



**COURSE CODE:** PYMATLA (Physics Laboratory for Mathematics Majors)  
**COURSE CREDITS:** 3 units  
**Co-requisite:** PHYMAT2 **Prerequisite to:**  
**Prerequisites:** PHYMAT1 **Type of Course:** Basic  
**Faculty:** \_\_\_\_\_  
**Term:** \_\_\_\_\_ **SY:** \_\_\_\_\_ **Section:** \_\_\_\_\_ **Time:** \_\_\_\_\_ **Room:** \_\_\_\_\_  
**Consultation Hours:** \_\_\_\_\_

**COURSE DESCRIPTION:**

This laboratory course is designed for College of Science students, particularly those taking up BS Mathematics as their undergraduate course.

This course supplements the topics discussed in the lecture class of PHYMAT1 and PHYMAT2 combined. Specifically, experiments in Mechanics, Electricity and Magnetism are performed to provide students the use of vector methods as well as the basic concepts of calculus in the laboratory setting.

**COURSE OBJECTIVES:**

At the end of the course, the students should be able to :

**Cognitive Domain**

1. identify the basic physical quantities and state their operational definitions.
2. state correctly the physical laws and principles.
3. infer and predict from the basic principles relevant consequences which can be applied to interpret and solve specific problems.
4. solve problems which require integration of basic principles.

**Psychomotor Domain**

1. write and present solutions in a clear legible and organized manner.
2. draw appropriate diagram relevant to a given problem.

**Affective Domain**

1. demonstrate desired Lasallian characteristics (critical and logical thinking, resourcefulness and innovativeness, patience, perseverance and self discipline).
2. manifest intellectual honesty.
3. practice scientific method in decision making.
4. relate the basic laws and principles of physics for the preservation of the environment.

**REQUIREMENTS/ASSESSMENT/EVALUATION**

1. A student's final grade will be based on the following
 

Group Reports (Guide Question & Worksheet) .....	40 %
Skill-building Quiz .....	15 %
Pre-lab Quizzes .....	10 %
Practical Exam .....	15 %
Final Examination .....	<u>20 %</u>
	100 %

PASSING MARK is 60 %

2. Students will work in groups of two or three. Each group is required to have at least two copies of the manual. In addition, students must secure guide questions before coming to class; otherwise, they will not be allowed to perform the scheduled experiment. At the end of the laboratory session, each group will submit the lab manual and answers to the guide questions to the assigned faculty for checking and grading.
3. Skill-building activities are prerequisites to ALL laboratory activities. A quiz will be given on the skill-building activities which may be taken only after performing these activities. A student may take the skill-building quiz **ONLY ONCE**.
4. A pre-lab quiz will be given in every required activity and elective activity. Should the student need to perform the activity again, the quiz that will be given merit is the quiz taken on the first attempt.
5. The student must also perform at least two elective activities. He/she may choose from the activities listed below.
6. The Practical Exam and Final Exam are **NOT OPEN LAB**. The student must take these examinations on his/her regular laboratory schedule indicated in his /her EAF.

**LABORATORY MANUALS:***Laboratory Manual in Physics: Mechanics* by Susan Fontanilla (DLSU Press)*Laboratory Manual in Physics: Heat and Thermodynamics, Electricity and Magnetism* by Carla Manzano and Alex Quema (DLSU Press)**Grade Point Equivalents**

<b>% Score</b>	<b>Grade Point</b>
96-100	4.0
90-95	3.5
84-89	3.0
78-83	2.5
72-77	2.0
66-71	1.5
60-65	1.0
Below 60	0.0

**LABORATORY EXPERIMENTS**

<b>WEEK</b>	<b>ACTIVITIES</b>		<b>PREREQUISITES</b>	
1	Orientation ( Discussion of Open Laboratory System)			
2 – 12	Skill Activities :	Significant Figures (SF)		
		Errors and Uncertainty of Measurements (Errors)		
		Graphs and Equations (G/E)		
		VOM Familiarization (VOM)		
	Skill-building Quizzes			
	Required Activities :	Composition of Concurrent Forces	SF, Errors, G/E	
		Conservation of Mechanical Energy	SF, Errors, G/E	
		Ohm's Law	SF, Errors, G/E, VOM	
		Resistors in Series, Parallel and Series-Parallel Circuits	SF, Errors, G/E, VOM	
	Elective Activities :	Uniform Acceleration	SF, Errors, G/E	
		Projectile Motion	SF, Errors, G/E	
		Conservation of Linear Momentum	SF, Errors, G/E	
		Electric Field	SF, Errors, G/E, VOM	
		Magnetic Field		
		EMF, Terminal Voltage and Internal Resistance	SF, Errors, G/E, VOM	
Kirchhoff's Rules		SF, Errors, G/E, VOM		
13	Practical Examination (covers only skill-building activities)			
14	Final Examination (covers skill-building and required activities)			