



Jordan University of Science and Technology

Faculty of Applied Medical Sciences

Department of Allied Medical Sciences

2016

Study Plan of Bachelor Degree in Optometry

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Vision:

The vision of the department is to lead, through academic and research excellence, regional and national health care delivery in the field of radiological sciences, optometry and paramedic.

Mission:

Consistent with the mission of J.U.S.T. our mission is to be a premier in improving paramedic through graduating fully qualified graduates to fulfill the need in the community and the region.

Objectives:

1. To provide students with the required knowledge related to optometry.
2. To provide students with required practical training regarding diagnosis and refractive errors treatment.
3. To provide student the required clinical training related to optometry in hospitals and clinics.

Job Opportunities: the Department of Allied Medical Sciences prepares the graduates in the optometry program to work in the following fields:

1. Eye examination to determine the presence of various refractive errors (Myopia, Hyperopia and Astigmatism) and referring patients to ophthalmologists for appropriate eye care treatment.
2. Prescription and preparation of eyeglasses.
3. Prescription of contact lenses.
4. Diagnosis and Prescription of visual aids to provide visual rehabilitation for patients with low vision.

Study Plan of Bachelor degree in Optometry

Numbering and coding system of courses of the study plan.

Course Coding

The following codes are used to designate courses:

Department			Level/year	Field	Sequence
A	B	C	X	y	z

The Department codes are as follows:

Code	Department	Code	Department
OPT	Optometry	AS	Audiology and Speech Therapy
PT	Physical Therapy	PARA	Paramedic
OT	Occupational Therapy	ADS	Allied Dental Sciences
RA	Radiologic Technology	LM	Medical Laboratory Sciences
TDEN	Dental Technology		

Course Numbering

- The Optometry courses are tabulated and numbered in such a manner to recognize each course regarding its subject area, year or level, and semester offered.
- Ex. OPT xyz: The **OPT** symbol in the course number denotes Optometry and (xyz) is a 3-digits number:

A. The first digit denotes the year level of the course according to student's study plan as follows:

Code	Level/year
1	First
2	Second
3	Third
4	Fourth

B. The second digit denotes the course field subject as follows:

Number	Specialization
0	Basics in optometry and optics
1	Anatomy of ocular neurophysiology
2	Ocular diseases and pharmacology
3	Binocular vision
4	Visual perception and low vision
5	Contact lenses and dispensing
6	Investigative techniques and optometric examinations
7	Pediatric and geriatric optometry
8	Special topics and community eye care
9	Clinical training

C. The third digit denotes sequence of semester during which the course is offered according to the study plan. In a way that odd numbers are given to the first and summer semesters while even numbers are given to second semesters. Example: OPT 102 Introduction to Radiologic Technology means:

OPT	1	0	2
Optometry	First year	Basics in optometry and optics	Second semester

A Bachelor of Science (B.Sc.) degree in Optometry at JUST is awarded in accordance with the statute stated by JUST regulations for B.Sc. awarding issued by the Dean's Council based on the adjusted 1987 law for awarding scientific degrees and certifications at JUST after completing (135) credit hours successfully.

The study plan composed of the following:

Classification	Credit hours		
	Compulsory	Elective	TOTAL
University requirements	16	9	25
Faculty requirements	24	-	24
Department requirements	86	-	86
TOTAL	126	9	135

A. University Requirements (27 Credit Hours)

1. Compulsory University Courses (16 Credit Hours) as below:

Course Code	Course Name	Cr. Hr.	Theoretical	Practical	Prerequisite
MS 100 *	Military Science	3	3	-	-
ARB 101	Arabic Language	3	3	-	-
HSS 119	Entrepreneurship and innovation	2	2	-	-
LG 112(**)	English language (2)	3	3	-	ENG. 111 or pass the English Admission Exam with no less than 80%
HSS 110	Social Responsibility	3	2	1	
HSS 129	General Skills	2	2	-	LG 112
	Total	16	15	1	

* The course is compulsory for Jordanian students only and is considered on a pass/ fail basis. Non-Jordanian students have to register for an alternative course selected from the list of university elective courses; grades for this course will be considered in the overall accumulative average of the student. In accordance with Higher Education Council's resolution 1561 dated 22.6.1998,

students who have graduated from military institutions are exempted from this course. The exemption includes the following categories:

- Graduates of The Royal Military College, Mu'tah University – and similar international military institutions.
- Officers who have taken basic courses in military operations
- Students who have obtained a statement from the Directorate of Military Training verifying that the student is eligible for exemption.

