University Physics II - 47941 - (PHYS 2426-001)

Physics 2426 carries 4 credits. Concurrent registration in Physics 2426-001 (lecture section) and Physics 2426-101 or Physics 2426-102 (lab sections) is required. *Letter grade will be awarded to you in Phys 2426-001 only; 25% weight will be given to lab work in determining your final letter grade for the course.*

**Required Readings:** Text for this course is, *Physics for Scientists and Engineers*, 7th edition, Raymond A. Serway and John W. Jewett, Jr., Publisher Brooks/Cole. *The conventionally printed textbook is required.*

**Course Description:** This course involves an intensive study of oscillations, wave motion, electricity and magnetism and their applications, using calculus wherever necessary. The classical theory of fields will be used to study electric and magnetic phenomena, including light, and their role in modern technology. Material from the following chapters in the text will be covered in lectures: Chapters 13, 16, 17, 18, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33 and 34. In addition you are responsible for learning, from the text and from the laboratory, material on optics from Chapters 35, 36, 37 and 38.

**Course schedule:** The course will start with a Mathematics Review covering: Scientific Notation, Algebra, Geometry Trigonometry, Series Expansions, Differential Calculus, Integral Calculus, and Propagation of Uncertainty to be covered during August 22- September 16 then followed by the exam I. The mathematical problems for the exam I will be based on physics examples from Chapter 1-12 of the textbook.

Following the Mathematics Review and the exam I, the Chapters 13-34 will be covered in class lectures.

**Attendance:** Attendance at all lectures is expected. Preparation should include the advance reading of the chapter to be covered in a particular lecture. Reading assignments will be given on the syllabus for each scheduled lecture followed by a 5 min entrance quiz BEFORE the class lecture.

Lectures are going to be delivered as mixture of: problem solving followed by summary of main points in PowerPoint projections; for good performance in the course, it will be necessary for you to take notes during the lectures.

**Learning Objectives:** After successfully completing this course you will be able to recognize the physical principles governing the behavior of oscillating objects and waves, electric charges, electric and magnetic fields, and light. You will be able to scientifically explain the nature of these phenomena qualitatively, answer quantitative questions on these phenomena, and design simple experiments to test the physical principles governing these phenomena.
Major Course Requirements/Prerequisites: Proficiency in college level algebra, trigonometry and calculus is very essential to successfully complete this course. You should have completed Calculus I and University Physics I and should be enrolled currently in Calculus II or should have completed it.

Graded Activities: There will be several online quizzes and pre class quizzes: - the on-line problems assign via UT website will account for 15% and the pre-class quizzes will account for 15% of the total score. The exams: math review exam will account for 10%, mid-term for 15% and the final for the 20% of the total score. The score for the laboratory experience will be determined by the instructor assigned to your lab and that score will represent 25% of your total numerical grade for the course.

Thus, your final letter grade will be based on your numerical grade weighted as follows: 15% - pre class quizzes, 15% - on-line quizzes, 10% - Mathematics Review exam, 15% mid-term, 20% final exam and 25% laboratory.

During the class the extra problems will be given allowing students to earn additional points.

On-line quizzes: There will be several online quizzes with published deadlines. Each student will get web downloadable customized quizzes, the answers to which should be submitted online. The solution to the quiz will be available in a web downloadable format after the quiz deadline has passed, if the quiz server is functioning normally. More details on how the online service grades your quiz will be explained in class. You are required to register for online quizzes, download the quizzes, and submit answers by going online to quest.cns.utexas.edu/student. This is a service provided by the College of Natural Sciences, The University of Texas, Austin, to the academic community. See the Announcements page for the course unique id number required to register for quizzes in PHYS 2426. A quiz may be due on the day of term exams or the day prior to the final exam.

The overall quiz grade is obtained by adding up your raw scores on each quiz, dividing that score by the maximum possible score you could have obtained, and multiplying this fraction by 100 to get a percentage. For example, if there were 4 quizzes with maximum possible scores of 120, 80, 110, and 90, and your raw scores on these quizzes were 100, 78, 102, and 80, then your overall quiz grade is 100*(100+78+102+80)/(120+80+110+90) = 90%.

Each question on every quiz is worth the same as any other question on the same or another quiz. Thus, a quiz with more questions counts more than a quiz with fewer questions. Read the instructions at the quiz website carefully on how your responses will be graded for multiple tries on a question.

