

Lyon College Course Syllabus

Course: Phy390.01DS/FA16	Physics Seminar	T:11:00 - 11:50 / Derby 148
Professor: Stuart Hutton	Office: Derby 248	Office Phone: ***.307.7560
Email: stuart.hutton@lyon.edu	Office Hours: MWF 10:00-10:50/AR	
Physics Email: lyonphysics@*****.***	Physics Web Gateway: physics.lyon.edu Backup: logcabinphysics.x10.bz	Physics SMS: 307.***.8765

STANDARD POLICIES

Honor Code

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

Class Attendance 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 Students who are administratively withdrawn from more than one course will be placed on probation or suspended.

Disabilities

Students seeking reasonable accommodations based on documented learning disabilities must contact the Dean of the Faculty at (870) 307-7332.

Harassment, Discrimination, and Sexual Misconduct

Title IX and Lyon’s policy prohibit harassment, discrimination and sexual misconduct. Lyon encourages anyone experiencing harassment, discrimination or sexual misconduct to talk to Clarinda Foote, Title IX Coordinator, or Patrick Mulick, Dean of Students and Title IX Investigator, about what happened so they can get the support they need and Lyon can respond appropriately. Lyon is legally obligated to respond to reports of sexual misconduct, and therefore we cannot guarantee the confidentiality of a report, unless made to a confidential resource (Chaplain, Counselor, or Nurse). As a faculty member, I am required to report possible Title IX violations and must provide our Title IX coordinator with all relevant details. I cannot, therefore, guarantee confidentiality.

Withdrawal Deadlines

Last day to drop with no record of the course is **Monday August 29, 2016.**

Last day to drop with a W is **Thursday October 20, 2016.**

Tentative Syllabus for Physics 390DS: Fall 2016

Professor: Dr. Stuart Hutton

Office: Derby Center: 248 Research Lab: Derby 219: General Physics lab: 148

SMS: 307.***.8765 / lab email: lyonphysics@<*****.com> web: physics.lyon.edu

Phone: ***.307.7560 Email: stuart.hutton@lyon.edu

During class periods and during tests:
cell phones are to be switched off.

Grading

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

180-162] A	(161-144] B	(143-126] C	(125-108] D	<(107 F
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The final course grade may reflect subjective course aspects such as attendance and positive class participation.

In this course, you will have several grading opportunities. The various weight of each of these activities in your final point grade is shown below. You are required to attend each seminar session. If you miss a session, your grade will be reduced by 10 points.

Note: The timing is presented as {x:y} where x is for a 5 student schedule and y is a for a 6 student schedule. This may require adjustment if class size changes.

This class will consist of several {10:8} minute timed presentations of which {8:6} minutes is devoted to presentation and ≈ 2 minutes is devoted to question and answer sessions ({5:6} presentations for each class period). There will also be a formal presentation consisting of a total of 25 minutes and: 20 minutes will be devoted to a formal presentation based upon independent research on an approved physics topic and 4 minutes will be devoted to question and answer sessions. A formal paper covering the formal presentation will be due November 17. **As you can see, our time is tight so it is extremely important that you arrive on time and ready to begin. You must get your electronic presentations to me before class so that they can be ready to go at the correct time.**

Grades will be obtained as follows:

Each {8:6} minute presentation period provides a maximum of 10 points: 8 points total for a presentation and 2 points total for active class discussion.

Total for {10:8} minute presentations=100 points.

On the dates shown on the schedule, you will submit (electronically) required preliminary topics, updates or rough drafts. You will receive 2 points for each of these 9 submissions for a total **of 18 points**. The formal paper will provide you with an additional 22 **points**. The formal presentation will provide you with an additional **40 points**.

Total maximum course points: 100+18+22+40=180

Presentations will be graded for preparedness and correctness.

Do not try to give a presentation that you have not adequately prepared for! This means that you must normally set aside time to prepare your presentations each week.

Your topics for the {10:8} minute presentations will come from the areas of physics mentioned during the particular week. I will provide you with several topics within each area for your selection. Topics 8 and 9 will be self-chosen, subject to approval and must come from physics areas. The topic choice for the formal presentation is subject to professor approval and must come from physics areas.

