

Welcome to **PHYSICS 102.001**

Introduction to Physics

Instructor: Prof. Bernd Bassalleck

Spring 2014 Tu/Th, 12:30 - 1:45 PM Regener Hall 103

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Please use the above e-address *exclusively* when contacting me,
and not e-mail within UNM Learn (see below).

Office hours: I will generally be available before and after class in
room 109 of Regener Hall.

TA: Mr. Anirban Chowdhury, anchowdhury@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. I encourage you *strongly* to provide feedback on my teaching and this course in general during the semester so that we can maximize your learning experience.

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.

UNM Learn & class-related material on the Web: This course is “web-enhanced” via our course management system UNM Learn: <https://learn.unm.edu>. You will be able to check your cumulative i>clicker score and thereby track your grade by logging into UNM Learn. In addition, all exams will be given online, using UNM Learn. Therefore you'll need to acquire some basic familiarity with this system right away, if you haven't already used it. UNM Learn will be used for posting of my lecture presentations as well as various reference 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 during class periods. 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 (88-91 A-; 92-96 A; >96 A+)

75% – 87%: B (75-78 B-; 79-83 B; 84-87 B+)

60% – 74%: C (60-68 C; 69-74 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 various versions should all work. In any case, *you must register your i>clicker no later than the end of the first week of classes.* Note: re-registration for every semester is required. Go to www.iclicker.com/registration, and (important!) for student ID use your UNM NetID (the stuff before @unm.edu), and for remote ID enter the serial number 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, and note that the College of A&S can help with i>clicker issues: ASTechUNM@gmail.com

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 and is bound to be changed during the semester, depending upon our progress and unforeseen circumstances. Not all sections of all chapters listed will be covered, and realistically we may not make it to chapter 17.)

January 21: Introduction to this course & Chapter 1 (focus on 1.1 and 1.8, but do read the rest); possibly start Chapter 2

January 23: Chapter 2

January 28: Closing comments on Chapter 2, then Chapter 3

January 30: Chapters 3 & 4

February 4: Chapter 4

February 6: Finish Chapter 4 – review Newton's Laws; possibly start Chapter 5

February 11: Chapter 5

February 13: Finish Chapter 5 & 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 13 class, and will cover chapters 2 – 5, of course only material discussed in class

February 18: Chapter 6

February 20: Chapter 6

February 25: Chapter 7

February 27: Chapter 7

March 4: Chapter 8

March 6: Chapter 8

March 11: Chapter 9

March 13: Chapter 9 (except 9.8 & 9.9)

Spring Break

March 25: Guest Lecture on Global Warming by Prof. Dave Gutzler from UNM's Dept. of Earth & Planetary Sciences

March 27: Review for Exam 2 – *online*, available for a yet to be determined period after this class, covering chapters 6 – 9; start Chapter 10

April 1: Chapter 10

April 3: Chapter 10

April 8: Finish Chapter 10; start Chapter 12

April 10: (Tentatively) Guest Lecture by Prof. Dinesh Loomba, our resident Dark Matter expert, on topics related to Chapter 11

April 15: Chapter 12

April 17: Finish Chapter 12; Chapter 13 (focus on 13.6 & 13.7)

April 22: Review for Exam 3 – *online*, available for a yet to be determined period after this class, covering chapters 10, 12, 13.6, 13.7; start Chapter 14

April 24: Finish Chapter 14 (except 14.5); start Chapter 15

April 29: Finish Chapter 15 (except 15.8); start Chapter 16

May 1: Chapters 16 (parts thereof)

May 6: Chapter 17 (parts thereof), assuming we get this far

May 8: Recap & Review for Final Exam

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