

# PHYS 1102 Laboratory Syllabus

Fall 2017

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## **COURSE MATERIAL REQUIRED:**

- Textbook: Electricity, Magnetism and Optics (Physics 1102/2102 Lab Manual) by Dr. Shree K Bhattarai, University of North Carolina – Charlotte. Publisher: Stipes Publishing LLC. [**This book is available at UNCC bookstore only**].
- Calculator
- Index card (5" X 3")
- Pencil to complete lab report, eraser
- A thin binder to keep your lab reports, homework and quizzes. Retain it until your grade has been posted.

## **COURSE INFORMATION:**

Physics 1102 laboratory is a course in experimental physics which must be taken concurrently with the lecture course, PHYS 1102. The laboratories are chosen to coincide with topical coverage in the lecture as much as possible.

**This course uses Canvas instead of Moodle as a learning management system. Canvas can be accessed at [canvas.uncc.edu](http://canvas.uncc.edu). You would need to use your UNCC credentials to log in.**

## **COURSE OBJECTIVES:**

- To conduct an organized and scientific investigation in order to experimentally verify the theoretical concept introduced in the lecture
- To familiarize students with experimental apparatus and scientific method of data collection and analysis
- To derive conclusions from the results based on your understanding of the relevant physics
- To study and understand introductory physics concepts via computer simulation experiments and exercises

## **LABORATORY ACTIVITIES:**

- 9 laboratory experimental sessions
- One in-class laboratory exam

## **COURSE GRADING:**

### **In-Class Experiment Lab Reports:**

- Pre-Lab Preparation:----- 10 points
- Lab Report:----- 85 points
  - 50% points for active participation in lab exercise. Deduction will be made for:
    - Tardiness
    - Not having your own calculator
    - Not having lab manual
    - Answering or making a phone call; and/or texting
    - Performing task unrelated to lab (e.g. surfing web, coursework etc)
  - 50% points for the content of your lab report
    - Lab report completed with pencil
    - Showing calculations
    - Properly filled data tables
    - Properly drawn graphs
    - Analysis
    - Writing proper unit of measurement
    - Problems and Questions
- Index Card and Communication Exercise ----- 5 points

Total: 100 points per lab

### **Calculation of Overall Lab Grade:**

- Lab. Reports from In-Class Experiment: ----- 80%
- Laboratory Exam: ----- 20%

Total: 100%

(Grade assignment:  $\geq 90\%$ : A, 80-89.9: B, 70-79.9: C, 60-69.9: D,  $< 60\%$ : F)

## **LAB ATTENDANCE POLICY/ MAKE-UP LABS:**

**There are NO Make-up labs.**

- If you miss a lab due to reason which classifies as genuine reason for absence as per university policy (<http://provost.uncc.edu/policies/classroom-attendance>), you should talk with your TA and lab coordinator to find a suitable time to do the make-up lab. All make up labs should be completed before the lab exam.
- If you miss a lab due to reasons beyond your control, it will be upon the discretion of lab instructor whether or not to grant you a make-up lab.

## **Academic Integrity:**

Students have the responsibility to know and observe the requirements of *The UNCC Code of Student Academic Integrity* (See the *UNCC Catalog*). This code forbids cheating, fabrication or falsification of information, multiple submission of academic work, plagiarism, abuse of academic materials, and complicity in academic dishonesty. Any special requirements or permission regarding academic integrity will be stated by the instructor, and are binding on the students. Academic evaluations in this course include a judgment that the student's work is free from academic dishonesty of any type; and grades in this course therefore should be and will be adversely affected by academic dishonesty. Students who violate the code can be expelled from UNCC. The normal penalty for a first offense is zero credit on the work involving dishonesty and further substantial reduction of the course grade. In almost all cases the course grade is reduced to F. Copies of the code can be obtained from the Dean of Students Office. Standards of academic integrity will be enforced in this course. Students are expected to report cases of academic dishonesty to the course instructor.

*Although the data collection during the lab is a group effort, data analysis and answering the questions related to the obtained data MUST be individual effort. Failure to do so will be treated as a case of academic dishonesty and will be dealt according to the University Policy.*

## **LABORATORY REPORTS**

You will use your lab manual pages to complete the lab reports. Follow the procedure and fill the appropriate tables, draw graphs, do calculations. Once you completed your lab report, print your name, your partner's name and the date. Tear off the associated pages from your manual and hand them to your instructor. **The report will be graded by your instructor and returned back to you at the beginning of the following lab session. Please make sure you picked up your graded lab work every lab session.** You should complete the Pre-Lab before coming to the lab and it is due at the beginning of the lab session.

*Please retain your graded lab reports at least until the final grade is posted. Make sure you ask for your graded lab report with your TA every lab session and keep it in a binder. In case of any grade disputes at the end of the semester, it will be student's responsibility to furnish the lab report to the TA or lab coordinator.*

## **LABORATORY EXAM**

You will be given a lab exam the last week of your lab session. The exam will be closed book, closed lab reports and will be conducted with no lab partners. Equation sheet will be provided.

### **Exam Format:**

- 20 Multiple choice questions:  $20 \times 3 = 60$  points
- 4 Numerical Problems:  $4 \times 10 = 40$  points

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Total = 100 points

## **PHYS 1102 Laboratory Schedule** **Fall 2017**

Lab Location: Burson 131

**Pre-lab are due at the beginning of each lab.**

<b>Dates</b>	<b>Lab Activity</b>
Week of Aug 21 <sup>st</sup> , 28 <sup>th</sup>	<b>No Labs</b>
Week of Sep 4 <sup>th</sup>	<b>Lab 1:</b> Electrostatics and Electric Field
Week of Sep 11 <sup>th</sup>	<b>Lab 2:</b> Electric Fields and Potentials
Week of Sep 18 <sup>th</sup>	<b>Lab 3:</b> Capacitors
Week of Sep 25 <sup>th</sup>	<b>Lab 4:</b> Charging, Discharging and Combination of Capacitors
Week of Oct 2 <sup>nd</sup>	<b>Lab 5:</b> Current and Voltage in a DC circuit: Ohm's Law
Week of Oct 9 <sup>th</sup>	<b>Student Recess Week, No Labs</b>
Week of Oct 16 <sup>th</sup>	<b>Lab 6:</b> Current and Magnetism
Week of Oct 23 <sup>rd</sup>	<b>Lab 7:</b> Magnetic Force and Electrical Current
Week of Oct 30 <sup>th</sup>	<b>Lab 8:</b> Faraday's Law of Electromagnetic Induction
Week of Nov 6 <sup>th</sup>	<b>Lab 10:</b> Reflection, Refraction, and nature of image formed by a convex lens
Week of Nov 13 <sup>th</sup>	<b>Final Lab Exam</b>
Week of Nov 20 <sup>th</sup>	<b>Happy Thanksgiving! Good luck with your course final.</b>