McLennan
COMMUNITY
COLLEGE

WACO, TEXAS

COURSE SYLLABUS
AND
INSTRUCTOR PLAN

College Physics II

PHYS - 1402 - 01

Professor Laura E. Wright

NOTE: This is a 16-week course.

Course Description:
Fundamental principles of physics, using algebra and trigonometry; the principles and applications of electricity and magnetism, including circuits, electrostatics, electromagnetism, waves, sound, light, optics, and modern physics topics; with emphasis on problem solving.

Prerequisites and/or Corequisites:
Prerequisite: PHYS 1401 with a grade of C or better.

Instructor Information:
Instructor Name: Professor Laura E. Wright
MCC E-mail: lwright@mclennan.edu
Office Phone Number: 254-299-8419
Office Location: HP 230
Office/Teacher Conference Hours: MW 2-3pm, T 2-3:30pm, Th 11am-1pm, or by appointment

*I am not always able to check email during non-business hours. Please keep in mind that you may not receive a response until the next business day.

Required Text & Materials:
- *Physics*, 5th Edition
  James S. Walker
  Pearson Addison-Wesley
  ISBN: 9780321976444 (textbook only)
  ISBN: 9780134019734 (textbook with *Mastering Physics Student Access Kit*)
- *Mastering Physics Student Access Kit*
  Pearson Addison-Wesley
  ISBN: 9780134019666
  (License can be purchased online through www.masteringphysics.com)
- A "scientific" calculator: This means something that can handle exponents, trig functions, hyperbolic trig functions, and logarithms.
- Reliable access to the internet. Homework assignments can be accessed online through Mastering Physics.
- Access to Brightspace: The Mastering Physics course will be linked through Brightspace. I will also post important announcements for the class (ie. schedule changes, class cancellations, adjustments to homework assignments, etc) via Brightspace. If you haven't yet logged into the system, learn how to do so. Log in, and make sure you can access the materials for this course. If you want to receive email notifications for class announcements, you will have to change that in your settings for the class. I highly recommend doing this so you don't miss anything important.

MCC Bookstore Website: http://www.mclennan.edu/bookstore/

Student Support/Resources:
MCC provides a variety of services to support student success in the classroom and in your academic pursuits to include counseling, tutors, technology help desk, advising, financial aid, etc. A listing of these and the many other services available to our students is available at http://www.mclennan.edu/campus-resource-guide/

College personnel recognize that food, housing, and transportation are essential for student success. If you are having trouble securing these resources, we encourage you to contact a success coach by calling (254) 299-8226. Students can visit the Completion Center Monday-Friday from 8:00 a.m.-5:00 p.m. to meet with a success coach and receive additional resources and support to help reach academic and personal goals. Paulanne's Pantry (MCC's food pantry) is open 12:00 p.m.-1:00 p.m., Monday-Friday, without an appointment. The Completion Center and pantry are located on the Second Floor of the Student Services Center (SSC).

Minimum Technical Skills:
Students should have basic computer skills, knowledge of word processing software, and a basic understanding of how to use search engines and common web browsers.

Backup Plan for Technology:
In the event MCC's technology systems are down, you will be contacted/notified through your MCC student email address. Please note that all assignments and activities will be due on the date specified in the Instructor Plan, unless otherwise noted by the instructor.

*** Click Here for the Minimum System Requirements to Utilize MCC's D2L|Brightspace**
(www.mclennan.edu/center-for-teaching-and-learning/teaching-commons/requirements)
Click on the link above for information on the minimum system requirements needed to reliably access your courses in MCC's D2L|Brightspace learning management system.

Methods of Teaching and Learning:
Students will learn through lecture and reading, as well as through work on homework, labs, and, exams. Additional methods may be used as opportunities present themselves.

