UNIVERSITY OF GUAM
UNIBETSEDÅT GUAHAN

College of Natural & Applied Sciences

DIVISION OF NATURAL SCIENCES

PH252-01/02: University Physics **University of Guam: Fañomnåkan (Spring), 2023**

PH211-01/02/03: Introductory Physics Laboratory

Instructor: J.C. Yoon **Office:** SC225 **Email:** jcyoon@yahoo.com

Office hours: MW 8:00 – 9:00 AM/4:30 – 5:30 PM, Thrs 09:00 – 11:00 AM

Course Description:

PH252: A continuation of PH251, this course deals with classical electricity and magnetism, optics, wave motion and sound. It includes three hours of lecture per week. Prerequisite: PH251.

PH211: This course consists of experiments dealing with electricity, magnetism, optics, and atomic physics. It acts as a laboratory for PH252. It meets for three hours weekly.

Textbooks:

Required: University Physics with Modern Physics, by Young, Freedman & Ford, 15th edition

Suggested: Physics for Scientists and Engineers with Modern Physics, by Serway, Jewett, 10th edition

Course Materials:

Required: MasteringPhysics (masteringphysics.com to purchase or register with/without eText)

Available at the course website: PH252 Lecture Note/Workbook, PH211 Lab Manual

Course Website: http://www.jcmoodle.com/moodle/

- Make sure to set the time zone UTC+10, not server's local time when registering in the Moodle or later in your account profile

Class Schedule:

PH252-01	Lectures: MW 9:00 – 10:50 am
PH252-02	Lectures: MW 5:30 – 7:20 pm
Lab I/II/III:	Th 11:00 – 13:50 am, F 8:00 – 10:50 am, 2:00 – 4:50 pm

Class Communication and Email:

- The best way to reach your instructor is via email at jcyoon@yahoo.com with a title starting with "[PH252 Section 1/2]…". You can expect email reply within 24 hours on weekdays, and within 48 hours on weekends.
- Regular class announcement including Exam information will be made to students at the top of the course web site. You are expected to log in the course web site regularly and read the course announcement. And more important or urgent announcements can be made via email from the course web site or UOG WebAdvisor.

- The extension of homework assignment upon personal request will not be announced.

Expectations:

For a 4-credit course, students with advanced physics and mathematical courses in high school should expect a minimum of 8 hours study in a week. Otherwise, students should expect a minimum of 12 hours study in a week. Students are encouraged to collaborate with your classmates and use the course materials provided by your instructor and any internet resource available.

PH252 Lectures, Worksheets, Worksheet Quizzes, Homework Assignments, and Online Quizzes:

1. Class attendance: For each lecture, a worksheet quiz on the previous lecture and video lessons for lecture and worksheet will open 10 min after the previous class and close at the usual class time. You are required to take a worksheet quiz on the previous lecture (10 multiple-choice questions, up to 3 times, the highest score) and complete video lessons of lecture and worksheet. For the worksheet quiz, you can review the lecture or use any internet resource available. Once you watch the video lesson, you should be allowed to review it again even after the lesson is closed. The video lesson and online worksheet quiz can be flexible and extended without announcement on any student's request given that there is a legitimate reason.

   Worksheet Quiz: mainly selected from worksheet of the previous lecture (No worksheet quiz in the first lecture)
   Grade category: Worksheet Quiz
   Number of Questions: 10 questions
   Time Limit: unlimited
   Attempts allowed: Unlimited
   Grading Method: Highest grade

2. Homework assignments is based on the MasteringPhysics online homework system and the course web site. Online Quizzes for Simple Questions and Exercise are available at the course website. For MasteringPhysics and Online Quizzes, you can review the lecture or use any internet resource available and are encouraged to collaborate with your classmates. Online Quizzes for Simple Questions and Exercise (not MasteringPhysics) can be flexible and extended without announcement on any student's request given that there is a legitimate reason.

