

McLennan

C O M M U N I T Y

COLLEGE

WACO, TEXAS

COURSE SYLLABUS

AND

INSTRUCTOR PLAN

College Physics II

PHYS – 1402 – 87

Professor Laura Wright

NOTE: This is a 16-week course.

NOTE: This is an Online course.

COVID 19 Notice:

McLennan Community College is committed to providing you with every resource you need to reach your academic goals. We are also concerned for your safety. We are working through COVID-19 guidelines to make sure we offer a safe environment for you and our faculty. This will include smaller class sizes to manage social distancing and proper cleaning techniques. You will have the advantage of a physical classroom experience but may also need to work part of the time online as we adjust to limited classroom capacity. This will also allow us the flexibility to move online if so directed by federal, state and/or local COVID 19 guidelines. Faculty and staff are preparing now to ensure that you have the best experience in the midst of these uncertain times.

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.

Semester Hours 4 (3 lec/3 lab)

Prerequisites and/or Corequisites:

Prerequisite: PHYS 1401 with a grade of C or better.

Instructor Information:

Instructor Name: Professor Laura Wright

MCC Email: lwright@mclennan.edu

Office Phone Number: 254-299-8419

Office Location: HP 230

Office/Teacher Conference Hours: M/W 1-4pm, by Zoom, or email to schedule an appointment

Zoom Meeting ID: 837-729-4618

**if you want the fastest possible response, please contact me via email. I am not always in my office to answer the phone, but I check email multiple times throughout the day.*

***please keep in mind that if you contact me after hours or over the weekend, I may not be able to respond 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. This course is entirely online and you will need to access Brightspace, Mastering Physics, Zoom, email, and other online resources.

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

Methods of Teaching and Learning:

This class will be delivered in a completely online format, through text reading assignments, lecture videos, online homework, quizzes, lab activities, and tests.

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:

You are responsible for everything listed in the detailed calendar below. Assignments for each week will be generally due on Fridays at 11:59pm, unless otherwise indicated by your instructor. You should watch the associated videos and read the indicated pages in the textbook on or before the due date for each assignment, so that you have time to complete the assignment. This calendar is subject to change. In the event that I need to make changes to the schedule, I will send an email to the class via Brightspace as soon as I possibly can.

Week	Topic	Textbook	What's due Friday @ 11:59pm
Week 1 1/11 – 1/15	<ul style="list-style-type: none"> • Orientation • Oscillations about Equilibrium 	Ch. 13	<input type="checkbox"/> Orientation Quiz <input type="checkbox"/> HW 1 <input type="checkbox"/> Discussion Board 1
Week 2 1/16 – 1/22	<ul style="list-style-type: none"> • Simple Harmonic Motion • Waves • Sound 	Ch. 13 Ch. 14	<input type="checkbox"/> HW 2 <input type="checkbox"/> Lab 1 <input type="checkbox"/> Quiz 1 <input type="checkbox"/> Discussion Board 2
Week 3 1/23 – 1/29	<ul style="list-style-type: none"> • Electric Charges and Forces • Electric Fields 	Ch. 19	<input type="checkbox"/> HW 3 <input type="checkbox"/> Lab 2 <input type="checkbox"/> Discussion Board 3
Week 4 1/30 – 2/5	<ul style="list-style-type: none"> • Electric Potential • Electric Potential Energy • Capacitors & Dielectrics 	Ch. 20	<input type="checkbox"/> HW 4 <input type="checkbox"/> Lab 3 <input type="checkbox"/> Quiz 2 <input type="checkbox"/> Discussion Board 4
Week 5 2/6 – 2/12	<ul style="list-style-type: none"> • Electric Current, Resistance, and Power • Test 1 (Weeks 1-4) 	Ch. 21	<input type="checkbox"/> HW 5 <input type="checkbox"/> Test 1 - take between 2/8 – 2/12
Week 6 2/13 – 2/19	<ul style="list-style-type: none"> • Series and Parallel Circuits • Kirchhoffs Laws • Capacitors in Circuits 	Ch. 21	<input type="checkbox"/> HW 6 <input type="checkbox"/> Lab 4 <input type="checkbox"/> Discussion Board 5

