Instructor: Philippe Tissot, Ph.D.  
Office: NRC 2801  
Office hours: Will be announced on the first day of class  
Lectures: M-W 3:30 – 4:45 PM / ST-104  
Labs: CI 217

Course Homepage on the Web: www.sci.tamucc.edu/~physweb/physics/physics-courses/tissot/phys2426/Physics2426-homepage.html

Lab Instructors: Instructor(s) to be named (see course website)

Physics 2426 carries 4 credits. Concurrent registration in Physics 2426.001 (lecture section) and Physics 2426.101/Phys2426.102/Phys2426.103 (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.

Audience: This course is part of the University core curriculum which serves as the common foundation for all majors. Accordingly the course is designed for students from all University disciplines provided that they have the proper background (see prerequisites). This course is a requirement for several degrees in the Sciences, Mathematics and Engineering and is often expected from students applying for graduate school in these same disciplines. University Physics I is also part of the required courses for a minor in Physics.

Prerequisites: University Physics I, PHYS 2425, and Calculus II, MATH 2414 or placement beyond MATH 2414. Proficiency in college level algebra and trigonometry is also essential in order to successfully complete this course.

Course Description: Calculus based introduction to oscillatory and wave phenomena, electricity and magnetism as well as other selected topics. The classical theory of fields will be used to study electric and magnetic phenomena, including light, and their role in modern technology. This course counts toward the natural science component of University Core Curriculum. Laboratory activities will provide a complementary introduction to empirical methods in physics.

Student Learning Outcomes: After successfully completing this course you will be able to recognize the physical principles governing the behavior of fluids, oscillating objects and waves, electrical charges, electric and magnetic fields, and light. You will be able to scientifically explain the nature of these phenomena qualitatively, answer elementary quantitative questions on these phenomena, and design simple experiments to test the physical principles governing these phenomena.

Upon completion of this course, the student should be able to demonstrate mastery of the following outcomes and competencies. The student should be able:

1) To define, make computations, explain and solve problems using the physical principles governing the behavior oscillating objects and waves, electrical charges, electric and magnetic fields, DC and AC electricity, and light
2) To scientifically explain the nature of wave motion, DC and AC electricity, and light qualitatively, compute quantitative questions, and design elementary experiments to test the physical principles
3) To define and explain the basics of physics based reasoning and the physics approach to solving problems
4) To participate as part of a team to complete satisfactorily laboratory experiments.

**Required Book:** ‘Physics for Scientists and Engineers’ by Serway & Jewett, 8th Edition Hybrid (with Enhanced WebAssign Homework and eBook LOE Printed Access Card for Multi Term Math and Science), 113310360X

**Required Lab Manual:** 'University Physics I Lab Manual' by M.K.Balasubramanya. The manual contains the physics necessary for all experiments and the details of these experiments.

**Bring the textbook and a calculator to every lecture and laboratory.**

**Other Books:** ‘Physics for Scientists and Engineers’ by Tipler &Mosca, ‘University Physics’ by Young & Friedman, ‘Physics for Scientists and Engineers’ by Fishbane, Gasiorowicz & Thornton.

**Sources of help:** The instructor strongly encourages you to see him on a regular basis to clarify your understanding of the course material and to seek his help in completing the homework. FREE mathematics and physics tutoring services are available via the **CASA, GSSC 119, Phone 825-5933**; you are strongly encouraged to make use of this service. You should also form a peer group of your classmates to collectively study and understand physics. The instructor will assist you in forming such groups. The university has a contract with an online commercial tutoring service, **smarthinking.com**, through which our students can obtain round the clock free one-on-one online tutoring.

**Communicating with the Instructor and Classmates:** You are encouraged to see the instructor personally during his office hours. You are also welcome to call him on the phone or e-mail him with physics questions (E-mail is the preferred and most efficient mean of communication). A listserv has been set up exclusively for students of this course, to interact with each other on issues related to the course. To subscribe to the list for Physics 2425, email **phys2426-request@listserv.tamucc.edu** with the word "subscribe" as the subject. If you want to send mail to all the list's subscribers, email **phys2426@listserv.tamucc.edu**. This will forward the message to all subscribed users. If you want to unsubscribe from the list, email **phys2426-request@listserv.tamucc.edu** with the word "unsubscribe" as the subject. The instructor posts course related announcements on the listserv and on the course web site; it is your responsibility to keep yourself informed of these announcements. Read the latest version of posted documents by frequently using the "reload" or "refresh" button on your web browser.

**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 may 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.

In the rare event that a discipline problem arises in the laboratory, the instructor can ask the student(s) to leave the laboratory. Discipline problems include student behavior disrupting the conduct of the laboratory or behavior disrespectful of the instructor or other students. The instructor will be the judge of such behavior. For the first offense the student(s) will be asked to make up the end of the lab at the end of the semester. If a student was asked more than once to leave the laboratory, no further make-up lab opportunities will be provided and the student will be given a grade of zero for this additional lab(s).

**Use of Computers:** Many experiments require the use of PCs in the physics laboratory. Computer skills that the student should acquire in this course include (a) the use of available physics software, and (b) creating and using a spreadsheet, including graphing and linear regression. You should bring a portable data storage device to the lab to save the files you and your group created. Alternately, save your work on remote drives accessible through a network. Each student must have access to a copy of the files the group created. Spend a few minutes at the end of the lab period to copy, for your use, the files you have created. The instructor cleans the desk top on the physics lab microcomputers frequently and student created files will be deleted at that time.
Homework: Reading will be assigned ahead of the lecture. You must have done the assigned reading for a class before coming to that class. Conceptual questions and problems from online course package will be assigned for homework. You are encouraged to work together on the homework and to seek help from the instructor, and other resources. Some of the homework questions will be asked on exams. The instructor will provide answers to homework questions if not provided by the online course package and the instructor and students will present chosen homework problem solutions in class.

