**LaGuardia Community College**

**City University of New York**

**SCP 232 General Physics II: Section 680**

**Academic Year:** Fall 2021

**Instructor Name**: Dr. John R.E. Toland

**Instructor Contact Info: Ext: 6005 Office: M210**

**Email:** Jtoland@lagcc.cuny.edu

PUT SCP 232 in the Subject!!!

**Synchronous Meeting Time:** Thursday 5:45 pm to 7:55 pmand some Tuesdays

**The Link for the course will be on Blackboard in the 685A sections in the Content tab**

**Office Hours:** Tuesday 1pm to 4pm, Wednesday 5:00 pm to 9:00 pm

The link for our office hours will be on Blackboard in the 680A sections in the Content tab

**MyOpenMathRegistration:** Please look at the item with the course number and password in blackboard, the link will be on Blackboard in the **680A** sections in the Content tab

**Course Description**:

This course is the second term of a calculus based, two-semester lecture and laboratory course in classical and modern physics. Topics include transverse and longitudinal waves, speed of sound, Doppler effect, Coulomb’s Law, Gauss Law, Electric Potential, Capacitance, Ohms Law, elements of DC circuits, Magneto statics, Lenz Law, Faradays Law, AC Circuits, Maxwell’s Equations, Geometric optics, Wave Optics. Physical principles are also demonstrated with a "hands on" laboratory experience.

**Course Organization:**

**This course is scheduled to take place both online with the laboratory taking place in person.**

**In Person:**

**Due to Delays in FDA approval of a Covid Vaccine over the summer the campus has modified its rules. In order to come on campus you must:**

1. **Upload proof of vaccination to CUNYFirst**
2. **Wear a face mask or face covering**

**The detailed rules for entering campus can be found at the following link**

[**https://www.laguardia.edu/campus-safety/students/**](https://www.laguardia.edu/campus-safety/students/)

1. **If we can start attending the lab before October 12 I will let you know but be prepared and plan to attend the lab on Tuesdays in person starting September 21, I will updated you weekly as to weather we are metting in person but as reminder ALL Labs will be in person from October 12 and all Unvaccinated students will be dropped from the course.**

**Online:**

This course will require you to use three online platforms in order to complete the required tasks, you will also need to watch videos on YouTube. These three platforms are Blackboard, Zoom, and MyOpenMath. All three of these platforms have numerous help videos that can be found on YouTube, if you are struggling to find these and need help please email me as soon as possible, be sure to put SCP 231 Help as the subject so I can easily find your email.

We will be using Blackboard for general communications, practice exams, and Laboratory. Your Labs will require you to participate in online discussion on Blackboard and to submit your lab reports on blackboard as well. Please keep in mind that course announcements and practice tests will be in Section A and all Laboratory activities will be in Section B

We will be using Zoom to hold our Synchronous lectures and office hours, there are links above that will directly connect you to the lecture and office hours however there will be a blackboard announcement that will allow you integrate our meetings into your online calendars.

Your homework assignments will be assigned and turned in via the MyOpenMath online HW system.

The course lectures are all available on YouTube. You should follow the course schedule as to which lecture you should be on for a given week. The course schedule is a separate document that you will find right below this one in the content section of Section A on Blackboard. Please Note that these lectures are watched asynchronously and you can watch them in the manner most helpful to you . All videos are at the following link:

**Text**: William Moebs, Samuel J. Ling, Jeff Sanny, *University Physics Vol.1*,

<https://openstax.org/details/books/university-physics-volume-1>

**Calculators**: You are allowed to use scientific and graphing calculators for problems in this class including exams. The calculator cannot have an internet connection or have a purpose other than calculations: TI-89 is O.K. however phones and tables are not allowed during exams.

**Academic Integrity Policy:** Instructors of this course are required to implement the College Policy regarding cheating on examinations and quizzes. A complete statement of the policy is available at the student counseling services.

**Attendance Policy:** Attendance at all class sessions, lecture and laboratory, is essential for proper understanding and mastery of the course material. A student who is absent from more than one laboratory session seriously jeopardizes his/her grade for the course. Note: Although laboratory counts only 25% of the grade, a student cannot receive a passing grade without completing all the requirements.

**Learning Objectives:**

On completion of the course, students should be able to:

Explain and understand basic physical concepts and principles such as charge, voltage, current, superposition, Maxwell’s equations, and the difference between wavelike and particle like interactions.

Use quantitative methods to develop physical models of electric, magnetic, and optical systems and solve problems based on these models using various mathematical techniques.

Obtain and analyze experimental data and learn to appropriately compare experimental results to theoretical predictions.

Understand the limitations of computerized instrumentation and sensors in data collection.

Communicate experimental results in lab write ups and discuss these results and their physical implications in a written report.

**Grading Breakdown**:

Examination 1……………… 15%

Examination 2……………… 15%

Examination 3……………….20%

Laboratory………………….. 25%

Homework…………………..25%

**Accommodations:**

In coordination with the Office for Students with Disabilities (OSD), accommodations will be provided for qualified students with disabilities. Please meet with me the first week of class to make arrangements. Jhony Nelson, Director of the Office for Students with Disabilities can be contacted at jhonyn@lagcc.cuny.edu, or in person at Room M-102.

**Distance Lectures:**

As you are aware, the current pandemic situation has suspended in person class meetings through the for the current semester, at present there is no solid information about next semester.

