

**THE UNIVERSITY OF TEXAS AT EL PASO
COLLEGE OF SCIENCE
DEPARTMENT OF PHYSICS**

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| Course #: | PHYS 1404 CRN 30647 | | | | | | | | | | |
| Course Title: | General Physics II | | | | | | | | | | |
| Credit Hrs: | 4.0 | | | | | | | | | | |
| Term: | Summer 2018 | | | | | | | | | | |
| Course Meetings & Location: | MTWRF 11:40 am – 1:50 pm, UGLC 342 | | | | | | | | | | |
| Prerequisite Courses: | - | | | | | | | | | | |
| Course Fee: (if applicable) | - | | | | | | | | | | |
| Instructor: | Dr. Huiyan Yang | | | | | | | | | | |
| Office Location: | PSCI 215 B | | | | | | | | | | |
| Contact Info: | Phone # : (915) 747 7510 | | | | | | | | | | |
| | E-mail address: hyang4@utep.edu | | | | | | | | | | |
| | Fax #: (915) 747 5447 | | | | | | | | | | |
| | Emergency Contact: (915) 747 7527 | | | | | | | | | | |
| Office Hrs: | F 10:30 am – 11:30 am, or through appointment | | | | | | | | | | |
| Textbook(s), Materials: | Main textbook: <i>College Physics</i> , 3rd edition, by Randall D. Knight, Brian Jones, Stuart Field. <i>Pearson MasteringPhysics access code</i> for homework assignments. A code comes with a new textbook or can be purchased online. The course ID is MPYANG07995 . | | | | | | | | | | |
| Course Objectives (Learning Outcomes): | The objective of PHYS 1404, which is the second part of a sequence of two algebra-based introductory physics courses, is to provide students with a rigorous description of physical phenomena and to improve students' problem-solving abilities. We will study the following topics: Electric Fields and Forces, Electric Potential, Current and Resistance, Circuits, Magnetic Fields and Forces, EM Induction and EM Waves, AC Electricity | | | | | | | | | | |
| Grading Policy: | Grades in this course will be based on your scores on two midterm exams, a final exam (comprehensive; but with emphasis on the last part of the course), laboratory, and homework assignments. <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td>Quizzes</td> <td>10%</td> </tr> <tr> <td>Midterm exams</td> <td>30% (10% each)</td> </tr> <tr> <td>Final exam</td> <td>30% (comprehensive)</td> </tr> <tr> <td>Laboratory</td> <td>15%</td> </tr> <tr> <td>Homework</td> <td>15%</td> </tr> </table> | Quizzes | 10% | Midterm exams | 30% (10% each) | Final exam | 30% (comprehensive) | Laboratory | 15% | Homework | 15% |
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| <p style="text-align: center;">Course Activities/Assignments:</p> | <p>Homework Homework will be assigned (and graded) in MasteringPhysics. The course ID is MPYANG07995.</p> <p>It is essential that students become well versed in problem solving methods, which means developing the writing skills to set up a problem, including diagrams and mathematical manipulation to achieve the final answer.</p> <p>Credit is reduced by 10% per day after the due day and a hard copy must be turned in. 30% credit will be granted when a turned-in homework is overdue more than a week. No homework will be accepted after the final exam.</p> <p>Quizzes Quizzes will be administered in the online student response system REEF, where the course title is PHYS 1404 Summer 2018. Each quiz will consist of about five short, multiple choice problems, based on the course material. No make-up quizzes will be given.</p> <p>Exams Exams will consist of problems very similar to the worked example problems in the text and the assigned homework problems. Exams will be strictly closed-book. You should bring with you a pocket calculator to work out the answers to numerical problems: make sure the battery is charged!</p> <p>The best way to prepare for the exams is to study the example problems and work out the assigned homework problems regularly. You should work as many additional problems from the text as you can: this is the best way to ensure your understanding of the material.</p> <p>Make up exams are given only on extraordinary cases of severe illnesses or emergencies. They can be arranged at the discretion of the instructor. A written excuse and official documents will be required and investigated.</p> |
| <p>Attendance Policy:</p> | <p>No credit will be granted for just attending the class.</p> |
| <p>Academic Integrity Policy:</p> | <p>Acts of academic dishonesty will not be tolerated in this class. Lapses in academic integrity will be referred to the Dean of Students, as required at http://academics.utep.edu/Default.aspx?tabid=23785.</p> |
| <p>Civility Statement:</p> | <ul style="list-style-type: none"> • Cell phones and pagers should be turned off during class time. • When absences occur, it is your responsibility to obtain handouts and notes from your peers. When possible you will complete the activities you have missed. • Academic integrity is to be practiced at all times. |

