PURDUE UNIVERSITY | School of Aeronautics and Astronautics

Memorandum

To: The Faculty of the College of Engineering

From: The School of Aeronautics and Astronautics

Date: January 29, 2025

Re: Fast track EFD – AAE 33301 updating learning outcomes

Courses: AAE 33301 Fluid Mechanics Laboratory

In this case we are just adding outcome 7 and retaining the other outcomes.

AAE 33301 Course Learning Outcomes:

1. Measure and differentiate between absolute, differential, and gauge pressure.
2. Make basic pressure and velocity measurements.
3. Utilize elementary flow visualization tools.
4. Deduce fluid physics information from flow visualization.
5. Calculate flow characteristics such as Reynolds number, friction factor, pressure and drag coefficient from laboratory measurements.
6. Identify and discuss foundation-level fluid phenomena including boundary layers, wakes, laminar to turbulent transition, turbulence, flow separation, drag on a body, and surface pressure distributions.
7. (New outcome) Design an experiment to meet a defined objective, conduct the experiment, analyze the data, and draw conclusions.

Reasons: This review revealed that the current course learning outcomes do not capture the all the outcomes associated with Lab 6, where the student teams design and complete their own experiments. The committee introduced a new learning outcome which is also mapped to the ABET Learning Outcome "An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgement to draw conclusions."

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