

**ENT4950 Registration Permission Form**  
**Verification of Senior Design Objectives through Enterprise Experience**

**Major:** MECHANICAL ENGINEERING

**Date:** \_\_\_\_\_

Part A: To be completed by student. List completed and planned project work semesters, and if applicable, approved modules for senior design credit:

Course: \_\_\_\_\_ Semester/Year: \_\_\_\_\_ CRN: \_\_\_\_\_  
 ENT \_\_\_\_\_  
 ENT \_\_\_\_\_  
 ENT 3950 \_\_\_\_\_  
 ENT 3960 \_\_\_\_\_  
 ENT 4950 \_\_\_\_\_  
 ENT 4960 \_\_\_\_\_

Student: \_\_\_\_\_  
 ID#: M \_\_\_\_\_  
 Primary major: \_\_\_\_\_ 2<sup>nd</sup> major/deg: \_\_\_\_\_  
 e-mail: \_\_\_\_\_@mtu.edu

Enterprise Team: \_\_\_\_\_  
 Enterprise Advisor: \_\_\_\_\_

Check if applicable:  
 ENT concentration (  EMEE Declared)  Enterprise Minor

Yes  No  Sr Design Ready \_\_\_\_\_ (to be initialed by academic advisor)

Part B. To be completed by student and enterprise advisor. Return signed form to the Pavlis Honors College (722 M&M). Form must be approved by your academic department prior to enrolling in ENT4950.

**Project Title:** \_\_\_\_\_

**Abstract:** Outline the project scope and deliverables assigned to **this student** using the template provided.

See attached (enterprise project template)

NOTE: Good Academic Standing required for enrollment in Formula SAE, Clean Snowmobile Challenge, Boardsport Technologies, Baja SAE, SENSE, Supermileage Systems, HEV, Velovations, Aerospace.  
 Student in Good Academic Standing: YES NO N/A

\_\_\_ ENT 3950 (same team) \_\_\_ MEEM 3900 \_\_\_ MEEM  
 \_\_\_ ENT 3960 (same team) \_\_\_ MEEM 3000 (C) 3502 (C)

OR

\_\_\_ MEEM 3911 \_\_\_ MEEM 3201(C)  
 \_\_\_ MA 3710 \_\_\_ MEEM 3750 (C)

**ABET Criteria** Check all that apply (completed by enterprise advisor):

- 3 (a) Apply knowledge of mathematics, science and engineering.
- 3 (b) Design and conduct experiments, as well as to analyze and interpret data.
- 3 (c) Design a system, component, or process to meet desired needs.
- 3 (d) Function on multi-disciplinary team(s) as demonstrated by the execution of a team project that is too large, complex, or diverse for a single person. Partition a project into tasks and lay out a project plan. Execute the project and produce the required deliverables.
- 3 (e) Identify, formulate and solve engineering problems.
- 3 (f) Demonstrate understanding of professional and ethical responsibility.
- 3 (g) Communicate effectively.
- 3 (h) Gain understanding of the impact of engineering solutions in a global, economic, environmental and societal context.
- 3 (i) Recognize the need for, and an ability to engage in life-long learning.
- 3 (j) Gain knowledge of contemporary issues.
- 3 (k) Use the techniques, skills and modern engineering tools necessary for the practice of engineering.
- Program specific criteria (please describe on back of this form)

Approved by: \_\_\_\_\_  
 Enterprise Faculty Advisor Date

Approved by: \_\_\_\_\_  
 Academic Department Date

Approved by: \_\_\_\_\_  
 2<sup>nd</sup> Major/Deg Academic Department Date

**Mechanical Engineering – Verification of Senior Design Objectives through Enterprise Experience**  
**(ENT 4950 Registration Permission Form)**

The Verification of Senior Design Objectives through Enterprise Experience form must be completed by each BSME-Enterprise concentration (EMEE) student prior to registering for ENT4950. The form is not complete until approved by the ME-EM department. The purpose is to ensure that the student's participation in the Enterprise program represents a culminating design experience as required by ABET (equivalent to ME-EM Senior Capstone Design). The basic procedure to be followed by ME students is provided below.

Students should consult with their Enterprise team advisor when defining the capstone-equivalent project they will be participating in. The completed form must be approved by the Enterprise team advisor and the ME-EM Associate Chair for Undergraduate Studies. After the Enterprise team advisor has signed the form, the student must submit the form to the ME Advising Center (2<sup>nd</sup> floor MEEM) for verification of pre-requisites by an academic advisor. The advisor will then submit the form to the ME-EM Associate Chair for Undergraduate Studies for review. The student will be enrolled in ENT 4950 when the form is returned with the Associate Chair's approval. Dual degree students need departmental approval from both applicable departments. Department approval must come from student's major department, not department housing the enterprise team.

The following steps are required prior to enrollment in ENT4950.

- 1. Complete Verification of Senior Design Objectives through Enterprise Experience form.**
- 2. The form must show the applicable ABET criteria addressed by the project (checked off by the Enterprise advisor).**
- 3. To be approved, the form must have an attached abstract/project brief that follows the required template for ME students. The project defined in this document should encompass both semesters of the project (ENT 4950 and 4960). Students working on the same project may submit the same project brief but must submit an individual form with brief attached.**
- 4. Form must be signed by the Enterprise advisor prior to submission to an academic advisor.**
- 5. The academic advisor will verify the following senior design readiness pre-requisite requirements are satisfied. The student should not check these off.**
  - **2013 or earlier flowchart: MEEM3900, MEEM3000 (concurrent pre-requisite), MEEM3502 (concurrent pre-requisite), and ENT3950/ENT3960 in same Enterprise.**
  - **2014 or later flowchart: MA3710, MEEM3201 (concurrent pre-requisite), MEEM3750 (concurrent pre-requisite), MEEM3911, and ENT3950/ENT3960 in same Enterprise.**  
**The above are the same pre-reqs required for MEEM4901.**
  - **At least two semesters of project credit are required for ENT4950 readiness. These prior semesters must be on the same Enterprise team as planned for ENT4950/4960. Typically these are ENT3950 and ENT3960 (4 total semesters minimum on the same Enterprise team including the capstone project semesters).**
- 6. The academic advisor will forward the completed form to the Associate Chair for final approval.**
- 7. When the department-approved form is received back, an academic advisor will enroll the student in ENT4950 and notify the student via email. Students will not be enrolled in ENT4950 prior to the completion of this process.**

The approved form and brief will be retained on file in the ME Advising Center and will also be submitted electronically to the Enterprise program office. It is recommended that this form be completed during the semester prior to taking ENT4950 in order to facilitate the registration process. The latest the form should be submitted is the end of the first week of classes of the semester in which ENT4950 is to be completed.

All that is typically required for ENT4960 registration for the second semester of the capstone-equivalent project is the usual signed Enterprise Enrollment (instructor) Approval form or equivalent. However if there any significant changes to the project definition, or if the original submission did not cover the second semester of the project, the above department approval process will be required for ENT4960 as well. Same ENT4950 pre-reqs apply to ENT4960 also.

Recognizing that it may not be possible to accurately and precisely predict the design project progress/outcome in this timeframe (i.e., the design project scope and/or deliverables may change over the course of the two project semesters), amended Verification of Senior Design Objectives through Enterprise Experience forms must be prepared and submitted through the above process again, if necessary. The final form on file at the conclusion of the Enterprise project course sequence must represent the project and deliverables as completed by the student.

Questions can be directed to Ryan in the ME Advising Center (204/205 MEEM, inside the ELC).

2.15.2016