



WACO, TEXAS

**COURSE SYLLABUS
AND
INSTRUCTOR PLAN**

College Physics

PHYS-1402-88

Dr. Meera D Gurung

NOTE: This is an Online Only course.

COVID 19 Notice:

McLennan Community College is committed to providing you with every resource you need to reach your academic goals including your safety. We will continue to monitor the evolving situation with COVID 19 and adjust our safety guidelines to make sure we offer a safe environment for you and our faculty. Please make sure to consult your faculty and the MCC website at <https://www.mclennan.edu/crisis-management/coronavirus-updates/index.html> on any changes to these guidelines.

Course Description:

Algebra-level physics sequence, with laboratories, that includes study of classical mechanics, thermodynamics, wave mechanics, optics, electricity, magnetism, and radioactivity.

Prerequisites and/or Corequisites:

Prerequisite: PHYS 1401 (General Physics 1).

Course Notes and Instructor Recommendations:

PHYS-1402-88 is an Online Only course. Class notes and lecture videos will be available on Brightspace to assist student success, all assignments will be posted on Mastering Physics, Discussion board, exams and quizzes will be posted on Brightspace.

Instructor Information:

Instructor Name: Dr. Meera Devi Gurung

MCC E-mail: mgurung@mclennan.edu

Office Phone Number: 254-299-8186

Office Location: S345

Office/Teacher Conference Hours: MW12:05 pm: 1:00 pm.

Other Instruction Information: **I usually reply emails within 24 hrs, if you don't hear back from me in 24 hr, email me again.**

Required Text & Materials:

- Title: Physics 5th Edition

Author: James S. Walker

Edition: 5th

Publisher: Pearson Addison-Wesley

ISBN: 9780134465784 (w/Modified Mastering Physics Access Code)

Access to PHYSICS (MODIFIED MASTERINGPHYSICS STANDALONE ACCESS CARD)

Publisher: Pearson Addison-Wesley

ISBN: 9780134019727

(License can be purchased online through www.masteringphysics.com)

- A Scientific Calculator: This means something that can handle exponential, trigonometric, hyperbolic trigonometric and logarithmic functions.
- Access to Brightspace: It is used for announcement, grades and other course related materials.
- **Additional requirements:** Students must have a reliable computer and internet connection.

Students must be able to demonstrate basic computer literacy skills such as keyboarding, sending and receiving email, and using a web browser.

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

Methods of Teaching and Learning:

The course offered is Online only class. All the Lectures material is available on Brightspace. Registered students gain access to a Brightspace that contains all course materials, instructions, assignments and Zoom meeting informations. Students will learn slides, online lectures, as well as through work on homework, labs, quizzes and, exams. Additional methods (discussion board) is used as opportunities to 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.
2. State the general nature of electrical forces and electrical charges, and their relationship to electrical current.
3. Solve problems involving the inter-relationship of electrical charges, electrical forces, and electrical fields.
4. Apply Kirchhoff's Laws to analysis of circuits with potential sources, capacitance, and resistance, including parallel and series capacitance and resistance.
5. Apply Ohm's law to the solutions of problems.
6. Use Faraday's and Lenz's laws to find the electromotive forces.
7. Discuss and solve AC circuit problems.
8. Discuss simple harmonic motion and its application to real-world problems.
9. Describe the components of a wave and relate those components to mechanical vibrations, sound, and decibel level.
10. Articulate the principles of reflection, refraction, diffraction, interference, and superposition of waves.
11. Solve real-world problems involving optics, lenses, and mirrors.
12. Analyse the laboratory reports that clearly communicate experimental information in a

logical and scientific manner posted online.

13. Articulate the principles of special and general relativity; and the physical consequences of these theories.
14. Discuss quantum mechanics and its effects on the macroscopic physical world.
15. Articulate the principles of atomic physics and nuclear physics and their effects.
16. Conduct basic laboratory experiments involving physics.
17. Relate physical observations and measurements involving classical mechanics to theoretical principles.
18. Evaluate the accuracy of physical measurements and the potential sources of error in the measurements.
19. Identify appropriate sources of information for conducting laboratory experiments involving classical mechanics.

