PH252-01/02: University Physics **University of Guam: Spring, 2016**

PH211-01/02/03: Introductory Physics Laboratory

Location: S221 Science Bldg

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

Office: SC225 **Office hours:** MW 8:00 – 9:00 AM
4:30 – 5:30 PM
Thrs 10:00 – 11:00 AM
Fri 9:00 – 10:00 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.

PH251-01	Lectures: MW 9:00 – 10:50 am S221 Science Bldg
PH251-02	Lectures: MW 5:30 – 7:20 pm S200 Science Bldg
Lab I/II/III:	Th 11:00 – 13:50 am, F 10:00 – 12:50 am, 2:00 – 4:50 pm S221 Science Bldg

Required Textbooks: University Physics with Modern Physics, by Young, Freedman & Ford, 13th edition.

Lectures:

1. Lecture attendance is mandatory. You are required to sign an attendance sheet for each class. Failure to attend the lectures will result in reduction of your final grade at instructor's discretion
2. All cell phones and other distracting electronic devices should be turned off during the lecture.
3. Active participation in the classroom is expected and encouraged.
4. Homework assignments will be announced during the semester. Each assignment will consist of solving standard problems, which will count towards 100% of your homework grade. Additional bonus problems at an advanced level may be provided to enable you to gain extra points.

PH211 Labs:

1. Attendance at all scheduled labs is required. Failure to attend and complete the labs will result in a non-completed course grade at the instructor's discretion. If you must miss a lab for legitimate reasons (i.e. illness, etc.), please inform your instructor as soon as possible. Make-up labs for the

students with legitimate reasons can be arranged at the discretion of your instructor.

2. You are required to sign an attendance sheet when you arrive for a lab meeting. You must have the permission of the lab instructor before you may leave the lab. Plan on staying for the full lab period.
3. Lab grades will be computed as follows.
    a. Experiment: You are expected to read the lab instructions handed out in the lab before you perform lab activities. Each group must submit a copy of the data collected with all members signing it before leaving the lab. Each student should also keep a copy of the experimental data for use in his/her lab report.
    b. Lab Report (10 points each): You are required to complete a lab report for each scheduled lab experiment. In order to earn the maximum grade, you must turn in a complete, concise, and thoughtful report.
        - Lab Report Deadline: Your lab report must be submitted at the end of each meeting. Place your lab report on the instructor's desk before you leave the lab.
        - Students who work together to perform an experiment will necessarily use the same set of data in preparing their individual laboratory reports. You and your lab group partners may freely discuss all aspects of the experiment. However, your submitted report must reflect your own individual work (answers & calculations). Unless specifically authorized, it is never permissible for a student to copy the report prepared by another student, even if the students worked together in performing the experiment.

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.

Attendance: You are expected to attend all lectures and labs since some materials may be discussed which is not in the text. In addition, anyone not present during a quiz or exam, or when homework is collected will receive zero credit unless the absence is arranged ahead of time. In-class participation activities will count toward your quiz grade. It is your responsibility to arrange to make up an excused absence promptly. This includes homework, quizzes, class activities and exams. If arrangements are not made within a week of the absence, the work cannot be made up and you shall receive ZERO CREDIT for the missed assignment.

Evaluation Methods:

PH252

- Class Attendance (Worksheet): 10%
- Homework, Quizzes: 30%
- Midterm I/II: 10% 20% Final Exam: 30%
- Grades: 90 – 100: A, 80 – 89: B, 70 – 79: C, 60 – 69: D, 0 – 59: F

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- Lab Grades: Experiment and Lab Report 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 Policy: The University of Guam is a tobacco-free campus and has a total ban on sales, smoking and distribution and use of tobacco and tobacco-based products on campus. UOG is committed to promoting the health, wellness and social well-being of the University Community, the people of Guam and the Western Pacific.

Special Needs (EEO/ADA): If you are a student with a disability who will require an accommodation to participate in this course, please contact me privately to discuss your specific needs. You will need to provide me with documentation concerning your need for accommodation from the EEO/ADA Office. If you have not registered with EEO/ADA Office, you should do so immediately at 735-2244/2971/2243 (TTY) to coordinate your accommodation request.

Course Schedule: Textbook Ch. 10 – 36 and more depending on the class progress

Tentative Lecture Schedule - Spring 2016		
Time Table	**Content**	**Note**
Week 1	Ch. 10 Dynamics of Rotational Motion Lab 1 Laws of Equilibrium II	
Week 2	Ch. 13 Gravitation Lab 2: Wave (including Lectures) - Ch 14 Periodic Motion - Ch 15 Mechanics Waves	
Week 3	Ch. 13 Gravitation Ch. 21 Electric Charge and Electric Field Lab 3: Resonance of Air Columns	
Week 4	Ch. 21 Electric Charge and Electric Field Lab 4: Fluid Mechanics (Including Lecture) - Ch 12 Fluid Mechanics	
Week 5	Ch. 22 Gauss's Law	No Lab: Faculty Development (02/19 Fri)
Week 6	Ch. 23 Electric Potential Lab 5: Archimedes' Principle Exam I: Ch 10 - 22	
Week 7	Ch. 23 Electric Potential Ch. 24 Capacitance and Dielectrics Force Lab 6: Thermodynamics I (including Lecture) - Ch 17. Temperature and Heat - Ch 18. Thermal Properties of Matter	
Week 8	Ch. 24 Capacitance and Dielectrics Force Lab 7: Thermodynamics II (including Lecture) - Ch 19. The First Law of Thermodynamics - Ch 20. The Second Law of Thermodynamics	No Class: Chamorro Heritage Day (03/07 Mon) Charter Day (03/08 Tue)
Week 9	Ch. 24 Capacitance and Dielectrics Force Ch. 25 Current, Resistance and Electromotive Lab 8 Circuits Experiment Board and Lights in Circuits	
Week 10	Spring Break: No Class	Spring Break No Class and No Lab
Week 11	Ch. 25 Current, Resistance and Electromotive Lab 9 Ohm's Law and Resistances in Circuits Exam II: Ch 23 – 25	
Week 12	Ch. 26 Direct-Current Circuits Lab 10 Voltages and Currents in Circuit	

Week 13	Ch. 26 Direct-Current Circuits Ch. 27 Magnetic Field and Magnetic Force Lab 12: Optics I (including Lectures) - Ch 34 Geometric Optics	
Week 14	Ch. 27 Magnetic Field and Magnetic Force Lab 13: Ray Optics	
Week 15	Ch 28 Sources of Magnetic Field Ch 29 Electromagnetic Induction Lab 14: Optics II (including Lectures) - Ch 35 Interference - Ch 36 Diffraction	
Week 16	Ch 29 Electromagnetic Induction Lab: Final	
Week 17	Ch 30 Inductance Final	No Lab

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	SLO 1: Students use the knowledge and understanding of physical principles to solve physics problems and perform experiments to test those principles.

	formats via computer. Graduates are competent in the following computer skills as related to 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.	SLO 3: Students communicate effectively in physics by explaining content, developing physics ideas, and presenting appropriate tables and plots for scientific data.

	BPLO 5	
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 publication. Graduates understand and apply the values and limitations of scientific research in addressing public policy issues.	SLO 4: Students work effectively together in teams in a physics laboratory, following ethical principles and understating the values and limitations of scientific 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.