

Independent Study/Undergraduate Research Proposal Outline

Independent work through Undergraduate Research or an Independent Study in the Department of Electrical and Computer Engineering must be based on a prearranged work proposal and must be approved by the faculty member who will supervise the study and provide feedback. This explicitly precludes credit for work already performed, such as in internships or Co-op work. For implementation requirement for independent work, see the Independent Study section of the Undergraduate Catalog.

Independent Study/Undergraduate Research paperwork is due to the ECE Student Services office (340 Whittemore Hall) **at least 2 weeks prior** to the start of the semester in which the student will earn IS/UR credit.

Type of credit requested (please check one):

- CPE or EE Technical Elective (2020/2021 graduates)
- CPE Design Technical Elective
- Secondary Focus (2022 and beyond graduates) – students will also be required to complete an Individualized Secondary Focus form (contact your advisor for more information)
- Free Elective

Student responsibilities:

- a) Maintain a weekly journal recording progress towards project goals during the course of the study;
- b) Upon completion of this effort the student must submit a faculty supervisor approved full summary report (containing the plan of work, results, and conclusions), which must be included in the basis for grading.

Faculty supervisor responsibilities:

- a) Fully approve all sections below in the student's proposal;
- b) Provide the student with Learning Objectives and ABET 1-7 analysis for Technical Elective or Design Technical Elective. A justification paragraph addressing Engineering Design is also required for Design Technical Elective credit.

Below is a checklist of the sections required in the proposal (professional-looking, word processed document). Each section can be covered in 1-2 paragraphs.

- I. **Study title:** Use the following format: (Title) by (Student Name) for (Semester)
- II. **Learning Objectives:** Required – should be completed by faculty member
- III. **Plan of Work:** Should include the following:
 - a. Previous work this effort is based on
 - b. Future courses duplicated by this effort
 - c. Problem statement
 - d. Methodology
 - e. Timeline for completion
 - f. Anticipated outcomes
- IV. **Statement on the Basis of Grading:** This must at a minimum include the required full summary report.
- V. **Statement on the Expected Amount of Work, Faculty Direction Availability, Meeting Schedule and Location of Work:** Should include the following:
 - a. Expected amount of work is to be commensurate with 45-50 hours per credit hour.
 - b. Faculty direction and meeting details: Extensive faculty supervision of the student is expected in Independent Studies and Undergraduate Research. Consequently, these options can only be open to those who can commit to a schedule for regular meetings with the faculty supervisor.
 - c. Meeting schedule and location of work: An estimate of the number of hours a student will work per week and the location in which that work will take place. In light of the expectation of extensive faculty supervision the work location is anticipated to be local.
- VI. **Engineering Design Credit Justification:** This section should be generated by the faculty supervisor and is required if Design Technical Elective credit is requested.
- VII. **ABET 1-7 Analysis:** Required for Technical Elective, Secondary Focus or Design Technical Elective (ABET form is available on ECE website.)