Quizzes: There will be several online quizzes with published deadlines on the course progression page and WebAssign. 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 the day after the quiz is due, if the quiz server is functioning normally. The website for accessing the quizzes, submitting your answers and getting the solutions will be provided at the start of the class. More details on how the online service grades your quiz will also be explained in class.

Exams: All exams will be of the "closed book" kind with a double sided formula sheet provided as part of the exam handout. There will be both conceptual questions and numerical problems on the exams, as well as questions based on the physics and measurement techniques you have learned in the lab. Your answers to exam questions should be clearly and legibly written on the exam. For the multiple-choice questions on the exams that have a numerical answer, you will need to show your work and calculations on a work sheet. If you worked a problem on an exam correctly, but marked its answer incorrectly, you will get partial credit based on the work shown on the worksheet. Please look over your exam copies when they are returned and contact the instructor at the end of the same class period the exam was returned if you notice a problem with the grading of your copy. Graded exams will be provided to the students for exams taking place during the semester. The final exam will be made available for inspection and study upon request but the copies will not be returned to the student and the student cannot copy the exam. Exam dates and times for term exams will be tentatively posted on the course progression page and will also be announced in class. More specific guidance on material for the exams will be provided prior to the exams.

Policy on Make Ups for Exams: There are NO provisions for making up exams except in cases where prior arrangements have been made with the instructor. The only valid reasons for missing a lab, 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 regarding your absence.
Grading policy: Your final composite numerical grade is based on the following weightings to the different components of the course:

<table>
<thead>
<tr>
<th>Evaluation Type</th>
<th>Percentage of Total Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet Quizzes</td>
<td>15%</td>
</tr>
<tr>
<td>Exam 1</td>
<td>15%</td>
</tr>
<tr>
<td>Exam 2</td>
<td>20%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>25%</td>
</tr>
<tr>
<td>Laboratory</td>
<td>25%</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Your letter grade will be determined using the university catalog's description of the meaning of each letter grade, and the instructor's criteria for translating that description to actual numerical grade ranges. (See the catalog's section on 'Grades': A = Excellent, B = Good, C = Average, D= Passing, F = Failure; work not passed). The procedure for awarding letter grades will be as follows:

<table>
<thead>
<tr>
<th>% Grade</th>
<th>Letter Grade</th>
<th>Catalog Meaning of the Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 85%</td>
<td>A</td>
<td>Excellent</td>
</tr>
<tr>
<td>75% to 85%</td>
<td>B</td>
<td>Good</td>
</tr>
<tr>
<td>65% to 75%</td>
<td>C</td>
<td>Average</td>
</tr>
<tr>
<td>55% to 65%</td>
<td>D</td>
<td>Passing</td>
</tr>
<tr>
<td>Below 55%</td>
<td>F</td>
<td>Failing</td>
</tr>
</tbody>
</table>

First assignment, please turn in the following information on paper or E-mail to the instructor before the second class period: (1) Your Name, (2) email address and (3) a 4-digit numerical code of your choice not beginning with 0 if you do not want the last 4 digits of your social security number to be used to identify your grades when posted, (4) the highest level mathematics course you have taken, and (5) if you have had physical science or physics in high school (indicate which) (6) general expectations and concerns for the class. If you missed the first class please email the instructor with this information.

Policy on Making Up Lost Work Days due to University Closure: In the event of the university closing down temporarily due to acts of nature or any other reason, the instruction will be through notes circulated by the instructor online and quizzes and exams conducted online. The instructor will announce details on the actual implementation of the policy at the time of the suspension of classes.
Grade Appeal Process: 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.

Dropping a Class: The Instructor hopes that you never find it necessary to drop this or any other class. However, unforeseen circumstances in the middle of the term may make dropping a course necessary or wise. Please consult with the Instructor 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.

Notice to Students with Disabilities: 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. Certain accommodations for the successful completion of the course by students with disabilities, like testing in a quiet, secluded room, or providing extra time as deemed appropriate, can be made, after the above office has determined the appropriateness of such accommodations for the disabled student. Any action regarding such accommodation will require prior written notice to the instructor by the Office for Students with Disabilities.

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.

Academic Integrity: The instructor expects a high level of personal integrity on the part of students enrolled in the course. Please review the University policies on academic integrity and honesty listed in the Graduate Catalog under the Academic Honesty section. The instructor will follow these guidelines if infractions such as plagiarism or other dishonest conduct occurs as part of this class. These guidelines will be followed for both the evaluation of the severity of the infraction and the determination of an appropriate penalty. Any student who has been penalized for academic dishonesty has the right to appeal the judgment or the penalty assessed. The Appeals Procedure will be the same as that specified for grade appeals. The grade appeals
procedure may be found in the University Rules manual at http://www.tamucc.edu/provost/university_rules/.

PHYSICS 2426 Course Calendar - Spring 2012: Please consult the Course Progression and Assignment Web page (http://www.sci.tamucc.edu/~physweb/physics/physics-courses/tissot/phys2426/S05-2426-Course%20Progression.htm)

IF ANY CHANGES TO ANY OF THE ABOVE STIPULATIONS ARE MADE, THEY WILL BE ANNOUNCED IN CLASS AND/OR ON THE LISTSERV AND WEB, AND YOU ARE RESPONSIBLE FOR KEEPING YOURSELF INFORMED OF SUCH CHANGES.