

Ministry of Higher Education and Scientific research



Department of Physics

College of science

University of Salahaddin-Erbil

Subject Optics Laboratory Course Book

3rd year medical

Dr : Amang Frenses

Dr.Ahmad Hasan

Assist. Lecturers: Samira Yousif Asoka

Academic Year: 2022 - 2023

Course Book

1. Course name	Applied optics laboratory
2. Lecturer in charge	Samira y. Asoka
3. Department/ College	Physics /science
4. Contact	E-mail : samira.asoka@su.edu.krd Tel: (optional)
5. Time (in hours) per week	practical: 6
6. Office hours	All days(9Am-3Pm)
7. Course code	
8. Teacher's academic profile	<ul style="list-style-type: none"> - I awarded B.Sc. in physics (College of Science) in 1989 Salahaddin University. - M.Sc. in 2007 (Salahaddin University-Erbil). - Assist. Lecturer from 2007 till now.
9. Keywords	Lens, mirror, interference, diffraction, polarization
10. Course overview:	
<p>the objective of this course is to teach optical phenomenon, the refraction and reflection of light from mirrors and lenses, and also to teach students the basic concepts about optical instruments used in the interpretation of the qualities of light and image formation and visual processing defects as a geometrical optics in addition to the physical optics which includes experiments of interference of light from slits and how to determine the wavelength of the light source by interference and producing polarizer light. The student can keep pace with technological development nowadays.</p>	
11. Course objective:	
<p>– The course will cover optics texts of selective topics together with print media or internet articles which deal with current applied optics issues. Instructional strategies attempt to strike a balance between developing the students' ability to cope with experimental optics texts, extending their general academic reading skills, and increasing their basic knowledge and understanding of applied optics. The laboratory will give students a better understanding of a number of optics experiment topics, the followings are examples but not restricted to: Study the concept principle of light absorption and emissions, Study the light theory, Study light and its characteristics, Understand the different applications of light, with some extra topics that will be identified as the course progress.</p>	
12. Student's obligation	
<ul style="list-style-type: none"> -The student should attend laboratory as much as possible. - The student must be read the required experiment, teacher's notes regularly. - The student must be participating in laboratory discussions, preparing the assignments given in the course. 	

- 4- Double Refraction of Calcite Crystal.
- 5- Determination of Magnifying Power (M) of Microscope.
- 6- Photometer units and Invers square law of light.
- 7- Chromatic dispersion of a prism and determination of Cauchy's constants A and B.
- 8- Fresnel's Biprism.
- 9- Interference by wedge shaped film.
- 10- Michelson interferometer.
- 11- Determination of the wavelength of Na-light by Newton's rings.
- 12- Single Slit Diffraction
- 13- Resolving Power of Optical Instruments.
- 14- Diffraction grating.
- 15- Diffraction from compact discs.
- 16- Fraunhofer Diffraction from a circular aperture
- 17- Reflection of light from dielectric material and Brewster's angle
- 18- Polarization and Malus' law
- 19- Measurement of Specific Rotation of Sugar Solution
- 20- Kerreffect

19. Examinations:

20. Extra notes:

1) This course is suitable for the 3rd year students (B.Sc.), it's very difficult for the 1st and 2nd years B.Sc.

2) This course is useful in different fields to get works in private sector.

21. Preview

پیداچوونھوی ھاوھل

This course book has to be reviewed and signed by a peer. The peer approves the contents of your course book by writing few sentences in this section.

(A peer is person who has enough knowledge about the subject you are teaching, he/she has to be a professor, assistant professor, a lecturer or an expert in the field of your subject).

نھم کورسبووکه دھبیت لھالین ھاوھلنکی نھکادیمپھوہ سپر بکریت و ناھروکی بابنھکانی کورسھکھ پھسند بکات و جھند ووشھپھک بنووسیت لھسھر شیاری ناھروکی کورسھکھ و واژووی لھسھر بکات. ھاوھل نھو کھسھپھ کہ زانیاری ھبیت لھسھر کورسھکھ و دھبیت پلھی زانستی لھ ماموستا کھمتر نھبیت.