** Pre-requisite: passing LG 099 or passing English Language Placement Test with a grade > 50%.

NOTICE: Non-Arabic speaking students must register for the following Arabic language course:

Course Code	Course Name	Cr. Hr.	Theoretical	Practical	Prerequisite
ARB 101 A	Arabic language for None Arabic speakers	3	3	-	-

2. **Elective courses:** (9) Credit hours selected by the students from the following list:

	Course No.	Course title	Credit hours	Theoretical	Lab
Group One: Humanities					
1.	ARB 200	Appreciation of literary texts	3	3	-
2.	HSS 103	The Palestinian issue	3	3	-
3.	HSS 115	Islam and recent problems	3	3	-
4.	HSS 116	Economic system in Islam	3	3	-
5.	HSS 121	Principles of sociology	3	3	-
6.	HSS 126	Principles of psychology	3	3	-

7.	HSS 127	Educational technology	3	3	-
8.	HSS 131	Islamic civilization	3	3	-
9.	HSS 132	The history of the city of Jerusalem	3	3	-
10.	HSS 133	Civilization and recent cultures	3	3	-
11.	HSS 135	Islamic culture	3	3	-
12.	HSS 137	Human rights	3	3	-
13.	HSS 153	Islam and contemporary challenges	3	3	-
14.	HSS 161	Contemporary problems	3	3	-
15.	HSS 211	Sociology (in English)	3	3	-
16.	HSS 213	Individual and society	3	3	-
17.	HSS 221	Introduction to psychology (in English)	3	3	-
18.	HSS 231	History of science in Islam	3	3	-
19.	HSS 251	Music tasting	3	3	-
20.	LG 106	Basic German language	3	3	-
Group two: Scientific and Agricultural					
21.	ES 103	Environnement protection (for non environnement sciences students)	3	3	-
22.	ME 102	Introduction to renewable energy	3	3	-
23.	ME 211	Fundamentals of automobile engineering (for non-ME students)	3	3	-
24.	CHE 191	Introduction to the Nanotechnology	3	3	-
25.	NF 177	Food preservation (in English)	3	3	-
26.	AP 200	Farm animal products (for non-agriculture and veterinary students)	3	3	-

27.	PP 200	Home gardens (for non-plant production and soil and irrigation students)	3	3	-
28.	PP 201	Beekeeping (for non-plant production students)	3	3	-
29.	NR 200	Natural resources and human (for non-plant production and soil and irrigation students)	3	3	-
30.	NR 207	Plant earth problems & solutions (for non-agriculture students)	3	3	-
31.	NE 200	Principles in nuclear energy and its peaceful applications	3	3	-
Group Three: Health					
32.	NUR 100	Health promotion (for non-medicine, non-nursing, and non-midwifery students)	3	3	-
33.	ADS 100	Oral and dental health (for non-dentistry and non-dentistry sciences students)	3	3	-
34.	PH 104	Community health and nutrition (for non-medicine, non-nursing, and non-midwifery students)	3	3	-
35.	NUR 109	Family health (for non-medicine, non-nursing, and non-midwifery students)	3	3	-
36.	VM 211	Animal health (not for veterinary medical and agriculture students)	3	3	-
37.	VM 212	Pet animal care (not for veterinary medical students)	3	3	-
38.	VM 213	Animal behavior and welfare	3	3	-
39.	PT 100	Wellness and life styles (for non-physical and occupational therapy students)	3	3	-
40.	OT 100	Disability and the society(not allowed for rehabilitation science dep. students)	3	3	-

