

Course Syllabus

Course Information

<i>Course Number/Section</i>	PHYS 1302.001
<i>Course Title</i>	College Physics II
<i>Term</i>	Fall 2015
<i>Days & Times</i>	MW 11:30 –12:15 PM
<i>Room</i>	SLC 2.303 (Second floor Lecture Hall)

Instructor Contact Information

<i>Professor</i>	Gary Frazier Ph.D.
<i>Office Phone</i>	None
<i>Email Address</i>	gaf012000@utdallas.edu
<i>Office Location</i>	FN 2.210
<i>Office Hours</i>	By appointment (24 Hours notice req'd) M-W are the best days

Course Pre-requisites, Co-requisites, and/or Other Restrictions

PHYS 1301. Co-requisite: PHYS 2126.

Course Description

Introductory course in electricity, magnetism, and optics. Topics include the nature of electric charge, electric fields and electric current, simple electric circuits, magnetism and magnetic fields, magnetic circuits, the Laws of Electromagnetism, electromagnetic waves, and geometric and physical optics. Demonstrations of these physical phenomena will be included as possible. Teaching is interactive including a peer-based learning approach.

Student Learning Objectives/Outcomes

Upon completing this class, students will:

- Be able to explain the concepts of electric charge and electric current and their theoretical and real-world effects and applications
- Be able to explain the concepts of magnetism, electric generation of magnetism, electromagnetic induction and their theoretical and real-world effects and applications
- Be able to explain electromagnetic waves, ray optics, interference and diffraction, and other aspects of optics including simple optical systems such as microscopes and telescopes.

Required Textbooks and Materials

Required Texts

College Physics, Young, 9th Edition,

Publisher; Pearson-Addison Wesley. The bound, loose leaf, or digital version is acceptable. You may purchase the 10th Edition but it will be the student's sole responsibility to identify differences between this later edition and the required text. Texts should be available in the Bookstore, but are available on-line from many sources.

The Code for Mastering Physics is not required for this course.

ISBN-13: 978-0-321-73317-7, ISBN-10:0-321-73317-7

Suggested Course Materials

NOT REQUIRED but suggested Readings/Texts. Schaum's Outline Series on Physical Science, Optics, Electricity and Magnetism, Electric Circuits. (Algebra & Trigonometry if required), Books on Introduction to Electricity, Magnetism, and Optics,

Reading Assignments

The student must have studied the relevant Chapter prior to its discussion in class

Topics, Reading Assignments

<u>Topic</u>	<u>Study Assignment</u> (Chapter in Text)
Review of Mathematics (Week 1-2)	0,1,2,3
Review of Mechanics (Week 1-2)	4,5,6,7,8
Electricity and Magnetism	17,18,19,20,21,22,23
Light and Optics	24,25,26

Class Materials

The student should keep a notebook. Copies of the most significant power point slides will be posted in eLearning either prior to (or with 24 hours of the end of) that class session. (Go to eLearning on the UTD home page. Log in and go to the section devoted to this class, PHYS 1302, Section 001. Some special topic materials may also be posted in eLearning.

Extra Credit

Bonus (Extra Credit) points are given out during class based upon student participation. The student notebook will be the primary log of these points. Bonus points will be tallied at the end of the semester and integrated into the grading process to the benefit of the student.

Outside Study and Problem Assignments

Reading assignments must be completed **prior** to their discussion in class. Generally, the student should be reading one Chapter ahead of the classroom topics, and attempting the questions at the end of each Chapter. Homework will be assigned from the questions, problems, and exercises at the end of the Chapter. Other assignments may also be given during class that fall outside of the Text. One or more extra credit challenge problems will usually be included. **All homework** is due on the first class day of the next week following the assignment unless stated otherwise on the assignment handout. (See below for format)

Examinations and quizzes

There will be 3 Intermediate Exams and one Final Exam. All exams are cumulative. All exams are "Take home." Popup oral or written in-class quizzes may be given at *any time* during the semester. Written quizzes will be counted as additional homework assignments when grades are assembled.

