

**Department.:** PHYSICS

**Course number:** PHYS 292W

**Title:** Research Thesis in Physics

**Credits:** 3

**Contact Person:** G. Rawitscher

**Catalog Copy:** -PHYS 292W. Research Thesis in Physics Either semester, three credits. Hours by arrangement. Open only with the consent of instructor. Writing and public presentation of a thesis based on advanced undergraduate research.

**W Criteria :** --Research investigation for the advanced undergraduate, performed under close consultation with a physics professor. Research and writing of a Thesis are required. Final public presentation is recommended. This course is the climax of a sequence of research efforts by the student on a particular topic, presumably under the PHYS 290 label. In this course the emphasis will be on teaching the student the skills of exposition of a complicated topic to an uninitiated audience, both orally and in written form. Acquiring the skills of exposition of a complicated topic to an uninitiated audience, both in organizing the sequence of topics pedagogically, as well as in writing and talking clearly, is a "must" for a successful researcher. The work by the student and the instructor merits a good deal of credit, as well as a "W" designation 1. The writing of the thesis will enhance the student's learning and understanding the scientific content of the results, since during the writing the student will have to practice the skill of explaining to a less specialized audience the intricate points and conclusions reached by the research being described. During this learning process the student is led to understand the ramifications and connections of his or her research relative to other areas of research, and hence gain a better understanding of the basic points of the results. 2. The primary modes of writing instructions in the course will consist of a combination of individual conferences and written commentary, on a one-to-one basis between the instructor and the student. 3. The opportunities for revision will be structured around the one-on-one meetings between the student and the professor. Since an oral presentation is strongly suggested at the end of the process, to be given to a peer group of students and various faculty, a strong incentive for quality will be present. 4. Since the course is structured around one-on-one meetings between the student and the professor the syllabus will take the form of a personalized written agreement between the instructor and the student. Since the work is primarily focused on the thesis writing (rather than on the research that has previously been performed), the emphasis on writing is an obvious ingredient in the activity of the course.

**Role of Grad Students:** -Graduate student TA's are unlikely to play a formal role, however consultations between the undergraduate students taking this course and graduate students familiar with the area of the research are likely to occur, and be beneficial to both parties.