

## **494W (M) Research and Design Senior Project (3 credits)**

This course continues the senior thesis research topic addressed by the student. This is a capstone research/design project which integrates: a) background literature search with articulation of a research hypothesis, b) design and implementation of an experimental plan to test the hypothesis, and c) conclusions regarding the validity of the hypothesis based on the experimental data obtained in the course of the research.

The main characteristic of this course is the performance of the research plan, followed by interpretation of the data in the context of the original hypothesis(es). Laboratory research is generally performed in collaboration with faculty and graduate research assistants, using equipment and facilities in a wide range of laboratories throughout campus. Occasionally, the nature of the research may require the student to collaborate with researchers outside of Penn State, perhaps even spending some time in residence at other facilities.

A total of three credits must be completed and advisor approved electronic thesis submitted, including signature form and electronic word search form by the deadline. Credits may be split between 2 semesters.

\*\*Completed applications should be submitted to Cindy in the Student Service office (225 Steidle). Credits indicated below will be added to the applicant's schedule during the first week of classes. If the application is not received by the deadline, the student will be required to participate in the Learning Factory Research and Design Senior Project.

### **Important Dates:**

ABET Review/Formatting for Fall Graduate: November 12, 2021  
Submit Final Draft to Thesis Advisor: November 19, 2021  
Thesis Submission Deadline for FA2021: December 14, 2021  
Graduation: Saturday, December 18, 2021

Poster Submission Deadline for Poster Competition: March 1, 2022  
ABET Review/Formatting for Spring Graduates: April 1, 2022  
Submit Final Draft to Thesis Advisor: April 8, 2022  
Thesis Submission Deadline for SP2022: May 3, 2022  
Graduation: Saturday, May 7, 2022

ABET Review/Formatting for Summer Graduate: July 8, 2022  
Submit Final Draft to Thesis Advisor: July 15, 2022  
Thesis Submission Deadline for SU2020: August 9, 2022  
Graduation: Saturday, August 13, 2022

