Welcome to PHYSICS 102.001

Introduction to Physics

Instructor: Prof. Bernd Bassalleck

Spring 2013 Tu/Th, 12:30 - 1:45 PM Regener Hall 103
Contact Info: bossek@unm.edu 277-1506
Office hours: I will generally be available before and after class in room 109 of Regener Hall.

Teaching Assistant: Mr. Feng Shen, shenfeng@unm.edu
You may contact him in case of questions about the material or class administration, such as i>clickers, online exams, etc. We will obviously work closely together.

Brief Course Description and Goals: This is a ***conceptual introduction*** to some important physics topics, intended for non-science majors. No previous physics preparation is assumed, and only a minimal amount of math (elementary algebra and graphical relations) will be employed. Our primary goals include having some fun (both you & I!) exploring core physics concepts, both "classical" (pre-1900, 1st semester half) and "modern" (post-1900, 2nd semester half), removing anxiety about physics and/or elementary math, as well as enhancing your science literacy and critical thinking skills. Let me hereby encourage you *strongly* to give me feedback on my teaching and this course in general during the semester already.

Required Textbook: *Physics, Concepts & Connections*, 5th edition, by Art Hobson (any version, incl. the less expensive 3-ring binder version or the electronic one from CourseSmart.com, which is also less expensive). Make sure (important!) you also have an **i>clicker** (see below) right at the beginning of the semester. We'll make *extensive* use of it. Apart from the Review Questions and

Conceptual Exercises at the end of each chapter (relevant for i>clicker quizzes and exams), note the useful Concept Checks throughout the chapters, all answered in the back of the book. Please also note your free access to www.physicsplace.com, mentioned in the front of the book.

Class Website:
http://panda.unm.edu/Courses/Bassalleck/Phy102Sp13/
(panda.unm.edu is the homepage of our Physics & Astronomy department.) On the class website we will post my lecture presentations as well as various ancillary, supporting material, relevant to the class topics and to quizzes and exams.

Important: I will NOT regurgitate (much of the) material presented in the book during my lectures. Rather, class time will be spent with discussions, demonstrations, sample calculations/problems, answering your questions as well as interactive questions/quizzes using i>clickers (which will contribute significantly to your grade, see below). Hopefully this format will clarify and amplify *what you've read **prior** to class* in the book. It is my intent to engage you as much as possible, our large class format notwithstanding. This approach makes it *absolutely crucial* that you read the assigned chapters *before class* and attend class regularly. Unless you are prepared to do this, you will not succeed in this course. Re-reading the material after class is of course also not a bad idea.

Homework/Quizzes/Exams/Grading: There will be NO written, graded homework. Instead we will make extensive use of i>clickers. I will regularly assign/strongly suggest certain problems out of the book, which will then form the basis for *some* (but not all) of the in-class i>clicker quizzes. There will be 3 exams (see the syllabus below) and a Final. The lowest exam grade will be dropped. There will be no make-up exams and no extra credit. The final grade will be computed from the two highest exams (15% each), i>clicker responses (40%, provided you participated in at

least 60% of all i>clicker quizzes), and the Final (30%). I will not curve, and plan to use fractional grading within the following scheme:

88% – 100%: A
75% – 87%: B
60% – 74%: C
50% – 59%: D
<50%: F

i>clickers: As already indicated, we plan to use them extensively and your responses (both participation and correct answers, 1 point ***each***) to questions in class will contribute very significantly to your final grade. i>clickers may be purchased from the bookstore or online. If you have one from a previous course, it can be used for this course, and the several different current versions should all work. In any case, ***you must register your i>clicker no later than the end of the first week of classes***. Go to www.iclicker.com/registration, and (important!) for student ID use your UNM Banner ID, for remote ID enter the series of 8 numbers and letters on the white sticker on the bottom back of your i>clicker. You must have come to class at least once and voted on at least one question, in order to complete this registration properly. I hope that active participation via your i>clicker will contribute significantly to your learning experience in this course. If you need help with your i>clicker, please see panda.unm.edu/Courses/StudentHelp

UNM Learn: This course is "web-enhanced" via our new course management system UNM Learn. We plan for you to be able to check your cumulative i>clicker score and thereby track your grade by logging into UNM Learn. In addition, the plan is to give all exams online, using UNM Learn. Therefore you'll need to acquire some basic familiarity with this system. Please consult newmedia.unm.edu/initiatives-projects/nextgenlms/index.html
Note that at least for the time being other class material (lectures and supporting material) will be posted on the class website hosted in the P&A department, as outlined above.

Class Etiquette: It goes without saying that cell phones and pagers are turned off before class. Please do not eat in class, don't surf the Web nor engage in other distracting activities. For i>clicker responses you are strongly encouraged to consult with your neighbor(s), but otherwise please don't talk in class. Physics is not an easy subject, and you will come across new and foreign (but hopefully also interesting) concepts, sometimes even challenges to your common sense. But that is also part of the fun and excitement surrounding this most fundamental of all sciences. I encourage you to engage and ask questions, after having read the material before class, as emphasized more than once. And remember, if you cheat (on exams or elsewhere) you first & foremost cheat yourself, apart from violating the UNM Student Code of Conduct. Your own effort will determine your success, your satisfaction, and your final grade. I am determined to treat everyone as a responsible adult.

Syllabus

(Note: subject to change, depending upon our progress and unforeseen circumstances. Not all sections of all chapters listed will be covered, and we may not make it to chapter 17.)

January 15: Introduction & Chapters 1 (particularly 1.1 and 1.8, but do read the rest)
January 17: Chapter 2
January 22: Closing comments on Chapter 2, then Chapter 3
January 24: Chapters 3 & 4
January 29: Chapter 4
January 31: Finish Chapter 4
February 5: Review Newton's Laws, then Chapter 5
February 7: Chapter 5 & brief final review for Exam 1, which will be *online* via UNM Learn, available for a yet to be determined period in the week after the February 7 class, and will cover chapters 2 – 5, of course only material covered in class
February 12: Any remaining questions on Ch. 5, then Chapter 6
February 14: Chapter 6
February 19: Chapter 6

February 21: Chapter 7
February 26: Chapter 7
February 28: Chapter 8
March 5: Chapter 8
March 7: Finish Chapter 8 & start 9

Spring Break

March 19: Chapter 9 (except 9.8 & 9.9)
March 21: Guest Lecture on Global Warming by Prof. Dave Gutzler from UNM's Dept. of Earth & Planetary Sciences
March 26: Finish ch. 9 (very briefly); Review for Exam 2 – online again, available after this class, covering chapters 6 - 9; Start chapter 10
March 28: Chapter 10
April 2: Chapter 10
April 4: Finish Chapter 10
April 9: Chapter 12
April 11: Guest Lecture by Prof. Dinesh Loomba, our resident Dark Matter expert, related to parts of ch. 11
April 16: Chapter 12
April 18: Chapter 13.6 & 13.7
April 23: Review for Exam 3 – *online* again, available sometime after this class, covering chapters 10, 12, 13.6, 13.7; start Chapter 14
April 25: Chapters 14 & 15 (parts thereof)
April 30: Chapter 16 (parts thereof)
May 2: Recap & Review for Final Exam, including half an hour with 10 clicker quizzes as make-up opportunity

During Finals Week: Final Exam (again online and comprehensive - to the extent material was covered in class)

The following link provides a short document with good and useful advice.
panda.unm.edu/Courses/Bassalleck/Phy102Sp13/info/Succeed in Physics.pdf