DO NOT FORGET TO FILL THE INFORMATION BELOW IN YOUR FIRST LAB SESSION. YOU WILL USE BELOW INFORMATION TO GET IN TOUCH WITH YOUR INSTRUCTOR DURING THE SEMESTER.

Your Instructor’s name: ______________________
Your Instructor’s Phone: ______________________ Email: ______________________

COURSE MATERIAL REQUIRED:
• Text: *RealTime Physics Active Learning laboratories, Module1, Mechanics* “THE PHYSICS SUITE” by Sokolof, Thornton, and Laws
• Calculator
• A thin binder to keep your lab reports, homework and quizzes

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.

COURSE OBJECTIVES:
• To conduct organized, experimental, scientific investigations
• To report your observations and results clearly and completely
• To draw conclusions from the results based on your understanding of the relevant physics
• To study introductory physics via computer simulation experiments and exercises.

LABORATORY ACTIVITIES
• 5 experimental laboratory sessions
• 5 out-of-class simulation exercises
• One in-class laboratory exam
COURSE GRADING:

Lab Reports:
- Pre-Lab Preparation: 5 points
- Report: 80 points
- Lab Homework: 15 points
- Total: 100 points

Simulations
- Simulation Questions (will be done as homework): 50 points
- Simulation Quizzes: 50 points
- Total: 100 points

- Total Lab. Reports: 50%
- Total Simulation in class quizzes + Simulation Questions: 20%
- Laboratory Exam: 30%
- Total: 100%

PLEASE NOTE THAT STUDENTS WHO MISS A LABORATORY MEETING (WITH THE EXCEPTION OF THE FIRST LAB MEETING) WILL LOSE 10% FOR THE LAB REPORT PLUS 4% FOR THE SIMULATION QUIZ AND THE SIMULATION QUESTIONS. THE LOSS OF THESE 14% OVERALL COURSE TOTAL POINTS AUTOMATICALLY PREVENTS ENOUGH POINTS (90) FOR A FINAL GRADE OF ‘A’ TO BE POSSIBLE!!!!

No make-up labs will be given

- If you miss a lab due to the reasons beyond your control, with a legitimate reason the credits of that lab will be added to your final exam. Therefore your final exam will be 44% of your overall grade points.
- This application can be done only for once. If you miss any more lab, you will miss 14 points from your overall grade which is equivalent to almost two letter grades (example: from A to C).
- It is strongly recommended that you do not miss any labs.
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 submissions 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.

**Conducting a Laboratory Investigation**

The goal of a physicist is to gain an understanding of our physical universe. To gain this understanding, observations must be made on physical systems. If the understanding is to be anything more than superficial, measurements of the physical properties of the system must be made. These measurements, once made, can then lead to a factual understanding of the system. For example, if our physical system is a bow and arrow, we can gain a factual understanding by examining the results of experiments done with the bow and arrow. To obtain this understanding we might begin by examining the physical appearance of the bow and arrow and by measuring certain properties of the bow and arrow, such as the length and mass of the arrow, the dimensions of the bow, etc. We might want to determine how far the arrow will travel when the bow string is pulled back by different distances or when the arrow is launched at different angles. In order to obtain and utilize the factual information in an efficient manner, certain techniques must be learned concerning the manner in which experimental data is obtained and how it is analyzed. In this laboratory many of the experiments have been designed to allow you an opportunity to develop skills necessary to make meaningful measurements, to extract useful data from a given physical system, to organize the data so as to reveal the maximum information about the system, and to draw conclusions about the system which are supported by the factual information obtained as a result of having done the experiment. Although your experiences in this class relate to the field of physics, the techniques whereby a problem is approached in a systematic way can carry over into many fields of study.
**SIMULATION ACTIVITIES & EXERCISES**

The simulation activities are assigned for the purpose of allowing students to interactively explore introductory physics concepts that are presented to them in the lecture portion of the class. Progress in computer simulations has provided an excellent opportunity for students to learn physics in the comforts of their own homes and on their own time schedule.

While only five (5) simulation chapters will be required for the laboratory portion of the class, there are many other chapters in the simulation web site that will help tremendously in learning the material that is being covered by your professor in the lecture portion of your class.

