

# OPHTHALMIC MEDICAL TECHNOLOGY (OMT)

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## **OMT 3122 Ocular Anatomy and Physiology (3 units)**

Eye anatomy and physiology, orbit and adnexa with an overview of ocular embryology.

**Course Component:** Lecture

## **OMT 3123 Optics and Refraction (3 units)**

Physical and geometrical optics and an introduction to physiological optics as related to optical systems. Topics include vergences, properties of lenses, mirrors, focal planes, lens surface powers, spherocylindrical lenses, transposition, Snell's law of refraction and prisms. The eye as an optical system as it applies to refraction. Refractometry including various techniques and instruments used. Course includes a clinical component.

**Course Component:** Lecture

Prerequisite: PHY 1322.

## **OMT 3124 Basic Diagnostics I (3 units)**

Techniques of modern ophthalmic photography. Topics include basic image formation, light intensity, exposure variables, filters, types of cameras their components and functions. Introduction to perimetry including a review of the visual system, retinal sensitivity, spatial localization, visual field analysis, testing strategies and types of perimetry. Course includes a clinical component.

**Course Component:** Lecture

## **OMT 3125 Clinical Application I (3 units)**

Introduction to patient care procedures in ophthalmology, to a variety of equipment and instruments associated with patient examination, observation of examination techniques in various specialty clinics. Emphasis will be placed on acquiring the basic skills and knowledge needed to begin patient examination. Instruction on examination procedures and techniques, development of clinical skills and supervised execution of several ophthalmic tasks.

**Course Component:** Lecture

## **OMT 31251 Clinical Application I (Part 1 of 2)**

Introduction to patient care procedures in ophthalmology, to a variety of equipment and instruments associated with patient examination, observation of examination techniques in various specialty clinics. Emphasis will be placed on acquiring the basic skills and knowledge needed to begin patient examination. Instruction on examination procedures and techniques, development of clinical skills and supervised execution of several ophthalmic tasks. (Part 1 of 2)

**Course Component:** Lecture

## **OMT 31252 Clinical Application I (Part 2 of 2) (3 units)**

Introduction to patient care procedures in ophthalmology, to a variety of equipment and instruments associated with patient examination, observation of examination techniques in various specialty clinics. Emphasis will be placed on acquiring the basic skills and knowledge needed to begin patient examination. Instruction on examination procedures and techniques, development of clinical skills and supervised execution of several ophthalmic tasks. (Part 2 of 2)

**Course Component:** Lecture

Prerequisite: OMT 31251.

## **OMT 3126 Ophthalmic Subspecialties (3 units)**

Glaucoma types, causes and treatments, pathophysiology of aqueous humor, anatomy and physiology of the optic nerve and nerve fiber layer, intraocular pressure, glaucomatous field defects and the evaluation of the glaucoma patient. Neuro-ophthalmology, the nervous system as it relates to the eye with particular attention to the sensory visual pathway and pupil function. The study of the Microbiology including bacterial flora of the conjunctiva and eyelid, bacteria associated with eye disease, basics of ocular cultures and techniques for specimen staining. This course will also introduce ocular pathology with emphasis on inflammation, infection and degenerative diseases of the eye. Course includes a clinical component.

**Course Component:** Lecture

Prerequisite: OMT 3122.

## **OMT 3127 Basics Diagnostics II (3 units)**

Ocular motility including terminology related to extraocular muscle interaction in preparation for the strabismus evaluation. Other topics include extraocular muscle anatomy and function, binocularity, fixation, sensory tests, vergences, eye movement and the use of prisms. A-Scan biometry including basic principles of ultrasound, examination procedures, trouble-shooting and intraocular lens calculation. Brief overview of B-Scan ultrasonography will also be discussed. Course includes a clinical component.

**Course Component:** Lecture

## **OMT 3128 Ophthalmic Basic Science Seminars (3 units)**

Ophthalmology lecture series detailing the anatomy and physiology of the eye, ocular diseases and disorders encompassing both the more common conditions to the more complicated cases, proper intervention and management techniques.

