

B.Sc. in Optometry Study Plan

■ **University Compulsory Courses** **16 C.H**
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■ **University Elective Courses** **9 C.H**
Pages (64 & 65)

■ **Faculty Compulsory Courses** **27 C.H**

| Line No. | Code | Course | |
|----------|----------|---|---|
| 102181 | MED218A | GROSS ANATOMY & HISTOLOGY | 3 |
| 102182 | MED218B | GROSS ANATOMY & HISTOLOGY (LAB) | 0 |
| 102304 | MED230A | HUMAN PHYSIOLOGY | 3 |
| 102305 | MED230B | HUMAN PHYSIOLOGY (LAB) | 1 |
| 103021 | MED302A | MEDICAL ETHICS | 1 |
| 183111 | PH311A | BIOSTATISTICS | 2 |
| 911031 | CHEM103A | GENERAL CHEMISTRY | 3 |
| 911072 | CHEM107B | GENERAL CHEMISTRY LAB | 1 |
| 921031 | PHY103A | GENERAL PHYSICS | 3 |
| 931030 | BIO103 | GENERAL BIOLOGY | 3 |
| 931070 | BIO107 | GENERAL BIOLOGY (PRACTICAL) | 1 |
| 1114580 | P.T458 | MANAGEMENTS IN ALLIED MEDICAL SCIENCES | 3 |
| 1731160 | CS116 | SELLECTED PROGRAMMING LANGUAGES (FOR NON COMPUTER SCIENCE INFORMATION STUDENTS) | 3 |

■ **Department Compulsory Courses** **83 C.H**

| Line No. | Code | Course | |
|----------|---------|--|---|
| 102121 | MED212A | PATHOLOGY | 3 |
| 102222 | MED222B | BIOCHEMISTRY | 3 |
| 102234 | MED223D | BIOCHEMISTRY (LAB) | 1 |
| 102261 | MED226A | NEUROSCIENCE (1) | 3 |
| 102262 | MED226B | NEUROSCIENCE 1 (LAB) | 0 |
| 102422 | MED242B | MICROBIOLOGY | 3 |
| 102430 | MED243 | MICROBIOLOGY (LAB) | 1 |
| 1101110 | OPT.111 | INTRODUCTION TO OPTOMETRY | 1 |
| 1102150 | OPT.215 | GEOMETRICAL &PHYSICAL OPTICS | 3 |
| 1102240 | OPT.224 | OCULAR ANATOMY & PHYSIOLOGY | 4 |
| 1102241 | OPT.224 | OCULAR ANATOMY &PHYSIOLOGY (LAB) | 0 |
| 1102260 | OPT.226 | PHTHALMIC LENSES & DISPENSING (1) | 3 |
| 1102261 | OPT.226 | PHTHALMIC LENSES & DISPENSING (1) (LAB) | 0 |
| 1102420 | OPT.242 | OPTOMETRY THEORY & METHODS(1) | 2 |
| 1102421 | OPT.242 | OPTOMETRY THEORY & METHODS(1) (LAB) | 0 |
| 1102460 | OPT.246 | OCULAR MOTILITY & NORMAL BINOCULR VISION | 2 |
| 1103150 | OPT.315 | OPTOMETRY THEORY & METHODS(2) | 4 |
| 1103151 | OPT.315 | OPTOMETRY THEORY AND METHODS (2) LAB | 0 |
| 1103170 | OPT.317 | VISUAL PERCEPTION | 3 |
| 1103510 | OPT.351 | OCULAR DISEASE(1) | 3 |
| 1103570 | OPT.357 | OPHTHALMIC LENSES & DISPENSING(2) | 3 |
| 1103571 | OPT.357 | OPHTHALMIC LENSES & DISPENSING (2) LAB | 0 |

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|---------|---------|--|---|
| 1103590 | OPT.359 | OCULAR PHARMACOLOGY | 3 |
| 1103640 | OPT.364 | OPTOMETRY THEORY & METHODS(3) | 3 |
| 1103641 | OPT.364 | OPTOMETRY THEORY & METHODS(3) (LAB) | 0 |
| 1103680 | OPT.368 | SPECIAL TESTING TECHNIQUES & LNSTRUMENTS | 3 |
| 1103681 | OPT.368 | SPECIAL TESTING TECHNIQUES & LNSTRUMENTS (LAB) | 0 |
| 1103740 | OPT.374 | OCULAR DISEASE(2) | 3 |
| 1103741 | OPT.374 | OCULAR DISEASE(2) (LAB) | 0 |
| 1103840 | OPT.384 | BINOCULAR VISISON ANOMALIES & ORTHOPTICS | 2 |
| 1103860 | OPT.386 | CONTACT LENSES(1) | 3 |
| 1103861 | OPT.386 | CONTACT LENSES(1) (LAB) | 0 |
| 1103880 | OPT.388 | VISION REHABILITATION/LOW VISION | 3 |
| 1103881 | OPT.388 | VISION REHABILITATION/LOW VISION (LAB) | 0 |
| 1104130 | OPT.413 | PEDIATRIC OPTOMETRY | 3 |
| 1104250 | OPT.425 | CONTACT LENSES(2) | 3 |
| 1104251 | OPT.425 | CONTACT LENSES 2 (LAB) | 0 |
| 1104450 | OPT.445 | NEURO - OPTOMETRY | 3 |
| 1104470 | OPT.447 | OPTOMETRY CLINICS(1) | 4 |
| 1104471 | OPT.447 | OPTOMETRY CLINICS (LAB) | 0 |
| 1104480 | OPT.448 | OPTOMETRY CLINICS(2) | 4 |
| 1104481 | OPT.448 | OPTOMETRY CLINICS(2) (LAB) | 0 |
| 1104640 | OPT.464 | COMMUNITY EYE CARE | 2 |
| 1104660 | OPT.466 | CASE STUDIES | 1 |
| 1104930 | OPT.493 | RESEARCH PROJECT | 1 |