   MasteringPhysics: a homework and tutorial system, providing feedback to your answers, and various hints for the problems, mainly selected from the textbook. Typically, it takes about 2 to 3 hours to complete each assignment with the total class average of about 80/100. An overall score of 60/100 or higher on MasteringPhysics is required to complete the course with a passing grade. Other course assignments

including lectures, quizzes, and exams can be restricted due to failing to meet the minimum MasteringPhysics requirement. About 10% of the exam questions will be selected from MasteringPhysics assignments.

Grade category: MasteringPhysics
Grading Policy:

- Students can take assignment up to 3 times and keep best score. Student must complete entire assignment before starting new attempt.
- Assignment Score will be shown to student immediately.
- Penalize Late Answer Submissions: reduce credit by 1% over each day late, but it never reduces credit by more than 10%. In other words, even if the assignment is overdue, students can submit the assignment and obtain the maximum of 90% of the assignment score. Usually, the deadline of MasteringPhysics assignments will not be extended.
- Limit number of attempts per questions to 6.
- Deduction for incorrect Multiple Choice or True/False Questions: Deduct credit for each incorrect answer before the last attempt. Deduction per incorrect answer is based on the number of choices in the question. For a multiple-choice question with 5 choices, a student would lose 25% credit for each incorrect answer.
- No deduction for any other incorrect Question type. No extra credit or deduction on Hint usage
- Students can always view hints and eText review link.

Simple Questions: conceptual questions or questions with minimum computation closely related to the lectures from each chapter. After completing the lectures in the chapter, students may try a couple of times to review first, before taking to get the highest score within the given time limit. 60% of the exam questions will be based on these sets.
Grade category: Online Quiz
Number of Questions: more than 20 questions
Time Limit: about 15 min to 30 min
Attempts allowed: Unlimited
Grading Method: Highest grade
Exercise: typical problems for each chapter (except Ch 0 and Ch 1). The exercise question set in pdf format and its problem-solving video are available in the course site. Students can complete the video before taking exercise online quiz. You may use your note from the problem-solving video or other internet resource to complete the quiz first. About 20% of the exam questions will be selected from the exercise questions.
Grade category: Online Quiz
Number of Questions: 10 random questions selected from the exercise question set
Time Limit: Unlimited

Attempts allowed: Unlimited
Grading Method: Highest grade

PH211 Labs:

1. Online Lab assignments are made of online simulation, video lessons and online quiz, often using MS Excel or PhET.
2. Microsoft Office 365: UOG licensed subscription allows eligible UOG students to download the latest Microsoft Office 365 up to 5 different devices. Students will be able to access Microsoft Office online and download the full suite as well. This product will remain functional until the student, faculty, or staff separates from the University of Guam (Link: https://www.uog.edu/it/services-software/email)

3. PhET: Free science and math simulations for teaching STEM topics, including physics, chemistry, biology, and math, from University of Colorado Boulder (Link: https://phet.colorado.edu/)
4. Lab grades:
   - Lab Lesson (10 points): You are expected to follow the instruction in the lesson or watch the videos and answer the questions to proceed. You may try a question again up to 10 times or take the lesson again (the highest score will be recorded). After completing the lesson, you can review it later.
   - Lab Assignment (10 points): You are expected to perform the activity and submit your assignment (file formats: .xls, .xlsx, .pdf, .doc, .docx) by selecting Add Submission to open the Assignment Submission page.
   - Online Quiz (10 points): You can take the online quiz up to 3 times and the highest score will be recorded.

Lab Safety: You are required to follow the safety rules listed in the lab manual and posted in the lab room. If you violate the safety rules you will be directed to leave the lab and will receive a grade of zero for the lab session.

Food and Drinks in the lab: Food is allowed in the lab only when provided by the instructor. Drinks are permitted provided that they are in fully leak-proof containers.

Evaluation Methods:

PH252: You are expected to check out the gradebook in the Moodle and report any error or missing assignments

or quizzes immediately to the instructor. No report on assignments two weeks after their due dates will be accepted. You are required to meet the minimum 60% in Class Attendance and MasteringPhysics by one week before an exam to take the exam.

