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Faculty of Arts and Sciences

Undergraduate Degree Programs

Earl Simson, Dean

Joan Dagle, Associate Dean

|  |  |  |
| --- | --- | --- |
| **Major** | **Degree** | **Concentration** |
| Africana Studies (p. ) | B.A. |   |
| Anthropology (p. ) | B.A. |   |
| Art (Studio) (p. ) | B.A. or B.F.A. | Ceramics |
|   | B.A. or B.F.A. | Digital Media |
|   | B.A. or B.F.A. | Graphic Design |
|   | B.A. or B.F.A. | Metalsmithing and Jewelry |
|   | B.A. or B.F.A. | Painting |
|   | B.A. or B.F.A. | Photography |
|   | B.A. or B.F.A. | Printmaking |
|   | B.A. or B.F.A. | Sculpture |
| Art Education (p. )\* | B.S. |   |
| Art Education (p. )\* | B.F.A. | Ceramics *(Admission currently suspended.)* |
|   | B.F.A. | Digital Media *(Admission currently suspended.)* |
|   | B.F.A. | Graphic Design *(Admission currently suspended.)* |
|   | B.F.A. | Metalsmithing and Jewelry *(Admission currently suspended.)* |
|   | B.F.A. | Painting *(Admission currently suspended.)* |
|   | B.F.A. | Photography *(Admission currently suspended.)* |
|   | B.F.A. | Printmaking *(Admission currently suspended.)* |
|   | B.F.A. | Sculpture *(Admission currently suspended.)* |
| Art History (p. ) | B.A. |   |
| Biology (p. )\*\* | B.S. |   |
| Chemical Dependency/Addiction Studies (p. ) | B.S. |   |
| Chemistry (p. )\*\* | B.A. |   |
|   | B.A. | Environmental Chemistry |
|   | B.S. | Biochemistry  |
|   | B.S. | Environmental Chemistry |
|   | B.S. | Professional Chemistry |
| Communication (p. ) | B.A. | Journalism |
|   | B.A. |  Media Communication  |
|   | B.A. | Public and Professional Communication |
|   | B.A. | Public Relations and Advertising |
|   | B.A. | Speech, Language, and Hearing Science |
| Computer Science (p. ) | B.A. |   |
| Computer Science (p. ) | B.S. |   |
| Dance Performance (p. ) | B.A. |   |
| English (p. )\*\* | B.A. |   |
|   | B.A. | Creative Writing |
| Environmental Studies (p. )  | B.A.  |   |
| Film Studies (p. ) | B.A. |   |
| Gender and Women’s Studies (p. ) | B.A. |   |
| Geography (p. ) | B.A. |   |
| Global Studies (p. )  | B.A.  |   |
| Health Sciences (p. ) | B.S. |   |
|   | B.S. | Dental Hygiene Completion |
|   | B.S. | Human Services |
|   | B.S. | Medical Laboratory Sciences |
|   | B.S. | Respiratory Therapy Completion |
| History (p. )\*\* | B.A. |   |
| Justice Studies (p. ) | B.A |   |
| Liberal Studies (p. ) | B.A. |   |
| Mathematics (p. )\*\* | B.A. |   |
| Medical Imaging (p. ) | B.S. | Certified RT Computed Tomography |
|   | B.S. | Certified Medical Imager Management |
|   | B.S. | Diagnostic Medical Sonography |
|   | B.S. | Magnetic Resonance Imaging |
|   | B.S. | Nuclear Medicine Technology |
|   | B.S. | Radiography |
| Modern Languages (p. ) | B.A. | Francophone Studies |
|   | B.A. | French |
|   | B.A. | Latin American Studies |
|   | B.A. | Portuguese |
|   | B.A. | Spanish |
| Music (p. ) | B.A. |   |
| Music (p. )\* | B.M. | Music Education |
|   | B.M. | Performance |
| Philosophy (p. ) | B.A. |   |
| Physics (p. )\*\* | B.S. |   |
| Political Science (p. ) | B.A. |   |
| Psychology (p. ) | B.A. |   |
| Public Administration (p. ) | B.A. |   |
| Sociology (p. ) | B.A. |   |
| Theatre (p. ) | B.A. | Design/Technical |
|   | B.A. | General Theatre |
|   | B.A. | Musical Theatre |
|   | B.A. | Performance |

\*Art education and music education are designed for students seeking grades pre-K–12 teaching certification.

