

PATH - Pathology

PATH 500 Introduction to Anatomical Laboratories (1 Credit Hour)

This course serves as an introduction to laboratory environments commonly seen in the practice of Pathology and fulfills training requirements necessary for continued study in the Pathologists' Assistant Program. Training will address bloodborne pathogen safety, laboratory safety and handling of biohazardous materials and waste. Proper use of Personal Protective Equipment (PPE) and laboratory regulations of the College of American Pathologists (CAP), OSHA and the Joint Commission will also be addressed. Training in human subjects' research regulations and requirements (via CITI training) will also be a component of this course. As a requirement for completion of this course, students will attain a two-year certification (by the American Heart Association) in Basic Life Support for Healthcare Providers (BLS-P). This course will also serve as an introduction to the functional, operational and administrative aspects of laboratories including the Surgical Pathology Laboratory at Sentara Norfolk General Hospital, the EVMS Biorepository and LifeNet Health.

PATH 501 Medical Ethics (2 Credit Hours)

This is a hybrid course having both an online component and face-to-face classroom discussions. The course was developed by Edx Inc., in collaboration with the faculty of Georgetown University, Kennedy Institute of Ethics. The course content and videos are equivalent to the (PHLX101-03X) course offered at Georgetown University. The in-house utilization of the course has supplemental features that include periodic interactive face-to-face classroom discussions on selected topics and themes. These discussions, conducted either as Blackboard postings or as classroom exchanges, personalize the course content. The course presents five major themes of bioethics and each of the five major themes is highlighted by a classroom discussion on the topic. Each week, a new unit will become available to the students either online or Blackboard. Presented in this course are the following themes: Autonomy, Bioethics and the human body, Bioethics as it pertains to the beginning and end of life and bioethics that have a global impact.

PATH 502 Educational Methodologies (2 Credit Hours)

This is an online component course that introduces the student to a variety of learning and teaching methods for health professionals. The course emphasizes the integration of knowledge and experience in preparing the student to function effectively in clinical clerkships. It covers a broad range of topics designed to improve learning skills, teaching, interactions with supervisors, residents, how to interact effectively with preceptors, how to become an effective preceptor to students and residents. Core themes include orienting the student learner, defining and applying feedback, application and analysis of effective questioning to promote knowledge and comprehension, strategies used in clinical educational encounters, role modeling, entrustment and behavioral elements of professionalism in the clinical setting.

PATH 503 Essential Physiology & Anatomy (5 Credit Hours)

This is a comprehensive introductory course to integrative organ system physiology and homeostatic regulatory mechanisms. Interrelationships of structure and function are reinforced throughout the course. The flow of the course is intended to interphase closely with the topic material being taught concurrently in Histology (PATH 513). The anatomy primer portion of the course introduces interactive learning exercises, videos and diagrams that expose the student to the major structural features that they will encounter in Anatomical Foundations (PATH 504).

PATH 504 Anatomical Foundations (5 Credit Hours)

The course is divided into 4 modular units of learning. The sequence is: back & upper extremities; head and neck; thorax & abdomen; pelvis & lower extremity. This course affords the student a coherent, sequential approach to the dissection and study of human anatomy at the gross level with applied clinical relationships for PA, SA & PathA students. The general objective is for the experience of dissection to lead to a 3-D visual concept of the human body in order to relate this to future professional settings. This 3-D dissection experience is extrapolated to all the other bodies in the anatomy lab providing the student with the anatomical basis for understanding and appreciating the variations and complexities of the human body. Students should be able to demonstrate to each other all the different normal structures and any pathological structures detailed in the student learning objectives for specific lectures. Students should be able to integrate materials in a particular module to talk about clinical/surgical functions. These objectives are evaluated by clinical scenario types of questions on exams.

PATH 506 Microbiology (2 Credit Hours)

This course will cover Medical Bacteriology and includes an introduction to bacteria biology including structure, growth, genetics, pathogenesis, mechanism-of-action of antimicrobial drugs and the fundamentals of disease prevention. Specific bacteria pathogens along with the human diseases they cause will be discussed. Emphasis will be on optimum methods of obtaining samples for culture and identification. Essential concepts related to life cycles, pathogenicity and aseptic technique will be introduced. One lecture each will introduce basic concepts in medical virology, medical mycology and medical parasitology.

PATH 507 Neuroanatomy (2 Credit Hours)

This course is a comprehensive introduction to integrative nervous system anatomy and physiology. Interrelationships of structure and function are reinforced throughout the course, including neurological cases. The flow of the course is intended to interphase closely with the topic material being taught concurrently in Mechanism of Disease (PATH 516) and Pathophysiology (PATH 510). The Neuroanatomy course introduces interactive learning exercises based on interactive lectures, clinical cases and material demonstrations using videos, materials and diagrams that expose the student to the major structural and functional features.

