Jordan University of Science and Technology

Faculty of Applied Medical Sciences

Optometry Department

OPT.203 Visual Optics - JNQF Level: 7

First Semester 2023-2024

Course Catalog
2 Credit Hours. 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 on basis of 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	Clinical Optics
Author(s)	Troy E. Fannin; Theodore Grosvenor
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: Sun : 09:30 - 10:30
Room: M3303

Prerequisites		
Line Number	**Course Name**	**Prerequisite Type**
1101040	OPT.104 Geometrical &Physical Optics	Prerequisite / Study

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
Week 1	Introduction	
Week 2	Refraction &total internal reflection in optical systems	
Week 3	Lens form, base curve, power, and index relationship	
Week 4	Vergence of light and lenses	
Week 5	Spherical lenses (optic center, spherical aberration)	
Week 6	Back vertex power, front vertex power, and effect of lens thickness	
Weeks 7, 8	Cylindrical lens (circle of least confusion, interval of Sturm)	
Weeks 9, 10	The eye as an optical system Refraction Effect of pupil size Refractive errors and their correction	
Weeks 11, 12	The effect of defocus on visual acuity with different sizes of the pupil and with the light of different colors	
Week 13	Prism application, prentice?s rule, and lens displacement	
Weeks 14, 15	Magnifiers use and determine the power of magnifiers	

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Ability to carry out calculations on the imaging properties of eyes corrected by spectacle or contact lenses. [30PLO 1] [20L7K1]	30%	
Understanding the optics of the human eye [20PLO 3] [20L7K1]	30%	
Learning the important properties of prism and lenses (Spherical and Cylindrical) [30PLO 1, 10PLO 3] [20L7S1]	40%	

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
60		40						

Relationship to NQF Outcomes (Out of 100%)	
L7K1	L7S1
60	40

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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