\*\*Students seeking grades 7–12 teaching certification in these majors should see Secondary Education.

# Medical Imaging

**Co-Directors**: Eric Hall and Kenneth Kinsey

The medical imaging program at Rhode Island College is a joint program in conjunction with the Lifespan School of Medical Imaging. It is a comprehensive four-year program consisting of General Education and cognate courses at Rhode Island College followed by clinical education courses at the School of Medical Imaging.

Clinical education courses are held at Rhode Island Hospital, Hasbro Children’s Hospital, University Orthopedics, The Miriam Hospital, and Rhode Island Medical Imaging. Students who successfully complete the program are eligible to take the appropriate national certification examination.

Students accepted into a medical imaging clinical program are responsible for obtaining certification in cardiopulmonary resuscitation (basic life support for the health care provider) prior to enrolling in clinical courses.

Students **must** consult with their assigned advisor before they will be able to register for courses.

Medical Imaging B.S.

Admission Requirements for Concentrations in Diagnostic Medical Sonography, Magnetic Resonance Imaging, Nuclear Medicine Technology, and Radiologic Technology

Concentrators

1. Completion of all required preclinical courses, with a minimum grade of C in each course.

2. A completed application form submitted by the appropriate deadline to the Director of the Medical Imaging Program.

3. A minimum cumulative grade point average of 2.70.

4. An interview with the admissions committee of the Rhode Island Hospital School of Diagnostic Imaging.

Admission Requirements for Concentrations in Certified Medical Imager Management

Prior licensure in Diagnostic Medical Sonography, Magnetic Resonance Imaging, Nuclear Medicine Technology or Radiologic Technology.

Retention Requirement for All Concentrations

A minimum grade of C in all required courses.

General Education Requirements for Concentration in Certified RT Computed Tomography

Students must complete the college’s General Education requirements, with the following contingencies:

1. Students will take a required MATH course in the cognates for each program that will satisfy their General Education Mathematics category.

2. Students will receive transfer credit for NS 175, which will fulfill the Natural Science category.

3. Students will receive transfer credit for AQSR 175, which will fulfill the Advanced Quantitative/Scientific Reasoning category.

Course Requirements

CHOOSE concentration A, B, C, D, E, or F below.

A. Certified RT Computed Tomography

|  |  |  |  |
| --- | --- | --- | --- |
| CTSC 300 | Principles of Computed Tomography | 2 | As needed |
| CTSC 301 | Computed Tomography Physics and Radiation Protection | 2 | As needed |
| CTSC 407 | Sectional Anatomy and Pathology | 2 | As needed |
| CTSC 432 | Computed Tomography Clinical Practice | 8 | As needed |

Cognates

|  |  |  |  |
| --- | --- | --- | --- |
| COMM 338 | Communication for Health Professionals | 4 | F |
| MATH 209 | Precalculus Mathematics | 4 | F, Sp, Su |

Note: MATH 209: Fulfills the mathematics category of General Education.

Radiologic Technology Certification Transfer Credits

|  |  |  |  |
| --- | --- | --- | --- |
| TRANSFER CREDITS |  | 60 |  |

Subtotal: 82

B. Certified Medical Imager Management

Cognates

|  |  |  |  |
| --- | --- | --- | --- |
| BIOL 231 | Human Anatomy | 4 | F, Sp, Su |
| BIOL 335 | Human Physiology | 4 | F, Sp, Su |
| BIOL 348 | Microbiology | 4 | F, Sp, Su |
| COMM 338 | Communication for Health Professionals | 4 | F |
| MATH 209 | Precalculus Mathematics | 4 | F, Sp, Su |
| MGT 201 | Foundations of Management | 4 | F, Sp, Su |
|  | TWO COURSES in management at the 300-level or above | 6-8 |  |

Note: MATH 209 Fulfills the mathematics category of General Education.