**Course Component:** Lecture

## **OMT 31281 Ophthalmic Basic Science Seminars (Part 1 of 2)**

Ophthalmology lecture series detailing the anatomy and physiology of the eye, ocular diseases and disorders encompassing both the more common conditions to the more complicated cases, proper intervention and management techniques. (Part 1 of 2)

**Course Component:** Lecture

## **OMT 31282 Ophthalmic Basic Science Seminars (Part 2 of 2) (3 units)**

Ophthalmology lecture series detailing the anatomy and physiology of the eye, ocular diseases and disorders encompassing both the more common conditions to the more complicated cases, proper intervention and management techniques. (Part 2 of 2)

**Course Component:** Lecture

Prerequisite: OMT 31281.

## **OMT 3231 Introduction to Ophthalmic Technology: Basic Skills-I (6 units)**

Basic skills needed for an ophthalmic medical technologist including history taking, visual assessment, stereopsis, depth perception, lensometry, tonometry, pachymetry, auto-refractometry and slit lamp techniques. Overview of basic medical knowledge and terminology, systemic illnesses and cardiopulmonary resuscitation will also be covered as well as all aspects of ophthalmic surgical assisting. Course include a clinical component.

**Course Component:** Lecture

**OMT 32311 Introduction to Ophthalmic Technology: Basic Skills-I (Part 1 of 2)**

Basic skills needed for an ophthalmic medical technologist including history taking, visual assessment, stereopsis, depth perception, lensometry, tonometry, pachymetry, auto-refractometry and slit lamp techniques. Overview of basic medical knowledge and terminology, systemic illnesses and cardiopulmonary resuscitation will also be covered as well as all aspects of ophthalmic surgical assisting. Course include a clinical component. (Part 1 of 2)

**Course Component:** Lecture

**OMT 32312 Introduction to Ophthalmic Technology: Basic Skills-I (Part 2 of 2) (6 units)**

Basic skills needed for an ophthalmic medical technologist including history taking, visual assessment, stereopsis, depth perception, lensometry, tonometry, pachymetry, auto-refractometry and slit lamp techniques. Overview of basic medical knowledge and terminology, systemic illnesses and cardiopulmonary resuscitation will also be covered as well as all aspects of ophthalmic surgical assisting. Course include a clinical component. (Part 2 of 2)

**Course Component:** Lecture

Prerequisite: OMT 32311.

**OMT 4122 Advanced Diagnostics I (3 units)**

Introduction to contact lenses including types, fitting procedures and techniques, case and storage procedures, indications for use, patient instruction, complication and therapeutic uses. Advanced motility problems, the diagnosis and treatment of amblyopia, comitant and incomitant deviations, and advanced testing techniques. Advanced photography, topics include slit-lamp and color fundus digital and film photography, equipment and procedures, fluorescein angiography and ICG basis and procedures as well as interpretation of various retinal findings. Course includes a clinical component.

**Course Component:** Lecture

Prerequisite: OMT 3127.

**OMT 4123 Ophthalmic Pharmacology and Microbiology (3 units)**

Ophthalmic medications, basics of mechanism of action, indications for use, dosage, sites of action, side effects, proper instillation techniques abbreviations used with emphasis on glaucoma drug therapies.

**Course Component:** Lecture

**OMT 4125 Ophthalmic Basic Science Seminars (3 units)**

Complete ophthalmology lecture series detailing the anatomy and physiology of the eye, ocular diseases and disorders encompassing both the more common conditions to the more complicated cases, proper intervention and management techniques.

**Course Component:** Lecture

**OMT 41251 Ophthalmic Basic Science Seminars (Part 1 of 2)**

Complete ophthalmology lecture series detailing the anatomy and physiology of the eye, ocular diseases and disorders encompassing both the more common conditions to the more complicated cases, proper intervention and management techniques. (Part 1 of 2)

**Course Component:** Lecture

**OMT 41252 Ophthalmic Basic Science Seminars (Part 2 of 2) (3 units)**

Complete ophthalmology lecture series detailing the anatomy and physiology of the eye, ocular diseases and disorders encompassing both the more common conditions to the more complicated cases, proper intervention and management techniques. (Part 2 of 2)

**Course Component:** Lecture

**OMT 4126 Specialized Diagnostics (3 units)**

Electroretinogram (ERG), electro-oculogram (EOG) and the visual evoked potential (VEP) including clinical use, components, recording procedures and measurements. This course will also examine the anatomy of the photosensitive pigments, bleaching process, photoregeneration and light and dark adaptation. Examination procedures of the low vision patient, including special equipment and techniques. Other topics include blindness, subnormal vision and optical principles of magnification.