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Week 7 2/20 – 2/26	<ul style="list-style-type: none"> • Magnetism • Current Loops 	Ch. 22	<input type="checkbox"/> HW 7 <input type="checkbox"/> Lab 5 <input type="checkbox"/> Quiz 3 <input type="checkbox"/> Discussion Board 6
Week 8 2/27 – 3/5	<ul style="list-style-type: none"> • Magnetic Flux and Faraday's Law • Generators, Motors and Inductance 	Ch. 23	<input type="checkbox"/> HW 8 <input type="checkbox"/> Lab 6 <input type="checkbox"/> Discussion Board 7
*****SPRING BREAK (3/6 – 3/14)*****			
Week 9 3/15 – 3/19	<ul style="list-style-type: none"> • AC Circuits • RC Circuits 	Ch. 24	<input type="checkbox"/> HW 9 <input type="checkbox"/> Lab 7 <input type="checkbox"/> Quiz 4 <input type="checkbox"/> Discussion Board 8
Week 10 3/20 – 3/26	<ul style="list-style-type: none"> • Electromagnetic Waves • Test 2 (Weeks 5-9) 	Ch. 25	<input type="checkbox"/> HW 10 <input type="checkbox"/> Test 2 - take between 3/22 – 3/26
Week 11 3/27 – 4/2	<ul style="list-style-type: none"> • Geometric Optics – Mirrors • Geometric Optics - Lenses 	Ch. 26	<input type="checkbox"/> HW 11 <input type="checkbox"/> Lab 8 <input type="checkbox"/> Discussion Board 9
Week 12 4/3 – 4/9	<ul style="list-style-type: none"> • Optical Instruments • Lenses in Combination 	Ch. 27	<input type="checkbox"/> HW 12 <input type="checkbox"/> Lab 9 <input type="checkbox"/> Quiz 5 <input type="checkbox"/> Discussion Board 10
Week 13 4/10 – 4/16	<ul style="list-style-type: none"> • Interference and Diffraction • Young's Two-Slit Experiment 	Ch. 28	<input type="checkbox"/> HW 13 <input type="checkbox"/> Lab 10 <input type="checkbox"/> Discussion Board 11
Week 14 4/17 – 4/23	<ul style="list-style-type: none"> • Quantum Physics 	Ch. 30	<input type="checkbox"/> HW 14 <input type="checkbox"/> Quiz 6 <input type="checkbox"/> Discussion Board 12
Week 15 4/24 – 4/30	Test 3 (Weeks 10-14)		<input type="checkbox"/> Test 3 - take between 4/26 – 4/30
Week 16 5/1 – 5/4	Final Exam		Final Exam - take between 5/1 – 5/4

Course Grading Information:

Category	Percent
Homework	20%
Discussion Boards	5%

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Quizzes	10%
Labs	15%
Tests (3 Regular averaged together)	30%
Final Exam	20%
Total	100%

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

Orientation Quiz: Before you can complete any assignments for the course, you must complete an orientation quiz. The orientation quiz will count as a quiz grade, and is designed to make sure you understand the policies of this course. You will have unlimited attempts, but you must score a 100% to receive credit for any other assignments. Please don't wait to complete the orientation quiz, so that you do not miss any important due dates.

Homework (20%): Homework will be completed through Mastering Physics. There will be 14 total homework assignments. If you are having trouble with the homework, do not wait until the last minute to get help. It is your responsibility to come to my office hours and get help if you need it. There will be a 5% penalty for each day that a homework assignment is late. This is to encourage you not to fall behind, while also allowing flexibility for unforeseen circumstances. The lowest homework grade will be dropped at the end of the semester.

Discussion Boards (5%): each week, you will need to complete a discussion board assignment. You will be given a prompt and expected to answer thoughtfully. You may also respond to other student's posts, as long as the discussion is thoughtful and civil. Discussion board questions may be over a certain topic, or a reflection on what you have learned that week. There will be no credit given for late discussion board assignments, for any reason.

Quizzes (10%): Throughout the semester, there will be 6 regular quizzes given. Dates for quizzes are given in the calendar above. You can take the quiz at any time within the week they are given. Quizzes are open note and open book. You will have two attempts to complete each quiz, and they will be timed, 30 minutes for each attempt. Beware, the questions are randomized, so you may see different questions each attempt. The orientation quiz will also count as a quiz grade. In addition, other quizzes may be given throughout the semester, which may come in the form of completion of test reviews or scanning and submitting notes for notebook checks. There will be no credit given for late quizzes.

Lab Activities (15%): There will be 10 lab activities throughout the course of the semester. All of the labs will be completed online. They will mostly be in the form of simulations designed to enhance your understanding of each week's lessons. Instructions for each lab will be given through Brightspace. Please see late policy below if you are unable to complete the lab activity

by the due date. The lowest lab grade will be dropped at the end of the semester. There will be no credit given for late lab activities.

Tests (30%): There will be three tests throughout the course of this semester. The tests will be taken online in the date ranges listed in the schedule above. Please see late policy below if you are unable to complete the test in the date range given. No tests will be dropped.

Final Exam (20%): The final exam will be comprehensive. It will be in the same format as the regular semester tests. It will be given through Mastering Physics, and you will need to take it online in the date range listed on the calendar above. Please see late policy below if you are unable to complete the final exam in the date range given.

Extra Credit Opportunities: Throughout out the semester, I may offer extra credit activities. I will post them on Brightspace as they arise.

Academic Dishonesty. Any student that is found guilty of academic dishonesty such as cheating, plagiarism, or collusion, will receive the zero grade on every test or assignment involved. For repeated violations, a guilty student can be assigned a failing grade in this course and can be recommended for suspension from the McLennan Community College District.