Medical Imager Certification Transfer Credits

|  |  |  |  |
| --- | --- | --- | --- |
| TRANSFER CREDITS |  | 30-60 |  |

Subtotal: 60-92

C. Diagnostic Medical Sonography

|  |  |  |  |
| --- | --- | --- | --- |
| DMS 305 | Foundations of Diagnostic Medical Sonography | 3 | F |
| DMS 306 | Sonographic Physics and Instrumentation | 4 | Sp |
| DMS 308 | Abdominal and Small Parts Sonography | 5 | Sp |
| DMS 309 | Clinical Education I | 3 | Sp |
| DMS 312 | Sonographic Women’s Imaging | 4 | Su |
| DMS 313 | Clinical Education II | 5 | Su |
| DMS 431 | Obstetrical Sonography | 4 | F |
| DMS 432 | Vascular Sonography | 4 | F |
| DMS 433 | Clinical Education III | 4 | F |
| DMS 434 | Advanced Procedures in Diagnostic Medical Sonography | 3 | Sp |
| DMS 435 | Registry Review | 3 | Sp |
| DMS 436 | Clinical Education IV | 4 | Sp |
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|  |  |  |  |
|  |  |  |  |
| MEDI 201 | Orientation to Medical Imaging | 1 | F, Sp |
| MEDI 203MEDI 205 | Complete Introduction to Medical ImagingMedical Terminology for Medical Imaging | 31 | FF |
| MEDI 255 | Patient Care in Medical Imaging | 3 | F |
| MEDI 308 | Professional Behavior in Medical Imaging | 3 | F |
| MEDI 463 | Senior Seminar in Medical Imaging | 3 | Sp |

Cognates

|  |  |  |  |
| --- | --- | --- | --- |
| BIOL 108 | Basic Principles of Biology | 4 | F, Sp, Su |
| BIOL 231 | Human Anatomy | 4 | F, Sp, Su |
| BIOL 335 | Human Physiology | 4 | F, Sp, Su |
| CHEM 105 | General, Organic and Biological Chemistry I | 4 | F, Sp, Su |
|  |  |  |  |
| MATH 209 | Precalculus Mathematics | 4 | F, Sp, Su |
| PHYS 110 | Introductory Physics | 4 | Sp, F, Su |

Subtotal: 84

D. Magnetic Resonance Imaging

|  |  |  |  |
| --- | --- | --- | --- |
| MRI 302 | Foundations of Magnetic Resonance Imaging | 3 | Sp |
| MRI 303 | Imaging Procedures I | 3 | Sp |
| MRI 304 | Physical Principles I | 4 | Sp |
| MRI 305 | Clinical Education I | 3 | Sp |
| MRI 306 | Imaging Procedures II | 3 | Su |
| MRI 307 | Clinical Education II | 5 | Su |
| MRI 431 | Physical Principles II | 4 | F |
| MRI 432 | Clinical Education III | 5 | F |
| MRI 433 | Advanced Procedures in Magnetic Resonance Imaging  | 3 | Sp |
| MRI 434 | MRI Registry Review | 3 | Sp |
| MRI 435 | Clinical Education IV | 4 | Sp |
| MEDI 201 | Orientation to Medical Imaging | 1 | F, Sp |
| MEDI 203 | Complete Introduction to Medical Imaging | 3 | F |
| MEDI 205 | Medical Terminology in Medical Imaging | 1 | F |
| MEDI 255 | Patient Care in Medical Imaging | 3 | F |
| MEDI 308 | Professional Behavior in Medical Imaging | 3 | F |
| MEDI 309 | Sectional Anatomy in Medical Imaging | 3 | F |
| MEDI 410 | Pathology in Medical Imaging | 3  | F |
| MEDI 463 | Senior Seminar in Medical Imaging | 3 | Sp |
|  |  |  |  |

Cognates

|  |  |  |  |
| --- | --- | --- | --- |
| BIOL 108 | Basic Principles of Biology | 4 | F, Sp, Su |
| BIOL 231 | Human Anatomy | 4 | F, Sp, Su |
| BIOL 335 | Human Physiology | 4 | F, Sp, Su |
| CHEM 105 | General, Organic and Biological Chemistry I | 4 | F, Sp, Su |
|  |  |  |  |
| MATH 209 | Precalculus Mathematics | 4 | F, Sp, Su |
| PHYS 110 | Introductory Physics | 4 | Sp, F, Su |

