Medical Diagnostic & Translational Sciences

Web Site: http://www.odu.edu/mdts (http://www.odu.edu/mdts/)

Harold Riethman, Chair

The School of Medical Diagnostic and Translational Sciences offers a coordinated program of courses and clinical experiences leading to degrees of Bachelor of Science in Medical Laboratory Science and Bachelor of Science in Nuclear Medicine Technology and a post-baccalaureate certificate in cytotechnology. Students may also pursue a major in cytotechnology through the Bachelor of Science in Health Sciences degree program. Additional information on the cytotechnology major and certificate can be found in the section for the Bachelor of Health Sciences degree. In addition, the school offers a minor in medical laboratory science and a degree completion program for certified medical laboratory technicians (MLT) pursuing a baccalaureate degree. For those seeking a graduate certificate in molecular diagnostics, please refer to the ODU Graduate Catalog.

Programs

Bachelor of Science in Medical Laboratory Science Program

- Medical Laboratory Science (BSMLS) (http://catalog.odu.edu/undergraduate/health-sciences/medical-diagnostic-translational-sciences/medical-laboratory-science-bsmls/)
- Medical Laboratory Science Degree Completion Major (BSMLS) (http://catalog.odu.edu/undergraduate/health-sciences/medical-diagnostic-translational-sciences/medical-laboratory-science-degree-completion-bsmls/)

Bachelor of Science in Nuclear Medicine Technology Program

- Nuclear Medicine Technology (BSNMT) (http://catalog.odu.edu/undergraduate/health-sciences/medical-diagnostic-translational-sciences/nuclear-medicine-technology-bsnmt/)

Minor Program

- Medical Laboratory Science Minor (http://catalog.odu.edu/undergraduate/health-sciences/medical-diagnostic-translational-sciences/medical-laboratory-science-minor/)

Courses

Cytotechnology (CYTO)

CYTO 403 Gynecological Screening Laboratory (3 Credit Hours)
Laboratory experience in the screening of gynecological smears.
Prerequisites: Acceptance into the Cytotechnology Program and/or permission of the cytotechnology program director
Pre- or corequisite: CYTO 405 and CYTO 415

CYTO 404 General Pathology (3 Credit Hours)
This course is an overview of general disease processes and causes in the human. All body systems will be covered including respiratory, gastrointestinal, circulatory, nervous, reproductive, and urinary. Aging, dietary, and stress factors will be discussed in the disease process. Bacteria, fungi, and viruses will be discussed in general and for each body system. Neoplasms will be covered for each body site. This course will be of benefit to anyone interested in diseases of the human body or entering the medical field. (cross listed with MLS 401)
Prerequisites: junior standing
Pre- or corequisite: BIOL 250 and BIOL 251 or equivalent

CYTO 405 Normal Gynecological Cytology (3 Credit Hours)
Introduction to histological and cytological features of the normal female genital tract with emphasis on normal and non-neoplastic abnormalities. Principles of cytological diagnostic techniques will be discussed.
Prerequisites: Acceptance into the Cytotechnology Program or permission of program director
Pre- or corequisite: CYTO 403

CYTO 407 Clinical Histology (3 Credit Hours)
This course consists of the systematic study of cellular components as well as the grouping/organization of tissues into major 'organ' systems. Additionally, the cellular basis of examples of human diseases will be studied. Microscopic and virtual identification and morphology of cells, tissues, and organ substructures will be emphasized. This course will be of benefit to anyone interested in diseases of the human body or entering the medical field.
Prerequisites: permission of the instructor

CYTO 415 Abnormal Gynecological Cytology (4 Credit Hours)
Introduction to diagnostic cytological techniques and pathology of the female reproductive tract with emphasis on premalignant and malignant changes.
Pre- or corequisite: CYTO 403 and CYTO 405

