



TABLE OF SPECIFICATIONS

PhSc 114 – Modern Physics

1st Semester AY 2021-2022

Examination: ☐ Midterm ☒ Final

Date of Examination: January 27, 2022

Content	No. of Meetings	Course Outcome/Learning Outcome (CO/LO)	%	Taxonomy of Objectives						Total Items
				Remembering	Understanding	Applying	Analyzing	Evaluating	Creating	
				31%	39%	___%	30%	___%	___%	
Conduction in Solids	2	1. Describe electron motion in conductors and semiconductors. 2. Compare and contrast <i>n</i> -type and <i>p</i> -type semiconductors.	20%	5	11		5			21
Electronic Devices	2	1. Describe how diodes limit current to motion in only one direction. 2. Explain how a transistor can amplify or increase voltage changes.	20%	4	9		8			21
The Nucleus	2	1. Determine the number of neutrons and protons in nuclides. 2. Define the binding energy of the nucleus. 3. Relate the energy released in a nuclear reaction to the change in binding energy during the reaction.	20%	8	6		7			21
Nuclear Decay and Reactions	2	1. Describe three forms of radioactive decay. 2. Solve nuclear equations. 3. Calculate the amount remaining and activity of radioactive material after a given time. 4. Define nuclear fission and fusion. 5. Describe the operation of a nuclear reactor.	20%	10	8		3			21
The Building Blocks of Matter	2	1. Describe the operation of particle accelerators and particle detectors. 2. Describe the Standard Model of matter and explain the role of force	20%	6	7		8			21