

OPHTHALMIC MEDICAL TECHNOLOGY (OMT)

Courses in ophthalmic medical technology (OMT) are offered by the Faculty of Medicine

OMT 3122 Ocular Anatomy and Physiology (3 units)

Comprehensive study of ocular anatomy and physiology, focusing on the structure and function of the human eye and its supporting systems, mechanisms behind eye movements, intraocular pressure regulation, and the neural pathways involved in vision. Common ocular conditions and diseases are explored, providing a foundational understanding of eye health and the biological principles that underpin ocular function.

Course Component: Lecture

OMT 3123 Optics and Refraction (3 units)

In-depth exploration of optics and refraction, focusing on the behavior of light as it interacts with various media and including principles of reflection, refraction, and dispersion, as well as the study of lenses, mirrors, and optical instruments with the goal of measuring refractive errors of the eye. Application of mathematical models to solve real-world problems in light propagation, image formation, and optical design. Theoretical concepts are combined with practical applications, emphasizing the role of optics in technology, medicine, and everyday life.

Course Component: Lecture

OMT 3124 Introduction of Ophthalmic Diagnostic Techniques (3 units)

Comprehensive introduction to ophthalmic photography and perimetry and the techniques and technologies used in capturing detailed images of the eye and assessing the visual field. Exploration of various imaging modalities along with their clinical applications in diagnosing and monitoring ocular diseases. Hands-on training and theoretical knowledge prepares students to proficiently use ophthalmic imaging and perimetry to enhance patient care and diagnosis.

Course Component: Lecture

OMT 3125 Clinical Application I (3 units)

Development and application of clinical skills essential for the examination and diagnosis of ophthalmology patients, including comprehensive eye exams, history-taking, visual acuity assessment, slit-lamp biomicroscopy, lensometry, intraocular pressure measurement, and other core clinical techniques in a real-world clinical setting.

Course Component: Theory and Laboratory

OMT 31251 Clinical Application I (Part 1 of 2)

Development and application of clinical skills essential for the examination and diagnosis of ophthalmology patients, including comprehensive eye exams, history-taking, visual acuity assessment, slit-lamp biomicroscopy, lensometry, intraocular pressure measurement, and other core clinical techniques in a real-world clinical setting. (Part 1 of 2)

Course Component: Theory and Laboratory

OMT 31252 Clinical Application I (Part 2 of 2) (6 units)

Development and application of clinical skills essential for the examination and diagnosis of ophthalmology patients, including comprehensive eye exams, history-taking, visual acuity assessment, slit-lamp biomicroscopy, lensometry, intraocular pressure measurement, and other core clinical techniques in a real-world clinical setting. (Part 2 of 2)

Course Component: Theory and Laboratory

Prerequisite: OMT 31251.

OMT 3126 Ophthalmic Medical Subspecialties (3 units)

Exploration of eye diseases with a focused study on glaucoma, neuro-ophthalmic disorders, and corneal pathology. Examination of the causes, clinical features, diagnostic approaches, and management strategies for common and sight-threatening ocular conditions. Special emphasis is placed on understanding the pathophysiology, diagnosis, and treatment of glaucoma, as well as disorders affecting the optic nerve, visual pathways, and cornea.

Course Component: Lecture

Prerequisite: OMT 3122.

OMT 3127 Advanced Ophthalmic Diagnostic Techniques (3 units)

Ocular motility and axial biometry and exploration of the fundamentals and advanced concepts of eye movement dynamics and measurement techniques used to assess axial length, corneal curvature, and other key ocular parameters. Theoretical instruction with practical training in various diagnostic tools including A-scan ultrasound, and basic principles of ultrasound, as well as IOL calculations.

Course Component: Theory and Laboratory

Prerequisite: OMT 3124.

OMT 3128 Ophthalmic Basic Science Seminars (6 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 Ophthalmic Technology: Basic Clinical Skills-I (6 units)

Foundational training in basic clinical skills and examination techniques in ophthalmology needed for comprehensive eye exams. Experiential learning of the proper use of ophthalmic instruments such as the slit lamp, direct ophthalmoscope, keratometer and lensometer, as well as techniques for assessing visual acuity, and intraocular pressure. The course covers the systematic approach to eye examinations, including history-taking, identifying signs of common ocular conditions, and performing basic assessments of the anterior and posterior segments of the eye. Through hands-on practice and guided instruction, students will gain the confidence and competence to conduct thorough eye exams, identify potential pathologies, and improve patient care in a clinical setting.

