Jordan University of Science and Technology

Faculty of Applied Medical Sciences

Optometry Department

OPT.205 Visual Optics Lab - JNQF Level: 6

First Semester 2023-2024

Course Catalog
1 Credit Hours. This course includes the practical experiments in visual optics that should be introduced to optometry students to give them a background in optics concerning the eye and ocular examination. The subject matter of this course comprises the application of geometric optics to the specific case of ophthalmic lenses, prisms, and the eye. While the basic fact of clinical practice requires the diagnosis and treatment of different ocular pathology, the vast majority of patients you might see have no pathology indeed and are seeking vision care for refractive or binocular problems. Managing these two important practices (refraction and binocular vision) requires the understanding and application of ophthalmic optics based on geometrical optics. The goal of this course is to teach the important properties of lenses and prisms as they affect the performance of the eye and eyeglass prescription.

Text Book	
Title	Geometrical and Visual Optics: A Clinical introduction
Author(s)	Steven H. Schwartz
Edition	2nd Edition
Short Name	1
Other Information	

Instructor	
Name	**Dr. Mohammad Anwar Alebrahim**
Office Location	Faculty of Applied Medical Sciences - GF
Office Hours	Sun : 14:30 - 15:30 Mon : 10:30 - 12:30 Tue : 14:30 - 15:30 Wed : 10:30 - 12:30
Email	maalebrahim@just.edu.jo

Class Schedule & Room

Section 1:
Lecture Time: Mon : 08:30 - 10:30
Room: LAB

Section 2:
Lecture Time: Wed : 08:30 - 10:30
Room: LAB

Section 3:
Lecture Time: Thu : 12:30 - 14:30
Room: LAB

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
Week 1	Introduction to the course/ vergence of light	From **1**
Week 2	The image formed by Refraction and concepts of spherical aberration	From **1**
Week 3	Image formation by convex and concave lenses	From **1**
Week 4	Combination of two lenses.	From **1**
Week 5	Critical angle and Total internal reflection	From **1**
Week 6	Prisms	From **1**
Week 8	Prisms induce by lens displacement and prove of prentice rule	
Week 9	Image formation the eye	From **1**
Week 10	The effect of defocus in image formation in the eye and the effect of correction	
Weeks 11, 12	Visual Acuity	From **1**
Weeks 13, 14	Optical Cross and writing a prescription	From **1**

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Problem-based learning approach to knowledge underpinning of optics with the ocular system and instrumentation [1PLO 3] [1L6K2, 1L6C4]	30%	
Applying practical knowledge of image formation and focusing by different types of lenses. [1PLO 3, 1PLO 4] [1L6S1]	40%	
Understanding refractive errors of the eye (Myopia, Hyperopia) and applying optics in the correction of such visual defects. [1PLO 4] [1L6C4]	30%	

Relationship to Program Student Outcomes (Out of 100%)								
PLO 1	PLO 2	PLO 3	PLO 4	PLO 5	PLO 6	PLO 7	PLO 8	PLO 9
		50	50					

Relationship to NQF Outcomes (Out of 100%)		
L6K2	L6S1	L6C4
15	40	45

Evaluation	
Assessment Tool	**Weight**
Midterm Exam	50%
Final Exam	50%

Policy	
Code of Conduct and Academic Integrity Guidelines	Statement on Professionalism Professional behavior is expected of students at all times. Attitude and professional behavior are a minimum criterion for passing this class. Examples of unprofessional behavior include but are not limited to: missing classes, tardiness, lack of attention for a speaker, talking to others during lecture, leaving a lecture prior to its completion without prior authorization of the instructor, working on other class material during class, and sleeping during class. Cheating: University regulations will be applied on cases of cheating and/or plagiarism Cell phone: The use of cellular phone is prohibited in class rooms and during exams. The cellular phone must be switched off in class rooms and during exams. Attendance: No points will be count for points attendance of this class, however attending the lectures will greatly enhance your grade. The student is responsible for any information discussed in lecture sessions. It is imperative to attend all classes! Absences: University regulations will be applied. Students are not allowed to be absent for more than 20% of lectures for any reason or excuse. If a student exceeds the absence limit, he or she will not be allowed to sit for future course exams. (Please review university regulation for more details) Make-up Exam: is entitled for students who miss the exam with accepted legal or medical excuse endorsed by the instructor within 24 hours after the scheduled exam (Please review university regulation for more details) Feedback: Concerns, complaints, questions, and/or feedback are appreciated and will be important for the instructor. You can contact your instructor using the e-mail or during office hours.

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