- Class Attendance (Lecture and Worksheet Video Lesson 25%, Worksheet Quiz 75%): 10%
- Homework, Quizzes (MasteringPhysics 80%, Online Quiz 20%): 35%
- Midterm I/II: 10% 15% Final Exam: 30%
- Grades: 90 – 100: A, 80 – 89: B, 70 – 79: C, 60 – 69: D, 0 – 59: F

PH211: You are required to meet the minimum 60% in Lab Assignment by one week before an exam to take the exam.

- Lab Grades: Experiment and Lab Lesson, Assignment, Online Quiz: 70%, Final: 30%

Academic Integrity Policy: Academic Integrity is about performing in your role as student in ways that are honest, trustworthy, respectful, responsible, and fair (see www.academicintegrity.org for more information). As a student, you will complete your academic assignments in the manner expected by the instructor.

Tobacco-free/Smoke-free/Vaping-free campus: University of Guam is a tobacco-free/smoke-free, vaping/e-cigarette-free campus. Thank you for not using tobacco products or e-cigarettes on campus, for helping to fight cancer, and for helping to make UOG a healthy learning environment.

UOG Disabilities Policy

The University is committed to providing an inclusive and welcoming environment for all members of our community. Federal and local laws protect the University community from any act of sex discrimination. Such acts violate the essential dignity of our community members. If you need assistance with EEO (Equal Employment Opportunity) and/or Title IX concerns, please contact the Director of EEO/ADA & TITLE IX Office at 671-735-2244, 671-735-2971, TDD 671-735-2243 or eeo-ada@triton.uog.edu.

For individuals covered under the ADA {Americans with Disabilities Act), if you are a ***student*** with a disability requiring academic accommodation(s), please contact the Student Counseling and Advising Service Accommodations Office to discuss your confidential request. Please provide an accommodation letter from the Disability Support Services/Student Counseling and Advising Service Accommodation counselor. To register for academic accommodations, please contact or visit the Student Center, Rotunda office #6, disabilitysupport@triton.uog.edu or telephone/(TDD) 671-735-2460.

For ***applicants or employees*** with a disability requiring employment or workplace accommodation(s), please contact the Director of EEO/ADA and TITLE IX Office to discuss your specific needs. Please provide documentation concerning your disability and the need for employment or workplace accommodation. Our office is located at the lya Hami Hall, Dorm 2, right side entrance, first floor, Room 104 and our contact numbers are indicated above.

Student Evaluation of Faculty Information.

The student course and faculty evaluations for courses will be administered at the completion of the semester within CollegeNet. Student participation is essential and appreciated. Student responses are anonymous and cannot be traced back to individual students. You will need your WebAdvisor login credentials to complete the evaluation. If you experience login issues, please refer inquiries to OIT staff to assist at 735-2630/40.

Plagiarism Statement.

The term "plagiarism" includes, but is not limited, to, the use, by paraphrase or direct quotation, of the published or unpublished work of another person without full and clear acknowledgment. It also includes the unacknowledged use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials (UOG Student Handbook, p. 49). Cases of plagiarism are referred to the Student Discipline and Appeals Committee.

Communication Policy

University policy states that official communications will be sent using university assigned (@gotriton or @triton) email addresses. University electronic mail and messaging is to be used to enhance and facilitate teaching, learning, scholarly research, support academic experiences, and to facilitate the effective business and administrative processes of the University. (OIT policy manual, 3.10, p. 36)

