



Course Specification

(Bachelor)

Course Title: Ophthalmic Lens Surfacing

Course Code: APOP2101

Program: Optician Diploma

Department: Enter Department Name.

College: Applied Collage

Institution: Umm-Al-Qura University

Version: 1

Last Revision Date: Dec. 2024



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A. General information about the course:

1. Course Identification

1. Credit hours: (3h)

3 credit hrs = 2 theoretical + 1 practical

2. Course type

- A. ☐ University ☐ College ☒ Department ☐ Track ☐ Others
- B. ☒ Required ☐ Elective

3. Level/year at which this course is offered: (2nd level/1st year)

4. Course General Description:

This course provides a comprehensive understanding of the principles and techniques involved in ophthalmic lens surfacing. Students will explore the processes used to shape, refine, and finish optical lenses, enabling them to meet various prescription requirements. Through a combination of theoretical knowledge and hands-on practice, the course will cover the entire lens surfacing process, from lens material selection to final coating and inspection. Emphasis will be placed on the use of surfacing equipment, safety protocols, and quality control standards.

5. Pre-requirements for this course (if any):

Ophthalmic lenses (APOP1104)

6. Co-requisites for this course (if any):

NA

7. Course Main Objective(s):

Be the end of the course, students should to:

1. Explain the properties and types of lens materials (e.g., glass, plastic, polycarbonate).
2. Understand the principles of lens design, including single-vision, bifocal, trifocal, and progressive lenses.
3. Explore coating options like anti-reflective, UV-blocking, and scratch-resistant coatings.

2. Teaching mode (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	30	42
2	E-learning		
3	Hybrid <ul style="list-style-type: none"> • Traditional classroom • E-learning 		
4	Distance learning		
5	Lab	42	58



3. Contact Hours (based on the academic semester)

No	Activity	Contact Hours
1.	Lectures	2*15
2.	Laboratory/Studio	3*14
3.	Field	
4.	Tutorial	
5.	Others (specify)	
Total		72

B. Course Learning Outcomes (CLOs), Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Code of CLOs aligned with program	Teaching Strategies	Assessment Methods
1.0	Knowledge and understanding			
1.1	Describe the impact of surface curvature and index of refraction on lens power	K1	Interactive Lecturing	Examinations
1.2	Discuss the suitability of materials for various lens surfacing techniques.	K4	Interactive Lecturing	Examinations
1.3	Understand the processes of grinding, polishing, and coating lenses to achieve desired optical properties	K4	Interactive Lecturing	Examinations
2.0	Skills			
2.1	Apply appropriate fining and polishing techniques.	S3	Lectures and lab	Written exam Practical exam
2.2	Perform and evaluate lens coatings to enhance lens performance and durability	S1	Lectures and lab	Written exam Practical exam
3.0	Values, autonomy, and responsibility			
3.1	Work independently according to the specific requirements of patient prescriptions and lab protocols.	V2	Lab Activities	Participation Reports
3.2	Take responsibility for ensuring the quality of finished lenses to industry standards (ISO, ANSI).	V2	Lab Activities	Participation Reports

C. Course Content

No	List of Topics	Contact Hours
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1.	Introduction to Ophthalmic Optics and Lens Materials	5
2.	Prescription Interpretation and Lens Design	5
3	Prescription Interpretation and Lens Design (cont.)	5
4	Introduction to Surfacing Equipment and Tools	5
5	Introduction to Surfacing Equipment and Tools (cont.)	5
6	Lens Generation – Cutting and Curving Techniques	5
7	Lens Generation – Cutting and Curving Techniques (cont.)	5
8	Coatings: Anti-reflective, UV, and Scratch-resistant Treatments	5
9	Coatings: Anti-reflective, UV, and Scratch-resistant Treatments(cont.)	5
10	Finding and Polishing Processes	5
11	Finding and Polishing Processes (cont.	5
12	Lens Quality Control and Inspection Methods	5
13	Lens Quality Control and Inspection Methods (cont.)	5
14	Safety, Maintenance, and Troubleshooting in the Lab	5
15	Industry Standards, Best Practices, and Future Trends	2
Total		72

D. Students Assessment Activities

No	Assessment Activities *	Assessment timing (in week no)	Percentage of Total Assessment Score
1.	Quizzes	5	10
2.	Mid-Term Exam	8	20
3.	Presentations and homework	All weak	10
4.	Lab Reports	All weak	10
4.	Final Exam (practical)	13	10
5.	Final Exam	16	40

*Assessment Activities (i.e., Written test, oral test, oral presentation, group project, essay, etc.).

E. Learning Resources and Facilities

1. References and Learning Resources

Essential References	"Essentials of Ophthalmic Lens Finishing" by Clifford W. Brooks
Supportive References	
Electronic Materials	
Other Learning Materials	





2. Required Facilities and equipment

Items	Resources
facilities (Classrooms, laboratories, exhibition rooms, simulation rooms, etc.)	Classrooms and laboratorie
Technology equipment (Projector, smart board, software)	Projector
Other equipment (Depending on the nature of the specialty)	Generator, polishing and finning machine

F. Assessment of Course Quality

Assessment Areas/Issues	Assessor	Assessment Methods
Effectiveness of teaching	Students and Faculty	Curse report, annual report, survey and results
Effectiveness of students assessment	Faculty and Program Leaders	Curse report, annual report, survey and results
Quality of learning resources	Students, Faculty and Program Leaders	Curse report, annual report, survey and results
The extent to which CLOs have been achieved	Faculty and Program Leaders	Curse report, annual report, survey and results
Other		

Assessors (Students, Faculty, Program Leaders, Peer Reviewers, Others (specify))

Assessment Methods (Direct, Indirect)

G. Specification Approval

COUNCIL /COMMITTEE	Umm Al-Qura University Council
REFERENCE NO.	851141114462/190386
DATE	1446/11/22