PATH 508 Medical Photography (2 Credit Hours)

This course applies the basic foundations of digital photography to medical photo documentation techniques. Students will learn principles of light, optics, exposure, metering, lighting, special filters, annotation and archiving of images both at the macro and microscopic level. Learning methodologies include lectures and application in a practicum setting.

PATH 509 Autopsy & Surgical Path Techniques (3 Credit Hours)

This course is a combination of lectures and laboratory sessions. Students will be taught established surgical pathology and autopsy techniques. Autopsy techniques will include evisceration and dissection methods. Historical context and legal considerations will also be introduced. Surgical pathology topics will include general dictation and grossing techniques as well as specific organ/system methods, as well as the AJCC Cancer Staging Manual criteria and CAP protocols. There will be a review of laboratory operations, coding and laboratory safety as it applies to the Pathologists' Assistant. The laboratory portion of the course will include fixed, porcine organ/tissue grossing, frozen sections and dictation exercises. Students will be oriented to the facilities of Sentara Norfolk General Hospital Surgical Pathology and the Tidewater District Office of the Virginia Medical Examiner's Office.

PATH 510 Pathophysiology (4 Credit Hours)

This course is a didactic presentation of human pathophysiology designed for Health Professions students. A clear understanding of the etiology, pathogenesis, pathophysiology and morphologic changes of disease serves as an essential basis for the understanding and competent practice in all areas of medicine. Students in this course will: Develop a background and vocabulary in pathophysiology; acquire an understanding of general physiologic/pathophysiologic processes such as inflammation, repair, neoplasia and senescence; survey pathophysiologic processes and morphologic changes which manifest in organ systems and establish a basis for the understanding of disease; exercise an approach to clinical problems which evaluates symptoms, signs and findings with a knowledge of pathophysiology to formulate a diagnosis with due consideration of differential diagnoses.

PATH 511 Organ System Pathology (4 Credit Hours)

This course is a comprehensive introduction to integrative organ system pathology, and will include interrelationships of structure and function are reinforced throughout the course. The flow of the course is intended to interphase with topic material being taught concurrently in Autopsy and Surgical Pathology Techniques (PATH 509). The course introduces an interactive learning experience that exposes the student to all the major organ system pathology as is presented in Robbins Pathology and will provide the student with a strong background for fulfilling the competency requirements for a career as a Pathologists' Assistant.

PATH 512 Histotechnology I (2 Credit Hours)

This course focuses on the laboratory skills required to function in a clinical or research histology facility including specimen acquisition and fixation, tissue processing, embedding, sectioning and staining. Paraffin-based techniques with H&E/special stains are introduced. The student is expected to gain experience in cryomicrotomy and is introduced to a variety of immunohistochemical techniques. Chemical and environmental safety issues are covered in depth and emphasized. Proper record-keeping practices including quality control and quality assurance requirements are also reinforced. Responsible lab management procedures are emphasized including essential inventory control concerns, as well as instrumentation, care, quality assurance and maintenance.

PATH 513 Histology Health Professions (2 Credit Hours)

This course provides students with an understanding of the normal architecture of cells and an opportunity to gain appreciation of how cellular components specialize to form primary tissues and how these tissues give rise to organs and organ systems. The course allows for the evaluation of the structure-function relationships in normal cells, tissues and organs. Students will acquire morphological pattern recognition and cell/tissue/organ identification skills at the light microscopic level and to a lesser extent at the electron microscope level through a lecture-lab combination, systems-based approach. Students will be introduced to proper use of a light microscope and essentials of microscopy. Utilizing light microscopes in a laboratory setting and on-line tutorials to recognize the morphology of structures, students will relate these structures to their function. This course is a critical prerequisite to Pathology and Pathophysiology.

PATH 514 Medical Terminology (2 Credit Hours)

This is an interactive online and temporally guided self-paced course conducted using Quizlet. The course provides the student with an extensive vocabulary building set of exercises in medical terminology. The course is constructed with multiple sets of self-educational exercises that instruct the student in: General rules governing medical nomenclature, general rules pertaining to plurality and pronunciation, common medical terms and conditions, prefixes and suffixes of medical terms, covering AAMA suggested list of medical terms derived from Robbins Pathology textbook. The individual study sets are designed to cover each individual chapter of Robbins Pathology textbook. The students are introduced to CPT coding for surgical pathology used by the American Medical Association.

