

Course Name: PHY-112 Technical Physics II

Date Updated: 4/2022

Credit Hours/week: Lec. 3, Lab 1 hrs./wk. – 4 cr.

BEGINNING: SPRING 2022

Catalog Description: This is the second course of a two-semester applied physics course covering the essentials of electricity and magnetism, and selected topics from fluid mechanics, wave theory and optics.

Prerequisite: PHY-111

Text: Tippens, Physics, 7th Edition, McGraw-Hill

Lab Manual: Einstein, F., Technical Physics II Lab Manual, 16th Edition, CCM

Supplementary Material: Scientific Calculator, Bound Lab Notebook, Pens/Pencils/Highlighter

Syllabus:

Period	Topics (Lecture)	Topics (Lab)
1	Ch 15 - Fluids at Rest & Fluids in motion	Tech Phy I Manual Ch 1 and 2
2	Q 1 Density & Pressure, CH 21 Waves	Ch 1 Fluids
3	Q 2 Fluids at Rest, CH 33 Light / CH 34 Reflection	Ch 2 Waves on a string
4	Q 3 Waves, Ch 35 Refraction	Ch 3 Optics
5	CH 36 Lenses, Q 4 Reflection/Refraction	Ch 4 Microwaves
6	Problem Session Q 5 Lenses	Ch 4 Microwaves
7	Mid Term Exam	Ch 23 Open Electricity – Lect
8	CH 23 Electricity	Ch 6 Elementary Electric Charge
9	CH 24 Fields	CH 7 Electric Fields
10	Ch 25 Potential Energy, Q 6 Fundamental Charges	CH 8 Joule's
11	Ch 26 Charging, Quiz 7 Fields	CH 10 Ohm's Law
12	Ch 27 Circuits, Q 8 Work & Potential	CH 11 Voltmeter
13	Ch 28 DC Circuits Q 9 Capacitance	Ch 12 Wheatstone Bridge
14	Q 10 Resistance and DC Circuits	Ch 29 Magnetism
15	Final Exam	Review

Students are expected to adhere to the policies of the County College of Morris. These can be accessed at: (insert link here)

Statement of Expected Course LEARNING OUTCOMES

- Demonstrate a knowledge and understanding of natural phenomena in the realm of physics.
- Demonstrate how observation, hypothesis, and experimentation provide the basis for the laws of physics that describe the everyday world.
- Gather, organize, analyze critically, synthesize, evaluate, and communicate scientific information clearly and effectively.
- Demonstrate problem solving skills.
- Evaluate and draw scientific conclusions from numerical data and graphical information.

Statement of Relation to Curriculum(s):

- Required for Electronic Engineering Technology and Mechanical Engineering Technology majors, as well as others