We will meet via Zoom on Thursdays at 5:45 p.m. until about 7:55 p.m.. The lectures were recorded during the Spring 2020 semester so please ignore dates you may hear and check in during or synchronous time to get current updates. Our live time will be spent answering any questions you may have about the lectures you watched and we will be focusing on working through problems your participation and attendance in the blackboard collaborate Ultra Sessions will make up your Online Participation Grade.

**I am going to try holding office hours via ZOOM, I will set up a repeating zoom meeting and put the link on black board and you can drop in when you have a question.**

**Homework:**

We will be using the online homework component of the text (Wiley+) to do homework in this class. You are required to obtain a registration code and register for Wiley+. You can order an eBook and code with access to all sorts of multimedia for about $100 on Wiley’s website.

The homework will consist of solving problems at the end of the chapter in the text. Solving problems is a large part of learning physics and you will be assigned problems that challenge you to use many of the mathematics skill and critical thinking skills that you have developed throughout your education. The learning curve of getting used to online assignments is sometimes frustrating to students, I will provided below are some tips on how to effectively do the homework online and hopefully answer some questions in the process.

1. It is a good Idea to do all work on paper as if you were not doing it online and then simply type in your answer in the prompt. If there is a problem with the program and you have paper work I can check I can manually give you points.
2. You will be given 10 attempts to answer the question if after the third attempt you it is still not correct STOP this is probably a good point at which to email me or see me during my office hours so your professor can help you with the problem or we can discuss it during recitation.

**Exams:**

There will be three exams including a final. The final is essentially a third exam. Exams will be assigned on Wiley Plus. Once you start the exam you must finish it. You will have some flexibility on when to start the exam. Exams are multiple choice and consist of 50 questions, you will have 80 minutes to complete the exam.

**Rough Course Outline:** (This list is subject to change)

|  |  |  |
| --- | --- | --- |
|  | Topic | Reading from Text |
| Week1 | Wave Motion | Vol 1. Chapters 16 & 17 |
| Week2 | Electric Charge | Vol 2. Chapter 5 |
| Week3 | Electric Field and Gauss’ Law | Vol 2. Chapter 6 |
| Week4 | Electric Potential  | Vol 2. Chapter 7 |
| Week5 | Capacitance, Current, and Resistance**Exam I (10/19/2021)** | Vol 2. Chapters 8 & 9  |
| Week6 | Circuits | Vol 2. Chapter 10 |
| Week7 | Magnetic Fields and Magnetic Fields due to Currents | Vol 2. Chapters 11 & 12 |
| Week8 | Induction | Vol 2. Chapters 13 &14 |
| Week9 | AC circuits  | Vol 2. Chapters 14 & 15  |
| Week10 | Maxwell’s Equations & Electromagnetic Waves**Exam 2 (11/16/2021)** | Vol 2. Chapters 16 |
| Week11 | Geometric Optics | Vol 3. Chapters 1 & 2 |
| Week12 | Wave Optics | Vol 3. Chapters 3 & 4  |
| Final Exam | **Final exam (12/14/2021)** |  |

**FINAL EXAM will take place during the finals period on Tuesday December 14th 2021**

SCP 232 Laboratory Guide

Lab Schedule

|  |  |
| --- | --- |
| Week | Experiment |
| 1 | Introduction-Lab Rules-Lab Report Guidance  |
| 2 | Virtual Lab: Waves |
| 3 | Virtual Lab: Waves |
| 4 | Virtual Lab: Charges and E-Fields |
| 5 | Virtual Lab: Charges and E-Fields |
| 6 | DC Circuits |
| 7 | DC Circuits |
| 8 | DC Circuits |
| 9 | Magnets and AC Circuits |
| 10 | Magnets and AC Circuits |
| 11 | Magnets and AC Circuits |
| 12 | Virtual Lab: EC Optics/ Clean Room Tour |

Lab Rules:

Food and Drinks are prohibited in laboratory. You may put your drinks near the door or along the wall but they must be consumed OUTSIDE of the Lab Room. We will be working with electrical equipment and open circuits that can be hazardous if contacted with liquid.

You must wear closed toe shoes at all times.

In the event of an electrical fire unplug your circuit and devices and INFORM YOUR INSTRUCTOR IMMEDATLY!!

Lab cleanliness is of great importance, you must put wires, plugs, and equipment back in the packaging they were given too you in. Failure to do this will result in a 10% deduction for the ENTIRE CLASS on the Lab Report so please take the time to clean up your mess.

The Lab component of this course requires you to be present and active in the lab. If you miss more than 2 Laboratory Sections you will lose all of your lab points and will have to repeat the lab portion of the course the next semester to get a grade in the course.

It may be possible to make up a lab but only at the discretion of your Lab Instructor. Lab Reports will be checked against attendance and if you are absent without an authorized make up you will receive a zero for the lab report. In other words you cannot simply copy data from someone and turn in a report if you miss a lab.

Lab Reports: Lab Reports must be turned in via the lab section of Blackboard. I WILL NOT BE ACCEPTING PAPER REPORTS!!!! Late Reports will get 20% off right away with a further 15% off per week thereafter.

Coordinator: Dr. John R.E. Toland Office: M 210

Email: jtoland@lagcc.cuny.edu Phone: (718) 349-6005