Course Component: Praticum

OMT 32311 Ophthalmic Technology: Basic Clinical Skills-I (Part 1 of 2)

Foundational training in basic clinical skills and examination techniques in ophthalmology needed for comprehensive eye exams. Experiential learning of the proper use of ophthalmic instruments such as the slit lamp, direct ophthalmoscope, keratometer and lensometer, as well as techniques for assessing visual acuity, and intraocular pressure. The course covers the systematic approach to eye examinations, including history-taking, identifying signs of common ocular conditions, and performing basic assessments of the anterior and posterior segments of the eye. Through hands-on practice and guided instruction, students will gain the confidence and competence to conduct thorough eye exams, identify potential pathologies, and improve patient care in a clinical setting. (Part 1 of 2)

Course Component: Praticum

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

Foundational training in basic clinical skills and examination techniques in ophthalmology needed for comprehensive eye exams. Experiential learning of the proper use of ophthalmic instruments such as the slit lamp, direct ophthalmoscope, keratometer and lensometer, as well as techniques for assessing visual acuity, and intraocular pressure. The course covers the systematic approach to eye examinations, including history-taking, identifying signs of common ocular conditions, and performing basic assessments of the anterior and posterior segments of the eye. Through hands-on practice and guided instruction, students will gain the confidence and competence to conduct thorough eye exams, identify potential pathologies, and improve patient care in a clinical setting. (Part 2 of 2)

Course Component: Praticum

Prerequisite: OMT 32311.

OMT 4122 Auxiliary Ophthalmic Assessments (3 units)

Comprehensive overview of advanced ocular motility, contact lens fitting, and low vision rehabilitation, integrating key concepts and clinical skills essential for effective eye care. Evaluation and management of ocular motility disorders, gaining an understanding of binocular vision, strabismus, and nystagmus. Introduction to low vision rehabilitation, learning to assess visual impairment and apply optical and non-optical aids to enhance functional vision.

Course Component: Theory and Laboratory

Prerequisite: OMT 3127.

OMT 4123 Ophthalmic Pharmacology and Microbiology (3 units)

In-depth exploration of the drugs and microorganisms that affect the eye and its surrounding structures. Study of pharmacokinetics and pharmacodynamics of ocular medications, including topical, systemic, and injectable therapies used to treat conditions such as glaucoma, infections, inflammation, and retinal diseases. Role of antibiotics, antivirals, antifungals, and other pharmaceutical agents in managing ocular infections are covered.

Course Component: Theory and Laboratory

OMT 4125 Ophthalmic Basic Science Research Project (6 units)

In-depth exploration of ophthalmic topics through critical discussion, literature review, and a hands-on clinical research project. Select a relevant research question within the field of ophthalmology, design and conduct a clinical research project, and analyze data to draw evidence-based conclusions, with emphasis on academic inquiry and practical application with guidance from faculty mentors.

Course Component: Research

Prerequisite: OMT 3128.

OMT 41251 Ophthalmic Basic Science Research Project (Part 1 of 2)

In-depth exploration of ophthalmic topics through critical discussion, literature review, and a hands-on clinical research project. Select a relevant research question within the field of ophthalmology, design and conduct a clinical research project, and analyze data to draw evidence-based conclusions, with emphasis on academic inquiry and practical application with guidance from faculty mentors. (Part 1 of 2)

Course Component: Research

Prerequisite: OMT 3128.

OMT 41252 Ophthalmic Basic Science Research Project (Part 2 of 2) (3 units)

In-depth exploration of ophthalmic topics through critical discussion, literature review, and a hands-on clinical research project. Select a relevant research question within the field of ophthalmology, design and conduct a clinical research project, and analyze data to draw evidence-based conclusions, with emphasis on academic inquiry and practical application with guidance from faculty mentors. (Part 2 of 2)

Course Component: Research

Prerequisite: OMT 41251.