Subtotal: 84

E. Nuclear Medicine Technology

|  |  |  |  |
| --- | --- | --- | --- |
| CTSC 300CTSC 301MEDI 201 | Principles of Computed TomographyCT Physics and Radiation ProtectionOrientation to Medical Imaging | 221 | SpSpF, Sp |
| MEDI 203 | Complete Introduction to Medical Imaging | 3 | F |
| MEDI 205 | Medical Terminology for Medical Imaging | 1 | F |
| MEDI 255 | Patient Care in Medical Imaging | 3 | F |
| MEDI 308 | Professional Behavior in Medical Imaging | 3 | F |
| MEDI 309 | Sectional Anatomy in Medical Imaging | 3 | F |
| MEDI 410 | Pathology in Medical Imaging | 3  | F |
| MEDI 463 | Senior Seminar in Medical Imaging | 3 | Sp |
|  |  |  |  |
| NMT 302 | Foundations of Nuclear Medicine Technology | 3 | Sp |
| NMT 303 | Nuclear Medicine Procedures I | 3 | Sp |
| NMT 304 | Radiation Safety and Radiobiology | 3 | Sp |
| NMT 306 | Medicine Procedures II and Therapeutics Nuclear | 3 | Su |
| NMT 336 | Clinical Education I  | 3 | Sp |
|  |  |  |  |
| NMT 337 | Clinical Education II | 5 | Su |
| NMT 433 | Radiopharmaceuticals in Nuclear Medicine | 3 | F |
| NMT 434 | Radiation Physics and Advanced Instrumentation | 3 | F |
| NMT 436 | Clinical Education III | 5 | F |
| NMT 435 | NMT Registry Review | 3 | Sp |
| NMT 437 | Clinical Education IV | 4 | Sp |
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Cognates

|  |  |  |  |
| --- | --- | --- | --- |
| BIOL 108 | Basic Principles of Biology | 4 | F, Sp, Su |
| BIOL 231 | Human Anatomy | 4 | F, Sp, Su |
| BIOL 335 | Human Physiology | 4 | F, Sp, Su |
| CHEM 105 | General, Organic and Biological Chemistry I | 4 | F, Sp, Su |
|  |  |  |  |
| MATH 209 | Precalculus Mathematics | 4 | F, Sp, Su |
| PHYS 110 | Introductory Physics | 4 | Sp, F, Su |

Subtotal: 86

F. Radiography

|  |  |  |  |
| --- | --- | --- | --- |
| MEDI 201 | Orientation to Medical Imaging | 1 | F, Sp |
| MEDI 203 | Complete Introduction to Medical Imaging | 3 | F |
| MEDI 205 | Medical Terminology in Medical Imaging | 1 | F |
| MEDI 255MEDI 308MEDI 309MEDI 410MEDI 463 | Patient Care in Medical ImagingProfessional Behavior in Medical ImagingSectional anatomy in Medical ImagingPathology in Medical ImagingSenior Seminar in Medical Imaging | 33333 | FFFFSp |
| RAD 331 | Foundations of Radiography | 3 | Sp |
| RAD 332 | Radiographic Procedures I | 3 | Sp |
| RAD 333 | Radiographic Procedures II | 3 | Su |
| RAD 334 | Principles of Radiography | 4 | Sp |
| RAD 335 | Radiation Physics | 3 | Su |
| RAD 336 | Clinical Education I | 3 | Sp |
| RAD 338 | Clinical Education II | 5 | Su |
|  |  |  |  |
| RAD 432 | Advanced Principles of Radiobiology | 4 | F |
| RAD 433 | Clinical Education III | 5 | F |
| RAD 434 | Advanced Procedures in Radiography | 3 | Sp |
| RAD 435 | Registry Review | 3 | Sp |
| RAD 436 | Clinical Education IV | 4 | Sp |
|  |  |  |  |
|  |  |  |  |

Cognates

|  |  |  |  |
| --- | --- | --- | --- |
| BIOL 108 | Basic Principles of Biology | 4 | F, Sp, Su |
| BIOL 231 | Human Anatomy | 4 | F, Sp, Su |
| BIOL 335 | Human Physiology | 4 | F, Sp, Su |
| CHEM 105 | General, Organic and Biological Chemistry I | 4 | F, Sp, Su |
|  |  |  |  |
| MATH 209 | Precalculus Mathematics | 4 | F, Sp, Su |
| PHYS 110 | Introductory Physics | 4 | Sp, F, Su |

Subtotal: 87

# DMS - Diagnostic Medical Sonography

DMS 300 - Introduction to Diagnostic Medical Sonography (1.5)

This course is designed to introduce students to diagnostic medical sonography, including sonographic principles and instrumentation, other imaging modalities and medical terminology.

