THE COLLEGE OF NEW JERSEY
DEPARTMENT OF PHYSICS
Project Proposal for PHY 399 - Physics Internship

NAME: _____ PAWS ID: _____

Fall, Spring, Summer 20_____ GPA: _____

MAJOR: _____ JR/SR LOCAL PHONE # _____

TOTAL COURSE LOAD (INCLUDING INTERNSHIP) _____ COURSE UNITS

PHYSICS DEPARTMENT GUIDELINES:

- At the conclusion of the Internship, all students will submit a written report and give an oral or poster presentation.
- Students must meet with their faculty mentor at least once a week.
- A minimum of twelve hours of effort per week (per course unit) is expected for successful completion of the Internship.

See reverse side for the TCNJ Statement of Independent Research Criteria.

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1. State the specific problems, questions, or goals you intend to pursue in this internship.

2. Describe the aspects of the internship you expect to perform.

THIS APPLICATION IS FOR _____ COURSE UNITS OF CREDIT.

_____ _____

Student Signature DATE Faculty Supervisor DATE

_____

Department Chairperson Approval DATE

REV 09/04/13

PHY 399 – PHYSICS INTERNSHIP

I. Basic Course Information

PHY 399 is a course which provides a student to receive TCNJ credits for pertinent internships or research experiences at off-campus institutions through an extension of that work with a TCNJ faculty mentor (FM). To register, the student needs to obtain prior approval from the FM and Chair of the Physics Department. In the course, the student is expected to actively engage in literature search and work closely with the FM to synthesize the work done during the internship, to produce and deliver an oral or poster presentation, and to write a high quality paper based on the research. This is a writing intensive course. PHY 399 is an upper level elective course in the physics curriculum open to all students in their junior year with at least a 2.5 overall GPA. To register for this course students must obtain permission from a faculty mentor, the Chairperson of the Physics Department and the Assistant Dean of Science. Internship experiences are expected to produce new knowledge by the student in collaboration with a faculty member and/or with fellow student researchers and a faculty member.

The subject matter of the internship experience will be agreed upon by a faculty mentor and the student. The experience will involve laboratory or observational experiences or complex calculations beyond what is covered in a lecture/laboratory course. It is expected that the research will build upon the knowledge gained by students in courses offered by the Department.

II. Learning Goals

1. A deeper understanding and application of the scientific method.
2. To enhance a student's ability to obtain and analyze data, find correlations between variables, and draw conclusions.
3. To write a research quality paper based on the outcomes of the project.

III. Students Assessment

Students will be continuously assessed, by the faculty mentor, based on their weekly progress. Furthermore, weekly meetings between the student and the faculty mentor will insure that a high quality product will be the outcome of the experience. At the end of the semester students must present orally or via a poster the results of their internship to the faculty members and students of the Physics Department. Students will be required to produce a research quality paper concerning their project.

The required paper will include an abstract and sections on theory, methodology, results and discussions, and a summary or conclusions. The sections will be presented to the faculty mentor, throughout the semester, for feedback and corrections. Several iterations are expected before a final paper is delivered at the end of the semester.

IV. Learning Activities

The learning activities will be decided by the faculty mentor and will be specific to each faculty-student designed internship experience. Examples of these activities include:

1. Laboratory, field, or observatory experiences, computer modeling of physical systems, application of spectroscopic and microscopic techniques.
2. Data analysis using advanced mathematical techniques or correlation methods.
3. Presentation of results using Power Point or other audio visual techniques.
4. A paper that has a writing style dependent on the specific field of research chosen.