Course Objectives and/or Competencies:
1. Articulate the fundamental concepts of electricity and electromagnetism, including electrostatic potential energy, electrostatic potential, potential difference, magnetic field, and induction. *(Chapters 19, 20, 21, 22)*

2. State the general nature of electrical forces and electrical charges, and their relationship to electrical current. *(Chapters 19, 20, 21)*
3. Solve problems involving the inter-relationship of electrical charges, electrical forces, and electrical fields. *(Chapters 19, 20)*
4. Apply Kirchhoff's Laws to analysis of circuits with potential sources, capacitance, and resistance, including parallel and series capacitance and resistance. *(Chapter 21)*
5. Apply Ohm's law to the solutions of problems. *(Chapter 21)*
6. Use Faraday's and Lenz's laws to find the electromotive forces. *(Chapter 22)*
7. Discuss and solve AC circuit problems. *(Chapter 23)*
8. Discuss simple harmonic motion and its application to real-world problems. *(Chapter 13)*
9. Describe the components of a wave and relate those components to mechanical vibrations, sound, and decibel level. *(Chapter 14)*
10. Articulate the principles of reflection, refraction, diffraction, interference, and superposition of waves. *(Chapter 27)*
11. Solve real-world problems involving optics, lenses, and mirrors. *(Chapter 26)*
12. Prepare laboratory reports that clearly communicate experimental information in a logical and scientific manner. *(All labs)*
13. Conduct basic laboratory experiments involving physics. *(All labs)*
14. Relate physical observations and measurements involving classical mechanics to theoretical principles. *(All labs)*
15. Evaluate the accuracy of physical measurements and the potential sources of error in the measurements. *(All labs)*
16. Identify appropriate sources of information for conducting laboratory experiments involving classical mechanics. *(All labs)*

CORE OBJECTIVES – LIFE AND PHYSICAL SCIENCES: Courses in this category focus on describing, explaining, and predicting natural phenomena using the scientific method. Courses involve the understanding of interactions among natural phenomena and the implications of scientific principles on the physical world and on human experiences.

A. Critical Thinking Skills - to include creative thinking, innovation, inquiry, and analysis, evaluation, and synthesis of information. These will be assessed through lecture exams, problems assigned for homework, and/or laboratory exercises.
B. Communication Skills - to include effective development, interpretation, and expression of ideas through written, oral and visual communication. These will be assessed by presentations and/or reports based on laboratories, problems, and/or research.
C. Empirical and Quantitative Skills - to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions. These will be assessed through lecture exams, problems assigned for homework, and/or laboratory exercises.
D. Teamwork - to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal. This will be evaluated through group discussions, group laboratory projects, and/or through group presentations.

Course Outline or Schedule:

Below is a tentative schedule for the course. This schedule is subject to change, and such changes will be announced both in class and via Brightspace.

Date	Topic	Textbook	HW due
Mon, Jan 13	Oscillations about Equilibrium	13.1, 13.2	
Wed, Jan 15	Simple Harmonic Motion	13.3, 13.4	
Mon, Jan 20	*No Class - MLK Jr. Day*		
Wed, Jan 22	The Pendulum	13.5, 13.6	HW 1
Mon, Jan 27	Waves	14.1, 14.2, 14.4, 14.5	
Wed, Jan 29	Sound	14.6, 14.7, 14.8	
Mon, Feb 3	Electric Charges and Forces	19.1, 19.2, 19.3	HW 2
Wed, Feb 5	**Test 1 (Ch 13, 14)**		
Mon, Feb 10	Electric Fields	19.4, 19.5, 19.7	
Wed, Feb 12	Electric Potential and Electric Potential Energy	20.1, 20.2, 20.3	HW 3
Mon, Feb 17	Capacitors and Dielectrics	20.5, 20.6	
Wed, Feb 19	Electric Current, Resistance, and Power	21.1, 21.2, 21.3	HW 4
Mon, Feb 24	Series and Parallel Circuits	21.4	
Wed, Feb 26	Kirchhoff's Laws, Capacitors in Circuits	21.5, 21.6	
Mon, Mar 2	Magnetism	22.1, 22.2, 22.3, 22.4	HW5
Wed, Mar 4	**Test 2 (Ch 19, 20, 21)**		
Mon, Mar 9	*No Class - Spring Break*		
Wed, Mar 11			
Mon, Mar 16	More Magnetism	22.6, 22.7, 22.8	
Wed, Mar 18	Magnetic Flux and Faraday's Law	23.1, 23.2, 23.3, 23.4	HW 6
Mon, Mar 23	Generators, Motors, and Inductance	23.5, 23.6, 23.7. 23.8	
Wed, Mar 25	AC Circuits	24.1, 24.2, 24.3, 24.4	
Mon, Mar 30	Electromagnetic Waves	25.1, 25.2, 25.3, 25.4	HW 7
Wed, Apr 1	**Test 3 (Ch 22, 23, 24)**		
Mon, Apr 6	Geometric Optics - Mirrors	26.1, 26.2, 26.3, 26.4	
Wed, Apr 8	Geometric Optics - Lenses	26.5, 26.6, 26.7, 26.8	HW 8
Mon, Apr 13	Optical Instruments	27.1, 27.2, 27.3. 27.4, 27.5	
Wed, Apr 15	Interference and Diffraction	28.1, 28.2, 28.3, 28.4	HW 9
Mon, Apr 20	Introduction to Quantum Physics	30.1, 30.2, 30.3	
Wed, Apr 22	**Test 4 (Ch 25, 26, 27, 28)**		
Mon, Apr 27	Quantum Physics continued	30.4, 30.5, 30.6	
Wed, Apr 29	Final Exam Review		HW 10
Mon, May 4	***Final Exam 11:10-1:10 S230***		