B. Faculty Requirements: (24 credit hours) distributed as follows:

Course No.	Course title	Credit hours	Theoretical	Lab	Prerequisite or co-request
ADS 491	Administration and quality assurance in applied medical sciences	3	3	-	--
BT 103	General biology	3	3	-	--
BT107	General biology lab	1	-	1	BT 103 (or co)
CHEM 103	General chemistry	3	3	-	--
CHEM107	General chemistry lab	1	-	1	CEM 103 (or co)
PT 218	Gross anatomy and histology	3	2	1	BT 103, BT 107
MED 230A	Human physiology	3	3	-	BT 103
MED 230B	Human physiology lab	1	-	1	MED 230A (or co)
PH 311	Biostatistics	2	2	-	--
LM 491	Scientific research methods	1	1	-	PH 311
LM 493	Research project	2	2	-	LM 491
PARA 391	Ethics in applied medical careers	1	1	-	--
TOTAL		24	20	4	

C. Department requirements: (86 Credit Hours) distributed as follows:

1. Department required courses from the Faculty of Science and Arts (4 credit hours); distributed as follows:

Course No.	Course title	Credit hours	Theoretical	Lab	Prerequisite (or Co)
BT 231	General Microbiology	3	3	-	BT 103
BT 233	General Microbiology lab	1	-	1	BT 231 or Co-requisite
TOTAL		4	3	1	

2. Department required courses from the Faculty of Medicine (6 credit hours); distributed as follows:

Course No.	Course title	Credit hours	Theoretical	Lab	Prerequisite (or Co)
LM 202	Pathology	3	3	-	P.T 218, MED 230B
P.T 226	Neuroscience 1	3	2	1	MED 230B
TOTAL		6	5	1	

3. Department required courses from the department of Allied Medical Sciences (77 credit hours); distributed as follows:

Course No.	Course title	Credit hours	Theoretical	Lab	Prerequisite	Co-requisite
OPT 102	Introduction to optometry	1	1	-	--	--
OPT 104	Geometrical and physical optics	3	3	-	OPT 102 or Co	--
OPT 203	Visual optics	2	2	-	OPT 104	--
OPT 205	Visual optics lab	1	-	1	--	OPT 203
OPT 211	Ocular anatomy and physiology	3	3	--	P.T 218, MED 230B	--
OPT 213	Ocular anatomy and physiology lab	1	-	1	--	OPT 211
OPT 232	Binocular vision 1	2	2	-	OPT 213	--
OPT 234	Binocular vision 1 lab	1	-	1	--	OPT 232
OPT 252	Ophthalmic lenses and dispensing 1	2	2	-	OPT 205	--
OPT 254	Ophthalmic lenses and dispensing 1 lab	1	-	1	--	OPT 252
OPT 262	Optometric examination 1	1	1	-	OPT 213	--
OPT 264	Optometric examination 1 lab	1	-	1	--	OPT 262
OPT 321	Ocular disease 1	3	3	-	LM 202	--
OPT 323	Ocular pharmacology	2	2	-	OPT 213	--
OPT 326	Ocular disease 2	3	3	-	OPT 321	--
OPT 332	Binocular vision 2	3	3	-	OPT 234	--
OPT 341	Visual perception	2	2	-	OPT 234	--
OPT 342	Low vision and visual rehabilitation	2	2	-	OPT 363	--
OPT 344	Low vision and visual rehabilitation lab	1	-	1	--	OPT 342
OPT 351	Ophthalmic lenses and dispensing 2	2	2	--	OPT 254	--
OPT 353	Ophthalmic lenses and dispensing 2 lab	2	-	2	--	OPT 351
OPT 361	Optometric examination 2	2	2	-	OPT 264	--
OPT 362	Instrumentation and investigative techniques	2	2	-	OPT 363	--

OPT 363	Optometric examination 2 lab	2	-	2	--	OPT 361
OPT 364	Instrumentation and investigative techniques lab	1	-	1	--	OPT 362
OPT 366	Optometric examination 3	2	2	-	OPT 363	--
OPT 368	Optometric examination 3 lab	1	-	1	--	OPT366
OPT 411	Visual neurophysiology	3	3	-	P.T 226, OPT 326	--
OPT 455	Contact lenses 1	2	2	-	OPT 368	--
OPT 456	Contact lenses 2	2	2	-	OPT 457	--
OPT 457	Contact lenses 1 lab	1	-	1	--	OPT 455
OPT 458	Contact lenses 2 lab	1	-	1	--	OPT 456
OPT 473	Pediatric optometry	3	3	-	OPT 326	--
OPT 474	Geriatric optometry	2	2	-	OPT 491	--
OPT 482	Community eye care	1	-	1	OPT 491	--
OPT 486	Special topics in optometry	2	2	-	OPT 326	--
OPT 491	Clinical training 1	4	-	4	OPT 326, OPT 368	--
OPT 492	Clinical training 2	6	-	6	OPT 491	--
TOTAL		76	51	25		