Course Schedule: Textbook Ch. 13 – 27 and more depending on the class progress

Tentative Lecture Schedule - Fañomnåkan 2022		
Time Table	**Content**	**Note**
Week 1 **01/16 – 01/20**	1/18: Lecture 1 Ch. 0 Review	Online and MasteringPhysics Registration (Due 01/22)
Week 2 **01/23 – 01/27**	1/23: L2 Ch. 13 Gravitation (1/3) 1/25: L3 Ch. 13 Gravitation (2/3)	
Week 3 **01/30 – 02/03**	1/30: L4 Ch. 13 Gravitation (3/3) 2/01: L5 Ch. 21 Electric Charge and Field (1/4)	Ch 13 Exercise, Simple Questions Ch 13, MP Ch 13 HW: Due 02/05
Week 4 **02/06 – 02/10**	2/06: L6 Ch. 21 Electric Charge and Field (2/4) 2/08: L7 Ch. 21 Electric Charge and Field (3/4)	
Week 5 **02/13 – 02/17**	2/13: L8 Ch. 21 Electric Charge and Field (4/4) 2/15: L9 Ch. 22 Gauss's Law (1/2)	No Lab: Faculty Development (02/17 Fri) Ch 21 Exercise, Simple Questions Ch 21, MP Ch 21 HW: Due 02/19
Week 6 **02/20 – 02/24**	2/20: L10 Ch. 22 Gauss's Law (2/2) 2/22: L11 Ch. 23 Electric Potential (1/3)	
Week 7 **02/27 – 03/03**	2/27: L12 Ch. 23 Electric Potential (2/3) 3/01: Midterm I: Ch 13 – 22	Charter Day (03/02 Thursday) No Lab Ch 22 Exercise, Simple Questions Ch 22, MP Ch 22 HW: Due 02/28
Week 8 **03/06 – 03/10**	3/06: No class 3/08: L13 Ch. 23 Electric Potential (3/3)	No Class: Chamorro Heritage Day (03/06 Mon)
Week 9 **03/13 – 03/17**	3/13: L14 Ch. 24 Capacitance (1/3) 3/15: L15 Ch. 24 Capacitance (2/3)	Ch 23 Exercise, Simple Questions Ch 23, MP Ch 23 HW: Due 03/19
Week 10 **03/20 – 03/24**	Spring Break: No Class	Spring Break No Class and No Lab
Week 11 **03/27 – 03/31**	3/27: L16 Ch. 24 Capacitance (3/3) 3/29: L17 Ch. 25 Current, Resistance (1/3)	Ch 24 Exercise, Simple Questions Ch 24, MP Ch 24 HW: Due 04/02
Week 12 **04/03 – 04/07**	4/03: L18 Ch. 25 Current, Resistance (2/3) 4/05: L19 Ch. 25 Current, Resistance (3/3)	Ch 25 Exercise, Simple Questions Ch 25, MP Ch 25 HW: Due 04/09
Week 13 **04/10 – 04/14**	4/10: L20 Ch. 26 Direct-Current Circuits (1/4) 4/12: Midterm II: Ch 23 – 25	
Week 14 **04/17 – 04/21**	4/17: L21 Ch. 26 Direct-Current Circuits (2/4) 4/19: L22 Ch. 26 Direct-Current Circuits (3/4)	
Week 15 **04/24 – 04/28**	4/24: L23 Ch. 26 Direct-Current Circuits (4/4) 4/26: L24 Ch. 27 Magnetic Field & Force (1/4)	Ch 26 Exercise, Simple Questions Ch 26, MP Ch 26 HW: Due 04/30
Week 16 **05/01 – 05/05**	5/01: L25 Ch. 27 Magnetic Field & Force (2/4) 5/03: L26 Ch. 27 Magnetic Field & Force (3/4)	
Week 17 **05/08 – 05/12**	5/08 L27 Ch. 27 Magnetic Field & Force (4/4) PH211 Lab Final	
Week 18 **05/15 – 05/19**	Final Exam: Ch 25 – 27 05/15 Mon Section 1 09:00 – 04:00 PM Section 2 05:00 PM – 12:00 AM	Ch 27 Exercise (Due 05/16), Ch 27 HW (Due 05/14)