Course Description

In this course, you will have an opportunity to gain experience with presentation of complex topics in physics. Topics will be at the level of each student's background in physics. Individually chosen topics may come from areas beyond general physics (such as modern physics), subject to approval.

Course Objectives

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

Course Prerequisites

Students in this course must have completed the following:

- (1) either Physics 210 or 240 (2) Physics 241
- (3) either Physics 220 or 250 (4) Physics 251

Text Book: There is no required text for this course.

You have many resources on the campus: the library, your colleagues and your professor. Your prime learning resource, however, must be considered to be the classroom: **punctual** and **complete** class attendance is expected and required.

Punctual and complete class attendance is expected. Absences will negatively impact your final grade. Use of a networked device to communicate (aside from downloading class materials) during class will be considered equivalent to an unexcused absence. Tardiness is considered to be an unexcused absence and will negatively impact your final grade. In general you do not have permission to enter the classroom after class has started. At no time during this class will you be permitted to text or access network infrastructure except when presenting. There is zero tolerance for this policy. You will be asked to leave and that day's presentation and credit will be considered to be an unexcused absence.

Academic Honesty

If you use reference work, **be sure to include proper references and these references must be visible during your presentation.** Your presentations must represent your unique work and thus simple copy and paste from sources is not permitted. Under the educational single use provision of copyright laws, you may at times use external material which is properly referenced in your presentation. Additionally you are expected to provide presentations that are unique; you may not simply replay presentations that you have previously presented. Practice talks in preparation for the weekly presentations is exempt from this requirement. You are, of course, permitted to ask me and your colleagues questions about presentations in their preparation. However the end result must represent your unique effort.

CLASS SCHEDULE / OFFICE HOURS Fall 2016

Office Derby 248		General Lab Derby 148		Research Lab Derby 219
PROFESSOR Stuart Hutton				
Monday	Tuesday	Wednesday	Thursday	Friday
8:00-8:50	8:00-9:15	8:00-8:50	8:00-9:15	8:00-8:50
PHY240.01 Fundamentals of Physics I Derby 011		PHY240.01 Fundamentals of Physics I Derby 011		PHY240.01 Fundamentals of Physics I Derby 011
9:00-9:50		9:00-9:50		9:00-9:50
PHY210.01 Gen Physics I Derby 011	9:30-10:45	PHY210.01 Gen Physics I Derby 011	9:30-10:45	PHY210.01 Gen Physics I Derby 011
10:10-10:50		10:10-10:50		10:10-10:50
Office Hours Derby 248		Office Hours Derby 248		Office Hours Derby 248
11:00-11:50	11:00-11:50 Phy390 Physics Seminar	11:00-11:50	11:00-11:50	11:00-11:50
12:00 - 12:50	12:00 - 12:50	12:00 - 12:50	12:00 - 12:50	12:00 - 12:50
12:50 - 13:50				
Phy335 Modern Physics	13:00-14:20	1:00-1:50	13:00-15:50 PHY241.01 Fund Physics I Lab Derby 148	13:00-15:50 PHY241.02 Fund Physics I Lab Derby 148
2:00-2:50	14:20 - 15:50 Phy335 Modern Physics	2:00-2:50		
3:00-3:50				

Physics 390:Fall 2016

Date	Events	Topics (presented on dates shown)	who presents what
August 16	Organizational meeting	Assignment of topics for next classes	
August 23	10 minute presentations 01	Mechanics I	
	1. preliminary topic	submission	ALL
		kinematics	
		conservation of energy	
		conservation of momentum	
		uniform circular motion	
		Newton's laws	
		Statics	
August 30	President's Convocation		
September 06	10 minute presentations 02	Mechanics II	
	2. Revised prelim topic	Torque and Equilibrium	ALL
		vibrations	
		gravity	
		non-uniform circular motion	
		simple harmonic oscillation	

		rigid body rotational motion		
September 13	10 minute presentations 03	Waves		
	3. Revised prelim topic	submission	ALL	
		traveling pulses		
		standing waves		
		transverse waves on strings		
		sound		
		TEM waves		
		longitudinal waves		
September 20	10 minute presentations 04	Thermodynamics		
	4. Formal Topics	Submission for approval	ALL	
		linear expansion		
		ideal gas		
		internal energy		
		entropy		
		adiabatic ideal gas		
		Carnot Cycle and heat engines		
September 27	10 minute presentations 05	Electrostatics		
	5. Formal Progress	Update 01	ALL	

