**Assessment Plan**

**for Workforce and FOS Programs**

**Program/Track Name: \_Engineering Field of Study (Mechanical Engineering)\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Description of Program-Level Learning Outcomes**

Please indicate the Program Learning Outcomes for the degree, degree track, or certificate below:

|  |  |
| --- | --- |
| Program-Level Learning Outcomes | |
| Program Learning Outcome 1: | Students will be able to apply principles of physics to analyze forces acting on stationary engineering structures and systems. |
| Program Learning Outcome 2: | Students will be able to analyze engineering structures and systems involving the motion of particles and rigid bodies. |
| Program Learning Outcome 3: | Students will be able to perform stress, strain and deformation analysis of engineering structures and systems. |
| Program Learning Outcome 4: | Students will be able to perform analysis of DC/AC circuits. |

**Section I: Technical Courses**

For **all technical courses** in the program, indicate in the table on the following page whether and/or how the course will support the program learning outcomes. You should include courses outside your discipline area and work collaboratively with those disciplines to determine whether and/or how those course(s) will support the program learning outcomes. **Please note** that it is understandable if courses from outside the discipline do not assess the program-level learning outcomes and serve only to introduce, practice and/or emphasize the program outcomes. It is also possible that technical courses outside of your discipline may not directly support the specific program-level learning outcomes you have identified.

***How to complete the program map:***

For each technical course in your program, please indicate whether any program-level learning outcome is introduced to students (I), practiced by students (P), emphasized for students (E), or formally assessed (A).

For example, if course WXYZ 1234 introduces students to one of the program outcomes, then enter “I” for that specific program outcome in the appropriate column. Please note that a course can be “I”, “P”, “E” and/or “A” in any program outcome. The labels in the following table apply SOLELY to the program level learning outcomes defined above. (It is NOT necessary for every course to address a program level learning outcome, and it is NOT necessary that Assessment or program level learning outcomes occur in every course.)

**Program Map ▼**

I=Introduced P=Practiced E=Emphasized A=Assessed

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Program Courses | Program Learning Outcome 1 | Program Learning Outcome 2 | Program Learning Outcome 3 | Program Learning Outcome 4 |
| MATH 2413 | I | I | I | I |
| MATH 2414 | I | I | I | I |
| MATH 2415 | I | I, P | I | I, P |
| MATH 2320 |  | I, P |  | I, P |
| PHYS 2425 | I, P | I, P | I, P |  |
| PHYS 2426 |  |  |  | I, P |
| CHEM 1409 |  |  | I, P |  |
| ENGR 2301 | E, A | I, P |  |  |
| ENGR 2302 | E | E, A |  |  |
| ENGR 2332 | E |  | E, A |  |
| ENGR 2305 |  |  |  | E, A |

**Assessment Plan for Program Learning Outcomes**

Review existing assessment methods and current practices for collecting/gathering student data to identify direct (and possibly indirect methods of assessment). Remember that the data will need to be gathered, analyzed, and used to support the program’s continuous improvement processes.

**Note:** Because courses from other disciplines already have assessment plans in place, they do not have to be included in this assessment plan. Nonetheless, proposers must work collaboratively with these other disciplines to stay current and up-to-date with the assessment plans in these courses.

|  |  |  |
| --- | --- | --- |
| Program-Level Learning Outcome (e.g. Students will describe the impact of various cultures on American cuisine.) | Assessment Measure(s) and Where Implemented in Curriculum – Description of Instrument(s)/ process(es) used to measure results and indication of where the assessment will be collected in curriculum. (e.g. Essay on Cultural influences on American cuisine in CUIS 1300.) | Targets- Level of Success Expected  (e.g. 80% of students score 2.5 or better on rubric for essay on cultures and cuisine.) |
| Students will be able to apply principles of physics to analyze forces acting on stationary engineering structures and systems. | Two unit exams containing questions on structural analysis of frames and machines composing 50% of each exam grade (ENGR 2301) | Min. 70% on each exam assessment by 70% of the students |
| Students will be able to analyze engineering structures and systems involving the motion of particles and rigid bodies. | Unit exam on planar motion analysis and kinetic equation of motion (ENGR 2302) | Min. 70% on unit exam assessment by 70% of the students |
| Students will be able to perform stress, strain and deformation analysis of engineering structures and systems. | Unit exam on calculation of stress and strain, and their transformation from one coordinate system to another  (ENGR 2332) | Min. 70% on unit exam assessment by 70% of the students |
| Students will be able to perform analysis of DC/AC circuits. | Comprehensive final exam on analysis of DC/AC circuit (ENGR 2305) | Min. 70% on exam assessment by 70% of the students |