CYTO 424 Respiratory Cytology (4 Credit Hours)
Principles of diagnostic cytology and pathology of the respiratory tract, including benign conditions, inflammatory and infectious diseases, premalignant conditions and primary and metastatic malignancies.
Prerequisites: Admission to the cytotechnology program
Pre- or corequisite: CYTO 405 and CYTO 415

CYTO 428W Cytopreparatory Techniques and Procedures (3 Credit Hours)
Introduction to collection, processing and preparation of cytologic specimens from all body sites and general laboratory procedures and regulations. A portion of this course consists of practical experience acquired in the laboratory. Practical experience will be perfected during clinical site rotations throughout the Cytotechnology Program. Students will learn how to properly write lab reports and papers related to health science fields. This is a writing intensive course.
Prerequisites: Pre-admission to the Cytotechnology Program or Program Director permission; completion of ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C with a grade of C or higher

CYTO 430 Cytology Laboratory Operations & Ancillary Techniques (3 Credit Hours)
The course offers an introduction to laboratory regulations and ancillary diagnostic techniques. In addition, this course studies the cytology lab's role in conforming to regulatory and accrediting agency requirements. Students will learn ancillary techniques that are used in the cytopathology practice.
Prerequisites: CYTO 428W

CYTO 442 Gastro-Intestinal Cytology (2 Credit Hours)
Study of the pathology and cytology of the gastro-intestinal tract, including the oral cavity, esophagus, stomach, colon, and rectum. Emphasis on normal conditions, benign inflammatory, infections, parasitic conditions, gastric ulcers, premalignant and malignant lesions.
Pre- or corequisite: CYTO 405 and CYTO 415

CYTO 444 Genitourinary Cytology (2 Credit Hours)
Study of the pathology and cytology of the genitourinary tract, with emphasis in normal conditions, benign inflammatory and infectious conditions, crystals, premalignant and malignant lesions.
Pre- or corequisite: CYTO 405 and CYTO 415

CYTO 445 Breast Cytology (2 Credit Hours)
Study of pathology and cytology of the breast, with emphasis on benign, inflammatory conditions, premalignant and malignant disease in both breast smears and fine needle aspirations.
Prerequisites: CYTO 407
Pre- or corequisite: CYTO 405 and CYTO 415

CYTO 446 Body Fluids Cytology (3 Credit Hours)
Study of the pleural, peritoneal and pericardial cavity fluids, synovial and cerebral spinal fluids, with emphasis on benign, inflammatory conditions, and primary and metastatic malignancies.
Prerequisites: CYTO 407
Pre- or corequisite: CYTO 405 and CYTO 415

CYTO 448 Non-Epithelial Cytology (1 Credit Hour)
Study of the pathology and cytology of non-epithelial lesions with emphasis on benign, inflammatory, and malignant conditions.
Prerequisites: Admission to the cytotechnology program
Pre- or corequisite: CYTO 405, CYTO 415, CYTO 424, CYTO 444, CYTO 445, and CYTO 446

CYTO 456 Fine Needle Aspiration Cytology I (3 Credit Hours)
Study of specialized collection techniques, processing and diagnosis of fine needle aspirations from various body sites, including thyroid, liver, lymph nodes, pancreas, lung, mediastinum, salivary gland, and ovary. Clinical practical application of these principles will be continued at the clinical sites.
Prerequisites: CYTO 403, CYTO 405, CYTO 415, and CYTO 428W

CYTO 457 Fine Needle Aspiration Cytology II (3 Credit Hours)
Study of specialized collection techniques, processing and diagnosis of fine needle aspirations from various body sites, including kidney, retroperitoneum, breast, soft tissue, bone, eye, central nervous system, and skin. Clinical practical application of these principles will be continued at the clinical sites.
Prerequisites: CYTO 403, CYTO 405, CYTO 415, CYTO 424, CYTO 428W, CYTO 445, CYTO 446, CYTO 448, and CYTO 456