Tentative Lecture Schedule - Fañomnåkan 2021		
Time Table	**Content**	**Note**
Week 1 **01/16 – 01/20**	No Lab	
Week 2 **01/23 – 01/27**	Lab 1: Simple Pendulum Study	
Week 3 **01/30 – 02/03**	Lab 2: Mechanical Waves (including Lectures) - Ch 14 Periodic Motion - Ch 15 Mechanics Waves	
Week 4 **02/06 – 02/10**	Lab 4: Resonance of Air Columns	
Week 5 **02/13 – 02/17**	No Lab	No Lab: Faculty Development (02/17 Fri)
Week 6 **02/20 – 02/24**	Lab 5: Fluid Mechanics (Including Lecture) - Ch 12 Fluid Mechanics	
Week 7 **02/27 – 03/03**	No Lab	Charter Day (03/032 Thursday) No Lab
Week 8 **03/06 – 03/10**	Lab 6: Archimedes' Principle	No Class: Chamorro Heritage Day (03/06 Mon)
Week 9 **03/13 – 03/17**	Lab 7: Introduction to Circuits and Lights	
Week 10 **03/20 – 03/24**	Spring Break: No Class and No Lab	Spring Break No Class and No Lab
Week 11 **03/27 – 03/31**	Lab 8: Ohm's Law and Resistances	
Week 12 **04/03 – 04/07**	Lab 9: Voltages and Currents in Circuits	
Week 13 **04/10 – 04/14**	Lab 10: Circuits Worksheet	
Week 14 **04/17 – 04/21**	Lab 11: Circuits Exercise	
Week 15 **04/24 – 04/28**	Lab 12: Kirchhoff's Rules	
Week 16 **05/01 – 05/05**	Lab 13: Optics Ray Diagram	
Week 17 **05/08 – 05/12**	PH211 Lab Final	
Week 18 **05/15 – 05/19**	Final Exam: Ch 25 – 27 05/15 Mon Section 1 09:00 – 04:00 PM Section 2 05:00 PM – 12:00 AM	

Student Learning Outcome

ILO	BPLO	SLO
ILO 1: Mastery of critical thinking and problem solving	BPLO 1: Disciplinary knowledge and skills: Graduates use their knowledge and understanding of essential concepts to solve problems in ecology, genetics, molecular biology, systematics, and evolution. They can apply their biology knowledge and skills to locally important issues such as island biogeography, conservation, and endangered species problems. They apply relevant concepts from chemistry and physics to biology problems. BPLO 3: Research/laboratory skills: Graduates are competent in basic biology procedures and safety in the laboratory and the field; they formulate testable hypotheses and create effective experimental designs using their knowledge, understanding, and practical experience of scientific instruments. BPLO 5: Digital Literacy: Graduates use and process information in multiple formats via computer. Graduates are competent in the following computer skills as related to	SLO 1: Students use the knowledge and understanding of physical principles to solve physics problems and perform experiments to test those principles.

	their science work: desktop competencies, word processing, presentation, and data retrieval and manipulation. Graduates effectively judge the usefulness and accuracy of external sources of information.	
ILO 2: Mastery of quantitative analysis	BPLO 2: Quantitative skills: Graduates apply numerical methods in research design, and use computers for analysis manipulating and modeling biological data. BPLO 5	SLO 2: Students use quantitative problem solving skills and apply numerical methods to solve physics problems.
ILO 3: Effective oral and written communication	BPLO 4: Communication skills: Graduates use scientific literature and diagrams as a source of information, properly cite sources and avoid plagiarism, and create text and graphics to communicate results effectively through print and oral presentations. They collect and assess evidence and use it to create effective arguments in writing scientific reports and proposals. BPLO 5	SLO 3: Students communicate effectively in physics by explaining content, developing physics ideas, and presenting appropriate tables and plots for scientific data.
ILO 4: Understanding and appreciation of culturally diverse people, ideas and values in a democratic context	BPLO 6: Professionalism: Graduates work effectively together in teams in a laboratory and field settings and follow ethical principles underlying scientific research and	SLO 4: Students work effectively together in teams in a physics laboratory, following ethical principles and understating the values and limitations of scientific

	publication. Graduates understand and apply the values and limitations of scientific research in addressing public policy issues.	research.
ILO 5: Responsible use of knowledge, natural resources, and technology	BPLO 6	SLO 4
ILO 6: An appreciation of the arts and sciences	BPLO 6	SLO 4
ILO 7: An interest in personal development and lifelong learning	BPLO 6	SLO 4

Note: Information contained in this syllabus may be subject to change with advance notice, as deemed appropriate by the instructor.