Prerequisite: MEDI 201 or RADT 201, and admission into the diagnostic medical sonography concentration.

Offered: Fall.

DMS 301 - Abdominal Sonography I (1.5)

This course introduces the student to scanning lower extremity vascular sonography. The student then progresses to abdominal vasculature, neck sonography and sonography of the kidneys.

Prerequisite: Admission into the diagnostic medical sonography concentration.

Offered: Spring.

DMS 302 - Scan Lab I (1)

This Scan lab specifically introduces scanning techniques, scan protocols and procedures within the laboratory setting. 2 contact hours.

Prerequisite: DMS 300.

Offered: Spring.

DMS 303 - Abdominal Sonography II (1.5)

This course is designed to give the student an understanding of abdominal and small parts anatomy, physiology, pathophysiology, sonographic presentation, and the clinical presentation of multiple disease states.

Prerequisite: DMS 301.

Offered: Summer.

DMS 305 – Foundations of Diagnostic Medical Sonography (3)

Students are introduced to the Diagnostic Medical Sonography profession. Foundations and basic principles will be discussed.

Prerequisite: Acceptance into a Medical Imaging Clinical Program.

Offered: Fall

DMS 306 – Abdominal and Small Parts Sonography (5)

Students learn in-depth pathophysiology of abdominal and small parts organs, including but not limited to the thyroid, parathyroid, prostate and scrotum. 7 contact hours.

Prerequisite: DMS 305.

Offered: Spring

DMS 307 - Sonographic Principles and Instrumentation (3)

Imaging techniques that use high frequency sound production are introduced. Included is in-depth study of the characteristics of ultrasound and its interaction with human tissue.

Prerequisite: DMS 303.

Offered: Spring.

DMS 308 – Sonographic Principles and Instrumentation (4)

Physical principles and instrumentation of diagnostic ultrasound are covered. Students will study the physical principles of image formation, management of artifacts, evaluation of instrument performance, and safe scanning techniques.

Prerequisite: DMS 305

Offered: Spring

DMS 309 – Clinical Education I (3)

Students are prepared for entering the healthcare profession. The student will observe sonographic examinations and procedures as well as practice their individual scanning skills. 16 contact hours.

Prerequisite DMS 305

Offered: Spring

DMS 310 - Clinical Practice I (6)

Students are introduced to clinical and practical experience in diagnostic medical imaging. They must demonstrate the structures of the abdomen and gravid and non-gravid female pelvis, using sonography under known conditions. 24 contact hours.

Prerequisite: Admission into the diagnostic medical sonography concentration.

Offered: Spring.

DMS 312 Sonographic Women’s Imaging (4)

Students will obtain comprehensive understanding of women’s DMS imaging. Topics will focus on breast and gynecology health. Students will practice scanning ultrasound examinations with simulated phantom technology.

Prerequisite: DMS 305

Offered: Summer

DMS 313 Clinical Education II (5)

Students learn ultrasound procedures and examinations in clinical settings. This course prepares students to become independent functioning ultrasound technologists.  30 contact hours.

Prerequisite: DMS 309

Offered: Summer

DMS 330 - Clinical Practice II (8)

This is a continuation of DMS 310. Students perform sonographic examinations and learn to recognize normal and abnormal sonographic patterns in the abdomen, female pelvis, and fetus. 24 contact hours.

Prerequisite: DMS 310.

Offered: Summer.

DMS 333 - Abdominal Sonography III (1.5)

Students will learn abdominal sonography, including the pancreas and spleen. The student will also be introduced to MSK imaging and abdominal organ imaging.

Prerequisite: DMS 303.

Offered: Fall.

DMS 335 - Obstetrical and Gynecological Sonography III (1.5)

Students will learn third trimester anatomy and pathologies, fetal heart and brain and fetal thoracic pathologies. The student will be introduced to fetal echocardiography and 3D and 4D obstetrical sonography.

