**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

**Contact name:** Yiping Wang **Contact email:** ywang@collin.edu **Contact phone:**  972.553.1185

**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 standard  Average: 71.2741  High: 100  Low: 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 | |
| 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 | |
| 1. **Implementation of Findings**  * Increase the number of unit exams * Increase the number of chapter quizzes | |

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| ENGR-2302 Engineering Mechanics II  Analyze 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 | |