General

The student is responsible for a general understanding of the concepts in each Chapter covered, *even sections not covered* in class. This may require additional out-of-class study. The student is responsible for knowing and being able to solve problems surrounding the material covered in class. Not everything discussed in class will be posted in eLearning. Therefore it is imperative that the student attend all classes.

Student Progress Evaluation

Intermediate Exams (3)

(60%)

Exams will be held at approximately uniform intervals during the semester.

All exams are “take home” and are due 1 week after being posted in eLearning unless otherwise stated on the exam handout.

Exam posting dates will be announced at least 1 week before exam posting.

Each exam will be given a numerical score. All problems are worth 10 points.

Subject matter is cumulative, but emphasizes the most recent classwork.

The solution to the exam problems will be posted. Graded student exams are eventually returned, but it is *strongly suggested* that students make a copy of their exam work (via a scanner or a cell phone photo) to allow early reference to the posted solutions. This course does not use Scantron or other shortcuts. Graded exams may take 10 days or more to be returned. To be considered, students must raise objections to exam grades within 7 days of the return of the exam.

Final Exam

(20%)

The Final Exam will be “Take Home” and due on the last regular class day.

All problems are worth 10 points. Subject matter is cumulative. The solution to the Final Exam problems will be posted. Graded student Final Exams may be viewable at the discretion of the instructor but are not returned. It is strongly suggested that students make a copy of their Final Exam work (via a scanner or cell phone photo) to allow early reference to the posted solutions.

Quizzes, Homework, Class participation

(20%)

Quiz results, homework grades, attendance, and the instructor’s assessment of the students’ level of class participation will be used in calculating the student grade.

Important! Attend class and attempt and submit all homework assignments! All

homework and quiz problems are worth 10 points. It is essential that the student participate in classroom discussions and in-class problem solving sessions. The solution to important homework assignments will be posted. Make a copy or take a photo of your work to check against the posted solutions. Due to the volume of papers to be graded, the student should *not* assume that homework will be returned.

Attendance is taken at the start of class. Late arrival may result in a “not attended” record.

Extra Credit

Extra credit (EC) can count up to 10% **on top of** the students’ baseline score. The instructor will estimate the fair value of extra credit based upon the total EC points won by the entire class. Extra credit also can take the form of **approved** out-of-class research, group study, personal field trips, etc. *An EC point is not necessarily weighted the same as an exam or homework point.* The student should strive to win as many EC points as possible.

Curving of the student grade

Final grading will include a class-wide curve. Taking the Final Exam is mandatory for all students to achieve a grade of B or higher. The lowest intermediate exam grade will be converted to 100% in determining the final grade. However, *no curve* will be applied to attendance, the *fact* of homework submission, or class participation. Depending upon the volume of homework, a homework assignment may count between ½ and 1 percentage point toward the final grade. *Submitting homework solutions and attendance is essential to achieving a high grade.*

Class Department

Food: Do not bring food to class unless there is a medical necessity. (Alert the instructor) Coffee, soda, energy drinks, and bottled water are allowed unless prohibited by University policy. Clean up your spills!

Biology: Take restroom breaks before class.

Noise: Respect the desire of fellow students' to learn in an undistracted environment. This course encourages class-wide "Group Think" discussion. But the student *must not* distract the class with sidebar comments and discussions during the lecture.

Course & Instructor Policies

Technology

The student must not be distracted during class. **All computers and smart phones must be turned off during class.** Cell phones must be placed in vibrate mode. Notes must be taken by hand although dedicated audio recording devices are allowed. Video recording is not allowed.

Computing technology can be used positively to support learning, or negatively to by-pass the learning process. In this course, the internet may be used to research topics including those required to solve homework and exam problems. Any aspect of eBooks may be used in the course of study. The internet may **not** be used to obtain solutions to problems. ***Any interactive use of the internet (e.g., ask.com) to obtain answers to assigned problems is strictly prohibited and can result in an immediate failing grade for the course.*** Treat computers and the internet as electronic textbooks or study guides, or electronic calculators - not answer books. Do not use the well-known answer books to solve homework problems. This is a *certain* recipe to fail the exams. No custom or dedicated software application may be used to solve problems except for their incidental use as smart calculators. Applications such as MATLAB or Mathematica may be used to perform tedious or complex calculations such as large matrix inversion. (The need for these tool is highly unlikely)

Questions about the allowed use of computer aides (e.g., a disability that requires the use of a computer for note taking) should be directed to the instructor in person or by e-mail.

