UNIT REPORT Computer Software Engineering Technology BS - Assessment Plan Summary

# **Computer Software Engineering Technology BS**

# **Ethical Principles And Management Skills**

### **Goal Description:**

To develop students' knowledge of ethical principles, technical skills, and management skills relevant to the field of computer software Engineering Technology.

**RELATED ITEMS/ELEMENTS - - - -**

#### **RELATED ITEM LEVEL 1**

#### **Ethical Principles And Management Skills**

#### Learning Objective Description:

Students will develop and demonstrate an understanding of the ethic considerations and management principles relevant to the field of Computer Software Engineering Technology.

#### **RELATED ITEM LEVEL 2**

#### Curriculum

#### **Indicator Description:**

The Curriculum Committees will be asked to review curriculum for all undergraduate programs. The committees will issue annual reports to be distributed at department meetings.

#### **Criterion Description:**

The Chair of the Undergraduate and Graduate Curriculum Committees will report discussion, recommendations and actions on an annual basis.

#### **Findings Description:**

The curriculum committee documents demonstrate that the faculty are actively engaged in reflection on the the curriculum, its relevance to ABET and ACM curricular guidelines, and student performance. The Curriculum committees are reporting on a semi-annual basis, meeting the established criteria.

#### Attached Files

<u>160907\_UCC\_MeetingMinutes</u>
 <u>170125\_UCC\_MeetingMinutes</u>
 <u>170419\_UCC\_MeetingMinutes</u>
 <u>2015\_11\_05\_UCC</u>
 <u>2016\_02\_03\_UCC</u>

#### **RELATED ITEM LEVEL 3**

#### TASO

#### **Action Description:**

There is concern that a misalignment exists between the objectives of the TASO and the objectives of the Software Engineering course in which the TASO is conducted. There is also concern that the TASO does not adequately reflect performance for students in the Computer Software Engineering program. The Undergraduate Curriculum Committee will examine alternative approaches to conducting TASO.

#### TASO

**Indicator Description:** 

All undergraduate Computer Software Engineering Technology students must complete COSC4349 (Professionalism and Ethics) prior to graduation. COSC4349 addresses three of the eleven identified student outcomes. Additionally, TASO (Test for Assessing Student Outcomes) is implemented to quantitatively measure these Student Outcomes.

Attached Files

# TASO-assessment\_spring2017-CSET-FIXED

TASO-assessment\_S16

**Criterion Description:** 

To perform a quantitative assessment, the following rubrics for the two courses are developed: (1) rubric for Project, (2) rubric for presentation evaluation, (3) rubric for group member evaluation, and (4) rubric for ethics topics. For COSC4349, students' performance is indirectly evaluated through the exam questions that address rubric (4). Each category is rated with the following scale values: (1) 1.0 (below expectations or unacceptable), (2) 2.0 (evolving or developing), (3) proficient (or competent), and (4) outstanding (or exemplary).

Student's performance on Student Outcomes is directly evaluated with each specific rubric, while the performance on objectives is indirectly measured by mapping between Student Outcomes and Program Objectives.

#### **Findings Description:**

From a general computer science student performance perspective, the TASO and Ethics exam are producing results that indicate that students are performing at an appropriate level. The quality of data, and the longevity of the data samples indicate that performance over multiple years is relatively stable. There are, however, still areas that could be improved.

Many questions produce results that are below the expected correct rate. One reason may be that this is the first time we have offered the TASO exam to CSET students. They are not familiar with the exam format. A second reason is majority of students in this program are international students from Turkey, who took some of these major core courses from their old school, which may have different course curriculum. In addition, the ethics exam is typical administered during their junior, rather than senior year, at a point where their English Language skills have not be fully developed.

It is still too early to analyze the results of CSET due to limited data we collected, we will continue to monitor and strive to have a better student success rate.

There is misalignment between the assessment criteria in the TASO and the course objectives in the Software Engineering course, where the TASO is administered. The undergraduate curriculum committee has been tasked with resolving this.

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#### **RELATED ITEM LEVEL 1**

#### **Technical Competence**

#### Learning Objective Description:

Students will develop and demonstrate knowledge of technical skills, relevant to the field of computer software engieering technology.

#### **RELATED ITEM LEVEL 2**

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**RELATED ITEM LEVEL 2** 

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#### **RELATED ITEM LEVEL 1**

#### TASO

### **Performance Objective Description:**

Each of the components of TASO provides aggregate results on a five point scale for each of the 11 Performance Objectives (PO) and Four Student Learning Objects (SLO) identified as appropriate measurements by ABET/CAC.

For each of the PO's and SLO's an aggregate score above 3.0 represents adequate performance. Aggregate scores above 4.0 represent strong performance.

# **Technical Competence**

### **Goal Description:**

Students will have a strong technical foundation, i.e., students will develop and demonstrate knowledge of theoretical materials, and computational and technical skills in the areas of Computer Software Engineering Technology.

RELATED ITEMS/ELEMENTS -----

#### **RELATED ITEM LEVEL 1**

### Technical Competence Learning Objective Description:

Students will develop and demonstrate knowledge of technical skills, relevant to the field of computer software engieering technology.

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# Update to Previous Cycle's Plan for Continuous Improvement

### Previous Cycle's Plan For Continuous Improvement (Do Not Modify):

The primary area of concern is ensuring the accreditability of the Computer Software Engineering Technology program. This has two components:

- alignment with ABET Body of Knowledge for Engineering Technology programs
- assessment alignment to satisfy ABET requirements and existing assessment in the Computing Science program.

The Undergraduate Curriculum Committee will work on these two issues in the 2016/17 cycle.

### Update of Progress to the Previous Cycle's PCI:

The Undergraduate Curriculum Committee has discussed approaches to assessment to

- align with other undergraduate programs in the department
- meet the accreditation requirements for ABET/TAC.

Plans have been established to be implemented in the 2017/8 cycle.

# **Plan for Continuous Improvement**

### **Closing Summary:**

The Computer Software Engineering Technology program is a new program with one year of successful graduates.

The performance assessment of the program is aligned with performance assessment for other undergraduate programs. For the most part it works with the following caveats:

- students take the Ethics course in their Junior year rather than their Senior year. Ethics assessment is therefore conducted one year earlier for CSET students than for others, potentially leading to poorer performance.
- one students take the Software Engineering course in their sophomore year rather than their senior year, again potentially leading to poorer performance.

The undergraduate curriculum committee has been tasked with adjusting the timing of assessment to address these problems.