

# Design and Development BS

## Develop Knowledge And Skills

### Goal Description:

Students will develop knowledge and skills relevant to Design and Development.

RELATED ITEMS/ELEMENTS

RELATED ITEM LEVEL 1

### Development Of Students’ Knowledge And Skill

#### Learning Objective Description:

Students will demonstrate competency in key areas of Design and Development.

RELATED ITEM LEVEL 2

### ETDD 4339 Design And Development Course Rubric

#### Indicator Description:

All students enrolled in the program are required to complete ETDD 4339 and successfully demonstrate effective use of resources and acceptable designing skills. Each semester, seven randomly selected assignments from five randomly selected students enrolled in the course will be reviewed by faculty members with expertise in the field. Faculty members will score the assignments using a scale of 1 - 5 with 3 "meets expectations," 4 "exceeds expectations," and 5 "far exceeds expectations."

#### Criterion Description:

There is a general consensus among ETEC faculty members that at least 70% of the students enrolled in ETEC 4339 will perform at an acceptable level with a score of 3.5 (meets standards) or higher.

#### Findings Description:

Overall, the five students randomaly selected performed at an acceptable level. However, when the data was disaggregated, only 80% (4 of 5) scored higher than the 3.5 minimum level expected. The one student failing to meet the standard scored a 3.25 on the assessment rubric.

Advanced Computer Aided Design Rubric

ITEC 4339

Individual Student Term Project (Product Design)

Overall Report for 5 Students

|   | 1                               | 2                                | 3                   | 4              | 5   | Score       |
|---|---------------------------------|----------------------------------|---------------------|----------------|---|-------------|
| Identify the Need – Assessing the Problem                           | Insufficient                    | Somewhat Sufficient              | Acceptable          | Good           | Knowledgeable with Depth of Understanding | 4           |
| Concept Design<br><br>Brainstorming Solutions – Literature Research | Poor                            | Minimum Acceptable/Passing Score | Understand Concepts | Knowledgeable  | Excellent                                 | 3.4         |
| Knowledge of Free Hand Sketching – Communicating with Others        | Beginning/ Little Understanding | Minimum Acceptable/Passing Score | Satisfactory        | Good           | Proficient                                | 3.2         |
| Understanding of Design Process                                     | Needs Work                      | Below Expectation/Average        | Intermediate        | Good           | Very Concise                              | 4.3         |
| Computer Aided Design Application                                   | Lack of Knowledge               | Adequate                         | Acceptable          | Competent      | Exemplary                                 | 4.6         |
| Working Drawing Development   | Needs Work                      | Average                          | Meet Expectations   | Concise        | Excellent                                 | 4.2         |
| Prototyping   | Poor                            | Somewhat sufficient              | Acceptable          | Functional     | Fully Functional                          | 4           |
| Test and Redesign   | Needs Work                      | Tolerable                        | Satisfactory        | Good           | Advanced                                  | 4.2         |
| Project Presentation  | Poor                            | Below Average                    | Satisfactory        | Well Organized | Well Prepared/ Fluent                     | 4.2         |
| Final Report/Design Journal   | Insufficient                    | Somewhat sufficient              | Acceptable          | Well Organized | Excellent                                 | 4.1         |
| <b>Total Score/Average for 5 Students:</b>                          |                                 |                                  |                     |                |   | <b>4.02</b> |

**Identify Problem - Areas of Improvement**

- Students scored low on the section of “Knowledge of Free Hand Sketching and Communication with Others”.
- Brainstorming skills and literature review should be studied more deeply.

**Potential Solutions to Improve the Low Scored Sections**

- Instructor will work with the instructors who teach freshman and sophomore level engineering graphics, product design and development, basic drafting to develop freehand sketching and brainstorming skills of the students prior taking this advance level course.
- Course instructor will come up with a form summarizing skill set needed for this course targeting transfer students who take the entry level design courses at the junior colleges. Instructor will work with those students who has low skill set on especially product design steps and sharing project ideas through hand-sketching.
- Instructor will spend more time on dimensioning and prototyping.

Students will be provided more example projects accomplished by others.

**RELATED ITEM LEVEL 3**

**Development of Students' Knowledge and Skill**

**Action Description:**

The randomly selected five students for assessment performed at an acceptable level with 80% (4 out of 5) scored higher than the 3.5 minimum level expected. The one student failing to meet the standard scored a 3.25 on the assessment rubric. It is expected that future students will achieve at a similar level. We may consider moving the criterion description of 80% of students enrolled in this course scoring a four or higher on the assessment rubric.

**Develop Professional Skills**

**Goal Description:**

Students will learn the skills necessary to compete in the professional marketplace.

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

**RELATED ITEM LEVEL 1**

**Demonstrate Professional Skills**

**Learning Objective Description:**

Students completing the BS in Design and Development (D&D) will demonstrate skills necessary to compete in the professional marketplace through an internship.

RELATED ITEM LEVEL 2

**ETEC 4391 Internship Evaluation**

**Indicator Description:**

All students enrolled in the program must complete ETEC 4391 in their final year of enrollment. ETEC 4391 addresses key concepts and skills relevant to the field of design. Each semester interns will be evaluated by their internship supervisor and by their faculty supervisor on a faculty-developed rating scale.

**Criterion Description:**

There is a general consensus among ETEC faculty members who review internship assessments that at least 80% of the students enrolled in ETEC 4391 demonstrated an above average level of performance on the rating scales.

**Findings Description:**

Only one student pursuing the BS in Design and Development was enrolled in ETEC 4391 in Spring 2016, the semester of assessment. The student completed the assigned weekly reports with a score of 5 on a 5-point scale.

RELATED ITEM LEVEL 3

**Demonstrate Professional Skills**

**Action Description:**

Only one student pursuing the BS in Design and Development was enrolled in ETEC 4391 during this assessment circle, and earned a score of 5 on a 5-point scale. We will continue monitoring student performance on an annual basis and be diligent in continuous assessment of this learning objective to ensure that our students are prepared to meet the demands of the marketplace.. We consider the current criterion description of 80% of Construction Management students enrolled in the course scoring a 4 or higher appropriate, and will continue to meet and exceed it.

**Update to Previous Cycle's Plan for Continuous Improvement**

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

Continuation of individual instruction with lab assistance to refine skills.

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

Additional assistance provided in the lab setting appeared to generally improve outcomes as expressed in student scores from the assessment rubric. We will continue to make this investment in the future.

**Monitoring market place, skills, and content knowledge**

**Closing Summary:**

We must be diligent in continuous assessment of the learning objective, "Development of Professional Skills", particularly latest tools for design and development of product, to ensure that our students are well prepared for the dynamic marketplace. We will continue our efforts to meet and exceed the criterion description of 80% students scoring 3.5 or higher.

The five randomly selected students for assessment performed at an acceptable level with 80% (4 out of 5) scored higher than the 3.5 minimum level expected. The one student failing to meet the standard scored a 3.25 on the assessment rubric. It is expected that future students will achieve at a similar level. We may consider moving the criterion description of 80% of students enrolled in this course scoring a four or higher on the assessment rubric.