**Assessment of Student Outcomes in Mechanical Engineering**

**CRITERION 3. STUDENT OUTCOMES**

**A. Student Outcomes**

Our program curriculum and processes are designed to ensure the achievement of our

program educational objectives. Toward this end, strategies and actions, probable program outcomes 1, relevant ABET (a-k) criteria, and assessment methods/metrics for each of the program objectives are tabulated as follows. The assessment methods/metrics indicate where the affiliated student outcomes are documented.

**I. Attainment of the ABET student outcomes (a)-(k)**

*Outcome (a): an ability to apply knowledge of mathematics, science, and engineering*

The main assessment methods used in ensuring Outcome-(a) is attained are (1) student homework, exams, and reports, (2) external exams, e.g. FE, and (3) exit and alumni surveys.

*Outcome (b): an ability to design and conduct experiments, as well as analyze and interpret data*

The main assessment methods used in ensuring Outcome-(b) is attained are (1) student lab reports and oral presentations, (2) use of locally developed report review forms, (3) use of data analysis/interpretation tools, e.g. Matlab and LabVIEW, and (4) exit and alumni surveys.

*Outcome (c): an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability*

The main assessment methods used in ensuring Outcome-(c) is attained are (1) student design project reports and (2) course and alumni surveys.

*Outcome (d): an ability to function on multi-disciplinary teams*

The main assessment methods used in ensuring Outcome-(d) is attained are (1) student project reports and oral presentations and (2) exit and alumni surveys.

*Outcome (e): an ability to identify, formulate, and solve engineering problems*

The main assessment methods used in ensuring Outcome-(e) is attained are (1) student exams and project reports, (2) external exams, e.g. FE, and (3) exit and alumni surveys.

*Outcome (f): an understanding of professional and ethical responsibility*

The main assessment methods used in ensuring Outcome-(f) is attained are (1) professional development workshops, (2) student project reports and presentations, and (3) exit and alumni surveys.

*Outcome (g): an ability to communicate effectively*

The main assessment methods used in ensuring Outcome-(g) is attained are (1) student project reports and oral presentations and (2) exit and alumni surveys.

*Outcome (h): the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental and societal context*

The main assessment methods used in ensuring Outcome-(h) is attained are (1) general education component, (2) professional development workshops, (3) student project reports and presentations, and (4) exit and alumni surveys.

*Outcome (i): a recognition of the need for, and an ability to engage in life-long learning*

The main assessment methods used in ensuring Outcome-(i) is attained are (1) student design project reports and oral presentations, (2) students pursuing advanced degrees, and (3) exit and alumni surveys.

*Outcome (j): a knowledge of contemporary issues*

The main assessment methods used in ensuring Outcome-(j) is attained are (1) professional development workshops, (2) student project reports and presentations, and (3) exit and alumni surveys.

*Outcome (k): an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice*

The main assessment methods used in ensuring Outcome-(k) is attained are (1) professional development workshops, (2) student project reports and presentations, and (3) exit and alumni surveys.