CYTO 458 Cytology Internship I (3 Credit Hours)
Directly supervised experience in a clinical setting: includes evaluation of gynecologic smears and study set assignments. Students will be exposed to cytopreparatory techniques.
Pre- or corequisite: CYTO 405 and CYTO 415

CYTO 468 Cytology Internship II (4 Credit Hours)
Directly supervised experience in a clinical setting. Includes evaluation of gynecologic and non-gynecologic specimen slides and study set assignments. Students will pre-screen gynecologic and non-gynecologic smears and study set assignments. Students will be exposed to cytopreparatory techniques.
Pre- or corequisite: CYTO 405, CYTO 415, CYTO 424, CYTO 444, CYTO 445, and CYTO 446

CYTO 478 Cytology Internship III (8 Credit Hours)
Directly supervised experience in a clinical setting. Includes evaluation of gynecologic and non-gynecologic smears and study set assignments. Students will be exposed to cytopreparatory techniques.
Prerequisites: Admission to the cytotechnology program
Pre- or corequisite: CYTO 405, CYTO 415, CYTO 424, CYTO 444, CYTO 445, CYTO 446, CYTO 456, and CYTO 457

CYTO 495 Topics in Cytology (1-3 Credit Hours)
Independent study of selected topics in clinical cytology. Review of cytologic specimens from various body sites
Prerequisites: permission of the program director

CYTO 497 Cytology Senior Seminar (1 Credit Hour)
Supervised experience consists of clinical cases and seminar presentations into current advances within the specialty of clinical cytology. A student research project and oral presentation of current journal articles and the research paper are required.
Prerequisites: permission of the program director

CYTO 498 Topics (1-3 Credit Hours)

CYTO 499 Comprehensive Cytology Review (1 Credit Hour)
The course is a comprehensive review course that includes the review and study of the exfoliative and non-exfoliative (including fine needle aspirations) cytomorphologic features of neoplastic and non-neoplastic lesions of the female genital tract, respiratory tract, urinary tract, body fluids, lymph nodes, thyroid, salivary glands, pancreas and biliary tract, the diagnostic pitfalls associated with the various body sites, the appropriate use of ancillary techniques in diagnostic cytology, the principles of quality assurance, and the new developments in the field of cytopathology.
Prerequisites: CYTO 403, CYTO 405, CYTO 415, CYTO 424, CYTO 428W, CYTO 442, CYTO 444, CYTO 445, CYTO 446, CYTO 448, CYTO 456, CYTO 457, CYTO 458, and CYTO 468

Medical Laboratory Science (MLS)

MLS 210 Orientation to Medical Laboratory Science (1 Credit Hour)
An introduction to the profession of medical laboratory science (previously called medical technology). Professional, ethical and operational issues will be discussed.

MLS 307 Clinical Methods in Microbiology (1 Credit Hour)
Laboratory techniques in the diagnosis of clinically relevant microorganisms.
Prerequisites: admission to the major or minor in medical laboratory science
Pre- or corequisite: MLS 308

MLS 308 Clinical Microbiology (2 Credit Hours)
A fundamental course in microbiology that includes bacterial growth, synthesis, differentiation, microbial nutrition and metabolism.
Prerequisites: BIOL 121N, BIOL 122N, CHEM 121N, CHEM 122N; CHEM 211 is recommended or permission of the instructor

MLS 309 Medical Bacteriology (3 Credit Hours)
A comprehensive survey of bacteria, including colonial morphology, cultural characteristics, biochemical identification, pathogenicity, epidemiology, and treatment.
Prerequisites: MLS 307 and MLS 308

MLS 310 Urinalysis and Body Fluids (1 Credit Hour)
A study of the chemical, physical and microscopic analysis of human urine and other body fluids, with abnormal results interpreted and correlated to disease processes and cancer cytology of the urinary tract.
Prerequisites: BIOL 250 and BIOL 251 or permission of the instructor