Course Grading Information:

Category	Percent
Homework	20%
Quizzes	5%
Labs	25%
Tests (3 Regular averaged together)	30%
Final Exam	20%

A: 90%+ B: 80% – 89% C: 70% – 79% D: 60% – 69% F: 0% – 59%

Homework: Homework assignments are involved numeric problems designed to challenge you to gain a deeper understanding of the course material. Homework will be completed online and graded utilizing Mastering Physics. The link to your course is accessed through Brightspace. The lab period after a homework assignment is due, we will go over some of the more challenging homework problems from that assignment in class. I will not post solutions to homework or problem sets online, you must attend class or get the notes from a classmate who did if you want to see them worked out.

Quizzes: There will be at least 5 pop quizzes in class. Pop quizzes will be open note and open book; however, internet capable devices (phone, tablet, etc) will not be allowed. Quizzes may be given at any time during the class period. If you are not present in class for any reason during a pop quiz, you will not be allowed to make it up.

Lab: The lab grades will consist of activities and problem sets to be completed during the lab time. If you do not finish before the end of class time, you may take it home to complete and turn in the next class period. You can expect to have a lab every day after each lecture, except for test days, there will be no lab afterward. Additionally, the lab period before a test will be used as a review session for the test; however, the review itself will not be graded. I will drop the lowest lab grade at the end of the semester.

Exams: There will be three major exams during the semester. Exam questions will come from the material covered in class, the textbook, and laboratory exercises. The exams will be closed note and closed book. Internet capable devices (phones, tablets, etc) will not be allowed.

Final Exam: The final exam is comprehensive and has the same format as the other exams. The final exam will be closed note and closed book. Internet capable devices (phones, tablets, etc) will not be allowed.

Late Work, Attendance, and Make Up Work Policies:

Homework: Students lose 2% credit per hour for problems completed after the due date and time on Mastering Physics. **Student absences have no effect on the due date and time*.** The class period after a homework assignment is due, we will spend part of the lab time going over some of the more challenging homework questions.

Lab: Students who miss a lab for an college approved, documented excused absence are responsible for getting a data set from the instructor and turning in the lab before class of the next class period. Students who miss an in-class problem set are responsible for turning those problems before class of the next class period. If you leave class before you finish your lab activity or problem set, you will be marked absent and not allowed to turn in the work for that day. If you need to leave early for a college approved reason, please notify me BEFORE class, and you must provide documentation by the next class period when you turn in your work.

Exams: Unless there is a college approved, documented excused absence, no major exam may be made up. Any unexcused absence for an exam will result in a grade of zero for that exam.

Final Exam: The final exam is required for all students. Unless there is a college approved, documented excused absence, the final exam may not be made up. Any unexcused absence for the final exam will result in a grade of zero for that exam.

Attendance is mandatory. ***Per MCC policy, you will be automatically dropped after missing 25% of class meetings, or 8 lectures.*** If you are dropped before the official drop date, you will receive a grade of W. If you reach 8 absences after the official drop date, you will receive a grade of F, unless there are highly unusual circumstances.

