



## PHY 2020: Concepts of Physics

Department of Physics  
College of Science, University of Central Florida

### COURSE SYLLABUS

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|               |                               |                      |                   |
|---------------|-------------------------------|----------------------|-------------------|
| Instructor:   | Dr. Jacquelyn Chini           | Term:                | Fall 2015         |
| Office:       | PSB 105                       | Class Meeting Days:  | Tues/Thurs        |
| Phone:        | 407-823-3607                  | Class Meeting Hours: | 8:00 AM – 9:15 PM |
| E-Mail:       | jchini@ucf.edu                | Class Location:      | MSB 350           |
| Website:      | physics.cos.ucf.edu/chiniperg |                      |                   |
| Office Hours: | TBD                           |                      |                   |

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#### I. Welcome!

Welcome to Concepts of Physics!

#### II. University Course Catalog Description

An introductory course in physics designed for non-science majors, emphasizing topics relevant to everyday life. The course focuses on major physical discoveries and their implications for the world around us.

#### III. Course Overview

Physical Science is not a collection of static facts and equations to be absorbed and remembered. Rather, it's a set of changing ideas about how the world works, together with the dynamic process by which such ideas are developed. This process involves a lot of creative thinking, along with observation and logical reasoning based on various forms of evidence. In this course you will be making predictions based on your own ideas, watching experiments and simulations, and recording your observations. You will discuss ideas with your classmates and try to draw conclusions based on the evidence you have recorded. Some lessons will also focus on the process by which you are learning and about the way in which science knowledge is developed.

You'll find that this book doesn't look like a familiar, traditional, science textbook. Instead it's a workbook where you record observations, your ideas and those of your classmates. In each lesson you'll work in collaboration with your neighbors, discussing your thoughts and ideas, and finally trying to come to consensus to some summarizing questions as a whole class. Don't expect your instructor to give you the 'right' answers! Instead, your instructor and the course materials will serve as a guide to help you formulate your own responses to questions.

This course will cover topics in energy, forces, and small particle theories of matter.

#### IV. Course Objectives

LEPS is a discussion-oriented course, with three major goals:

- (1) To help you develop a deep understanding of physical science ideas that can be used to explain everyday phenomena

(2) To help you become more aware of how your own ideas about physical science change and develop over time, and how the structure of the curriculum facilitates these changes.

(3) To help you develop an understanding of how knowledge is developed within a scientific community and the nature of that knowledge itself.

The aim of the LEPS format is for you to take charge of your own learning, so there's very little formal lecturing in the LEPS course. During class you'll spend most of your time discussing ideas and questions. You will also continue your learning outside class, as you work through the interactive homework modules associated with almost every lesson.

#### V. Course Prerequisites

Students should be able to perform basic mathematical calculations (adding, subtracting, multiplying and dividing).

#### VI. Course Credits

3

#### VII. Required Texts and Materials

*Learning Physical Science, It's About Time* Publishers (2013)

ISBN-10: 1607205246

ISBN-13: 978-1607205241

I clicker (Version 1 or 2 will work)

#### VIII. Basis for Final Grade

| Assessment        | Percent of Final Grade |
|-------------------|------------------------|
| Homework          | 12%                    |
| Pop Quizzes       | 10%                    |
| Clicker Questions | 10%                    |
| Labs              | 6%                     |
| Participation     | 2%                     |
| Tests             | 40%                    |
| Final             | 20%                    |
|                   | 100%                   |

| Grading Scale (%) |    |
|-------------------|----|
| 94-100            | A  |
| 90-93             | A- |
| 87-89             | B+ |
| 84-86             | B  |
| 80-83             | B- |
| 77-79             | C+ |
| 74-76             | C  |
| 70-73             | C- |
| 67-69             | D+ |
| 64-66             | D  |
| 60-63             | D- |
| 0 - 59            | F  |

\*Note: The Grading Scale is subject to revision at the instructor's discretion.

**Homework:** Homework will be assigned every day in Webcourses and is due at the beginning of the next class, as material from the homework will be built upon in the following lessons. Several times during the semester, the “explain your reasoning” questions will be graded and will count for the HW score in place of the multiple choice questions.

**Pop Quizzes:** Pop quizzes will occur sporadically throughout the course. They will be based on the homework and tutorials, and may be “clicker style” or free response.

**Clicker Questions:** Clicker questions will be asked in most lessons. Students will earn 3 points for a correct answer and 2 points for an incorrect answer.

**Labs:** Lab days will occur around each test. More details will be provided.

**Participation:** Participation scores will be based on attendance, on time arrival to class, and participation in class discussions.

**Tests:** Each Unit will be assessed separately as an individual “test”, although Units 1 and 2 and Units 3 and 4 will be tested on the same day. Your lowest one of the five test scores will be dropped.

**Final:** The final exam will be cumulative.

#### **IX. Grade Dissemination**

Graded tests and materials in this course will be returned individually only by request. You can access your scores at any time using the Grade Book function of Webcourses. Please note that scores returned mid-semester are unofficial grades. You have one week from the posting of a grade to request changes.

#### **X. Course Policies: Grades**

##### **Late Work Policy:**

There are no make-ups for in-class activities, quizzes, or the final exam. Instead, **one quiz score, one day’s clicker score, and three individual homework assignments (a typical day’s homework) will be dropped.** These dropped scores will account for situations that may arise and prevent you from participating in the day’s activities, such as a flat tire or loss of internet access.