**Course Component:** Lecture

**OMT 4127 Advanced Diagnostics II (3 units)**

Advanced techniques for ocular biometry, B-scan ultrasound screening and ultrasound biomicroscopy (UBM), including interpretation of ocular pathology on ultrasound. Advanced techniques for manual and automated perimetry, exploration of visual defects, quantification of scotomas, and interpretation of visual field patterns. Course includes a clinical component.

**Course Component:** Lecture

Prerequisite: OMT 3124.

**OMT 4128 Ophthalmic Abnormalities and Disorders (3 units)**

Common and exotic eye disorders and diseases including recognition pattern, special testing and methods of treatment. Pathological condition of the eye, eyelids, conjunctiva, cornea and lachrimal apparatus such as inflammation, infection, congenital, acquired, traumatic, and degenerative disease. This course will also cover the management of ocular emergencies from proper triage of patients to immediate intervention, long-term complication and preventative measures.

**Course Component:** Lecture

**OMT 4201 Ophthalmic Technology: Basic Skills II (6 units)**

Evaluation of pupil function, specular microscopy and cell analysis, direct and indirect ophthalmoscopy, advanced slit lamp examination techniques and the basics of ophthalmic equipment maintenance. Other topics include properties and clinical uses of various lasers used in ophthalmology with emphasis on the technical operations of the excimer laser for refractive and therapeutic surgeries. Course includes a clinical component.

**Course Component:** Lecture

Prerequisite: OMT 3124.

**OMT 42011 Basic Skills II (Part 1 of 2)**

Evaluation of pupil function, specular microscopy and cell analysis, direct and indirect ophthalmoscopy, advanced slit lamp examination techniques and the basics of ophthalmic equipment maintenance. Other topics include properties and clinical uses of various lasers used in ophthalmology with emphasis on the technical operations of the excimer laser for refractive and therapeutic surgeries. Course includes a clinical component. (Part 1 of 2)

**Course Component:** Lecture

Prerequisite: OMT 3124.

**OMT 42012 Basic Skills II (Part 2 of 2) (6 units)**

Evaluation of pupil function, specular microscopy and cell analysis, direct and indirect ophthalmoscopy, advanced slit lamp examination techniques and the basics of ophthalmic equipment maintenance. Other topics include properties and clinical uses of various lasers used in ophthalmology with emphasis on the technical operations of the excimer laser for refractive and therapeutic surgeries. Course includes a clinical component. (Part 2 of 2)

**Course Component:** Lecture

Prerequisite: OMT 42011

**OMT 4224 Clinical Application-II (6 units)**

Continuation of the previous clinical experiences completed in year-3. Students will be given more autonomy in patient care. Emphasis will be placed on acquiring more specialized testing skills and techniques. Final course in ophthalmic patient care experience. The student will be required to perform at a high level of competence in all phases of ophthalmic technology as they are expected to function as a full member of the health team in all clinical areas.

**Course Component:** Lecture

**OMT 42241 Clinical Application-II (Part 1 of 2)**

Continuation of the previous clinical experiences completed in year-3. Students will be given more autonomy in patient care. Emphasis will be placed on acquiring more specialized testing skills and techniques. Final course in ophthalmic patient care experience. The student will be required to perform at a high level of competence in all phases of ophthalmic technology as they are expected to function as a full member of the health team in all clinical areas. (Part 1 of 2)

**Course Component:** Lecture

**OMT 42242 Clinical Application-II (Part 2 of 2) (6 units)**

Continuation of the previous clinical experiences completed in year-3. Students will be given more autonomy in patient care. Emphasis will be placed on acquiring more specialized testing skills and techniques. Final course in ophthalmic patient care experience. The student will be required to perform at a high level of competence in all phases of ophthalmic technology as they are expected to function as a full member of the health team in all clinical areas. (Part 2 of 2)

**Course Component:** Lecture

Prerequisite: OMT 42241.