Lyon College Course Syllabus

Course Number and Section:Phy321.01 DS

Course Title: Physics Research

Course Meeting Days/Times: By Arrangement Semester/Year:FA2022

Professor's Information

Name Stuart Hutton

Office Location: Derby 248 Office Hours: MWF 10-10:50/AR

E-mail Address: stuart.hutton@lyon.edu Phone Number: ***.307.7560

Physics: Email: lyonphysics@*****.*** SMS:307.***.8765 Gateway: physics.lyon.edu

Standard Policies

Honor Code

All graded work in this class is to be pledged in accordance with the Lyon College Honor Code. The use of a phone for any reason during the curse of an exam is considered an honor code violation.

Class Attendence Policy

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, except that a student may make up work missed during an excused absence. 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 Students who are administratively withdrawn from more than one course will be placed on probation or suspended.

Academic Support

The Morrow Academic Center (MAC) helps students who want to improve grades by providing peer-led services including Supplemental Instruction (SI), tutoring, the Writing Center, and academic coaching as well providing 24-hour, online tutoring for all subjects through Tutor.com. A schedule of peer-led services is available at lyon.edu/mac and Tutor.com is accessed through courses in Schoology. Contact Donald Taylor, Director of Academic Support, at 870-307-7319 or donald.taylor@lyon.edu for more information about MAC services.

Technology Support

For general technology support, you can contact the IT department by emailing support@lyon.edu or by calling 870-307-7555. For assistance with classroom-related technologies, such as the learning management system (LMS), you can request support using the methods above, or you can contact sarah.williams@lyon.edu directly for assistance. Your course content will be accessible digitally using either the Schoology or Canvas LMS. Both LMS platforms will use your myLyon credentials for your student login.

- For Canvas, login at lyon.instructure.com
- For Schoology, login at lyon.schoology.com

Disabilities

Students seeking reasonable accommodations based on documented learning disabilities must contact Interim Director of Academic Support Donald Taylor in the Morrow Academic Center at (870) 307-7019 or at donald.taylor@lyon.edu.

Harassment, Discrimination, and Sexual Misconduct

Lyon College seeks to provide all members of the community with a safe and secure learning and work environment that is free of crime and/or policy violations motivated by discrimination, sexual and bias-related harassment, and other violations of rights. The College has a zero-tolerance policy against gender-based misconduct, sexual assault, and interpersonal violence toward any member or guest of the Lyon College community. Any individual who has been the victim of an act of violence or intimidation is urged to make an official report by contacting a campus Title IX coordinator or by visiting www.lyon.edu/file-a-title-ix-report. A report of an act of violence or intimidation will be dealt with promptly. Confidentiality will be maintained to the greatest extent possible within the constraints of the law. For more information regarding the College's Title IX policies and procedures, visit www.lyon.edu/title-ix.

Mental & Behavioral Health

Lyon College is dedicated to ensuring each student has access to mental and behavioral health resources. The College's Mental and Behavioral Health Office is located in Edwards Commons and is partnered with White River Health System's Behavioral Health Clinic. The office is committed to helping the Lyon community achieve maximum mental and behavioral wellness through both preventative and reactive care. A full-time, licensed, professional counselor provides counseling, consultations, outreach, workshops, and many more mental and behavioral services to Lyon students, faculty, and staff at no cost. The Mental and Behavioral Health Office also provides access to White River Health System's services and facilities, including medication management and in-patient and out-patient care. To make an appointment, contact counseling@lyon.edu.

College-Wide COVID-19 Policies for Fall, 2022

- The College does not require masks in instructional and meeting spaces inside academic buildings. However, if instructors require masks in their classroom, lab, or studio, then students and guests must comply with that requirement.
- Vaccines are strongly encouraged for all faculty, staff, and students. Vaccines are not mandated for Lyon College community members, although there may be specific courses involving interactions with vulnerable, external populations where a vaccine may be required.
- The College will continue to offer symptomatic testing for students, faculty and staff.

Details specific to this course may be found in the subsequent pages of this syllabus. Those details will include at least the following:

1. A description of the course consistent with the Lyon College catalog.
2. A list of student learning outcomes for the course.
3. A summary of all course requirements.
4. An explanation of the grading system to be used in the course.
5. Any course-specific attendance policies that go beyond the College policy.
6. Details about what constitutes acceptable and unacceptable student collaboration on graded work.
7. A clear statement about which LMS is being used for the course. We will use schoology this fall.

