PHYS 4180-4380 Undergraduate Research in Physics. One-three semester hours. (FL/SP)

**Course Description:**
Students work on a physics research project. The topic is chosen by the student and approved by the instructor. Course may be repeated under different topic for credit. Prerequisite: Permission of instructor and department. Offer only “Satisfactory/Fail” grades.

**Student Learning Outcomes:**
Upon successful completion of this course, the student will be able to:
- identify appropriate steps necessary to conduct research in physics project;
- apply mathematical techniques to solve physical problems;
- formulate significant research questions;
- effectively write, interpret, and report the research results;
- present research topic with a clear manner.

**Justification:** It is better to add the course with the title of Undergraduate Research in Physics rather than use Independent Study in Physics. In addition, this course will focus on the research topic.

**Approvals:**

**Chair**
Department Curriculum Committee

**Signature**
Qingwen Ni

**Date**

**Chair**
Department

**Signature**
Rafic Bachnak

**Date**