COREQUISITE:
Proficiency in college level algebra, trigonometry, and calculus (though Calculus II) is very essential to successfully complete this course. University Physics 2425 should have been successfully completed before registering for this course.

1. COURSE DESCRIPTION:
This course involves an intensive study of oscillations, wave motion, electricity and magnetism and their applications. This study will be both conceptual and quantitative, using algebra and trigonometry.

2. STUDENT’S 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 elementary quantitative questions on these phenomena, and design simple experiments to test the physical principles governing these phenomena.

3. TEXTBOOK:
’University Physics II Lab Manual’ by M.K.Balasubramanya. To order go to http://www.onlinewaves.net/
The instructor encourages diligent note taking in class, and relies heavily on online quizzes available from the Black Board for weekly assessment of learning.

4. INSTRUCTIONAL ACTIVITIES AND METHODS:
   GRADES:
Your grade will be comprised of 2 in-class tests, 5 online tests, Laboratory work, and a final exam.
The grade breakdown is as follows:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>In-class tests average</td>
<td>25%</td>
</tr>
<tr>
<td>Online tests average</td>
<td>25%</td>
</tr>
<tr>
<td>Laboratory work</td>
<td>25%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>25%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>

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.
Disability and Veterans’ Services: 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.

ATTENDANCE AND LATE POLICY:
Although roll is not formally taken in class, it is expected that all participants with body temperatures above 90F will attend regularly. (If you are not in this category please see me.) The curriculum of this class is designed such way that the major learning comes from the actual class period. Don't afraid of being late to the class, to be late is better than to be absent. If you have to miss class due to emergency or doctor’s appointment please make sure to obtain class notes from your peers. If there is a reason that you must miss more than one class please talk with me to make arrangements to cover the material. Due dates for all the work for submission will be listed in the calendar on class BB page.

ACADEMIC DISHONESTY/PLAGIARISM
No form of cheating/plagiarism will be tolerated in this class. If anyone is suspected of academic dishonesty, I will privately speak with this person in an attempt to find a solution to whatever problem is manifesting itself. If anyone is caught cheating on a given assignment/test, negative credit will be given.

GENERAL PHILOSOPHY
I believe in having fun while learning Physics. Although it is very important to get a great deal of work done in this course, it is equally important to be human. Therefore asking questions is strongly encouraged. If you don't wish to ask questions in class please come by my office, give me a call or make an appointment.

STUDENT RESPONSIBILITY
You are responsible for all material presented in class as far as examinations are concerned. Excused absences wouldn’t take this responsibility away.

Topics:
Periodic Motion.
Simple Harmonic Oscillator. Pendulum.
Mechanical waves. Wave Superposition.
Standing wave on a string
Sound waves. Speed of sound. Intensity of sound.
Doppler effect.
Electric Field and Gauss’s Law
Electric Potential Energy.
Calculating Electric Potential
Electric Current, Voltage, and Resistance. Ohm’s Law
DC. Resistors in Parallel and Series.
Electrical circuits calculations.
Capacitors. R-C Circuits.
Phenomenon of Magnetism. Magnetic Field.
Motion of a Charged Particle in Magnetic Field.
Magnetic Force Between Parallel Conductors.
Amper’s Law
Faraday’s Law of Induction
Lenz’s Law.
Generators and Motors.
Alternating Current