
The Capstone Engineering Society is a group of alumni actively involved in planning and support for the College of Engineering. Participation in the society indicates a high level of commitment to the College of Engineering. The number of CCE MS graduates in the society will be monitored annually.
Source of Evidence: Academic indirect indicator of learning - other

**M 14: Engineering Career Services**
Employers indicate their respect for the program by scheduling on-campus interviews. The Engineering Career Services office schedules and monitors these visits. The number of interview opportunities for CCE MS graduates will be monitored annually.
Source of Evidence: Academic indirect indicator of learning - other