



# ACCREDITATION EVIDENCE

**Title:** Engineering Program Use of Results

**Evidence Type:** Corroborating

**Date:** 23 September 2022

**WAN:** 22-0451

**Classification:** Report

**PII:** No

**Redacted:** No



# Outcome Details By Program

## Engineering/Physics

### Program Description

Engineering is a broad discipline that prepares students for rewarding careers in almost any industry. An Engineering degree is intended for students with a strong scientific background to apply their skills to solving real-world problems.

Students will learn how to analyze internal and external forces acting on structures and machines, including consideration for the behavior of fluids and the transfer of energy. Computing plays an increasing role in engineering professions and this is reflected in the program, with introductory courses in several commonly used software packages. In addition to the theory, opportunities will be provided for practical application of the engineering design process through a variety of projects designed to connect concepts with hands-on experiences. These opportunities allow students to combine their creative and analytical skills while gaining real problem solving experience.

### Mission Statement

to provide a firm foundation in physics and core engineering curriculum, allowing students to transfer seamlessly to most four-year institutions and be successful.

## Student Learning Outcomes

Target	Actual Result	Difference Score
70.00%	54.55%	-15.45%

## SLO 1 - Theory

### Outcome Description

Students will apply engineering and physical principles to the solution of physical problems.

### Outcome Type

Student Learning Outcomes

## Planning Years

Planning Years	Start Date	End Date
2021-2022	07/01/2017	06/30/2018

## Institutional Goals

## Program Goals

No Program Goals to Display

## Stakeholders

## MEASURES

### 1 - Mechanics Baseline Test

Mechanics Baseline Test to be administered during PHYS 1310 (Pre-test, freshman year, fall semester) and during ES 2120 (Post-test, sophomore year, fall semester).

Measure Type	Target	Actual Result	Difference Score
Exam	70.00%	%	%

## Outcome Details By Program

### CRITERIA

#### 1 - Mechanics Baseline Test

Pre and post test scores will improve by 2 points for 70% of the course population enrolled in PHYS 1310 and ES 2120.

Criteria Type	Target	Actual Result	Difference Score
Benchmark	70.00%	0.00%	-70.00%
Numeric Type:Percent	Target Value:70.00%	Actual Value:0.00%	Difference Value:-70.00%
Sample Size:0	Met:0.00	Not Met:0	% Met:0.00%

### FINDINGS

Date: 5/13/2022

Course: DYNAMICS

Class:2021 FALL-4896-MWF--Schutten, Stephen

Given that Dynamics did not run in the Fall, there was no post test data to compare the pre test data to.

Measure Type	Target	Actual Result	Difference Score
Exam	70.00%	0.00%	-70.00%
Numeric Type:Percent	Target Value:70.00%	Actual Value:0.00%	Difference Value: -70.00%
Numeric Type:Percent	Target Value:0	Actual Value:0	Difference Value: 0%

### MEASURES

#### 2 - PHYS 1050 Pre/Post test

PHYS 1050 Pre/Post test. Five questions from final will be given in an initial test and results will be compared.

Measure Type	Target	Actual Result	Difference Score
Exam	70.00%	53.34%	-16.66%

### CRITERIA

#### 1 - PHYS 1050 Pre/Post test

Pre and post test scores will improve by 2 questions for 70% of the course population.

Criteria Type	Target	Actual Result	Difference Score
Benchmark	70.00%	53.34%	-15.45%
Numeric Type:Percent	Target Value:70.00%	Actual Value:53.34%	Difference Value:-15.45%
Sample Size:11	Met:6.00	Not Met:5	% Met:53.34%

### FINDINGS

Date: 5/13/2022

Course: CONCEPTS OF PHYSICS

Class:2021 FALL-5211-TTh--Schutten, Stephen

2 students increased their score by 3 questions and 2 students increased their score by 1 question. 1 student had no change but did get 4/5 correct.

Measure Type	Target	Actual Result	Difference Score
Exam	70.00%	40.00%	-30.00%

## Outcome Details By Program

Numeric Type:Percent	Target Value:70.00%	Actual Value:40.00%	Difference Value: -30.00%
Numeric Type:Percent	Target Value:2	Actual Value:3	Difference Value: 40%

Date: 5/13/2022      Course: CONCEPTS OF PHYSICS  
 Class:2022 SPRING-6780-TTh--Schutten, Stephen

3 students increased their score by 3 questions and 2 student increased their score by 1 -2 questions. 1 student had no change but did get 4/5 correct.

Measure Type	Target	Actual Result	Difference Score
Exam	70.00%	66.67%	-3.33%
Numeric Type:Percent	Target Value:70.00%	Actual Value:66.67%	Difference Value: -3.33%
Numeric Type:Percent	Target Value:4	Actual Value:2	Difference Value: 66.67%

### Intended Results

**Date:**      **Description:**  
 05/13/2022    Approx. 55 % of students have improved on their post test.

### Status Reports

**Date:**      **Description:**  
 05/13/2022    Given that we are not meeting the 70% target, I suggest that this benchmark remain as is.

### Actual Results

**Date:**      **Description:**  
 05/13/2022    It's great to see that many students who get 1 to 2 correct on the pretest improve by 3 questions.  
 As far as the MBT is concerned, we have not had enough post test data to evaluate this population.

### Use of Results

**Date:**      **Description:**  
 05/13/2022    Though only 55 % of the students increased their correct responses by 2 or more, 82% of the students ended up with 4-5 correct answers on the pretest. Based on this and the small sample size (11), I don't plan to change anything.

### Gap Analysis

**Date:**      **Gap Analysis:**  
 No Gap Analysis to Display

### SWOT

**Date:**      **Description:**  
 No SWOT to Display

### Associated Standards

No Associated Standards to Display

# Outcome Details By Program

Associated Objectives

No Associated Objectives to Display