If you are unable to submit answers to a quiz online for any reason the only way you can get any credit for your work on that quiz is by emailing the instructor your answers to quiz questions before the deadline, followed by submission of your written work on the questions to the instructor the day following the deadline.

Lab: You must complete the Laboratory Safety Seminar - SMTE 0091 successfully to be able to work in the physics laboratory. Documentation on having successfully completed this seminar during a previous semester is acceptable. Your documentation on successful completion of the lab safety seminar has to be with your lab instructor one week after the start of classes. It is the student's responsibility to get any help needed by calling TAMUCC Island Online Help Desk at (361)825-2825 or long distance 1-866-353-2491 to successfully log in to this WebCT based course and complete all the modules. Failure to complete this requirement by the deadline will result in the student being deleted from the class. You will be assigned pre-lab exercises, with a multiple choice quiz based on those exercises at the beginning of the lab period, as well as a post-lab quiz which tests your ability to interpret and analyze data related to that experiment. You can use only the lab manual to answer these pre- and post- lab quizzes. All experiments will be performed in groups and will require a group lab
report. Each one of you is individually responsible for recording experimental observations and data. If your lab partner recorded experimental data and you did not, and if your lab partner dropped the course or is unreachable and uncommunicative, you are still responsible for completing work on that lab on time.

You will not be allowed a lab make up opportunity unless you have been granted the instructor's prior approval for an absence for reasons of sickness (backed by your doctor's note) or family emergency.

The lab report on an experiment should be comprehensive, including a clear analysis of the experimental results. The required structure of the lab report will be explained to you in the lab. The lab instructor will evaluate your group's quality of work, the care taken in collecting data and in performing the experiment, and your understanding of physics evident from the analysis of your data and your discussion in the report. Your lab report on an experiment is due at the beginning of the next lab period.

At the end of the semester there will be a required Computer Skills for Physics Lab Test where your computational skills with the spreadsheet and your ability to gather and analyze data generated by electronic sensors and collected by the computer will be tested. The lab grade will be evaluated according to this scheme: Lab Reports 80%, Pre- and Post-Lab quizzes 15% and the Computer Skills for Physics Lab Test 5%.

**Policy on Make Ups for Labs and Exams:**
There are NO provisions for making up exams or laboratories except in cases where prior arrangements have been made with the instructor. The only valid reasons for missing a lab, a quiz or an exam are (1) health related, backed by a doctor's note, (2) family emergency which can be documented, (3) job interview with the letter of invitation for the interview, and (4) participation in a previously scheduled athletic, or university event or travel to a conference. In case of emergency resulting in not informing the instructor of your absence from class, contact the instructor at your earliest convenience. If you have to miss a laboratory, contact the laboratory instructor by phone or e-mail immediately. The instructor emphasizes that reasons for an absence for a class, a lab or an exam must be reported prior to the respective meeting time and not after the class, lab or exam.

**Course Policies**

**Cell Phone:** Cell phones need to be turned off before class.

**Academic Integrity/Plagiarism.**
University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or test will result in failing grade.

**Dropping a Class**
I hope that you never find it necessary to drop this or any other class. However, events can sometimes occur that make dropping a course necessary or wise. Please consult with me before you decide to drop to be sure it is the best thing to do. Should dropping the course be the best course of action, you must initiate the process to drop the course by going to the Student Services Center and filling out a course drop form. Just stopping attendance and participation WILL NOT automatically result in your being dropped from the class. (November 4, Friday) is the last day to drop a class with an automatic grade of “W” this term.
Classroom/professional behavior
Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

Grade Appeals
As stated in University Rule 13.02.99.C2, Student Grade Appeals, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Rule 13.02.99.C2, Student Grade Appeals, and University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules Web site at http://www.tamucc.edu/provost/university_rules/index.html. For assistance and/or guidance in the grade appeal process, students may contact the Office of Student Affairs.

Disabilities Accommodations
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please call or visit Disability Services at (361) 825-5816 in Driftwood 101. If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816.

Syllabus:

August 22 - September 16 then followed by the exam I (math review).
September 16-30:  Chapters 13, 16, 17,
October Chapters:  18, 23, 24, 25 – Mid-term exam (II)
November Chapters:  26, 27, 28, 29, 30,
December Chapters:  31, 32, 33 and 34 followed by the final exam (III).