

PHYSICS 104 - General Physics

Course Outline and Format

Spring 2005

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|----------------------------|---|--|
| Sections | 001, 002 | 003 |
| Unique class number | 10401 | 99843 |
| Instructors | Dr. Tatiana Allen 347 Grote Hall Tel: 425-4520 e-mail: Tatiana-Allen@utc.edu http://www.utc.edu/Faculty/Tatiana-Allen | Dr. Peter Groves 219 Grote Hall Tel: 425-1766 e-mail: Peter-Groves@utc.edu |
| Schedule | Tu, Th 10:50 – 12:05 | MWF 9:00 – 9:50 |
| Final exam | Th, April 21, 11 am – 1 pm | Monday, April 25, 8-10 am |
| Location | Grote 226 | Grote 131 |
| Office Hours | according to schedule on the office door or by appointment | MWF 10-11 am, or by appointment |

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Catalog Description

104 General Physics-Electromagnetism and Optics (3)

Algebra-based introduction to classical electricity and magnetism, optics, and the concepts of modern physics. Required in premedical, pre dental, prepharmacy, and physical therapy programs. Every semester. Lecture 3 hours. Prerequisite: Physics 103 / 183 or approval of the instructor. Corequisite: Physics 184 laboratory, or approval of the department.

Course Objectives

As a result of completing Physics 104, you should:

1. understand the basic concepts of Physics as an essential foundation for comprehending the technological problems in everyday life.
 2. develop problems solving skills useful in your professional life.
 3. apply the concepts of algebra, trigonometry, and geometry, to actual problems in physics.
 4. be able to integrate the conceptual and qualitative exercises.
 5. realize the significance of conservation principles, such as energy, momentum and angular momentum and their applications.
 6. understand the origin and evolution of physical principles.
 7. be familiar with the misconceptions prevalent in society and the scientifically correct explanations.
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Text: Our text will be COLLEGE PHYSICS, 5 th Edition, by Jerry D. Wilson and Anthony J. Buffa.

We shall concentrate heavily on chapters 15 - 30.

Attendance in class is required. Your grade will be dropped by one letter grade for every three (3) classes missed. **Attendance at all tests is required. If you miss a test, you will get zero for this test. I may make exceptions if I am convinced that you were ill, had a death in the family, or were involved in a similar emergency. Students are responsible for all information that is given in class including the material covered, information concerning the execution of the class and the possible changes of schedule and policies.**

Grades: the tentative grading plan will be as follows:

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|---|-------------|
| tests 3 @ 15% | 45% |
| homework on U of Texas Server | 15% |
| quizzes based on HW, reading, and problems discussed in class | 15% |
| final exam | 25% |
| Total | 100% |

The grading scale is: A= 90 -100; B= 80 - 89; C= 70 - 79; D= 60 - 69; F= less than 60

Studying

Effective studying consists of attending lectures and taking lecture notes, active reading of the textbook, and solving various exercises on your own. Begin studying your lecture notes by reviewing the lecture outlines. Ask yourself questions about the material; for example, ask yourself

to provide definitions, to summarize the purpose, method and results of studies. Active reading involves several steps. First, read the title, topic and subtopic headings, and the summary at the end of each chapter, in order to get an overall sense of what the chapter is about. Read the chapter "in chunks". The size of these chunks should be determined by natural breaks in the text, and by your ability to assimilate the material being read. Make brief notes in the margins of the text as necessary. It is helpful to make one- or two-page summary notes per chapter showing the major headings and key concepts. Try to relate these summaries to various problems that you attempt to solve. In general, study as if you were going to write an examination.

Homework is a vital part of the learning process at this level of physics. Homework is self motivational, like life after school days. We will use an automated homework service provided by the University of Texas.

With this service each student will get a unique set of problems and work on them with his/her own pace (within the deadline). Then the answers should be entered into the server, and they will be graded instantly. Many problems allow several attempts to submit correct answer. Many problems are divided into smaller questions, which allows to obtain partial credit. After the deadline everybody can download solutions for their problems and learn from them.

A set of homework problems will be posted once a week, and will be due the following week (see schedule). I expect you to download the homework problems **before the weekend** and start working on them. If you have any questions, please ask them in class, so everybody has the same input for their homework. If you have any problems with your personal computer, please let me know. You can use computers at the Physics Department, or any university computer to access this service.

Please follow the [Student instructions](https://hw10.ph.utexas.edu/studentInstructions.html): (<https://hw10.ph.utexas.edu/studentInstructions.html>)

to register. **Please submit your valid e-mail address with registration, because some class information will be communicated by e-mail.**

Unique class number: see in the table on the first page, different for different sections

Student Login Page: <https://hw.utexas.edu/>

Weekly cycle of homework

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|----------------|--|
| Posted | Friday, before 3 p.m. |
| Questions/help | Monday, in class for MWF section Tuesday in class for TT sections |
| Due | Thursday, 2 p.m. |

The server produces a unique set of problems for every student. **You may consult with other students, but you must not copy their work! Plagiarism is an offense which will be reported to the honor court, and may result in failure and/or expulsion from the course.**