Late Work, Attendance, and Make Up Work Policies:

You will receive a 5% penalty for each day a homework assignment is late, regardless of the reason it is late.

Discussion board assignments, labs, quizzes, and tests will **not** be accepted late, for any reason.

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.).

If you are unable to complete a test, the final exam, quiz, or lab activity within the date ranges given in the calendar above, please contact me as soon as possible. If you are able to provide documentation for the MCC excused absence reasons listed above, I will make other arrangements for you to complete the test, final, quiz, or lab activity.

The MCC excused absence policy also includes any family members you care for that may become sick (children, parents, grandparents, etc). If you have to miss a due date because you are

caring for a family member, please provide a doctor's note as soon as you are able, so that I can make other arrangements for you to complete your work.

If you are called to active military duty that requires an extended absence, please contact me, so that we can determine the best options for you moving forward in this course.

As per McLennan Community College's attendance policy, regular and punctual attendance is expected of all students. Students, whether present or absent, are responsible for all material presented, assigned, or due in class and will be held accountable for such materials in the determination of course grades. Absence from more than 25 percent of scheduled lecture meetings will be taken as evidence that a student does not intend to complete the course. The student will be withdrawn with a grade of "W." If a student reaches the 25 percent absences after the official drop date, the instructor may assign a "W" or an "F" depending upon the student's academic performance at the time of the decision.

Attendance will be taken weekly. It will be based on completion of assignments. If you do not complete any assignments for the week, you will be marked absent for that week. For this course, 25% absences are reached after 4 weeks of non-participation. If you have 4 absences, you will be automatically dropped from the course. If your 4 absences are reached after the drop date, you will not be dropped, and you will earn an F for the course. Please note that an "excused" absence does not remove the absence. An "excused" absence means you the opportunity to make up missed work due to the absence.

You are encouraged to keep track of your attendance in PHYS 1401 by checking your attendance rate in Brightspace under Assessments> Attendance.

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](http://www.mclennan.edu/academic-integrity)
(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](https://www.mclennan.edu/highlander-guide/policies.html)
(<https://www.mclennan.edu/highlander-guide/policies.html>)

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

** You will need to access each link separately through your Web browser (for example: Mozilla Firefox, Chrome, Microsoft Edge 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******

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C O M M U N I T Y

COLLEGE

ACADEMIC RESOURCES/POLICIES

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 or want to explore strategies for balancing life and school, we encourage you to contact a success coach by calling (254) 299-8226. Students can visit the Completion Center Monday-Friday from 8 a.m.-5 p.m. to schedule a meeting with a success coach and receive additional resources and support to help reach academic and personal goals. Paulanne's Pantry (MCC's food pantry) provides free food by appointment to students, faculty and staff based on household size. Text (254) 870-7573 to schedule a pantry appointment. The Completion Center and pantry are located on the Second Floor of the Student Services Center (SSC).

MCC Foundation Emergency Grant Fund:

Unanticipated expenses, such as car repairs, medical bills, housing, or job loss can affect us all. Should an unexpected expense arise, the MCC Foundation has an emergency grant fund that may be able to assist you. Please go to <https://www.mclennan.edu/foundation/scholarships-and-resources/emergencygrant.html> to find out more about the emergency grant. The application can be found at https://www.mclennan.edu/foundation/docs/Emergency_Grant_Application.pdf.

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](https://www.mclennan.edu/center-for-teaching-and-learning/Faculty%20and%20Staff%20Commons/requirements.html)
(<https://www.mclennan.edu/center-for-teaching-and-learning/Faculty%20and%20Staff%20Commons/requirements.html>)

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.

Email Policy:

McLennan Community College would like to remind you of the policy (<http://www.mclennan.edu/employees/policy-manual/docs/E-XXXI-B.pdf>) regarding college email. All students, faculty, and staff are encouraged to use their McLennan email addresses when conducting college business.

A student's McLennan email address is the preferred email address that college employees should use for official college information or business. Students are expected to read and, if needed, respond in a timely manner to college emails.

Instructional Uses of Email:

Faculty members can determine classroom use of email or electronic communications. Faculty should expect and encourage students to check the college email on a regular basis. Faculty should inform students in the course syllabus if another communication method is to be used and of any special or unusual expectations for electronic communications.

If a faculty member prefers not to communicate by email with her/his students, it should be reflected in the course syllabus and information should be provided for the preferred form of communication.

Email on Mobile Devices:

The College recommends that you set up your mobile device to receive McLennan emails.

Forwarding Emails:

You may forward the emails that come to your McLennan address to alternate email addresses; however, the College will not be held responsible for emails forwarded to an alternate address that may become lost or placed in junk or spam filters.

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](http://www.mclennan.edu/titleix)
(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 (Chief of Staff for Equity & Inclusion/Title IX) 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. Any student or employee may report sexual harassment anonymously by visiting the following website: <http://www.lighthouse-services.com/mclennan/>.

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 Mozilla Firefox, Chrome, Microsoft Edge, or Safari) to print each link's information.*