

University of North Alabama  
Fall 2013

<u>PH 495</u>	Directed Research
<u>Credit</u>	Two semester hours
<u>Class Meetings</u>	TBA
<u>Faculty Mentor</u>	Dr. D. Brian Thompson
<u>Office</u>	FSB 219
<u>Office Hours</u>	M      8:30 to 9:00 & 1:00 to 2:00 T      8:30 to 9:00 W      8:30 to 9:00 & 1:00 to 2:00 Th     8:30 to 10:30 F      8:30 to 9:00 & 1:00 to 2:00
<u>Telephone</u>	765-4881
<u>e-mail</u>	<a href="mailto:dbthompson@una.edu">dbthompson@una.edu</a>
<u>Prerequisites</u>	PH 343

Course Description    Directed Research

PH 495 (1-3) **Directed Research.** Experimental, theoretical, or computational investigation of problems in physics under the direction of departmental faculty, with enrollment and projects subject to approval of the department. Formal reports of research progress will be required for credit. Scheduled work and conferences require a minimum of three hours per week per credit hour. May be repeated to a maximum of four credit hours. A maximum of 2 credit hours will be offered during the summer term. Prerequisite: departmental approval. (Fall, Spring)

Learning Objectives    Upon completion of this course, students will demonstrate how to design and conduct, and report research. 290-3-3.18(1)(c)7

Content                    How to design, conduct and report research using models, literature sources, and data from the process related to research topic  
290-3-3.18(1)(c)7

Assessment              The research project will be assessed either through an external evaluation of posters and oral presentations by an academic

audience (Alabama Academy of Science) or by an evaluation of a research paper using rubrics.  
290-3-3.18(1)(c)7

A student performs research under guidance of the faculty mentor. The work is expected to require four-six hours per week. The student presents results of this research in an approved venue.

Course Grading        A schedule of graded activities will be handed out after each exam. The first schedule of activities is at the end of this syllabus. The list of activities, along with each activity's contribution to the final grade, is listed below.

*Homework*.....50%

Students turn in solutions to assigned homework problems during lecture periods shown on the activities schedules. Late solutions will not be accepted for grading. Student solutions must be written on a single side of unlined white paper, with multiple pages attached by a paperclip. Each problem solution must begin on a new sheet of paper. Students may work together on homework assignments, but they must present their own solutions to homework problems.

For the first schedule of homework problems, each problem will be graded using a four-point scale. For all subsequent schedules of homework problems, each problem will be graded on an eight-point scale (i.e., these problems will count twice as much as problems from the first schedule).

*Exams (including final exam)*.....50%

Exams consist of two parts, an in-class exam and a take-home exam. In-class exams will be given on selected lecture days. A corresponding take-home exam will be handed out the lecture prior to the in-class exam, and the take-home exam will be due the lecture following the in-class exam.

For the in-class exams, a student may bring a calculator and a single sheet of paper with anything they want written on it. The paper must be turned in with the exam. Each in-class exam will be graded on a 50 point scale.

In working the take-home exam, students may not solicit help from class-mates, professors or anyone else. Each take-home exam will be graded on a 50 point scale.

Grading scale

90 - 100% .....	A
80 – 89%.....	B
70 – 79%.....	C
60 – 69% .....	D
less than 60%.....	F

## Course Policies

### Class Attendance:

Students are expected to attend all class meetings, to have read and worked on assigned material beforehand in order to participate fully in class discussions. Before-hand preparation and problem-solving by students is *essential* for them to succeed in this class.

### Academic integrity:

The instructor assumes absolutely the academic integrity of students.

### ADA policy:

It is the policy of UNA to afford equal opportunity in education to qualified students. Therefore, a student who has a disability that inhibits the student's ability to meet course requirements and who desires accommodations must contact the instructor and Developmental Services within three class meetings of the semester. The goal is to develop a timely accommodation plan and to file an Americans with Disabilities Act (ADA) Accommodation form. Course requirements will not be waived, but accommodations will be made to allow each student to meet those requirements, provided the student acts within the first three class meetings to work with the instructor to develop an accommodation plan. If the disability is identified later in the semester, a non-retroactive plan will be developed at that time.

### Conferences:

My office hours are listed on the previous page. Students are strongly encouraged to take advantage of these hours and should not hesitate to ask questions or seek help. If schedule conflicts exist, *please make an appointment*.

