2012-2013 Assessment Report  
Program: Occupational Safety and Ergonomics, Graduate Certificate

Samuel Ginn College of Engineering  
Industrial & Systems Engineering  
Occupational Safety and Ergonomics, Graduate Certificate

Expected Outcome 1: Knowledge of Ergonomics.  
All students in the program will demonstrate comprehensive knowledge of the following two subjects:  
1. Fundamentals of anatomy systems  
2. Fundamentals of biomechanics

Assessment Method 1: Test Questions.

Assessment Method Description  
This assessment method was based on multiple choice questions given on two tests. The tests covered the two subjects mentioned above. One test was given for each subject. The students passed the test by answering correctly more than 70% of the questions on the test.

Findings  
16 students responded to the test questions. The findings are as follows:

<table>
<thead>
<tr>
<th>Subject</th>
<th>% of students who passed the test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fundamentals of anatomy systems</td>
<td>88%</td>
</tr>
<tr>
<td>Fundamentals of biomechanics</td>
<td>98%</td>
</tr>
</tbody>
</table>

How did you use findings for improvement?  
On the assessment method, changes will be implemented to ask students to synthesize the information provided, which will require short or long answer questions as opposed to use of a multiple choices.

Additional Comments
Expected Outcome 2: Knowledge of Safety Engineering
All students in the program will demonstrate comprehensive knowledge of the following two subjects:

1. Hazard protection and prevention (Fire protection, noise, vibration, radiation)
2. Fundamental concepts of safety engineering (Walking surfaces, electrical safety, lockout, machine guarding)

Assessment Method 1: Test Questions.

Assessment Method Description
This assessment method was based on multiple choice questions given on two tests. The tests covered the two subjects mentioned above. One test was given for each subject. The students passed the test by answering correctly more than 70% of the questions on the test.

Findings
11 students responded to the test questions. The findings are as follows:

<table>
<thead>
<tr>
<th>Subject</th>
<th>% of students who passed the test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fundamental concepts of safety engineering</td>
<td>100%</td>
</tr>
<tr>
<td>Hazard protection and prevention</td>
<td>100%</td>
</tr>
</tbody>
</table>

How did you use findings for improvement?
Since the student performance was high, no changes will be implemented next year.

Additional Comments

Expected Outcome 3: Mastery of Occupational Safety and Ergonomics
Students are required to gain in-depth knowledge of occupational safety and ergonomics, including both the theoretical basis for the associated engineering concepts and specific applications of the topic.

Assessment Method 1: Completion of Certificate Courses

Assessment Method Description
Students must complete Safety Engineering I, Safety Engineering II, Ergonomics I, Ergonomics II, and either Human Factors Engineering or
Industrial Hygiene (all are 3 semester hour courses) with a GPA of 3.0 in the certificate courses.

**Findings**
Since the program's inception, the following numbers of students have completed the certificate successfully:
- 2010: 1
- 2011: 15
- 2012: 9
- 2013: 11

**How did you use findings for improvement?**
Most of the certificate earners are on-campus students; since the program has been successful with on-campus students, we plan to work with other campus resources to market the program to outreach students.

**Additional Comments**

**Assessment Method 2: Exit Surveys of Certificate Earners**

**Assessment Method Description**
We have just recently been given access to a Qualtrix survey conducted by the Graduate School for earners of our certificates. In the past, we have conducted exit surveys of our students, but the certificate student data was not separated from the aggregate student data. There were 18 questions given to the students. Findings are discussed in the next section.

**Findings**
1. Only 2 students completed the survey during the assessment period. These 2 students said they would do the program again if given the choice, would recommend the program to others, and rated the program "Excellent", which was the highest rating they could give.
2. These 2 students also either agreed or strongly agreed with the following statements about our graduate certificate program:
   - My graduate program was academically challenging
   - Faculty members in my graduate program were good teachers
   - Faculty members helped graduates of my program find appropriate employment
   - Faculty members in my graduate program were good researchers
   - Course requirements and sequences for my graduate program were effective
   - The courses I needed were available
- Opportunities existed outside of class for interactions between students and faculty members in my graduate program
- Faculty members were available to work with me on my research
- Graduate teaching/research assistantships were available in my graduate program
- Tuition support was available in my program
- My graduate program prepared me to teach
- My graduate program prepared me to carry out research
- My advisor was available when needed
- My graduate program kept pace with recent trends and developments in the field

**How did you use findings for improvement?**
There are 3 actions we plan to take based on these findings:
1. Keep doing what we're doing - don't allow resources to be taken away from this successful program.
2. Work with the Graduate School to get more students to complete the survey.
3. Work with other campus resources to market the program to more on-campus and outreach students.

**Additional Comments**
One of the students made this comment in the "Additional Comments" section: "My advisor (Richard Sesek) was the best teacher/mentor/friend I have ever had".