**Continuous Improvement Plan**

**Outcomes might not change from year to year. For example, if you have not met previous targets, you may wish to retain the same outcomes. *If this is an academic, workforce, or continuing education program, you must have at least one student learning outcome.* You may also add short-term administrative, technological, assessment, resource or professional development goals, as needed.**

**Date:** 1/15/2021 **Name of Program/Unit:** Engineering FOS

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**Table 1: CIP Outcomes, Measures & Targets Table (focus on at least one for the next two years)**

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| **A. Expected Outcome(s)**Results expected in this unit(e.g. Authorization requests will be completed more quickly; Increase client satisfaction with our services) |  **B. Measure(s)**Instrument(s) / process(es) used to measure results(e.g. survey results, exam questions, etc.) | **C. Target(s)**Level of success expected(e.g. 80% approval rating, 10 day faster request turn-around time, etc.) |
| ENGR-1201 Introduction to Engineering * Explain Engineering Design process and perform documentation of the process
* Use technical communication and research skills
 | * Design a simple engineering device, write a design report, and present the design
* Perform research on an engineering product and do a group presentation about it
 | Min. 70% on project assessments by 70% of the students |
|  ENGR-2301 Engineering Mechanics I * Analyze a static system involving equilibrium of rigid bodies subjected to a system of forces, moments, and friction using free body diagrams
 |   Two-unit exams  | Min. 70% on exam assessment by 70% of the students |
| ENGR-2302 Engineering Mechanics II* Analyze a dynamic system using equation of motion, and principles of work and energy
 |   Final comprehensive exam | Min. 70% on exam assessment by 70% of the students |
| ENGR-2305/2105 Electrical Circuits I * Perform transient analysis and steady state analysis of DC and AC circuits
 |   AC circuit lab exercise to do transient and steady state analysis  | Min. 70% on experiment assessment by 70% of the students |
|  ENGR1304 Engineering Graphics* Demonstrate proficiency in creating engineering drawings with 2D and 3D views using advanced CADD
 | Final project rubric | Min. 70% on project assessment by 70% of the students |
| ENGR-2332 Mechanics of Materials* Calculate stress, strain and deflection in statically determinate and indeterminate members
 | Two-unit exams  | Min. 70% on exams assessment by 70% of the students |

**Description of Fields in the Following CIP Tables:**

**A. Outcome(s)** -Results expected in this program (e.g. Students will learn how to compare/contrast conflict and structural functional theories; increase student retention in Nursing Program).

**B. Measure(s)** -Instrument(s)/process(es) used to measure results

(e.g. results of surveys, test item questions 6 & 7 from final exam, end of term retention rates, etc.)

**C. Target(s)** -Degree of success expected (e.g. 80% approval rating, 25 graduates per year, increase retention by 2% etc.).

**D. Action Plan** -Based on analysis, identify actions to be taken to accomplish outcome. What will you do?

**E. Results Summary** - Summarize the information and data collected in year 1.

**F. Findings** - Explain how the information and data has impacted the expected outcome and program success.

**G. Implementation of Findings** – Describe how you have used or will use your findings and analysis of the data to make improvements.

**Table 2. CIP Outcomes 1, 2 & 3 (FOCUS ON AT LEAST 1)**

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| ENGR-1201 Introduction to Engineering * Explain Engineering Design process and perform documentation of the process
* Use technical communication and research skills
 |
| 1. **Measure (Outcome #1)**
* Design a simple engineering device, write a design report, and present the design
* Perform research on an engineering product and do a group presentation about it
 | 1. **Target (Outcome #1)**
* Min. 70% on project assessment by 70% of the students
* Min. 70% on project assessment by 70% of the students
 |
| 1. **Action Plan (Outcome #1)**

Design project rubrics to assess the measures  |
| 1. **Results Summary (Outcome #1)**
* Design a simple engineering device (roller coaster), write a design report, and present the design

62 out of 83 met standardAverage: 71.2741High: 100Low: 0* Perform research on student selected and faculty approved engineering product and do a group presentation about it

 76 out of 83 met standard Average: 87.09639 High: 99 Low: 0 |
| 1. **Findings (Outcome #1)**
* Target met
* The students would have been more successful in performing in the projects if the projects and exams were staggered
* Individual student feedback for the group project would be effective in motivating team work
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| 1. **Implementation of Findings**
* Stagger the projects and exams for the next academic year
* Include the individual student feedback in the group project assessment
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| ENGR-2301 Engineering Mechanics I Analyze a static system involving equilibrium of rigid bodies subjected to a system of forces, moments, and friction using free body diagrams |
| 1. **Measure (Outcome #2)**

Two-unit exams | 1. **Target (Outcome #2)**

Min. 70% on project assessment by 70% of the students |
| 1. **Action Plan (Outcome #2)**

Two-unit exam rubrics to assess the measures |
| 1. **Results Summary (Outcome #2)**

 37 out of 50 met standard Average: 72.73252 High: 109.25 Low: 0 |
| 1. **Findings (Outcome #1)**
* Target met
* It was observed that students would benefit from more unit exams with narrowed exam course material
* Additional quizzes would be beneficial for students to give faculty real time feedback of subject comprehension
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| 1. **Implementation of Findings**
* Increase the number of unit exams
* Increase the number of chapter quizzes
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| ENGR-2302 Engineering Mechanics IIAnalyze a dynamic system using equation of motion, and principles of work and energy |
| 1. **Measure (Outcome #3)**

Final comprehensive exam | 1. **Target (Outcome #3)**

Min. 70% on project assessment by 70% of the students |
| 1. **Action Plan (Outcome #3)**

Final comprehensive exam rubric to assess the measure |
| 1. **Results Summary (Outcome #2)**

 9 out of 9 met standard Average: 90.88889 High: 100 Low: 73 |
| 1. **Findings (Outcome #1)**
* Target met
* No major change needed in assessment
 |
| 1. **Implementation of Findings**
* No major change needed in assessment
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