Preparation of Submitted Work

It is an essential part of the course that the student demonstrates proficiency in the subject. This course is not about solving equations. There is no such thing as "plug & chug" in this course. Terse solutions, with no explanation of the thought process used to arrive at the solution will receive minimal, if any, credit. The student should present solutions as though she/he was teaching the method to a competent student peer. Often, a few words of discussion are sufficient to annotate the major steps in the solution process. A thesis is not required, but some discussion is better than none and is graded as part of the solution process. *Examples of solutions done well and done poorly will be posted in eLearning and discussed during the first week of class.*

The following are other specific requirements for submitted work. These requirements are installed to accelerate the grading process and to maximize the student's final grade.

1. **Type of paper and color:** Work must be submitted on standard 8.5" x 11" ruled or un-ruled white paper or via Blue Book. Ragged pages torn out of spiral notebooks will not be graded. Work must be submitted in black or dark blue ink, toner, or pencil. Color, when used to enhance the solution, is welcome. Pencil work must be submitted using a *dark #2* pencil. No felt tip! *Work that is too difficult to read will receive zero credit.* Hand-written work should use lined paper.
2. **Name your Work:** The first page of all submitted work must include the printed name of the student(s) in the top right corner (or in the name field if a Blue Book is used). *Do not* include the student's UTD ID code or email address. *Work with misplaced, unrecognizable, or cursive names will not be graded.*
3. **Staple:** Multiple pages must be stapled with one or two staples only in the upper left corner. Work that is *unstapled or improperly stapled will not be graded.* Single page solutions need not be stapled.
4. **Identify the Problem:** Start the solution to assigned textbook problems by writing down and underlining or highlighting the chapter, type, and number of the problem being solved. Example 18.Q.4 (Translation: Chapter 18, Question 4) Re-stating the problem is helpful, but not required. A new page should begin lengthy problem solutions. Do problems **in order** and label your work with the problem identifier **even if** you do not attempt that problem.
5. **Draw attention to the answer:** Bound all numerical answers with a bounding box or demark using a yellow highlighter. *Numerical solution results that do not include a bounding box or highlighting will receive zero credit.* Always check that the correct units (e.g. Joules, Kelvin, Volts, Watts, Hz, Moos, $\text{kg}\cdot\text{m}/\text{s}^2$, etc.) are included where required.
6. **Take Pride in your Work:** All work must be neat and well organized. Work containing cross-outs, scribbles, massive erasures, etc. will receive zero credit. A student with poor writing skills should prepare a draft of her/his solutions then re-write them in final form or use a computer to generate her/his work.
7. **Computer Printouts:** Work may be submitted in the form of a computer printout. Courier New, Arial, or Times New Roman font or similar is acceptable; 12-point or larger. This size includes graphics and equations. Handwritten work may be integrated into computer documents. Caution: Be sure to annotate work done on a computer. Attractive plug-and-chug solutions receive zero credit.
8. **Check those Units:** Be sure to include the correct units (and vector notation) in numerical answers that require this information. *Missing or erroneous units receive point deductions.*
9. **Use the Obverse not the Reverse:** Only submit work on one side of the page. Work written on the reverse side of pages may not be graded.
10. **First page option:** The student has the option of using a colored cover page that need include only the student name(s) as required by Requirement #2. Submitted work may

start on the subsequent white pages. A uniquely colored top page may help the student find her/his work in the return stack.

Teaming on Homework

Teaming on homework is very strongly encouraged. Discuss the problems and engage each student to develop solution technique(s). Dividing up assignments then combining independent solutions is counterproductive. Members of a homework team may either submit their own solution document or submit a single "team" document *but not both!* A single document is preferred. Be sure to print the names of all students on the first page of a "team" document as required above.

