Syllabus for Physics 116 Online Summer 2018

Professor Jeff Steele

This syllabus is a live document and subject to change

Course: General Physics II

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Text: Required: Fundamentals of Physics, 9ed (ninth edition), by Halliday,

Resnick, and Walker; please note that you can also get the extended version or you can get the shortened version. The text also comes in two parts, but you need both parts for 115 and 116. You may find this book on the College bookstore website, or probably cheaper on Amazon, much cheaper if used. You may use an electronic version. *Required*: In addition, you need the ExpertTA homework service. This is purchased by semester, so you will need to pay for it this spring in

order to do homework.

Registration Link: http://goeta.link/USA48VA-41A3B2-1MZ

Optional: Study Guide

Course Comments: This course is the second half of an calculus based comprehensive survey of basic physics. This course covers topics in mechanics (gravitation, equilibrium, fluids), electricity and magnetism (the study of forces, fields, circuits, and waves), and optics (electromagnetic waves, light) at a level appropriate for beginning physics majors, pre-medical students and science majors. We will cover approximately three chapters every week or a bit more. The goal of this course is to train your physical intuition, to give you a basic understanding of electricity and magnetism in the world around us, and to teach you the tools needed for effective problem-solving.

Course Schedule (July 9-August 10)

Week 1: (July 9) Chapter 12 - Equilibrium

HW1 assigned M, part due F

Chapter 13 - Gravitation

HW1 due M

HW2 assigned M, part due F

Chapter 21 - Electric Charge

HW2 due M

HW3 assigned M

Week 2: (July 16) Chapter 22 - Electric Field

HW3 due M

HW4 assigned M, part due F

Chapter 23 - Gauss' Law

HW4 due M

HW5 assigned M (short)
Exam 1 Th (help session W)

Chapter 24 - Electric Potential

HW5 due M

HW6 assignmed M, part due F

Week 3: July 21 Chapter 25 - Capacitance

HW6 due M

HW7 assigned M and due F

Exam 1 due, Chapters 12, 13, 21, 22 Chapter 26 - Current & Resistance

HW8 assigned M

Take-home Quiz 2 due Th

Chapter 27 - Circuits

HW8 due M

HW9 assigned M, part due F

Week 4: July 28 Chapter 28 - Magnetic Fields

HW9 due M

HW10 assigned M (short) Exam 2 Th (help session W)

Exam 2 (Chapters 23-27)

Chapter 29 - Magnetic Fields Due to Currents

HW10 due M

HW11 assigned M, part due F

Chapter 30 - Induction

HW11 due M

HW12 assigned M, part due F

Week 5 (August 6) Chapter 31 - Electromagnetism & AC

HW12 due M

HW13 assigned M

Additional Topics

Exam Review
HW13 due M
HW14 assigned M and due F
Final Exam

Course Lecture

Direct lectures will be done via pre-recorded video lecture, from the professor (not outside sources). Videos will include the presentation of the concepts and example problems solved.

Office hours

Office hours are live face to face. A schedule is posted, and may be modified based on the needs and schedules of the students and professor. Office hours may be requested outside of the regularly announced times. Please feel free to try any time, including evenings and weekends, to make an appointment.

As you see by the schedule, the class will move quickly, approximately three chapters per week. There will be one homework assignment due for each chapter. Homework is generally due one week after being assigned, except where noted on the syllabus. Part of the homework must be done by Friday as explained elsewhere.

- Tests will cover 2-4 chapters, and there will be two during the semester
- Quizzes will be offered as an opportunity to improve any low test scores.
- The final is comprehensive, with a larger emphasis on materials from Chapters 28-32 (material covered after exam 2

Grading

Grading will be determined as follows:

Homework: 30%Exam 1: 20%Exam 2: 20%Final Exam: 30%

If you do the regular homework assignments, then it is worth 30% of your grade. The more additional homework you do, the more the homework counts, and the less the exams count. If you get all the extra homework points, it is worth 40% of your grade (an additional 10%) and the weight of the exams goes down 10%. If you get half the extra homework points, homework will count as 25% of your grade and the weight of the exams goes down 5% equivalently, etc.

Honor Code and Responsibility

Take responsibility for your work and yourself. You are expected to complete all homeworks and exams by the policies outlined for the assignments, on time. Honor is of utmost importance

in the academic atmosphere and is taken very seriously by me. I encourage people to work together on homework and labs, but the finished product must be your own work. I would encourage anyone to come to me with a problem that has kept you from doing your work, so that we can work something out, rather than just taking a zero, or worse yet, cheating and possibly failing the class. I will feel free to give you freedom, but then the conduct of the Honor System instituted at Randolph College is in the hands of the students.

Communication

I plan on using Moodle to communicate. Homework assignments and solutions, exam hints and solutions, schedule changes and guidelines (such as those listed here) will all be on the web so that you can access them anytime, and even print them out if you would like.