Tentative Syllabus for Physics 321DS: Spring 2012
Topic: Ferroelectric Crystal Growth, Glass Preparation and experimentation

Professor: Dr. Stuart Hutton
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During class periods and during tests:
cell phones are to be switched off.

Office Hours

I will schedule several office hour blocks. I will be very close to my office during these times. Otherwise, I will usually be close to my office. If you want to find me outside of office hours, make an appointment so that you will be sure to find me. My schedule is located on the physics home page which you may review to determine office hours.

Grading

As a general guide to grades, grades will be assigned as follows:

100-90]	(90-80]	(80-70]	(70-60]	<(60
A	B	C	D	F

You are required in this course to spend 1 hour minimum in documented research time for each credit hour of the course per week for a minimum of 12 weeks. Electronically pledged weekly progress reports will count for 60% of your grade. These will be due each Friday as indicated on the schedule.. You will want to keep a record documenting this laboratory effort as the course progresses since this comprises 21% of your grade for 12 events. You will also be required periodically to provide me with oral progress reports which will count for 10% of your grade. At the end of the course, a report and a presentation are required for a total of 9% of your grade. The various credit percentages are allocated as follows:

Weekly electronic pledged progress reports:60% total
10 total (each report is worth 6 points for a total of 60%)

Oral discussions of research (with me):10% total
5 total (each discussion is worth 2 points or a total of 10%)

Documented significant laboratory effort: 21% total
(documented lab effort for 12 events, each documented effort is worth 1.75%)

Final report and notebook presentation: 9% total
(9%: report is worth 4.5%, presentation is worth 4.5%)

Course Objectives and Prerequisites

PHY 321 INDEPENDENT STUDY / 1-3 credits

Directed study on an individual basis covering topics from advanced physics. Prerequisite: PHY 210/240, PHY 220/250 and permission of the instructor. Course may be repeated for up to 3 credits.

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Attendance

The Lyon College Catalogue for 2010-2011 states:

Students are expected to attend all class periods for the courses in which they are enrolled. They are responsible for conferring with individual professors regarding any missed assignments. Faculty members are to notify the Registrar when a student misses the equivalent of one, two, three, and four weeks of class periods in a single course. Under this policy, there is no distinction between "excused" and "unexcused" absences. A reminder of the college's attendance policy will be issued to the student at one week, a second reminder at two weeks, a warning at three weeks, and notification of administrative withdrawal and the assigning of an "F" grade at four weeks. Students who are administratively withdrawn from more than one course will be placed on probation or suspended (see Academic Probation and Academic Suspension).

Academic Honesty

It is expected and encouraged that students in this class will work together on homework problems. If you use reference work, be sure to include proper references. On tests, students are required to keep notes and books closed except as instructed. **Your professor will supply all the paper needed for the tests.** Any questions during tests should be directed to the professor only. **CELL PHONES AND OTHER WIRELESS OR NETWORKED DEVICES (INCLUDING COMPUTERS) MAY NOT BE USED DURING TESTS**. If you do use such devices during a test, it will automatically be considered to be a violation of the Lyon College Honor Code.

All graded work in this class is to be pledged in accordance with the Lyon College Honor Code.

"Students seeking reasonable accommodations based on documented learning disabilities must contact the Office of Academic Services at 307-7332."

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General Education Objectives (proposed)

1. Students can apply critical thinking to pose and answer questions.

2. Students can use the processes and methods of science and mathematics to demonstrate how reproducible results give rise to the discovery of fundamental laws and the development of theories.

3. Students can articulate a basic knowledge of current scientific understanding of the universe and the scientific and mathematical laws that govern it.

4l Students can summarize, interpret, analyze, and critically evaluate data and reports relating to the natural sciences and mathematics.

Topics in Phy321 have varied in the periods it has been taught. During the first time it was presented, the topic was microwave interference, and scattering. The student that participated in this particular course did not complete the course. During the most recent periods, the emphasis has been upon group research projects involving ferroelectric crystals. Presently three students have participated in this course and for Fall 2010, an additional three students will participate. The topics will involve growth and electronic measurement of ferroelectric crystals. As a result of this course, students obtain a more direct self-motivated approach to research typically as part of a team and this course is additionally intended to provide students with experiential learning. Evaluation of the work consists of weekly progress updates showing evidence of research progress, a more formal compilation of results at the end of the course and a formal oral presentation. Because of the very nature of research in the sciences as opposed to research in other areas of liberal arts, it is essential that the research be performed under the direction of a faculty member.