Teaming on Exams

No teaming of any kind, including the use of other persons or the internet, to obtain solutions is allowed on the exams and will be considered serious plagiarism.

Late Work and Make-up Exams

On the required due date, submitted Exams and Homework are due when the student arrives to class but **no later than 10 minutes** after the start of class. No late Homework or Exam solutions will be accepted unless the reason for the lateness is based upon a documented emergency. In such cases the student must prove to the instructor's satisfaction that the emergency prevented compliance: for example, by submitting a signed letter from a medical professional or UTD security. The student must contact the instructor well ahead of potential schedule conflicts that affect compliance. **There will be absolutely no make-up assignments or exams for any reason.**

"Late Arrivals" Coupons

Everyone has pop-up issues that arise from time to time. For this reason, each student will be provided two coupons at the beginning of the course which can be used to void a lateness penalty on up to two occasions. To use a coupon, staple it to the late work and turn it in to the instructor or TA or the instructor's mail slot **no later than 4PM** on the due date of the assignment. A coupon may be used to avoid a late penalty on homework and intermediate exams only. Coupons may not be used for the Final Exam or any other lateness including absence from class. Coupons may not be shared across students.

Return of Homework and Exams

Graded intermediate exams will be returned. The Final Exam will not be returned but may be viewed by special arrangement. Homework may or may not be returned. Solutions to the exams and homework are posted in eLearning. To obtain rapid feedback on progress, the student should make a copy (e.g., a scan or cell phone photo) of work to compare submitted solutions to the posted solutions.

Special Assignments

TBD

Class Attendance

Class participation is highly encouraged and required as part of the overall grade. Exams and Quizzes are based in part on the material covered in class. Some homework assignments are stated verbally in class and may not be posted in eLearning. The University has a new grading system that includes an "NF" for "failed based upon non-attendance."
Attend class!

Classroom Citizenship

For the benefit of fellow students and your instructor, each student is expected to practice common courtesy with regards to all class interactions.

Wireless communications of any kind (Texting, non-urgent cell calls, access to the web, etc.) will be considered disruption of the class.

Be on time for class. Do not leave early. Do not rustle papers in preparation to leave before class is over. These activities will be considered disruption of the class.

Repeated or egregious disruption of class will be grounds for a reduction in final grade up to and including, F.

Technical Support

Problems with the UTD account? Send an email to: assist@utdallas.edu or call the UTD Computer Helpdesk at 972-883-2911.

Field Trip Policies / Off-Campus Instruction and Course Activities

None planned

Student Conduct & Discipline

The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations which govern student conduct and activities. General information on student conduct and discipline is contained in the UTD printed publication, *A to Z Guide*, which is provided to all registered students each academic year.

The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the *Rules and Regulations, Series 50000, Board of Regents, The University of Texas System*, and in Title V, Rules on Student Services and Activities of the university's *Handbook of Operating Procedures*. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations (SU 1.602, 972/883-6391) and online at <http://www.utdallas.edu/judicialaffairs/UTDJudicialAffairs-HOPV.html>

A student at the university neither loses the rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents' Rules, university regulations, and administrative rules. Students are subject to discipline for violating the standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct.

Academic Integrity

The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work.

Scholastic Dishonesty, any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts.

Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the university's policy on plagiarism (see general catalog for details). This course will use the resources of turnitin.com, which searches the web for possible plagiarism and is over 90% effective.