TOTAL

135 C.H

*** For prerequisite & equivalent courses see the Courses' Description.**

B.Sc. in Optometry

Courses' Description

M 226 Neuroscience I 3 C.H

Gross and microscopic anatomy of the brain and spinal cord and their physiology, with emphasis on integration of the sensory and motor systems. *(Prerequisite: M230A/B)*

M 302 Medical Ethics 1 C.H

This course provides the students with the fundamental comprehension of medical ethics to develop a conceptualized framework for moral judgment, and decision making to serve as a basis for health care practice. *(Prerequisite: none)*

PT 300 Computers in Medical Sciences 2 C.H

Principles of usage computer in general with emphasize on medical aspects. The course develops an open framework for explaining and using of data basis in health care organizations, especially in hospitals. The emphasis is to lie on a using the Microsoft office future tools in management process to provide information to administration to achieve goals in future. *(Prerequisite: None)*

PT 342 Introduction to clinical medicine 3 C.H

Supervised treatment of patients in affiliated hospitals and facilities correlated with therapeutic procedures and exercise. *(Prerequisite: M 212)*

PT 458 Management in Allied Health Sciences 3 C.H

A course designed to provide on-site rotations with AHS administrative directors, instruction in budget preparation, personnel considerations, equipment purchasing and related maintenance, departmental design, and other duties and responsibilities of all types of AHS administrators. *(Prerequisite: none)*

Op 212 Mechanical optics 3 C.H

Nature of light, wave motion, superposition of waves, interference of light, Fraunhofer diffraction and resolution limit of Optical instruments; the diffraction grating and the analysis of light. Fresnel diffraction. Polarized light. Coherence of light and lasers. Fiber optics. *(Prerequisite: Phy 103)*

Op 213 Anatomy of the Eye 3 C.H

The gross, microscopic and ultra structure of ocular tissues. The embryology of the eye is included. The relationship of the eye to the vascular supply of the head and the vascular supply of the head and the nervous system will be studied *(Prerequisite: M 218)*

Op222 Physiology of the Eye 3 C.H

The physiology of the smooth muscles of the eye, the extraocular striate muscles, the lacrimal apparatus, the cornea, the iris, the lens, the ciliary body and the vitreous body. Production and drainage of aqueous and related influences on intraocular pressure. The vascular supply of the eye. *(Prerequisite: M 230A/B)*

Op 311 Ophthalmic Optics 3 C.H

Optics of spectacle lenses. Lens materials. Multifocal lenses. Theory of spectacle lens design. Protective lenses. Spectacle frame materials. Prescribing ophthalmic appliances. Ophthalmic laboratory procedures. *(Prerequisite: Op 212/Op 331 or Corequisite)*

Op 322 Special testing 3 C.H

Presentation of testing not normally performed in routine eye examination but needed in selected cases to diagnose. Course covers indications of these test and basic interpretation of finding. *(Prerequisite: Op355)*

Op 331 Clinical Techniques I 3 C.H

Clinical techniques for the detection of strabismus and the assessment of the no strabismus state. Assessment of ocular misalignments, motor reserves, and accommodative function with particular emphasis on the relationship between accommodation and convergence. Differential diagnosis of conditions including vertical imbalance, vergence imbalance and amblyopia. *(Prerequisite: Op 311)*

OP 332 Clinical Techniques II 3C.H

Clinical techniques for the primary care examination of the sensory, refractive, binocular and health systems of the eye. The emphasis is on accuracy and efficiency in performing complete examinations. Introduction to presbyopic examination techniques. Preliminary clinical examinations in the Eye Care Centre. *(Prerequisite: Op 331)*

Op 333 Visual Physiology 2 C.H

Addresses the cognitive and perceptual aspects of vision related to anatomy and physiology. *(Prerequisite: Op 222/Op 213)*