Prerequisite: DMS 306.

Offered: Fall.

DMS 403 - Abdominal Sonography IV (1.5)

Students will learn about scrotum, breast, abdomen wall and cavities and GI tract sonography. Contrast agents and their use in ultrasound and invasive procedures will also be covered.

Prerequisite: DMS 333.

Offered: Spring.

DMS 406 - Obstetrical and Gynecological Sonography IV (1.5)

Students will learn sonography of post-partum uterus and interventional obstetrics/gynecology with sonographic guidance. Pediatric sonography, and preparation for the ARDMS exam are included.

Prerequisite: DMS 335.

Offered: Spring.

DMS 410 - Clinical Practice III (8)

This is a continuation of DMS 330. 25.5 contact hours.

Prerequisite: DMS 330.

Offered: Fall.

DMS 412 - Scan Lab III (1)

Topics of this course include pancreatic and splenic sonography, and MSK of the shoulder. 2 contact hours.

Prerequisite: DMS 312.

Offered: Fall.

DMS 422 - Scan Lab IV (1)

Topics of this course include testes, breast and carotid artery imaging. 2 contact hours.

Prerequisite: DMS 312.

Offered: Spring.

DMS 430 - Clinical Practice IV (6)

This is a continuation of DMS 410. 18 contact hours.

Prerequisite: DMS 410.

Offered: Spring.

DMS 431 Vascular Technology (4)

Students learn about vascular techniques in DMS. Students learn about venous and arterial anatomy, physiology, pathology and imaging protocols. Advanced testing techniques and interventional procedures are included.  6 contact hours

Prerequisite: DMS 313

Offered: Fall

DMS 432 Obstetrical Sonography (4)

Students will learn normal and pathologic obstetrical imaging. This course also includes ethics, congenital conditions, complications, fetal surveying and assessment.

Prerequisite: DMS 313

Offered: Fall

DMS 433 Clinical Education III (4)

Students learn advanced ultrasound procedures and examinations in clinical settings. This course prepares students to become independent functioning ultrasound technologists. 24 contact hours

Prerequisite: DMS 313

Offered: Fall

DMS 434 Registry Review (3)

Students of diagnostic medical sonography are prepared to sit for their registry examinations in Abdomen and Ob/GYN sonography.

Prerequisite: DMS 433

Offered: Spring

DMS 435 Advanced Procedures in DMS (3)

Students are educated on a variety of advanced sonographic procedures and examinations. Topics include emerging technologies, sonographic imaging in pediatrics, musculoskeletal, contrast-enhanced imaging and doppler analysis.

Prerequisite: DMS 433

Offered: Spring

DMS 436 Clinical Education IV (4)

Students practice advanced ultrasound procedures and examinations in various clinical settings on all patient types. This course prepares students to become independent functioning ultrasound technologists.  24 contact hours.

Prerequisite: DMS 433

Offered: Spring

# MRI - Magnetic Resonance Imaging

MRI 301 - Introduction to Magnetic Resonance Imaging (3)

This course covers basic MRI history, instrumentation, safety, positioning, equipment, coils and an overview of the department. Also included are basic pharmacology, venipuncture and intravenous contrast media administration.

Prerequisite: MEDI 201 or RADT 201, and acceptance into the MRI clinical program.

Offered: Spring.

MRI 302 – Foundations of Medical Resonance Imaging (3)

Students will learn MRI history, instrumentation, safety, positioning, equipment, coils and mechanisms of image formation. Also included are basic pharmacology, venipuncture and intravenous contrast media administration.

Prerequisite: Acceptance into a Medical Imaging clinical program

Offered: Spring

MRI 303 – Procedures I (3)

Students will learn human anatomy and pathology as seen in multiple orthogonal planes. Bone, muscle, vascular structures, organs and soft tissues are studied.

Prerequisite: Acceptance into a Medical Imaging clinical program

Offered: Spring

MRI 304 – Physical Principles I (4)

Students learn about MR signal production, tissue characteristics, widely used pulse sequences, image formation, and image contrast. In addition, the physics of MRI and image formation and safety are presented.

