Objective: This is a 3-unit research course, to be taken by graduate students in the Doctor of Philosophy (Ph.D.) program as they complete the work on their doctoral dissertation. Research projects will be in the areas of cell signaling, immunology or cancer biology. **Doctoral students are required** to attend departmental seminars, graduate student seminars, and student proposal and thesis or dissertation defense presentations. Additional responsibilities may include, but are not limited to: 1) writing and defending the dissertation; 2) participating in the preparation of manuscripts and grant applications; 3) attending lab meetings; 4) meeting with members of the student’s committee; 5) presenting data at research symposia and scientific meetings; 6) seeking postdoctoral employment; 7) participating in experimental design and performance; and 8) discussing results and comparing them with those from the literature.

It is expected that students will dedicate a minimum of **10 hours per week** to the completion of this course and its requirements.

Specific research projects and responsibilities will be assigned at the beginning of the semester for each student. **Learning objectives and outcomes** include: 1) demonstration of appropriate knowledge of research project, methods and significance; 2) ability to discuss and effectively represent the literature supporting the project; 3) presentation of project progress and findings in both oral and written format; and 4) perform quantitative and qualitative analyses of project data.

Exams: Defense of the dissertation

Grading: Letter grades for this course will be determined based primarily on student attendance and performance, and will be assigned as follows:

- 90-100% A
- 80-89% B
- 70-79% C
- 60-69% D
- 59% or less F

Drop date: To receive an automatic “W”, the last day to drop or withdraw from this class is **online**. After this date, a “W” can only be assigned by the Dean of the College of Science, and is only granted under **exceptional** circumstances.