PATH 515 Embryology (2 Credit Hours)

This course is a comprehensive introduction to human embryology with application to pathology. The course is intended to interface with the topics taught concurrently in Anatomical Foundations (PATH 504).

PATH 516 General Mechanisms of Disease (3 Credit Hours)

The General Mechanisms of Disease module serves as a transition from the foundational modules to the organ systems modules. It focuses on the general mechanisms of disease, introducing students to microbiology and infectious disease, principles for discriminating healthy from unhealthy conditions and predicting clinical manifestations. The course consists of face-to-face lectures by basic science faculty focusing on major principles and their biomedical applications. Exams are used to assess foundational knowledge and facilitate knowledge integration and are designed to facilitate student review and self-assessment. The PathA student will complete approximately 60 contact hours. The course will have three major non-comprehensive multiple choice exams each covering approximately 6 to 8 hours of lecture content. The course will assess topic-specific foundational knowledge and facilitate disease knowledge integration.

PATH 600 Clinical Rotations (8 Credit Hours)

This course is the first of three consecutive courses comprising the Supervised Clinical Practice (SCP) component of the EVMS Pathologists' Assistant Program. This course consists of immersive clinical experiences in the various disciplines where Pathologists' Assistants may serve. Students will function under the direct supervision and guidance of site preceptors (Pathologists, Pathologists' Assistants, or other appropriate laboratory professionals). These rotations will include experience in Surgical Pathology, Medical Autopsy Pathology, Forensic Autopsy Pathology, Laboratory Management and Bio-Banking/Biorepository Sciences. The settings for these experiences will include district offices of the Virginia Medical Examiner's Office, military and Veterans Administration hospitals, community hospitals, larger private hospital complexes, academic medical centers and the EVMS Biorepository. Students will apply the knowledge and the skills developed in previous didactical courses to develop skills necessary for clinical practice. This course will introduce the student to the demands of the working environment and expectations of a practicing Pathologists' Assistant.

PATH 601 Certificate Completion Program (2 Credit Hours)

A new self-paced online certificate program, University of Pathology Informatics (UPI) leverages case-based learning to develop critical knowledge of informatics concepts. UPI is a joint effort between the American Society for Clinical Pathology (ASCP) and the Association for Pathology Informatics (API) focusing on the four laboratory informatics competencies: Information Fundamentals, Information Systems, Workflow & Processes and Governance & Management. This certificate program consists of 20 custom courses; 12 core and eight elective courses are required to earn the certificate. UPI utilizes a case-based approach, where you will act as the project leader in developing a pathology informatics needs assessment for a laboratory.

PATH 602 Special Topics: Pediatric Pathology (2 Credit Hours)

This is an online course that introduces the student to a variety of commonly encountered pediatric pathology cases. The course emphasizes the integration of knowledge obtained from prior pathology courses and prepares the student to function effectively in clinical clerkships where pediatric samples are encountered. It covers a broad range of topics designed to improve knowledge specific to pediatric cases and samples. Following successful completion of this course the student should be able to interact with pathologists and residents specialized in the field of pediatric pathology to carry out the function of a Pathologists' Assistant.

PATH 603 Clinical Rotations (8-10 Credit Hours)

This course is the second of three consecutive courses comprising the Supervised Clinical Practice (SCP) component of the EVMS Pathologists' Assistant Program. This course also consists of immersive clinical experiences in the various disciplines where Pathologists' Assistants may serve. Students will function under the direct supervision and guidance of site preceptors (Pathologists, Pathologists' Assistants, or other appropriate laboratory professionals). These rotations will include experience in Surgical Pathology, Medical Autopsy Pathology, Forensic Autopsy Pathology, Laboratory Management and Bio-Banking/Biorepository Sciences. The settings for these experiences will include district offices of Virginia Medical Examiner's Office, military and Veterans Administration hospitals, community hospitals, larger private hospital complexes, academic medical centers and the EVMS Biorepository. Students will continue to develop skills for clinical practice, an emphasis will be placed in functioning with greater autonomy and efficiency. They will expand their repertoire of specimen types and perform duties of progressively increasing complexity. Learning objectives addressed in prior courses or clinical rotations will be reinforced and emphasized. This course will prepare the student to meet the demands of the working environment and expectations of a practicing Pathologists' Assistant.

PATH 604 Lab Management Certificate (2 Credit Hours)

This course uses the Lab Management University (LMU) self-paced online certificate program that improves competencies in laboratory management. It will teach the student practical, day-to-day skills needed to function successfully in a laboratory environment. All core concepts of laboratory management are introduced. The Fundamentals Certificate of Completion in Laboratory Management is awarded on completion of 25 courses across six core competencies: Leadership, Personnel Management, Operations, Financial Management, Informatics and Compliance. Students select and complete 25 courses under the Fundamentals program at their own pace, receiving their Certificate of Completion in Laboratory Management upon successful completion.