##### **Grades of "Incomplete":**

The current university policy concerning incomplete grades will be followed in this course. Incomplete grades are given only in situations where unexpected emergencies prevent a student from completing the course and the remaining work can be completed the next semester. Your instructor is the final authority on whether you qualify for an incomplete. Incomplete work must be finished by the end of the subsequent semester or the “I” will automatically be recorded as an “F” on your transcript.

#### **XI. Course Policies: Technology and Media**

**Email:** Questions regarding this course should be submitted via email to Dr. Chini at [jchini@ucf.edu](mailto:jchini@ucf.edu). I will try to respond within 24 hours from emails sent Sunday – Thursday and within 48 hours for emails sent Friday – Saturday.

**Webcourses:** This course will make extensive use of Webcourses. All homework assignments will be completed through Webcourses. Students are expected to log in daily to check for announcements and assignments.

**Laptop Usage:** Laptops should not be used in class unless specifically suggested by the instructor or with prior approval. Off-topic laptop usage will affect your participation score.

**Classroom Devices:** Students may use a simple calculator on some clicker questions, quizzes and exams. Directions will be given for each specific assessment.

**Classroom Response Clickers:** We will be using REEF polling/iClicker in class on a regular basis. You will need a REEF account. You can vote with either a clicker or a Wi-Fi enabled device.

## **XII. Course Policies: Student Expectations**

### **Disability Access:**

The University of Central Florida is committed to providing reasonable accommodations for all persons with disabilities. This syllabus is available in alternate formats upon request. Students who need accommodations must be registered with Student Disability Services, Ferrell Commons Room 185, phone (407) 823-2371, TTY/TDD only phone (407) 823-2116, before requesting accommodations from the professor.

**Attendance Policy:** This course is based on in class participation, so attendance is expected at every class session. You must be in class to earn clicker or participation points. One unexcused absence will be granted (as explained above). Otherwise, only absences for university approved reasons will be allowed.

### **Professionalism Policy:**

Mobile phones, tables, etc. must be silenced and put away during class. Those not heeding this rule will be asked to leave the classroom/lab immediately so as to not disrupt the learning environment, and will not earn clicker or participation points for the day. Please arrive on time for all class meetings. Students who habitually disturb the class by talking, arriving late, etc., and have been warned may suffer a reduction in their final class grade. Arrival more than 20 minutes late will be treated as an absence.

**Academic Conduct Policy:** Academic dishonesty in any form will not be tolerated. If you are uncertain as to what constitutes academic dishonesty, please consult The Golden Rule, the University of Central Florida's Student Handbook (<http://www.goldenrule.sdes.ucf.edu/>) for further details. As in all University courses, The Golden Rule Rules of Conduct will be applied. Violations of these rules will result in a record of the infraction being placed in your file and receiving a zero on the work in question AT A MINIMUM. At the instructor's discretion, you may also receive a failing grade for the course. Confirmation of such incidents can also result in expulsion from the University. Examples of academic dishonesty include, but are not limited to, using unauthorized aids during quizzes or tests, using another student's Iclicker, and "Googling" homework assignments.

## **XIII. Important Dates to Remember**

We will have a quiz approximately one a week, starting with Week 2. The exact date will depend on the timing of the class, and will typically be about one day after the completion of a Unit. All dates and assignments are tentative, and can be changed at the discretion of the professor.

|                             |                              |
|-----------------------------|------------------------------|
| Drop/Swap Deadline:         | Thu, August 27, 2015         |
| Grade Forgiveness Deadline: | Mon, November 2, 2015        |
| Withdrawal Deadline:        | Mon, November 2, 2015        |
| Final Examination:          | Tues, December 15, 2015 7 AM |

## **XIV. Religious Observances**

Students are expected to notify their instructor in advance if they intend to miss class to observe a holy day of their religious faith. For a current schedule of major religious holidays, see the Faculty Center's main web page under "Calendars," and for additional information, contact the Office of Diversity Initiatives at 407-823-6479.

## **XV. Schedule**

| <b>Week</b> | <b>Unit</b>             | <b>Tests/Labs</b> |
|-------------|-------------------------|-------------------|
| 1           | Unit 1 (Lessons 1 – 4)  | Pre-diagnostics   |
| 2           | Unit 1 (Lessons 5 – 10) |                   |

|  |   |                       |
|--|---|-----------------------|
| 3  | Unit 1 (Lessons 11 – 13) and Unit 2 (Lessons 1 – 3) |                       |
| 4  | Unit 2 (Lessons 4 – 9)                              |                       |
| 5  | Unit 2 (Lessons 10 -11)                             | Lab Day #1            |
| 6  | Catch Up/Review                                     | Test#1: Units 1 and 2 |
| 7  | Unit 3 (Lessons 1 – 6)                              |                       |
| 8  | Unit 3 (Lessons 7 – 10) and Unit 4 (Lessons 1 – 2)  |                       |
| 9  | Unit 4 (Lessons 3 – 8)                              |                       |
| 10   | Catch Up/Review                                     | Lab Day #2            |
| 11   | Unit 5 (Lessons 1 – 3)                              | Test#2: Units 3 and 4 |
| 12   | Unit 5 (Lessons 7 – 9)                              |                       |
| 13   | Unit 5 (Lessons 10 – 13)/Catch up and Review        |                       |
| 14   | Unit 5  | Test #3: Unit 5       |
| 15   | Review  | Lab Day #3            |
| Final Exam: Tues, December 15, 2015 7 AM – 10 AM |   |                       |

\* Note: The Schedule is subject to revision.