**YOU ARE REQUIRED TO PERFORM ALL OF THE ILLUSTRATIONS AND EXPLORATIONS FOR THE ASSIGNED SIMULATION CHAPTERS!!!**. It is required that you answer the simulation questions before coming to the next lab session. These questions will be graded by your instructor and they will worth 50 points. The simulation related quiz will be given at the beginning of the lab session and it will be worth 50 points.

**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 of the associated pages from your manual and hand them in to your instructor. The report will be graded by your instructor and returned back to you in the beginning of the following lab session. Your lab report will worth 80 points. You will prepare the Pre-Lab Preparation Sheet before coming to the lab and it will be collected for grading by your instructor in the beginning of the lab session. Pre-Lab Preparation will worth 5 points. Once you finish the experiment, you will complete the related homework in your manual, and handed in to your instructor at the beginning of the following lab session. Homework will worth 15 points.

**LABORATORY EXAM**

You will be given a lab exam the last week of your lab session. The exam will be closed book and closed lab reports. You will have practical part for your exam related to the experiments that you conduct during the semester and also related to the simulations. The lab exam will weigh 30% of your overall course grade.
**PHYS 2101 Labs Schedule**  
**Summer I (2013)**

Group A includes students with two lab sections L03 and L05)  
Group B includes students with three lab sections L01, L02, and L04  
Please see the table below for your lab schedule for the summer I semester.  
**Lab Location: Burson 153**  
Lab = *in-class experimental activity*  
Sim. = *simulation activity* which is done by the student using Module 1 lab manual.

<table>
<thead>
<tr>
<th>Date</th>
<th>Group A Activity</th>
<th>Group B Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 28 (Tuesday)</td>
<td>Lab 1 – Introduction to Motion</td>
<td>NONE</td>
</tr>
<tr>
<td>May 29 (Wednesday)</td>
<td>Sim. 1 – The Moving Man &amp; the Maze Game</td>
<td>Lab 1 – Introduction to Motion</td>
</tr>
</tbody>
</table>
| May 30 (Thursday)| Lab 2 – Changing Motion  
Return Homework for Lab 1  
Return Pre Lab Preparation for Lab. 2  
Return Sim. 1 questions. | Sim. 1 – The Moving Man & the Maze Game |
| June 04 (Tuesday)| Sim. 2 – Projectile Motion                           | Lab 2 – Changing Motion  
Return Homework for Lab 1  
Return Pre Lab Preparation for Lab 2  
Return Sim. 1 questions. |
| June 05 (Wednesday)| Lab 3 – Force and Motion  
Return Homework for Lab 2  
Return Pre Lab Preparation for Lab 3  
Return Sim 2 questions | Sim. 2 – Projectile Motion |
| June 06 (Thursday)| Sim 3 – The Ramp                                     | Lab 3 – Force and Motion  
Return Homework for Lab 2  
Return Pre Lab Preparation for Lab 3  
Return Sim 2 questions |
| June 11 (Tuesday)| Lab 4 – Work and Energy  
Return Homework for Lab 3  
Return Pre Lab Preparation for Lab 5  
Return Sim 3 questions | Sim 3 The Ramp |
| June 12 (Wednesday)| Sim 4 – Energy Skate Park                            | Lab 4 – Work and Energy  
Return Homework for Lab 3  
Return Pre Lab Preparation for Lab 5  
Return Sim 3 questions |
| June 13 (Thursday)| Lab 5 – Conservation of Energy  
Return Homework for Lab 4  
Return Sim 4 questions | Sim 4 – Energy Skate Park |
| June 18 (Tuesday)| Sim 5 – Ladybug Revolution                           | Lab 5 – Conservation of Energy  
Return Homework for Lab 4  
Return Sim 4 questions |
| June 19 (Wednesday)| **Lab Exam**  
Return Homework for Lab 5  
Return Sim 5 questions | Sim 5 – Ladybug Revolution |
| June 20 (Thursday)| NONE                                                 | **Lab Exam**  
Return Homework for Lab 5  
Return Sim 5 questions |