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| Disability Statement: | <p>If you have a disability and need classroom accommodations, please contact the Center for Accommodations and Support Services (CASS) at 747-5148, or by email to cass@utep.edu, or visit their office located in UTEP Union East Building, Room 106. For additional information, please visit the CASS website at www.sa.utep.edu/cass. The student is responsible for presenting to the instructor any accommodation letters and instructions.</p> |
| Military Statement: | <p>If you are a military student with the potential of being called to military service and/or training during the course of the semester, you are encouraged to contact the instructor at the beginning of the semester.</p> |
| Course Schedule: | <p>Chapter 20: Electric Fields and Forces</p> <ul style="list-style-type: none"> • 20.1 Charges and Forces • 20.2 Charges, Atoms, and Molecules • 20.3 Coulomb's Law • 20.4 The Concept of the Electric Field • 20.5 Applications of the Electric Field • 20.6 Conductors and Electric Fields • 20.7 Forces and Torques in Electric Fields <p>Chapter 21: Electric Potential</p> <ul style="list-style-type: none"> • 21.1 Electric Potential Energy and Electric Potential • 21.2 Sources of Electric Potential • 21.3 Electric Potential and Conservation of Energy • 21.4 Calculating the Electric Potential • 21.5 Connecting Potential and Field • 21.6 The Electrocardiogram • 21.7 Capacitance and Capacitors • 21.8 Energy and Capacitors <p>Chapter 22: Current and Resistance</p> <ul style="list-style-type: none"> • 22.1 A Model of Current • 22.2 Defining and Describing Current • 22.3 Batteries and emf • 22.4 Connecting Potential and Current • 22.5 Ohm's Law and Resistor Circuits • 22.6 Energy and Power |

Course Schedule:

Chapter 23: Circuits

- 23.1 Circuit Elements and Diagrams
- 23.2 Kirchhoff's Laws
- 23.3 Series and Parallel Circuits
- 23.4 Measuring Voltage and Current
- 23.5 More Complex Circuits
- 23.6 Capacitors in Parallel and Series
- 23.7 RC Circuits
- 23.8 Electricity in the Nervous System

Chapter 24: Magnetic Fields and Forces

- 24.1 Magnetism
- 24.2 The Magnetic Field
- 24.3 Electric Currents Also Create Magnetic Fields
- 24.4 Calculating the Magnetic Field Due to a Current
- 24.5 Magnetic Fields Exert Forces on Moving Charges
- 24.6 Magnetic Fields Exert Forces on Currents
- 24.7 Magnetic Fields Exert Torques on Dipoles
- 24.8 Magnets and Magnetic Materials

Chapter 25: EM Induction and EM Waves

- 25.1 Induced Currents
- 25.2 Motional emf
- 25.3 Magnetic Flux
- 25.4 Faraday's Law
- 25.5 Electromagnetic Waves
- 25.6 The Photon Model of Electromagnetic Waves
- 25.7 The Electromagnetic Spectrum

Chapter 26: AC Electricity

- 26.1 Alternating Current
- 26.2 AC Electricity and Transformers
- 26.3 Household Electricity
- 26.4 Biological Effects and Electrical Safety
- 26.5 Capacitor Circuits
- 26.6 Inductors and Inductor Circuits
- 26.7 Oscillation Circuits