Schedule (tentative) for TT sections

| Week | Date | |
|------|--------|-------------------------------------|
| 1 | 6-Jan | Chapter 15 |
| 2 | 11-Jan | Chapter 15 |
| | 13-Jan | Chapter 15 |
| 3 | 18-Jan | Chapter 15 |
| | 20-Jan | Chapter 16 |
| 4 | 25-Jan | Chapter 16 |
| | 27-Jan | Chapter 17 |
| 5 | 1-Feb | Chapter 18 |
| | 3-Feb | Test 1 over chapters 15-18 |
| 6 | 8-Feb | Chapter 19 |
| | 10-Feb | Chapter 19 |
| 7 | 15-Feb | Chapter 19 |
| | 17-Feb | Chapter 19 |
| 8 | 22-Feb | Chapter 20 |
| | 24-Feb | Chapter 20 |
| 9 | 1-Mar | Chapter 21 |
| | 3-Mar | Chapter 21 |
| 10 | 15-Mar | Test 2 over chapters 19-21 |
| | 17-Mar | Chapter 22 |
| 11 | 22-Mar | Chapter 22, 23 |
| | 24-Mar | Chapter 23 |
| 12 | 29-Mar | Chapter 24 |
| | 31-Mar | Chapter 24 |
| 13 | 5-Apr | Chapter 25 |
| | 7-Apr | Selected topics from Chapters 26-29 |
| 14 | 12-Apr | Selected topics from Chapters 26-29 |
| | 14-Apr | Test 3 |
| 15 | 19-Apr | Review |

Schedule (tentative) for MWF section

| Week | Date | |
|------|--------|-------------------------------------|
| 1 | 5-Jan | Chapter 15 |
| | 7-Jan | Chapter 15 |
| 2 | 10-Jan | Chapter 15 |
| | 12-Jan | Chapter 15 |
| | 14-Jan | Chapter 15 |
| 3 | 19-Jan | Chapter 15 |
| | 21-Jan | Chapter 16 |
| 4 | 24-Jan | Chapter 16 |
| | 26-Jan | Chapter 16 |
| | 28-Jan | Chapter 17 |
| 5 | 31-Jan | Chapter 17 |
| | 2-Feb | Chapter 18 |
| | 4-Feb | Test 1 over chapters 15-18 |
| 6 | 7-Feb | Chapter 19 |
| | 9-Feb | Chapter 19 |
| | 11-Feb | Chapter 19 |
| 7 | 14-Feb | Chapter 19 |
| | 16-Feb | Chapter 19 |
| | 18-Feb | Chapter 19 |
| 8 | 21-Feb | Chapter 20 |
| | 23-Feb | Chapter 20 |
| | 25-Feb | Chapter 20 |
| 9 | 28-Feb | Chapter 21 |
| | 2-Mar | Chapter 21 |
| | 4-Mar | Chapter 21 |
| 10 | 14-Mar | Test 2 over chapters 19-21 |
| | 16-Mar | Chapter 22 |
| | 18-Mar | Chapter 22 |
| 11 | 21-Mar | Chapter 23 |
| | 23-Mar | Chapter 23 |
| | 25-Mar | Chapter 23 |
| 12 | 28-Mar | Chapter 24 |
| | 30-Mar | Chapter 24 |
| | 1-Apr | Chapter 24 |
| 13 | 4-Apr | Chapter 24 |
| | 6-Apr | Chapter 25 |
| | 8-Apr | Selected topics from Chapters 26-29 |
| 14 | 11-Apr | Selected topics from Chapters 26-29 |
| | 13-Apr | Selected topics from Chapters 26-29 |
| | 15-Apr | Selected topics from Chapters 26-29 |
| 15 | 18-Apr | Test 3 |
| | 20-Apr | Review |

Technology/e-mail

To enhance student services, the University will use your UTC email address (firstname-lastname@utc.edu) for communications. (See <http://onenet.utc.edu> for your exact address.) Please check your UTC email on a regular basis. If you have problems with accessing your email account, contact the Help Desk at 423/425-2678.

You can forward all of your UTC e-mail to any e-mail address of your choice. To do this you need to:

1. Go to <http://onenet.utc.edu> and login using your UTCID and password.
2. Log in to My Mail
3. Go to My Mail Options. Located in the top center of the window.
4. In the Options select Mailbox Management.
5. In the middle of the window look for the Forwarding section.
 - * Select Yes to Forward all new messages
 - * Select No to Keep Copy
 - * Enter any valid e-mail address in the Forward to: box
6. Select Save and Close.

Please feel free to contact your instructor by e-mail. Your instructor will respond to your message within 48 hours of receiving it during the business week. If the instructor gets your e-mail on Friday, it will be responded to by next Tuesday. Usually, instructors do not read their e-mail on weekends.

If you find that personal problems, career indecision, study and time management difficulties, etc. are adversely affecting your successful progress at UTC, please contact the Counseling and Career Planning Center at 425-4438.

If you are a student with a disability (e.g. physical, learning, psychiatric, vision, hearing, etc.) and think that you might need special assistance or a special accommodations in this class or any other class, call the Office for Students with Disabilities/College Access Program at 425-4006 or come by the office - 110 Frist Hall.

Last updated Jan 3, 2005