Study Plan

FIRST YEAR													
First semester							Second semester						
Course No.	Course name	Total credits	Weekly hours		Prerequisite	Co-requisite	Course No.	Course name	Total credits	Weekly hours		Prerequisite	Co-requisite
			Lecture	Lab						Lecture	Lab		
ARB 101	Arabic language	3	3	-	--	--	HSS 119	Entrepreneurship and innovation	2	2	-	--	--
BT 103	General biology	3	3	-	--	--	PT 218	Gross anatomy and histology	3	2	2	BT 103, BT 107	--
BT 107	General biology practical	1	-	2	BT 103 (or Co)	--	MED 230A	Human physiology	3	3	-	BT 103	--
CHEM 103	General chemistry	3	3	-	--	--	MED 230B	Human physiology lab	1	-	2	MED 230A (or co)	--
CHEM 107	General chemistry lab	1	-	2	CHEM 103 (or Co)	--	MS 100	Military sciences	3	3	-	--	--
HSS 110	Social Responsibility	3	2	1	--	--	HSS 129	General skills	2	2	-	LG 112	--
LG 112	English language 2	3	3	-	Passing LG 099 or passing English Language Placement Test with a grade > 50%	--	OPT 104	Geometrical and physical optics	3	3	-	OPT 102 (or co)	
OPT 102	Introduction to optometry	1	1	-	--	--							
TOTAL		18	15	5			TOTAL		17	15	4		

SECOND YEAR													
First semester						Second semester							
Course No.	Course name	Total credits	Weekly hours		Prerequisite	Co-requisite	Course No.	Course name	Total credits	Weekly hours		Prerequisite	Co-requisite
			Lecture	Lab						Lecture	Lab		
LM 202	Pathology	3	3	-	P.T 218, MED 230B	--	BT 231	General microbiology	3	3	-	BT 103	--
P.T 226	Neuroscience 1	3	2	2	MED 230B	--	BT 232	General microbiology lab	1	-	3	BT 231 or Co	--
OPT 203	Visual optics	2	2	-	OPT 104	--	OPT 232	Binocular vision 1	2	2	-	OPT 213	--
OPT 205	Visual optics lab	1	-	2	--	OPT 203	OPT 234	Binocular vision 1 lab	1	-	2	--	OPT 232
OPT 211	Ocular anatomy and physiology	3	3	--	P.T 218, MED 230B	--	OPT 252	Ophthalmic lenses and dispensing 1	2	2	-	OPT 205	--
OPT 213	Ocular anatomy and physiology lab	1	-	2	--	OPT 211	OPT 254	Ophthalmic lenses and dispensing 1 lab	1	-	2	--	OPT 252
	University elective	3	3	-	--	--	OPT 262	Optometric examination 1	1	1	-	OPT 213	--
							OPT 264	Optometric examination 1lab	1	-	2	--	OPT 262
								University elective	3	3	-	--	--
TOTAL		16	13	6			TOTAL		15	11	9		

THIRD YEAR													
First semester							Second semester						
Course No.	Course name	Total credits	Weekly hours		Prerequisite	Co-requisite	Course No.	Course name	Total credits	Weekly hours		Prerequisite	Co-requisite
			Lecture	Lab						Lecture	Lab		
OPT 321	Ocular disease 1	3	3	-	LM 202	--	OPT 326	Ocular disease 2	3	3	-	OPT 321	--
OPT 323	Ocular pharmacology	2	2	-	OPT 213	--	OPT 332	Binocular vision 2	3	3	-	OPT 234	--
OPT 341	Visual perception	2	2	-	OPT 234	--	OPT 342	Low vision and visual rehabilitation	2	2	-	OPT 363	--
OPT 351	Ophthalmic lenses and dispensing 2	2	2	--	OPT 254	--	OPT 344	Low vision and visual rehabilitation lab	1	-	2	--	OPT 342
OPT 353	Ophthalmic lenses and dispensing 2 lab	2	-	4	--	OPT 351	OPT 362	Instrumentation and investigative techniques	2	2	-	OPT 363	--
OPT 361	Optometric examination 2	2	2	-	OPT 264	--	OPT 364	Instrumentation and investigative techniques lab	1	-	2	--	OPT 362
OPT 363	Optometric examination 2 lab	2	-	4	--	OPT 361	OPT 366	Optometric examination 3	2	2	-	OPT 363	--
PARA 391	Ethics in applied medical careers	1	1	-	--	--	OPT 368	Optometric examination 3 lab	1	-	2	--	OPT366
PH 311	Biostatistics	2	2	-	--	--		University elective	3	3	-	--	--
TOTAL		18	14	8			TOTAL		18	15	6		

