General Physics II - Syllabus

Fall semester 2023

Course information

Code	Title	Credit	Coordinator
PHYS152	General Physics II	3	Office of General Physics (*KPOP℘* Collaboration)

Course objective: We study fundamental concepts of electromagnetism, electric circuit, light waves, and matter waves.

Prerequisites: None.

Textbook: Halliday, Resnick, and Walker, *Principles of Physics, 10th or 11th Edition* (John Wiley & Sons, Inc)

Reference: ***KPOP℘* Physics Y** and ***KPOP℘* Physics YCheckpoints**

Course Policies (Optional by professors)

- Courses are taught online or offline.
- Online (Blackboard) quizzes are held 5 times during the semester. **Quiz questions come from the problems in YCheckpoints.**
- The specific exam schedule will be announced during the semester. Evaluation : [100 points per exam] $\times$ [2 exams] + [online quiz 100 points] + α = [300 points total] + α.

The number of absences	Penalties
$3 \sim 5$	one-step downgrade
$6 \sim 9$	two-step downgrade
10 or more	F

Tentative Course Outline

Week	Dates	Contents	Comments
W1	09/01 ~ 09/08	**21. Coulomb's Law** **22. Electric Field**	KOREA-YOSEI RIVALRY (09/08 ~ 09/09)
W2	09/11 ~ 09/15	**23. Gauss' Law** **24. Electric Potential**	

W3	09/18 ∼ 09/22	**25. Capacitance**	
W4	09/25 ∼ 09/29	**26. Current and Resistance**	HANKAWI WEEK (09/28 ∼ 10/01)
W5	10/02 ∼ 10/06	**27. Circuit**	Holiday 10/03
W6	10/09 ∼ 10/13	**28. Magnetic Fields**	Holiday 10/09
W7	10/16 ∼ 10/20	**29. Magnetic Fields Due to Currents**	MIDTERM EXAM PERIOD (10/20 ∼ 10/26)
W8	10/23 ∼ 10/27	**30. Induction and Inductance**	MIDTERM EXAM PERIOD (10/20 ∼ 10/26)
W9	10/30 ∼ 11/03	**31. Electromagnetic Oscillations and Alternating Current**	
W10	11/06 ∼ 11/10	**32. Maxwell's Equations; Magnetism of Matter** **33. Electromagnetic Waves**	
W11	11/13 ∼ 11/17	**35. Interference**	
W12	11/20 ∼ 11/24	**36. Diffraction**	
W13	11/27 ∼ 12/01	**38. Photons and Matter Waves**	
W14	12/04 ∼ 12/08	**39. More About Matter Waves**	
W15	12/11 ∼ 12/15	**Progress Adjusment or** **37. Relativity (optional)**	FINAL EXAM PERIOD (12/15 ∼ 12/21)
W16	12/18 ∼ 12/21	**Final Eaxm**	FINAL EXAM PERIOD (12/15 ∼ 12/21)

KPOP& **Physics YCheckpoints**

Y1C.	**Vectors**
Y2C.	**Coulomb's Law**
Y3C.	**Electirc Fields**
Y4C.	**Gauss' Law**
Y5C.	**Electric Potential**
Y6C.	**Capacitance**
Y7C.	**Current and Resistance**
Y8C.	**Oscillation Revisited**
Y9C.	**Circuits**
Y10C.	**Angular Momentum Revisited**
Y11C.	**Magnetic Fields**
Y12C.	**Divergence/Stoke's Theorems**
Y13C.	**Ampere's Law**
Y14C.	**Faraday's Law**
Y15C.	**Alternating Current**
Y16C.	**RLC Circuit**
Y17C.	**Maxwell's Equations**
Y18C.	**Electromagnetic Waves**
Y19C.	**Light Waves**
Y20C.	**Interference of Light Waves**
Y21C.	**Diffraction**
Y22C.	**Speed of Light**
Y23C.	**Lorentz Transformation**
Y24C.	**Four-Momentum and $E = mc^2$**
Y25C.	**Photon**
Y26C.	**Quantum Mechanics**
Y27C.	**Quantum Bound States**
Y28C.	**Hydrogen Atom**