



Ministry of
Higher Education
and Scientific Research



Salahaddin University-Erbil

College of Education

Department of Physics

(Coursebook) 3rd stage

Subject:

Modern Physics Laboratory

Academic year: 2023-2024

Instructor Information:

Professor Dr. Asaad Hamid Ismail

Assistant Professor Dr. Hiwa Hamad Azeez

Lecturer Mrs Avin Jawhar Ali

Assistant Lecturer Mrs Raz Waly Ali

Physics department

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Lectures:

Tuesday and Wednesday from 8:30 AM to 2:30 PM.

Course Book

Course overview:

Modern Physics is an undergraduate course on atomic Physics. The importance of the modern physics lab is to let students have practical information about atomic structure and atomic spectrum and see the instruments which are used in Modern labs. This module also provides a better understanding of atomic physics. To know something about electromagnetic radiation.

Student learning outcome:

After successful completion of the module, the students should have:

- Understanding of the basic idea of Atoms.
- Learn how to protect their bodies from electromagnetics.

The Syllabus of Modern Physics

First semester

The names of the experiments that will be conducted this semester are:

No.	Names of experiments
1	Microwave Wavelength measurement
2	Study of Stefan-Boltzmann's law of radiation
3	Study of Balmer series of Helium Atoms
4	The Study of Electron Diffraction
5	Single-slit diffraction and Heisenberg's uncertainty principle
6	Study Balmer series of Hydrogen Atom/ Determination of Rydberg's constant
7	Zeeman Effect

Second semester

The names of the experiments that will be conducted this semester are:

No. of exp.	Names of experiments
1	Microwave power and attenuation Measurements
2	Diffraction of microwaves
3	Transmission and absorption coefficient of microwaves
4	Band gap of germanium
5	Hall Effect in n-germanium
6	Hall Effect in metals
7	The Study of X-rays Characteristics of copper