Copyright Notice

The copyright law of the United States (Title 17, United States Code) governs the making of photocopies or other reproductions of copyrighted materials, including music and software. Copying, displaying, reproducing, or distributing copyrighted works may infringe the copyright owner's rights and such infringement is subject to appropriate disciplinary action as well as criminal penalties provided by federal law. Usage of such material is only appropriate when that usage constitutes "fair use" under the Copyright Act. As a UT Dallas student, you are required to follow the institution's copyright policy (Policy Memorandum 84-I.3-46). For more information about the fair use exemption, see <http://www.utsystem.edu/ogc/intellectualproperty/copypol2.htm>

Email Use

The University of Texas at Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange. The university encourages all official student email correspondence be sent only to a student's U.T. Dallas email address and that faculty and staff consider email from students official only if it originates from a UTD student account. This allows the university to maintain a high degree of confidence in the identity of all individual corresponding and the security of the transmitted information. UTD furnishes each student with a free email account that is to be used in all communication with university personnel. The Department of Information Resources at U.T. Dallas provides a method for students to have their U.T. Dallas mail forwarded to other accounts.

Withdrawal from Class

The administration of this institution has set deadlines for withdrawal of any college-level courses. These dates and times are published in that semester's course catalog. Administration procedures must be followed. It is the student's responsibility to handle withdrawal requirements from any class. In other words, I cannot drop or withdraw any student. You must do the proper paperwork to ensure that you will not receive a final grade of "F" in a course if you choose not to attend the class once you are enrolled.

Student Grievance Procedures

Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the university's *Handbook of Operating Procedures*.

In attempting to resolve any student grievance regarding grades, evaluations, or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originates (hereafter called "the respondent"). Individual faculty members retain primary responsibility for assigning grades and evaluations. If the matter cannot be resolved at that level, the grievance must be submitted in writing to the respondent with a copy of the respondent's School Dean. If the matter is not resolved by the written response provided by the respondent, the student may submit a written appeal to the School Dean. If the grievance is not resolved by the School Dean's decision, the student may make a written appeal to the Dean of Graduate or Undergraduate Education, and the dean will appoint and convene an Academic Appeals Panel. The decision of the Academic Appeals Panel is final. The results of the academic appeals process will be distributed to all involved parties.

Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations.

Incomplete Grade Policy

As per university policy, incomplete grades will be granted only for work unavoidably missed at the semester's end and only if 70% of the course work has been completed. An incomplete grade must be resolved within eight (8) weeks from the first day of the subsequent long semester. If the required work to complete the course and to remove the incomplete grade is not submitted by the specified deadline, the incomplete grade is changed automatically to a grade of **F**.

Disability Services

The goal of Disability Services is to provide students with disabilities educational opportunities equal to those of their non-disabled peers. Disability Services is located in room 1.610 in the Student Union. Office hours are Monday and Thursday, 8:30 a.m. to 6:30 p.m.; Tuesday and Wednesday, 8:30 a.m. to 7:30 p.m.; and Friday, 8:30 a.m. to 5:30 p.m.

The contact information for the Office of Disability Services is:

The University of Texas at Dallas, SU 22

PO Box 830688

Richardson, Texas 75083-0688

(972) 883-2098 (voice or TTY)

disabilityservice@utdallas.edu

If you anticipate issues related to the format or requirements of this course, please meet with the Coordinator of Disability Services. The Coordinator is available to discuss ways to ensure your full participation in the course. If you determine that formal, disability-related accommodations are necessary, it is very important that you be registered with Disability Services to notify them of your eligibility for reasonable accommodations. Disability Services can then plan how best to coordinate your accommodations.

It is the student's responsibility to notify his or her professors of the need for such an accommodation. Disability Services provides students with letters to present to faculty members to verify that the student has a disability and needs accommodations. Individuals requiring special accommodation should contact the professor after class or during office hours.

Religious Holy Days

The University of Texas at Dallas will excuse a student from class or other required activities for the travel to and observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, Tax Code, Texas Code Annotated.

The student is encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, preferably in advance of the assignment. The student, so excused, will be allowed to take the exam or complete the assignment within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails to complete the exam or assignment within the prescribed period may receive a failing grade for that exam or assignment.

If a student or an instructor disagrees about the nature of the absence [i.e., for the purpose of observing a religious holy day] or if there is similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the chief executive officer of the institution, or his or her designee. The chief executive officer or designee must take into account the legislative intent of TEC 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.

These descriptions and timelines are subject to change at the discretion of the University and the Instructor.