Tardiness and Leaving Class Early: Any student who is late for class or who leaves class early will accumulate a full absence, regardless of the reason for the tardiness or early departure. These absences will count towards the 25% absence policy of MCC. If you have an excusable reason to arrive late or leave early, please notify me beforehand.

If you wish to drop this class, you must email me from your MCC student account before 5 pm on the last day for student-initiated drops, with the request "Please drop me from COURSE ID and SECTION NUMBER." An email that says something like, "I would like to drop…" or, "I was thinking about dropping…" or, "I was wondering if I should drop…" will ***not*** be considered a drop request. *(Just like saying, "I would like to get married," does not mean anyone is going to automatically marry you.)* If the email does not come from your student account, or if the request is verbal, I cannot drop you. Alternatively, there is a form you can fill out and have me sign before 5 pm on the last day for student-initiated drops. (Make an appointment to ensure I am on campus to provide the signature). After submitting your request, you must verify the drop was processed, notifying me in writing within 48 hours of your original request if it was not. Otherwise, you will stay on the roster for the rest of the semester and be awarded the grade

earned. Drops past the drop date are only done in documented, extreme, life-crisis circumstances, which usually involve withdrawing from school entirely.

MCC allows for "excused" absences caused by (1) authorized participation in official College functions, (2) personal illness, (3) an illness or a death in the immediate family, or (4) the observance of a religious holy day. It is your responsibility to let me know the reason for an absence the day you return to campus and provide sufficient documentation (doctor's note, email from coach, etc.).

Normally, please do not bring your children, friends, or guests to the class. (Please discuss this with me because I do not want you missing class if you cannot make child care arrangements.)

Student Behavioral Expectations or Conduct Policy:

Students are expected to maintain classroom decorum that includes respect for other students and the instructor, prompt and regular attendance, and an attitude that seeks to take full advantage of the education opportunity.

*** Click Here for the MCC Academic Integrity Statement**

(www.mclennan.edu/academic-integrity)

The link above will provide you with information about academic integrity, dishonesty, and cheating.

*** Click Here for the MCC Attendance/Absences Policy**

(www.mclennan.edu/highlander-guide/policies)

Click on the link above for the college policies on attendance and absences. Your instructor may have guidelines specific to this course.

Accommodations/ADA Statement

Any student who is a qualified individual with a disability may request reasonable accommodations to assist with providing equal access to educational opportunities. Students should contact the Accommodations Coordinator as soon as possible to provide documentation and make necessary arrangements. Once that process is completed, appropriate verification will be provided to the student and instructor. Please note that instructors are not required to provide classroom accommodations to students until appropriate verification has been provided by the Accommodations Coordinator. Instructors should not provide accommodations unless approved by the Accommodations Coordinator. For additional information, please visit mclennan.edu/disability.

Students with questions or who require assistance with disabilities involving physical, classroom, or testing accommodations should contact:

disabilities@mclennan.edu
254-299-8122
Room 319, Student Services Center

*** Click Here for more information about Title IX**

(**www.mclennan.edu/titleix**)

We care about your safety, and value an environment where students and instructors can successfully teach and learn together. If you or someone you know experiences unwelcomed behavior, we are here to help. Individuals who would like to report an incident of sexual misconduct are encouraged to immediately contact the Title IX Coordinator at titleix@mclennan.edu or by calling Dr. Drew Canham (Vice President for Student Success) at 299-8645. Individuals also may contact the MCC Police Department at 299-8911 or the MCC Student Counseling Center at MCC by calling 299-8210. The MCC Student Counseling Center is a confidential resource for students.

McLennan's Title IX webpage (http://www.mclennan.edu/titleix/) contains more information about definitions, reporting, confidentiality, resources, and what to do if you or someone you know is a victim of sexual misconduct, gender-based violence or the crimes of rape, acquaintance rape, sexual assault, sexual harassment, stalking, dating violence or domestic violence.

* *You will need to access each link separately through your Web browser (for example: Internet Explorer, Mozilla, Chrome, or Safari) to print each link's information.*

******I reserve the right to change any term on this syllabus at any time during this semester******