MLS 311 Hematology (3 Credit Hours)
The study of the principles of the formation and development of blood, including the interpretation of normal and abnormal blood morphology and diagnostic procedures in the investigation of hematological disorders.
Prerequisites: BIOL 250 and BIOL 251 or permission of the instructor
Pre- or corequisite: MLS 312

MLS 312 Hematology Laboratory (1 Credit Hour)
Laboratory methods utilizing microscopy and other analytical procedures in the diagnosis and investigation of hematological disorders.
Prerequisites: admission to the major or minor in medical laboratory science
Pre- or corequisite: MLS 311

MLS 313 Diagnostic Methods in Urinalysis (1 Credit Hour)
Laboratory experience in the chemical, physical, and microscopic examination of the urine and body fluids with emphasis on quality control, osmometry, and disease correlates.
Prerequisites: BIOL 250 or equivalent
Pre- or corequisite: MLS 310

MLS 319 Medical Bacteriology Methods (2 Credit Hours)
Laboratory methods emphasizing isolation, identification and media requirements for pathogenic microorganisms.
Prerequisites: admission to the major or minor in medical laboratory science
Pre- or corequisite: MLS 309

MLS 320 Blood Collection Techniques (2 Credit Hours)
Laboratory methods in the procurement of blood by capillary, venipuncture and arterial draws, analytical variables, special phlebotomy tests, isolation techniques, safety, forensic, molecular, legal and ethical implications, pediatric, geriatric, and compromised patient concerns. All students must submit to venipuncture by fellow students.
Prerequisites: BIOL 250 or equivalent or permission of the instructor

MLS 322 Phlebotomy Internship (2 Credit Hours)
A 120-hour clinical internship for those desiring to qualify for the ASCP certification exam in phlebotomy.
Prerequisites: MLS 320

MLS 324 Clinical Instrumentation (3 Credit Hours)
This course covers the theory of operation of instrumentation used in the clinical chemistry laboratory. Methodologies discussed include: atomic absorption spectrometry, automation, blood gas instrumentation, chromatography, electrochemistry, electrophoresis, fluorometry, immunochemistry, luminometry, mass spectrometry, nephelometry, osmometry, POCT, spectrophotometry, and turbidimetry. Basic laboratory mathematics applicable to serial and compound dilutions, conversion between metric units, and determination of analyte concentration are presented. Statistical applications for quality control data analysis are introduced.
Prerequisites: CHEM 211 or CHEM 321, MATH 102M or permission of the instructor
Pre- or corequisite: MLS 325

MLS 325 Clinical Instrumentation Methods (1 Credit Hour)
A laboratory course designed for students entering the clinical laboratory field. The course includes the instrumental and data processing techniques required for the clinical analysis of body fluids, as well as statistical techniques applied to the interpretation of laboratory data, method comparison studies, quality control, calibration, maintenance, and troubleshooting of clinical chemistry analytics.
Prerequisites: MATH 102M, CHEM 121N, CHEM 122N, CHEM 123N, CHEM 124N, and CHEM 211

MLS 326 Immunohematology (3 Credit Hours)
The study of the identification of blood group antigens and antibodies, standard testing procedures, decision criteria for component selection, and regulations of blood banks and transfusion services.
Prerequisites: MLS 311, MLS 312, MLS 330, MLS 331, BIOL 250, and BIOL 251 or permission of the instructor
Pre- or corequisite: MLS 336

MLS 328 Advanced Hematology and Hemostasis (2 Credit Hours)
The microscopic study of blood cells in blood and body fluids, emphasizing morphologic identification and correlation of laboratory data in order to identify specific disease states. Fundamentals of hemostasis, emphasizing principles, evaluation techniques, and diagnostic applications.
Prerequisites: MLS 311, MLS 312 or permission of the instructor