		Coulomb's law		
		Electric dipole		
		Gauss's Law		
		Electrostatic Potential		
		Capacitance and energy density		
		Resistance and current		
October 04	10 minute presentations 06	Magnetism		
	6. Formal Progress	Update 02	ALL	
		Ampere's law		
		TEM waves		
		Solenoid		
		magnetization		
		Inductance and energy density		
		Displacement current		
October 11	10 minute presentations 07	Optics		
	7. Formal Progress	Update 03	ALL	
		Snell's Law		
		images formed with thin lenses		
		images formed with spherical mirrors		
		dispersion and prisms		

		polarization and Brewster's angle		
		interference of light waves		
October 18	10 minute presentations 08	Misc. Physics Topics I (Student Selected)	ALL	
	8. Formal Progress	Update 04		
October 25	10 minute presentations 09	Misc. Physics Topics II (Student Selected)	ALL	
	9. Formal Progress	Update 05		
November 01	10 minute presentations 10	Misc. Physics Topics III (Student Selected)	ALL	
	Formal Paper	Rough Draft Due		
November 8	25 minute presentations 01 Formal Papers Due (all)	1-2x		
November 22	25 minute presentations 02	1-2x		
November 29	25 minute presentations 03	1-2x		

Physics 390: Seminar Presentation Rubric

Category	3	2	1	0	Totals
Preparedness	Student completely prepared and has clearly rehearsed	Student is mostly prepared but could have rehearsed more	Student is somewhat prepared but should have rehearsed	Student is unprepared	
Speaks Clearly	Speaks clearly and distinctly during entire presentation. Makes good contact with audience.	Speaks clearly and distinctly most of the time, a few words poorly said or misused. Makes good contact with audience.	Difficult to hear and understand most of the time and little contact with audience	Mumbles and / or can not be understood. Avoided contact with audience.	
Visuals	Pdf, board work, and other props appropriate and correct.	Pdf, board work, and other props mostly appropriate with a few shortcomings including incorrect physics.	Pdf, board work, and other props relatively few and some may not represent correct physics.	Pdf, board work, and other props poorly done, with incorrect physics presented.	
Time Limits	Presentation of appropriate length, including time for questions.	Presentation too short or too long. time for questions ok.	Presentation way too short or way too long. time for questions ok.	Presentation way too short or way too long. time for questions not ok	
Comprehension	Student accurately answers all reasonable questions. Student shows full understanding of topic.	Student accurately answers most reasonable questions. Student shows good understanding of topic.	Student accurately answers some reasonable questions. Student understanding is shaky on parts of topic.	Student can not accurately answer reasonable questions. Student does not really understand topic.	
Participation	Listens intently, asks good, relevant questions pertaining to the presentation.	Does not always listen and/or may ask irrelevant questions.	Listens but did not ask required questions.	Does not listen, shows interruptive behavior (including late arrival). Questions not asked or are irrelevant.	
Attendance		Student arrives on time and is present throughout all presentations.		Student misses any portion of seminar.	

Student Learning Outcomes for the Physics Program at Lyon College

1. Students who complete physics seminar (Phy390) are able to:
 - 1a. give short technical presentations over topics from general physics.
 - 1b. investigate topics in other areas of general physics and provide short technical presentations over these areas.
 - 1c. investigate one topic in greater depth, providing a formal paper covering an in-depth presentation. The formal paper will consist largely of notes accompanying an in-depth 25 minute presentation.
 - 1d. experience being attentive listeners and to be able ask physically relevant questions in an audience of peers.
 - 1e. construct simple electronic presentations for a technical audience of peers.