Op 355 Diseases of the eye 3 C.H

Advanced considerations of the etiology, signs, symptoms, diagnosis, and treatment and management of ocular disease. Emphasis will be placed on the clinical case management with therapeutic pharmaceutical agents. *(Prerequisite: Op 222)*

Op 366 Clinical Ocular Pharmacology 1 C.H

Pharmacokinetic and pharmacodynamic principles of ophthalmic drug design and delivery. Selection and use of ophthalmic diagnostic pharmaceutical agents, palliative agents and therapeutic pharmaceutical agents. Mechanism of action, contraindications and adverse drug reactions. Recommended guidelines for use and follow-up procedures. *(Prerequisite: M230A/B)*

Op 381 Glasses preparation 3 C.H

Spectacle frame materials. Fitting and adjusting techniques. Selection of lens design. Lenses for high myopia. Dispensing of eye protectors. Optics of low vision aids. Patient counseling and management of dispensing problems. Laboratories provide experience in practical aspects of ophthalmic dispensing. *(Prerequisite: Op331 or Corequisite)*

Op 441 Strabismus and Aniseikonia 2 C.H

Detection and evaluation of sensory and motor characteristics of vision in aniseikonic, strabismic and non-strabismic patients. Classifications, diagnoses, prognoses, and modes of therapy for aniseikonic, non-strabismic, and strabismic patients. *(Prerequisite: Op 355)*

Op 443 Vision rehabilitation 2 C.H

This course will provide an opportunity for optometry students to discuss and evaluate clinical techniques, instrumentation, and ideologies not covered in the current curriculum. Students will be encouraged to use their basic knowledge of the vision sciences to provide a perceptive critique of the clinical subjects addressed. *(Prerequisite: Op 332)*

Op 451 Contact Lenses I 2 C.H

Patient examination and consultation. Indications and contra-indications for contact lens wear. Factors influencing lens selection and design. Principles of fitting and evaluating rigid and hydrogel soft contact lenses. Physico-chemical and mechanical properties of contact lens materials. Optical and mathematical concepts. The ocular physiological response to contact lens wear. Care and maintenance of contact lenses. (*Prerequisite: Op 381/Op 332*)

OP 452 Contact Lenses II 3 C.H

Detection and management of 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). Disposable lenses and replacement regimens. Extended wear options. Alternative management of refractive errors such as orthokeratology and refractive surgery. Contact lenses and presbyopia. (*Prerequisite: Op 451*)

Op 453 Optometry Clinics I 2 C.H

Students are assigned to various areas within the clinic where, under direct clinical faculty supervision, they participate in the provision of optometric services to clinic patients. In addition to primary care, they are exposed to the provision of contact lens, ocular health and opt (*Prerequisite: Op 332*)

Op 454 Optometry Clinics II 6C.H

Optometry students learn all aspects of clinical practice by providing direct patient care under faculty supervision and instruction. Areas of clinical activity include oculo-visual assessment, the diagnosis and management of ocular disease, contact lens care, diagnosis and treatment of oculomotor-sensory disorders, low vision rehabilitation, and ophthalmic dispensing. In addition to the main university clinic, student will gain experience in a variety of settings, including community health clinics, specialty care clinics, nursing homes, schools, private practices, and institutions for people with special needs. Each student will complete a one term externship in ocular therapeutics and disease management and a primary care rotation in private practice. Students will be required to show successful performance in each of the components of clinical training to which they are assigned. Evaluation may involve oral examination, assessment of performance with patients, record review, and/or demonstration of techniques. (*Prerequisite: Op 453*)

Op 455 Patients group meetings and counseling 3 C.H

Group meetings with patients, emphasizing psychosocial aspect of handling vision problems. (*Prerequisite: None*)

OP 461 Pediatric Optometry & Learning Disabilities 3 C.H

Consideration of the development of the optical and sensory-motor functions of the visual system provides the basis upon which this course examines the clinical testing and treatment procedures for infants and young children. Aspects of vision problems related to children with learning difficulty and special needs, including tests and measurements taken by optometrists, are covered. The role of the optometrist in conjunction with the parents, teachers, and psychologists is discussed. (*Prerequisite: Op 332*)

Op 472 Case presentation 2 C.H

The neural processing of color, brightness, movement and form by the retina, lateral geniculate, cortex, superior colliculus and other brain centers. Neural mechanisms underlying binocular depth perception, the accommodative response and eye movement. (*Prerequisite: Op 454 or Corequisite*)

Op 474 Project 2 C.H

Student will be assigned a project that gives practical exercise in a particular field. This may include community service, development of community awareness, assisting in a research project, preparation of teaching aids and material or any exercise that will give opportunity for student develop resourcefulness and creativity and for the improvement of the program. (*Prerequisite: None*)

Op 491 Seminar 1 C.H

Intensive study of a specialty optometric topic of mutual interest to a professor and a small group of students. Consult course coordinator each term for list of offerings. (*Prerequisite: None*)