ABET-a OU ME graduates will demonstrate an ability to apply principles of engineering, basic science and mathematics (including multivariate calculus and differential equations) to model, analyze, design and realize physical systems, components or processes, and work professionally in thermal or mechanical systems areas.

a.2.c) An awareness of real-world engineering applications of statistical analysis - Awareness

a.4.d) An awareness of wear and fracture mechanics as they apply to engineering materials – Awareness

a.5.b.5) An ability to solve problems involving column buckling - Competence

a.5.b.6) Ability to determine whether yielding occurs based on a state of stress and appropriate yield criterion (such as von Mises or Tresca) - Mastery

a.6.2) An awareness of mechanical fastening methods, including adhesives - Awareness

ABET-c OU ME graduates will demonstrate 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.

c.4) The ability to apply engineering analysis (including load and stress analysis) for the design/sizing/selection of mechanical parts and components (such as bearings, gears or fasteners) based on likely failure modes and meaningful factors of safety - Mastery

c.5) Design mechanical parts using methods of fatigue analysis to project part life and strength based on loading scenarios - Mastery

ABET-e OU ME graduates will demonstrate an ability to identify, formulate and solve engineering problems

e.2) An ability to appropriately interpret calculated results in the context of uncertainty (in the data, the models, the assumptions, or the analytical methods used) - Competence

e.3.e) The selection of materials for mechanical components based on design considerations such as weight, strength, fatigue performance, corrosion resistance, and workability.- Competence