

# PHYS 2101 Laboratory Syllabus

Fall 2018

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## **COURSE MATERIAL REQUIRED:**

- Textbook: Mechanics Lab Manual (Physics 1101/2101), Second Edition by Dr. Shree K Bhattarai, University of North Carolina – Charlotte. Publisher: Stipes Publishing LLC. ISBN: 978-1-60904-616-3. [This book is available at UNCC bookstore only].
- Scientific Calculator (any kind)
- College ruled paper (about 20 counts for entire semester)
- Pencil to complete lab report, eraser
- A thin binder to keep your lab reports and quizzes. Retain it until your grade has been posted.

## **COURSE INFORMATION:**

Physics 2101 laboratory is a course in experimental physics which must be taken concurrently with the lecture course, PHYS 2101. The laboratories are chosen to coincide with topical coverage in the lecture as much as possible.

This course uses **Canvas** as a learning management system. Canvas can be accessed at [canvas.uncc.edu](https://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:**

- 11 in-class laboratory sessions

## **COURSE GRADING:**

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

#### **LAB 0 (Zero):**

- Introduction to lab, brief discussion on syllabus and make-up labs
- Review of Math Techniques

Lab report grade breakdown for Lab 0 is identical to breakdowns for Lab 1 – Lab 8

#### **LAB 1- LAB 8:**

- Problem Solving Session: ----- 10 points
- Pre-Lab Preparation: ----- 10 points
- Lab Report:----- 80 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 drawn graphs and properly filled data tables
    - Analysis
    - Writing proper unit of measurement
    - Problems and Questions

#### **LAB 9:**

- Problem Solving Session:----- 10 points
- Pre-Lab Preparation:----- 20 points
- Lab Report:----- 70 points

Lab report grade breakdown for Lab 9 is identical to breakdowns for Lab 1 – Lab 8.

#### **LAB 10:**

- Review of Numerical problems that would help for your course final exam

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

- Top Eight lab grades out of first Nine labs (Lab 0- Lab 8): ----- 80%
- Lab – 9: ----- 10%
- Lab 10: ----- 10%

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.*

*A student can leave early only if he has completed all lab activities. Student leaving lab room early without completing lab activities will receive a grade of zero for that lab.*

## **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.*

## **PHYS 2101 Laboratory Schedule** **Fall 2018**

Lab Location: Burson 153

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

Dates	Lab Activity
Week of Aug 20 <sup>th</sup>	<b>No Labs</b>
Week of Aug 27 <sup>th</sup>	<b>No labs</b>
Week of Sep 3 <sup>rd</sup>	<b>Lab 0 (Zero): Introduction and Review of Math Techniques</b>
Week of Sep 10 <sup>th</sup>	<b>Lab 1:</b> Uncertainty in Measurement
Week of Sep 17 <sup>th</sup>	<b>Lab 2:</b> Motion of Objects in One Dimension
Week of Sep 24 <sup>th</sup>	<b>Lab 3:</b> Composition and Resolution of Vectors
Week of Oct 1 <sup>st</sup>	<b>Lab 4:</b> Projectile Motion
Week of Oct 8 <sup>th</sup>	<b>Student Recess week; No labs this week.</b>
Week of Oct 15 <sup>th</sup>	<b>Lab 5:</b> Newton's Law
Week of Oct 22 <sup>nd</sup>	<b>Lab 6:</b> Friction
Week of Oct 29 <sup>th</sup>	<b>Lab 7:</b> Conservation of Energy during Simple Harmonic Motion
Week of Nov 5 <sup>th</sup>	<b>Lab 8:</b> Static Equilibrium
Week of Nov 12 <sup>th</sup>	<b>Lab 9:</b> Critical Thinking and Designing an Experiment
Week of Nov 19 <sup>th</sup>	<b>No labs this week, Happy thanksgiving.</b>
Week of Nov 27 <sup>th</sup>	<b>Lab 10: Review of course final exam</b>