MLS 330 Clinical Immunology/Serology (2 Credit Hours)
The study of the body's immune response, its cellular and non-cellular components, in-vitro manifestations, diagnostic techniques and interpretations related to the investigation and diagnosis of infectious and non-infectious disease states.
Prerequisites: BIOL 121N, BIOL 122N, BIOL 250 and BIOL 251 or permission of the instructor
Pre- or corequisite: MLS 331

MLS 331 Clinical Immunology/Serology Laboratory (1 Credit Hour)
Laboratory methods emphasizing in-vitro antigen and antibody reactions used to aid in the diagnosis of infectious and non-infectious disorders.
Prerequisites: admission to the major or minor in medical laboratory science
Pre- or corequisite: MLS 330

MLS 336 Immunohematology Laboratory (1 Credit Hour)
Laboratory methods emphasizing procedures that lead to the identification of blood group antigens and antibodies and the selection of therapeutic components necessary for making transfusion-related decisions.
Prerequisites: admission to the major or minor in medical laboratory science
Pre- or corequisite: MLS 326

MLS 339 Medical Parasitology and Mycology Laboratory (1 Credit Hour)
Laboratory methods emphasizing the identification of medically relevant parasites and fungi.
Prerequisites: admission to the major or minor in medical laboratory science
Pre- or corequisite: MLS 340

MLS 340 Medical Parasitology, Mycology, and Virology (1 Credit Hour)
A study of the medically important parasites, fungi, and viruses, and their medical significance.
Prerequisites: MLS 307, MLS 308 or permission of the instructor

MLS 351 Clinical Biochemistry (3 Credit Hours)
An introduction to the applications of biochemistry and clinical testing in the diagnosis of human disease. Practice given in the interpretation of laboratory data in the areas of carbohydrate, protein, lipid, genetic disorders, liver, renal, pancreatic, G.I., enzymatic, and cardiac testing. Also enzyme kinetics, electrolytes, acid base physiology, tumor markers, endocrinology, pharmacokinetics, therapeutic drug monitoring, and molecular diagnostics. Special emphasis on specimen collecting, pre- and post-analytical variables, and case studies.
Prerequisites: BIOL 250, BIOL 251, CHEM 211, and CHEM 212, or permission of the instructor

MLS 401 General Pathology (3 Credit Hours)
This course is an overview of general disease processes and causes in the human. All body systems will be covered including respiratory, gastrointestinal, circulatory, nervous, reproductive, and urinary. Aging, dietary, and stress factors will be discussed in the disease process. Bacteria, fungi, and viruses will be discussed in general and for each body system. Neoplasms will be covered for each body site. This course will be of benefit to anyone interested in diseases of the human body or entering the medical field. (cross listed with CYTO 404) Pre- or
Prerequisites: junior standing
Corequisites: BIOL 250 and BIOL 251 or equivalent

MLS 402 Survey of Clinical Molecular Techniques (2 Credit Hours)
A brief review of nucleic acid chemistry, followed by discussion of clinical applications of FDA approved assays used to detect pathogens for which testing algorithms include molecular based testing.
Prerequisites: MLT certification and admission to MLT-to-MLS degree completion program or permission of the instructor

MLS 403W/503 Management in the Clinical Setting (3 Credit Hours)
A course concerned with organization and management in the clinical setting including personnel supervision, planning, equipment justification, quality assurance, data processing, budgeting, fiscal techniques, marketing, regulatory agencies, educational methodologies, current issues, as well as legal and ethical considerations. This is a writing intensive course.
Prerequisites: junior standing and a grade of C or better in ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C

MLS 404 Clinical Hematology Practicum (4 Credit Hours)
Direct clinical experience offered in automated and manual hematology procedures used in distinguishing blood dyscrasias and coagulation abnormalities. (qualifies as a CAP experience)
Prerequisites: MLS 311, MLS 312, MLS 328, and permission of the program director