FOYRTH YEAR													
First semester							Second semester						
Course No.	Course name	Total credits	Weekly hours		Prerequisite	Co-requisite	Course No.	Course name	Total credits	Weekly hours		Prerequisite	Co-requisite
			Lecture	Lab						Lecture	Lab		
ADS 491	Administration and quality assurance in applied medical sciences	3	3	-	--	--	OPT 456	Contact lenses 2	2	2	-	OPT 457	--
LM 491	Scientific research methods	1	1	-	PH 311	--	OPT 458	Contact lenses 2 lab	1	-	2	--	OPT 456
OPT 411	Visual neurophysiology	3	3	-	P.T 226, OPT 326	--	OPT 474	Geriatric optometry	2	2	-	OPT 491	--
OPT 455	Contact lenses 1	2	2	-	OPT 368	--	OPT 482	Community eye care	1	-	3	OPT 491	--
OPT 457	Contact lenses 1 lab	1	-	2	--	OPT 455	OPT 486	Special topics in optometry	2	2	-	OPT 326	--
OPT 473	Pediatric optometry	3	3	-	OPT 326	--	OPT 492	Clinical training 2	6	-	12	OPT 491	--
OPT 491	Clinical training 1	4	-	8	OPT 326, OPT 368	--	LM 493	Research project	2	2	-	LM 491	
TOTAL		17	12	10			TOTAL		16	8	17		

Course Description

OPT 102 Introductions to optometry (1 C.H) (Prerequisite: None)

The history of the profession of Optometry, and the development of vision science, a consideration of legal and organizational development of optometry in addition to the role of professional associations. The role and the scope of optometry, and its relationship to other professions in community.

OPT 104 Geometrical and physical optics (3 C.H) (Prerequisite: OPT 102 or Co)

Basic understanding of the nature of light and geometrical optics such as reflection and refraction, image formation, lenses of different thicknesses and telescopes. The characteristics of the images formed by mirrors, glasses and prisms, and describes laser properties and its applications.

OPT 203 Visual optics (2 C.H) (Prerequisite: OPT 104)

The optical characteristics of the eye in relation to visual performance, the optics of correcting lenses and the mechanism of various ophthalmic instruments. The calculations on the imaging properties of eyes corrected by spectacle, contact and intraocular lenses.

OPT 205 Visual optics lab (1 C.H) (Co-requisite: OPT 203)

Test the different properties of light when passing through different types of ophthalmic lenses and prisms. The implication of the more abstract elements of geometrical and visual optics in ocular context and ophthalmic practice.

OPT 211 Ocular anatomy and physiology (3 C.H) (Prerequisite: PT 218, MED 230B)

The structure of the eye and adnexa from a clinical perspective. Role of the eye in vascular supply and innervation to the head and nervous system. Basic understanding of the function of various structures of the eye from a clinical perspective.

OPT 213 Ocular anatomy and physiology lab (1 C.H) (Co-requisite: OPT 211)

Means to provide students with anatomical models for illustrations of anatomical eye and globe parts that make it easier for students to visualize and understand the medical anatomy and the mechanism of the different parts of the eye.

OPT 232 Binocular vision 1 (2 C.H) (Prerequisite: OPT 213)

Normal binocular status of the eye, as a basis for subsequent course binocular vision 2, ocular motor systems and the laws in terms of normal neurophysiology and neuroanatomy.

OPT 234 Binocular vision 1 lab (1 C.H) (Co-requisite: OPT 232)

The practical part of different methods in assessment of: Extra Ocular Muscle Motility, Fusion and Stereopsis.