Prerequisite: Acceptance into a Medical Imaging clinical program

Offered: Spring

MRI 305 – Clinical Education I (3)

Students are introduced to the clinical practice of MRI with emphasis on departmental   procedures, MRI safety and patient care. They will gain practical experience observing and applying imaging principles.  24 contact hours.

Prerequisite: Acceptance into a Medical Imaging clinical program

Offered: Spring

MRI 306 – Procedures II (3)

Students will learn the cross-sectional anatomy and related pathologies of the abdomen, pelvis, upper and lower extremities.

Prerequisite: MRI 303

Offered: Summer

MRI 307 – Clinical Education II (5)

Students are further introduced to the clinical practice of MRI with emphasis on departmental procedures, MRI safety and patient care. They will gain practical experience observing and applying imaging principles. 30 contact hours.

Prerequisite: MRI 305

Offered: Summer

MRI 309 - Clinical Observation (3.5)

This course provides an introduction to the clinical practice of MRI, with emphasis on departmental procedures, MRI safety, and patient care. This course offers practical experience observing and applying health care principles. 10.5 contact hours.

Prerequisite: Acceptance into the MRI clinical program.

Offered: Spring.

MRI 310 - Clinical Practice I (8)

Students gain skills required to achieve clinical competencies in a variety of MRI procedures. This course allows practice of MRI skills and leads to proficiency in MRI and patient care. 24 contact hours.

Prerequisite: MRI 301

Offered: Summer.

MRI 311 - Cross Sectional Anatomy and Imaging Procedures I (3)

This course covers anatomy in multiple orthogonal planes, including head, spine, neck and thorax. Bone, muscles, vascular structures and organs are examined. Includes discussion of imaging techniques and procedures.

Prerequisite: MRI 301

Offered: Summer.

MRI 321 - Physical Principles I (3)

This course covers a comprehensive overview of MRI principles to include: MRI signal production, tissue characteristics, widely used pulse sequences, image formation and image contrast.

Prerequisite: MRI 301

Offered: Summer.

MRI 410 - Clinical Practice II (8)

This course continues the experiences learned in MRI 310, including routine MRI procedures in various clinical settings on all patient types. Emphasis is placed on gaining confidence and manipulating parameters. 24 contact hours.

Prerequisite: MRI 310.

Offered: Fall.

MRI 411 - Cross Sectional Anatomy and Imaging Procedures II (3)

This is a continuation of MRI 311, discussing cross sectional anatomy of the abdomen, pelvis and upper and lower extremities, with continued emphasis on imaging techniques, procedures and protocols.

Prerequisite: MRI 311.

Offered: Fall.

MRI 420 - Clinical Practice III (6)

This course continues experiences learned in MRI 410, including advanced MRI procedures in various clinical settings on all patient types. This course prepares students to become independent functioning MRI technologists. 18 contact hours.

Prerequisite: MRI 410.

Offered: Spring.

MRI 421 - Physical Principles II (3)

This course is a continuation of MRI 321, providing an overview of encoding, data collection, image formation, K-space, acquisitions, advanced pulse sequence, flow phenomenon, MRA, cardiac MRI, and quality assurance.

Prerequisite: MRI 321.

Offered: Fall.

MRI 430 - Registry Review (3)

Students will review the specifications of the ARRT MRI examination, which include the guidelines for application, study strategies, and content included in the exam.

Prerequisite: MRI 410

Offered: Spring.

MRI 431 – Physical Principles II (4)

Students learn about encoding, data collection, image formation, K-space, acquisitions, advanced pulse sequences, flow phenomenon, MRA, cardiac MRI, and quality assurance.

Prerequisite: MRI 304

Offered: Fall

MRI 432 – Clinical Education III (5)

Students learn about routine MRI procedures in various clinical settings on all patient types. Emphasis is placed on gaining confidence and manipulating parameters. 30 contact hours.

Prerequisite: MRI 307

Offered: Fall

MRI 433 – Advanced Procedures in Magnetic Resonance Imaging (3)

Students learn about advanced procedures, including cardiac, functional MRI, MR spectroscopy, biopsies, research, whole body imaging, MR microscopy, interventional MRI and the importance of Magnetic Resonance Safety Officers (MRSO).

Prerequisite: MRI 432

Offered: Spring

MRI 434 – MRI Registry Review (3)

Students will review the specifications of the ARRT MRI examination, the guidelines for application, study strategies and content included in the exam.

