2023 Winter-Online Bridge Program
College Physics Syllabus

1 Basic Information

Term	2023 Winter semester	
Course Title	College Physics	PH101
Professor	Yoon Hee JEONG	
Department	Physics	
Language	English	
Students	Online Bridge Program / College Physics Applicants	
Learning Period	2024. 1. 2. (Tue) ~ 2024. 3. 11. (Mon) (10 weeks in total)	
Reviewing Period	2024. 3. 12. (Tue) ~ 2024. 3. 22 (Fri) (1 week in total)	
Final Exam Date	2024. 3. 23. (Sat) (Offline Exam)	

2 Course Details

Course Description	Preparatory course for the incoming students with a limited exposure to physics, who will take General Physics I and II as freshmen. The students will learn only the very basic concepts of classical physics and the main emphasis is on learning how to apply the laws of physics to real problems. Problem solving, not lecturing, is the main part of the course. The areas of physics to be covered include (1) Mechanics, (2) Electromagnetism and optics and (3) Thermal physics. For (1), problem solving constitutes ~80%, and for (2) and (3), introducing lectures and solving problems are 50/50.

Textbook/ References	The problems we deal with in classes are taken from "*Principles and practice of physics*" by E. Mazur. However, there is no need to buy this book, and you may consult any textbook you may have.					
Evaluation	Attendance	Quiz	Assignment	Discussion/ Others	Final Exam	Total
	0%	0%	35%	0%	65%	100%

3 Weekly Schedule

Week	Subject / Content
Week 1	1-1. Introduction: what is physics, 1-2. Preliminaries 2-1. Kinematics: Motion in 1 dim, 2-2. Acceleration 3-1, 3-2. Short lecture on Newton's laws
Week 2	4-1, 4-2. Motion in a plane 5-1, 5-2. Work and Energy 6-1, 6-2. Momentum
Week 3	7-1, 7-2. Short lecture on Rotation 8-1, 8-2. Motion in a circle 9-1, 9-2. Angular Momentum and Torque
Week 4	10-1, 10-2. Short lecture on Periodic motion and Waves 11-1, 11-2. Periodic Motion 12-1, 12-2. Waves
Week 5	13-1, 13-2. Gravity 14-1, 14-2. Short lecture on Special relativity
Week 6	15-1, 15-2. Short lecture on Electric force and field 16-1, 16-2. Electric force, field, and Gauss's Law 17-1, 17-2. Electric potential
Week 7	18-1, 18-2. Short lecture on Magnetic force and field 19-1, 19-2. Magnetic force and field
Week 8	20-1, 20-2. Short lecture on time-dependent B and E fields 21-1, 21-2. Time-dependent magnetic and electric fields
Week 9	22. Short lecture on EM waves and Wave Optics 23-1, 23-2. Electric Storage and circuits

Week 10	24. Short lecture on Thermodynamics
Week 11	Reviewing Period: Q & A session