MLS 406 Clinical Microbiology Practicum (5 Credit Hours)
Direct clinical experience offered in isolating and identifying human pathogens such as bacteria, fungi, and parasites from various clinical specimens.
Prerequisites: MLS 307, MLS 308, MLS 309, MLS 319 and permission of the program director

MLS 440/540 Statistical Applications and Data Analysis in the Clinical Laboratory (3 Credit Hours)
Topics include review of basic statistics used in the laboratory; use of statistics for quality control, reference range determination, method comparisons, test utility assessment, techniques for searching the literature and assessing quality and applicability of published studies; and data organization and retrieval via queries. Students will perform projects, preferably using actual laboratory data, that relate to lecture topics.
Prerequisites: STAT 130M and permission of the instructor

MLS 441 Clinical Hematology Competencies (1 Credit Hour)
Demonstration of stated clinical laboratory competencies within the discipline of hematology.
Prerequisites: MLS 328

MLS 442 Clinical Microbiology Competencies (1 Credit Hour)
Demonstration of stated clinical laboratory competencies within the discipline of clinical microbiology.
Prerequisites: MLS 309 and MLS 340

MLS 443 Clinical Chemistry Competencies (1 Credit Hour)
Demonstration of stated clinical laboratory competencies within the discipline of clinical chemistry.
Prerequisites: MLS 324 and MLS 351

MLS 444 Clinical Blood Bank Competencies (1 Credit Hour)
Demonstration of stated clinical laboratory competencies in the discipline of blood banking.
Prerequisites: MLS 326 and MLS 330

MLS 452 Clinical Biochemistry Practicum (5 Credit Hours)
Direct clinical experience offered in automated and manual clinical chemistry determinations with emphasis on the principles, instrumentation, interpretation, and diagnostic significance.
Prerequisites: MLS 324, MLS 325, MLS 351, and permission of the program director

MLS 454 Clinical Blood Bank Practicum (4 Credit Hours)
Direct clinical experience offered in the theories and principles of blood banking with emphasis on the instruction of technical procedures used in an AABB approved blood bank.
Prerequisites: MLS 311, MLS 312, MLS 326, MLS 336, and permission of the program director

MLS 457 Medical Laboratory Science Seminar (1 Credit Hour)
In-depth review for Medical Laboratory Scientist (MLS) certification exam.
Prerequisites: permission of the program director

MLS 495 Special Topics in Medical Laboratory Science (1-3 Credit Hours)
The advanced study of selected topics within the medical field.
Prerequisites: permission of the program director

MLS 497 Directed Study in Medical Laboratory Science (1-3 Credit Hours)
Supervised experience in medical laboratory science specialties, allowing students to pursue areas of interest under faculty direction.
Prerequisites: permission of the program director

MLS 498 Clinical Research Methods (3 Credit Hours)
An introduction to clinical research methods to include sampling techniques, data collection and analysis, inferential statistics, multivariate analysis, hypothesis testing and research design. The student will be expected to develop a research proposal based upon a critical review of the literature.
Prerequisites: STAT 130M or permission of the instructor

Nuclear Medicine Technology (NMED)

NMED 300 Medical Terminology (3 Credit Hours)
A course designed to cover the terminology and abbreviations used in the clinical sciences.
Prerequisites: ENGL 110C or equivalent

NMED 331 Fundamental Concepts in Nuclear Medicine Technology (4 Credit Hours)
A course designed to cover the physical principles related to nuclear medicine technology. The methods and mathematics of radioactive decay, types of radiation, radiation interactions, origins of radionuclides, including SPECT and PET/CT radionuclides also presented.
Prerequisites: PHYS 101N and PHYS 102N or equivalent

NMED 332 Nuclear Instrumentation (4 Credit Hours)
This course is designed to familiarize the student with the theory, operation and quality assurance associated with the instrumentation found in a typical nuclear medicine department. The course also covers the instrumentation of PET/CT scanners as well as the common radiopharmaceuticals, imaging protocols, and radiation safety currently employed in diagnostic PET/CT imaging practice.
Prerequisites: NMED 331 or permission of program director