PATH 605 Gross Anatomy Teaching Assistant (1 Credit Hour)

The students will participate in ongoing educational activity in the Gross Anatomy course for first year medical students or physician assistants and surgical assistants. It is anticipated that the PathA teaching assistant rotation (60 contact hours; approx. 8 weeks) will facilitate the learning experience of students currently enrolled in the course. Activities that the teaching assistant will conduct include dissection of cadavers for prosection presentation, photo documentation of dissection specimens of sufficient quality to be used for educational purposes. Conduct processing, dictation, and photo documentation of collected specimens of various pathologies encountered in the cadavers. The teaching assistants will participate in setting up formative quizzes, assisting in setting up of laboratory practical exams, opening of the calvarium and removal of brains and evaluations of student presentations.

PATH 606 Special Topics: Neuropathology (1 Credit Hour)

This is an online course that introduces the student to a variety of commonly encountered neuropathology cases. The course emphasizes the integration of knowledge obtained from prior pathology courses and prepares the student to function effectively in clinical clerkships where neuropathology samples are encountered. It covers a broad range of topics designed to improve knowledge specific to neuropathology cases and samples. Following successful completion of this course the student should be able to interact with pathologists and residents specialized in the field of neuropathology to carry out the function of a Pathologists' Assistant.

PATH 607 Clinical Rotations (4 Credit Hours)

This course is the final course of the Supervised Clinical Practice (SCP) component of the EVMS Pathologists' Assistant Program. This course consists of immersive clinical experiences in the various disciplines where Pathologists' Assistants may serve. Students will function under the direct supervision and guidance of site preceptors (Pathologists, Pathologists' Assistants, or other appropriate laboratory professionals). These rotations will include experience in Surgical Pathology, Medical Autopsy Pathology, Forensic Autopsy Pathology, Laboratory Management and Bio-Banking/Biorepository Sciences. The settings for these experiences will include district offices of Virginia Medical Examiner's Office, military and Veterans Administration hospitals, community hospitals, larger private hospital complexes, academic medical centers and the EVMS Biorepository. In this course, students will emphasize and refine the skills and abilities required of a practicing Pathologists' Assistant and will be capable of working with indirect supervision and with the independence expected of a PathA program graduate. Upon completion of this course, students will be fully competent in all essential duties of a PathA.

PATH 608 ASCP Certification Exam Prep (4 Credit Hours)

This seminar course is designed as a comprehensive review, study guide and self-evaluation tool with the goal of preparation for the American Society for Clinical Pathology Board of Certification (ASCP-BOC) Pathologists' Assistant certification examination. Students will have access to pre-course and post-course practice examinations and interactive study materials. Appropriate reference texts will be available as well as other review materials. This course will make use of the seminar format with students synthesizing material from multiple courses and disciplines into presentations to be shared with the class. The course will begin with a pre-course practice test to evaluate individual strengths and weaknesses in preparation of review for the ASCP-BOC Pathologists' Assistant Examination. Students will then be assigned seminar topics and will work in groups of two or three, to synthesize material and create presentations. Multiple disciplines (anatomy, pathology, histology, embryology, surgical pathology techniques, etc.) shall be included in the generation of review presentations and presentations will provide the foundation for seminars led by the assigned group. A post-course practice examination will allow the student to track their progress and identify any remaining points of weakness.

PATH 609 Graduate Seminar (2 Credit Hours)

This is a capstone research project designed to introduce the student to multiple elements of an original research project. The student will be responsible for selecting a topic in the discipline of Pathology to be worked up as a case-study finding or original research finding. The student will be responsible for the selection of the topic of interest, conducting literature search, compilation and analysis of the data material and writing of the findings in the form of an abstract and/or manuscript. Although not required, the reported findings should be of sufficient originality and scientific merit that it could be suitable for peer-review publication or presentation at a scientific meeting. The student will be responsible for writing and editing the final abstract, manuscript or report under the guidance of the Program Director. If the findings are submitted for publication, the student will be responsible for addressing reviewer comments and re-submission for publication with assistance from the Program Director. The course presents several major themes and opportunities of instructional methods related to research techniques and methods in health profession education. This course will allow the student to receive instructional and scientific guidance from the Program Director for initiating and completing a case-study report or other approved research project of interest. The culmination of the project will require that the student present the findings in an open seminar setting either in-house or at an approved scientific meeting to enhance the learning experience. The students will have the opportunity to participate in multiple discussions from the audience during their presentation.