OPT 252 Ophthalmic lenses and dispensing 1 (2 C.H) (Prerequisite: OPT 205)

Basic understanding of the Optics of lenses, lens form and design in different spectacles and lens materials, and selection of appropriate lenses in prescribing.

OPT 254 Ophthalmic lenses and dispensing 1 lab (1 C.H) (Co-requisite: OPT 252)

Means to provide the students with different types, powers and materials of Ophthalmic lenses, different frames designs and frames materials. Measuring ophthalmic lenses by using Lensometer and doing Formers for lens cutting.

OPT 262 Optometric examination 1 (1 C.H) (Prerequisite: OPT 213)

Basic understanding of optical eye status and different types of refractive errors. Refractive error signs and symptoms ,eye examination and treatment. Also include measuring of refractive error of the eye by using Retinoscope.

OPT 264 Optometric examination 1 lab (1 C.H) (Co-requisite: OPT 262)

Protocols and strategies of using Retinoscope in measuring different types of refractive error.

OPT 321 Ocular diseases 1 (3 C.H) (Prerequisite: LM 202)

Different diseases that affect the anterior segment of the eye, including their pathophysiology, presentations, diagnostic techniques, and management

OPT 323 Ocular pharmacology (2 C.H) (Prerequisite: OPT 213)

The pharmacokinetic and pharmacodynamic principles of drug design and delivery. The contraindications and warnings of drug use, and management of possible adverse side effects.

OPT 326 Ocular disease 2 (3 C.H) (Prerequisite: OPT 321)

Different diseases that affect the posterior eye segment, including their pathophysiology, presentations, diagnostic techniques, and management.

OPT 332 Binocular vision 2 (3 C.H) (Prerequisite: OPT 234)

Focuses on comparing and defining of strabismic vs. normal state of binocularity, classification of types of strabismus, differentiation between those which can be managed with glasses, prisms or vision therapy and those require consultation of an ophthalmologist.

OPT 341 Visual perceptions (2 C.H) (Prerequisite: OPT 234)

The cognitive and perceptual aspects of vision including theories of light perception, color vision, contrast sensitivity, spatial and temporal resolution, recognition of pattern and form and the perception of flicker and motion

OPT 342 Low vision and visual rehabilitation (2 C.H) (Prerequisite: OPT 363)

The needs and visual functioning of low vision patients. They will also be able to prescribe different types of visual optical aids and visual non-optical aids to restore the patients' ability to do their life activities easily, and to provide the patient with instructions and trainings of how to use these Aids in addition with different rehabilitation methods.

OPT 344 Low vision and visual rehabilitation 1 lab (1 C.H) (Co-requisite: OPT 342)

Evaluation methods for low vision patients by using lea system. Also the students will be introduced with different optical and non-optical low vision aids.

OPT 351 Ophthalmic lenses and dispensing 2 (2 C.H) (Prerequisite: OPT 254)

Preparation, delivery and repair of spectacles. The course is laboratory based requiring development and demonstration of knowledge and skills.

OPT 353 Ophthalmic lenses and dispensing 2 lab (2 C.H) (Co-requisite: OPT 351)

Implementation the knowledge gained from the theoretical part in spectacles preparations.

OPT 361 Optometric examination 2 (2 C.H) (Prerequisite: OPT 264)

Case history and record keeping, visual acuity assessment, the subjective and objective methods for assessment of refractive error, evaluating and measuring of accommodation, vergence and version system, treatment methods of different cases.

OPT 362 Instrumentation and investigative techniques (2 C.H) (Prerequisite: OPT 363)

Presentation of tests that are not normally performed in a routine eye examination but required to diagnose an underlying defect in special case. Indications for these tests and basic interpretation of findings.

OPT 363 Optometric examination 2 lab (2 C.H) (Co-requisite: OPT 361)

Case history and record keeping, using different methods for visual acuity assessments, doing refraction (subjective and objective), measuring of accommodation, vergence and version system.

OPT 364 Instrumentation and investigative techniques lab (1 C.H) (Co-requisite: OPT 362)

The system and protocols used in different instrument for eye examination (corneal Topography, Visual Field, Biometry..) and interpretation of findings.