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:

This course will encompass the following material to be divided into three sections. Objectives 12, 16-19 are covered in laboratory. SLOs are covered throughout the entire semester.

Chapter 13 – Oscillations about Equilibrium

Chapter 14 – Waves and Sound

Chapter 19 – Electric Charges, Forces, and Fields

Chapter 20 – Electric Potential and Electric Potential Energy

Chapter 21 – Electric Current and Direct- Current Circuits

Chapter 22 – Magnetism

Chapter 23 – Magnetic Flux and Faraday's Law of Induction

Chapter 24 – Alternating-Current Circuits

Chapter 25 – Electromagnetic Waves

Chapter 26 – Geometric Optics

Chapter 27 – Optical Instruments

Chapter 28 – Physical Optics: Interference and Diffraction

Chapter 29 – Relativity

Chapter 30 – Quantum Physics

Chapter 31 – Atomic Physics

Chapter 32 – Nuclear Physics and Nuclear Radiation

College Physics 1
PHYS-1402-88

Date	Chapter Coverage	Due dates For	Objective	Date	Chapter Coverage	Due dates For	Objective
7/10	13		8	7/26	23	HW21	6
7/11	14		9,11	7/27		HW22	7
7/12	26	HW 13	11	7/28		HW 23	
7/13	27	HW 14	9-11	7/29			
7/14		HW 26		7/30		Quiz2, Discussion board 3, lab4, lab5	
7/15		HW 27		7/31		Exam 2	
7/16		Discussion board 1, LAB 1, quiz1.		8/1	24		7
7/17	28		9-11	8/2	25	HW 24	7
7/18				8/3	29	HW 25	13
7/19		HW 28		8/4	30/32 (short lectures)	HW 29	
7/20		Exam 1		8/5			
7/21	19	HW 19	1-3	8/6		Discussion Board 4, Quiz 3, lab6, lab7 HW 30/32	
7/22	20	HW 20	1-3	8/7		Exam 3	
7/23		Discussion Board 2, lab2, lab3		8/8		Final (Who are graduating this summer)	14-15
7/24	21		4,5	8/9		Final	

College Physics 1
PHYS-1402-88

7/25	22		6	8/10			
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Course Grading Information:

Homework: 35% Lab: 10%
Exams (3): 30% Final Exam: 15%
Quizzes(3): 10%

A: +90, B: 80-89, C: 70-79, D: 60-69, F: 59 or less

Homework: Homework assignments are involved numeric problems designed to challenge you to gain a deeper understanding of the course material. Homework will be turned in and graded utilizing Mastering Physics. Due dates for all the homeworks are given on the calendar.

Lab: The lab exercises will be posted online, which will consist of graphical analysis , simulations or numerical analysis based on basic physics concepts. Due dates for all the labs are given on the calendar.

Exams: There will be three major exams during the summer session to be completed online . Exam questions will be based on material covered in the lecture notes , the textbook and the laboratory exercises. Final Exam: The final exam will be comprehensive and has the same format as the other exams. Check the dates for exam on the calendar.

Quizzes: There will be three quizzes and you will be notified about the quiz when it is posted, due dates for the quizzes are already posted on calendar.

All exams, and quizzes will be posted on Brightspace and you are required to take the exam using Lockdown Browser with webcam that will record you during an online exam. You must have a computer with functioning webcam and microphone.

Discussion board: Each week , you are required to participate in discussion board assignment, which will be on Brightspace, make sure you are thoughtful and civilized while responding to fellow student's post. Discussion board topics will be related to the chapters you are supposed to cover according to the calendar. **There will be no credit for any late submission.**

Late Work, Attendance, and Make Up Work Policies:

Homework and Lab: Students lose 2% credit per hour for problems completed after the due date and time on Mastering Physics.

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

Final Exams: The final exam is required for all students. Unless there is a college approved, documented, excused absence, the final exam may be made up. Any unexcused absence for final exam will result in a grade of zero for that exam.