NMED 335 Radiation Health (3 Credit Hours)
Discussions of radiation effects on cellular systems as well as guidelines for radiation protection and safe handling of radioactive materials in the nuclear medicine clinical setting.
Prerequisites: NMED 331 or permission of the instructor

NMED 401 Nuclear Medicine Technology I (4 Credit Hours)
A course designed to cover the nuclear medicine procedures and protocols of the gastrointestinal, genitourinary, central nervous, skeletal systems. Other current or emerging clinical nuclear medicine procedures are also covered.
Prerequisites: BIOL 240 or BIOL 250 and BIOL 241 or BIOL 251 and admission to the nuclear medicine program

NMED 402 Nuclear Medicine Technology II (4 Credit Hours)
A course designed to cover the nuclear medicine protocols and procedures of the respiratory, cardiovascular, endocrine, infection/inflammation and lymphatic systems. Other current and emerging clinical nuclear medicine procedures and protocols are also presented.
Prerequisites: NMED 401 or permission of the program director

NMED 403 Radiopharmacy (3 Credit Hours)
This course is designed to cover the concepts and techniques related to the field of radiopharmacy for nuclear medicine technology practice. The production, preparation, uses and quality assurance of radiopharmaceuticals are presented. Interventional and adjunctive pharmaceutical agents used in nuclear medicine will be covered.
Prerequisites: NMED 331, CHEM 105N-CHEM 106N and CHEM 107N-CHEM 108N or equivalent or permission of the program director

NMED 410 Nuclear Medicine and Molecular Imaging (3 Credit Hours)
This course covers the concepts, instrumentation and procedures pertaining to molecular imaging as related to nuclear medicine. Topics include: Positron Emission Tomography (PET), Computed Tomography (CT), PET/CT, Magnetic Resonance Imaging (MRI), and other emerging technologies. Cross-sectional anatomy and radionuclide therapy, including monoclonal antibodies are also discussed.
Prerequisites: NMED 401 and NMED 402

NMED 440 Clinical Nuclear Medicine Technology I (3-8 Credit Hours)
Clinical instruction in patient care, radiation safety, radiopharmaceutical administration, imaging and non-imaging techniques and quality assurance procedures, including PET/CT.
Prerequisites: admission to the program and permission of the program director

NMED 450 Clinical Nuclear Medicine Technology II (8 Credit Hours)
Continued clinical instruction in diagnostic and therapeutic nuclear medicine procedures. The correlation of nuclear medicine procedures is also presented. Clinical experiences include patient care, radiation safety, radiopharmaceutical administration, imaging and non-imaging techniques and quality assurance procedures.
Prerequisites: NMED 440 and permission of the program director

NMED 460 Clinical Nuclear Medicine Technology III (8 Credit Hours)
Advanced clinical instruction in diagnostic and therapeutic nuclear medicine procedures, including PET/CT. The correlation of nuclear medicine procedures is also presented.
Prerequisites: NMED 450 and permission of the program director

NMED 475W Administration and Management in Nuclear Medicine Technology (3 Credit Hours)
This writing intensive, capstone course is designed to provide a review of the administration, management, policies, and practices relevant to nuclear medicine technology. The leadership, legal, ethical and planning aspects of operating a nuclear medicine department are covered.
Prerequisites: Admission to the NMED program and a grade of C or better in ENGL 110C and ENGL 211C or ENGL 221C or ENGL 231C

NMED 495 Special Topics in Nuclear Medicine Technology (1-3 Credit Hours)
A study of selected current topics in nuclear medicine technology.
Prerequisites: permission of the program director

NMED 497 Directed Study in Nuclear Medicine Technology (1-3 Credit Hours)
Directed study in a topic relevant to nuclear medicine technology.
Prerequisites: Permission of the program director