Tentative Syllabus for Physics 321.01DS: FALL 2022
Topic: Research topics in Physics. Topic : astrophotography

Professor: Dr. Stuart Hutton
Office: Derby Center: 248 Research Lab: Derby 219: General Physics lab: 148
Phone: 870 307 7560
Email: stuart.hutton@lyon.edu
To access the Physics Gateway:http://physics.lyon.edu

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 10 weeks. Electronically pledged weekly progress reports will count for 30% of your grade. These will be due each Friday. You will want to keep a record documenting this laboratory effort as the course progresses since this comprises 20% of your grade for 10 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 40% of your grade. The various credit percentages are allocated as follows:

Weekly electronic pledged progress reports:30% total
10 total (each report is worth 3 points for a total of 30%)

Oral discussions of research (with me):10% total
10 total: 1 point for each discussion.

Documented significant weekly laboratory effort: 20% total
10 total: 1 point for each documentation.

Final report and notebook/portfolio presentation: 40% total
In this course, you agree to make a scarf presentation in the Spring.

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.

Text Book

There is no required text for this course; you are sort-of writing your own textbook in this class. Among the topics which you will learn, based upon my guidence will be the basics of astronomy, and other related topics. You will get out of this course what you put into it. Much of your laboratory will be outside with the telescope and so you will need to provide time in your schedules in the evenings for this. You will also be required to provide effort into use of the program Siril and then be able to teach me how to use this software. Additionally I want to be able to provide some of your photography for public display by our class website. For this reason, you should be concerned with quality and improvement.

Course Description

In this course, you will have an opportunity to gain research experience with advanced topics from physics.

Course Objectives

As a consequence of this course, you should obtain experience in physics research. In addition, you should come away from this course with an ability to discuss, among peers fundamental problems involving physical principles.

Punctual and complete class attendance is expected and independent research hours are required. Absences will negatively impact your final grade.

Academic Honesty

If you use reference work, **be sure to include proper references and these references must be visible during your presentation**. 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.

CLASS SCHEDULE / OFFICE HOURS Fall 2022
Pandemic Part 3 Version

Professor: Stuart Hutton

Monday	Tuesday	Wednesday	Thursday	Friday
8:00-8:50 PHY240.01 Fundamentals of Physics I	8:00-9:15	8:00-8:50 PHY240.01 Fundamentals of Physics I	8:00-9:15	8:00-8:50 PHY240.01 Fundamentals of Physics I
9:00-9:50 PHY210.01 General Physics 1	9:30-10:00	9:00-9:50 PHY210.01 General Physics 1	9:30-10:00	9:00-9:50 PHY210.01 General Physics 1
10:10-10:50 Office Hours	10:00 – 10:50	10:10-10:50 Office Hours	10:00 – 10:50	10:10-10:50 Office Hours
11:00-11:50	11:00-11:50	11:00-11:50	11-11:50	11:00-11:50
12:00-12:50	12:00-12:50	12:00 - 12:50	12:00 - 12:50 Phy390.01 **Seminar** Derby 148	12:00 - 12:50 SGA
13:00-15:50	13:00-14:50	13:00-15:50 PHY241.01 Fundamentals of Physics Lab 1 Derby 148	13:00-15:50 PHY241.02 Fundamentals of Physics Lab 1 Derby 148	13:00-15:50 PHY241.03 Fundamentals of Physics Lab 1 Derby 148

Safety regulations for Physics Labs
Fall 2022 Pandemic Version

At all times in the labs, students must properly wear face masks.

Correct social hygiene must be practiced at all times in the lab and masks must always be properly worn. Students are responsible for sanitizing work areas (including equipment) before and after lab.

(1) Anytime springs are used in lab, safety goggles must be worn.
(2) Anytime boiling water is used in lab, safety goggles must be worn.
(3) You should not look at laser light or point it towards other people.
(4) In the event of a spill (which will be water), dispense a towel from the spill kit (aka towel dispenser) and wipe up the spill.
(5) Food and drink are not permitted in lab.

College-Wide COVID-19 Policies for Fall, 2022

(6) Masks are mandated for all students in my classrooms, and laboratories. All other Lyon covid restrictions apply.

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.

General Education Objectives

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. For Fall 2022, the topic is astrophotography.