Attendance Policy for the online course. **Your Success in this course depends on your active participation and engagement throughout the course, you are required to complete all assignments (homework, labs ,3 quizzes, discussion boards , three tests and a final test) by the due date. If you don't log on and review your course for continuous 3 days it will be marked absent for that week, and if you miss due dates for 5 of the assignments , it will count towards 25% of absence in your attendance then you will be informed and you might be dropped from the class as well.**

Tardiness : Any student who is late in submitting the online assignment will accumulate half an absence, regardless for the reason for the tardiness. These half absences will count towards your absence in attendance.

Student Behavioral Expectations or Conduct Policy:

Describe the behaviors students are expected to demonstrate in class, lab, clinical, including dress policy and reference to the General Conduct Policy in the Highlander Guide. For example, "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 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.

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

Updated 11/04/2022



ACADEMIC RESOURCES/POLICIES

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. For additional information, please visit www.mclennan.edu/disability.

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

disabilities@mclennan.edu 254-
2998122
Room 319, Student Services Center

Title IX:

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 acting Title IX Coordinator at titleix@mclennan.edu or by calling, Dr. Claudette Jackson, (Diversity, Equity & Inclusion/Title IX) at (254) 299-8465. MCC employees are mandatory reporters and must report incidents immediately to the Title IX Coordinator. Individuals may also contact the MCC Police Department at (254) 299-8911 or the MCC Student Counseling Center at (254) 299-8210. The MCC Student Counseling Center is a confidential resource for students. Any student or employee may report sexual harassment anonymously by visiting <http://www.lighthouse-services.com/mclennan/>.

Go to McLennan's Title IX webpage at www.mclennan.edu/titleix/. It 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.

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/>

Academic Support and Tutoring is here to help students with all their course-related needs. Specializing in one-on-one tutoring, developing study skills, and effectively writing essays. Academic Support and Tutoring can be found in the Library and main floor of the Learning Commons. This service is available to students in person or through Zoom from 7:30 am - 6:00 pm Monday through Thursday and 7:30 am - 5:00 pm on Friday. You can contact the Academic Support and Tutoring team via Zoom (<https://mclennan.zoom.us/j/2542998500>) or email (ast@mclennan.edu) during the above mentioned times.

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 either MCC CREW – Campus Resources Education Web by calling (254) 299-8561 or by emailing crew@mclennan.edu or a Success Coach by calling (254) 299-8226 or emailing SuccessCoach@mclennan.edu. Both are located in the Completion Center located on the second floor of the Student Services Center (SSC) which is open Monday-Friday from 8 a.m.-5 p.m.

Paulanne's Pantry (MCC's food pantry) provides free food by appointment to students, faculty and staff. To schedule an appointment, go to https://mclennan.co1.qualtrics.com/jfe/form/SV_07byXd7eB8iTqJg. Both the Completion Center and Paulanne's 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.

MCC Academic Integrity Statement:

Go to www.mclennan.edu/academic-integrity for information about academic integrity, dishonesty, and cheating.

Minimum System Requirements to Utilize MCC's D2L|Brightspace:

Go to <https://www.mclennan.edu/center-for-teaching-and-learning/FacultyandStaffCommons/requirements.html> for information on the minimum system requirements needed to reliably access your courses in MCC's D2L|Brightspace learning management system.

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 notified via 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.

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. For more information about your student email account, go to www.mclennan.edu/studentemail.

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 their 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. If you need assistance with set-up, you may email Helpdesk@mclennan.edu for help.

You can find help on the McLennan website about connecting your McLennan email account to your mobile device:

- [Email Setup for iPhones and iPads](#)
- [Email Setup for Androids](#)

Forwarding Emails:

You may forward 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 be lost or placed in junk or spam filters.

For more helpful information about technology at MCC, go to [MCC's Tech Support Cheat Sheet](#) or email helpdesk@mclennan.edu.

Disclaimer:

The resources and policies listed above are merely for informational purposes and are subject to change without notice or obligation. The College reserves the right to change policies and other requirements in compliance with State and Federal laws. The provisions of this document do not constitute a contract.