OMT 4126 Visual Form and Function Testing (3 units)

Advanced techniques for visualizing and assessing ocular structures and functions, with an emphasis on both diagnostic imaging and electrophysiological testing. Principles and applications of ophthalmic electrodiagnostic tests, including electroretinography (ERG), visual evoked potentials (VEP), and electrooculography (EOG), which are essential for evaluating retinal function, optic nerve health, and visual pathways. Hands-on experience with imaging modalities such as fundus photography, optical coherence tomography (OCT), fluorescein angiography, and fundus autofluorescence to interpret findings to support diagnosis and monitoring of ocular diseases.

Course Component: Theory and Laboratory

OMT 4127 Specialized Diagnostic Techniques (3 units)

Theoretic and practical instruction on techniques for ophthalmic ultrasound [A-scan and B-scan] and perimetry. With a focus on the use of diagnostic ultrasound and standardized echography, as well as perimetry, in the presence of eye disease.

Course Component: Theory and Laboratory

Prerequisite: OMT 4122.

OMT 4128 The Eye in Health and Disease (3 units)

Ocular disease and disorders and systemic diseases affecting the eye as well as the ways in which systemic diseases can impact eye health. Management and assessment of ocular emergencies from proper triage of patients to immediate intervention, long-term complication and preventative measures.

Course Component: Theory and Laboratory

Prerequisite: OMT 3126.

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

Hands-on training in essential diagnostic and therapeutic techniques used in ophthalmic practice. Conduct thorough pupil assessments, perform biomicroscopy (slit-lamp examination), and use ophthalmoscopy to evaluate the health of the anterior and posterior segments of the eye. Learn fundamentals of lasers in ophthalmology, including their applications in various treatments like refractive surgery and retinal therapy with experience in surgical assisting. Practical knowledge in ophthalmic equipment maintenance to ensure the longevity and accuracy of diagnostic tools.

Course Component: Practicum

Prerequisite: OMT 3231.

OMT 42011 Ophthalmic Technology: Basic Clinical Skills II (Part 1 of 2)

Hands-on training in essential diagnostic and therapeutic techniques used in ophthalmic practice. Conduct thorough pupil assessments, perform biomicroscopy (slit-lamp examination), and use ophthalmoscopy to evaluate the health of the anterior and posterior segments of the eye. Learn fundamentals of lasers in ophthalmology, including their applications in various treatments like refractive surgery and retinal therapy with experience in surgical assisting. Practical knowledge in ophthalmic equipment maintenance to ensure the longevity and accuracy of diagnostic tools. (Part 1 of 2)

Course Component: Practicum

Prerequisite: OMT 3231.

OMT 42012 Ophthalmic Technology: Basic Clinical Skills II (Part 2 of 2) (3 units)

Hands-on training in essential diagnostic and therapeutic techniques used in ophthalmic practice. Conduct thorough pupil assessments, perform biomicroscopy (slit-lamp examination), and use ophthalmoscopy to evaluate the health of the anterior and posterior segments of the eye. Learn fundamentals of lasers in ophthalmology, including their applications in various treatments like refractive surgery and retinal therapy with experience in surgical assisting. Practical knowledge in ophthalmic equipment maintenance to ensure the longevity and accuracy of diagnostic tools. (Part 2 of 2)

Course Component: Practicum

Prerequisite: OMT 42011

OMT 4224 Clinical Application-II (3 units)

Advanced clinical experience focused on the clinical application of advanced patient ocular examination techniques and diagnostic testing in ophthalmology including performing and interpreting advanced diagnostic tests with emphasis on clinical competence and proficiency.

Course Component: Practicum

Prerequisite: OMT 3125.

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

Advanced clinical experience focused on the clinical application of advanced patient ocular examination techniques and diagnostic testing in ophthalmology including performing and interpreting advanced diagnostic tests with emphasis on clinical competence and proficiency. (Part 1 of 2)

Course Component: Practicum

Prerequisite: OMT 3125.

OMT 42242 Clinical Application-II (Part 2 of 2) (3 units)

Advanced clinical experience focused on the clinical application of advanced patient ocular examination techniques and diagnostic testing in ophthalmology including performing and interpreting advanced diagnostic tests with emphasis on clinical competence and proficiency. (Part 2 of 2)

Course Component: Practicum

Prerequisite: OMT 42241.