OPT 366 Optometric examination 3 (2 C.H) (Prerequisite: OPT 363)

Normal vision development, and vision development for special population patients, the relationship between vision and learning, assessment of visual efficiency and treatment by visual training and therapy, assessment of visual information processing problems and treatment methods and strategies.

OPT 368 Optometric examination 3 lab (1 C.H) (Co-requisite: OPT 366)

Different measuring methods in assessment of visual information processing (visual analysis, visual special, visual integration motor..ect). Visual training and therapy strategies of visual efficiency and visual information processing deficits.

OPT 411 Visual neurophysiology (3 C.H) (Prerequisite: PT 226, OPT 326)

The etiology, symptoms, signs, diagnosis and management of ocular neuropathology disorders.

OPT 455 Contact lenses 1 (2 C.H) (Prerequisite: OPT 368)

Indications and contra-indications for contact lens wear, factors influencing lens selection and design, principles of fitting and evaluating rigid and soft contact lenses. The physio-chemical and mechanical properties of contact lens material, optical and mathematical concepts, the ocular physiological response to contact lens wear and lens maintenance.

OPT 456 Contact lenses 2 (2 C.H) (Prerequisite: OPT 457)

The practical aspect of contact lens fitting, soft, hard and toric contact lenses. Detecting and managing chronic and acute complications induced by contact lenses. Contact lens management options for special conditions such as dry eye, aphakia and keratoconus (and other corneal irregularities) are also discussed in this course. Disposable contact lenses, replacement regimens and extended wear options will also be covered throughout the course. Contact lenses and presbyopia, alternative management of refractive errors such as orthokeratology and refractive surgery will be mentioned as another mean for correcting refractive errors.

OPT 457 Contact lenses 1 lab (1 C.H) (Co-requisite: OPT 455)

Practical part of contact lens measurements and fitting.

OPT 458 Contact lenses 2 lab (1 C.H) (Co-requisite: OPT 456)

Eye examination for detection of chronic and acute complications induced by contact lenses. In addition to learn fitting of soft, rigid and toric contact lens.

OPT 473 Pediatric optometry (3 C.H) (Prerequisite: OPT 326)

Different aspects concerning the eye care for children. It includes full coverage of the embryology and early anatomical and functional development of the child's visual system. In addition, it teaches how to deal with children and use the different techniques to examine children in different ages. It also concentrates on the differences in eye care and diagnostic techniques between children and adults. Special conditions related to pediatric such as amblyopia and congenital disorders and treatment will also be discussed.

OPT 474 Geriatric optometry (2 C.H) (Prerequisite: OPT 491)

The visual deficits that may occur in elderly population (e.g. difficulty with smooth pursuits and fixation, reduced contrast sensitivity and colour vision, difficulty with reading and object recognition). Biological, systemic, physiological and pathological changes of different ocular defects. The visual impact of some systemic diseases such as Alzheimer's, Parkinson's and strokes will be reviewed with the appropriate testing methods such as Glare testing, gaze behavior and balance, and quality of life.

OPT 482 Community eye care (1 C.H) (Prerequisite: OPT 491)

The Optometrist role in the society by providing health care services to the local society and by volunteering to examine patients of various ages and eye conditions, also by doing an on field screening to differentiate different refractive and pathological eye conditions.

OPT 486 Special topics in optometry (2 C.H) (Prerequisite: OPT 326)

The latest research and screening methods in the field of Optometry by discussing related scientific articles. Also it will discuss special medical eye conditions and ways of treatment. The laws of the profession and skills related to establishment and management of optometry centers and the development of communication skills of the student.

OPT 491 Clinical training 1 (4 C.H) (Prerequisite: OPT 326, OPT 368)

Developing of clinical skills by direct interaction with patients in the optometry clinics and hospitals. These skills include diagnosis and management of refractive error, binocular imbalance, low vision and eye diseases, also learning the system and strategy of direct ophthalmoscope, Slit lamp, Tonometer and corneal topography.

OPT 492 Clinical training 2 (6 C.H) (Prerequisite: OPT 491)

The use of A-B scan, Visual field, 3 mirror Gonioscopy, indirect ophthalmoscope, and indirect Funduscopy by slit lamp and Fluorescein angiography.