Prerequisite: MRI 432

Offered: Spring

MRI 435 – Clinical Education IV (4)

Students will learn advanced MRI procedures in various clinical settings on all patient types. This course prepares students to become independent functioning MRI technologists.  24 contact hours.

Prerequisite: MRI 432

Offered: Spring

MRI 455 - MRI Pathology (1.5)

This course covers common pathologies found in MRI, and the appearance of these pathologies in various imaging protocols. Emphasis is placed on commonly imaged body systems and areas.

Prerequisite: MRI 410.

Offered: Spring.

MEDI - Medical Imaging

MEDI 201 - Orientation to Medical Imaging (1) Topics include the history of medical imaging, the technologist's role on the health care team, equipment, clinical settings and the various modalities in diagnostic imaging. (Formerly RADT 201 Orientation to Medical Imaging.) Prerequisite: BIOL 231 and MATH 209. Offered: Fall, Spring.

MEDI 202 - Introduction to Medical Imaging (1.5) Presents the history of various specialties in medical imaging, and the technologist's role in the health care team. Safety and ethics, accreditation, certification and professional organizations will also be discussed. Prerequisite: MEDI 201 or RADT 201, and acceptance into a medical imaging clinical program. Offered: Fall.

MEDI 203 – Complete Introduction to Medical Imaging (3)

Students learn about the history of imaging, discovery of x-rays, and the specialties. Student’s time-management, safety and professional ethics will be emphasized.

Prerequisite: Acceptance into a Medical Imaging Clinical Program

Offered: Fall

MEDI 205 – Medical Terminology in Medical Imaging (1)

Students will become proficient in the basic medical terminology utilized in medical imaging.

Prerequisite: Acceptance into a Medical Imaging Clinical Program

Offered: Fall

MEDI 255 – Patient Care in Medical Imaging (3)

Students will learn the patient care skills needed for safe practice in the healthcare environment.

Prerequisite: Acceptance into a Medical Imaging Clinical Program

Offered: Fall

MEDI 308 – Professional Behavior in Medical Imaging (3)

Through role play and scenarios, students will learn and practice essential verbal and nonverbal communication skills necessary for the healthcare environment. Students will learn.

Prerequisite: Acceptance into a Medical Imaging Clinical Program

Offered: Fall

MEDI 309 – Sectional Anatomy in Medical Imaging (3)

Students will learn the of anatomical structures of the human body.  Topics include relationship of structures to surrounding tissues and location of structures on multiple imaging planes.

Prerequisite: Acceptance into a Medical Imaging Clinical Program

Offered: Fall

MEDI 410 – Pathology in Medical Imaging (3)

Students will be shown how disease processes are diagnosed using medical imaging. They will learn how disease processes work and recognize the appearance of diseases through different modalities.

Prerequisite: MEDI 309

Offered: Fall

MEDI 463 – Senior Seminar in Medical Imaging (3)

In their final year, medical imaging students will complete an approved project and present their results in a public seminar.

Prerequisite: DMS 433 or MEDI 410

Offered: Spring

MEDI 491-494 - Independent Study in Medical Imaging (1-4) The experimental aspects and recent advances in different fields of medical imaging are examined. A research project in the field is required. Prerequisite: Acceptance into a Medical Imaging Clinical Program, consent of instructor, program director and dean. Offered: As needed.

# NMT - Nuclear Medicine Technology

NMT 231 - Clinical Observation (3.5)

The clinical practice of nuclear medicine is introduced, with emphasis on hospital policies and procedures, radiation safety, and patient care. Practical experience is given in observing and applying health care principles. 10.5 contact hours.

Prerequisite: MEDI 201 or RADT 201, and acceptance into the medical imaging with concentration in nuclear medicine technology program.

Offered: Spring.

NMT 301 - Introduction to Nuclear Medicine Technology (3)

This is an introduction to the science and practice of nuclear medicine technology. Topics include the organization of diagnostic departments and the responsibilities of the professional nuclear medicine technologist.

Prerequisite: MEDI 201 or RADT 201, and acceptance into the medical imaging with concentration in nuclear medicine technology program.

Offered: Spring.

NMT 302 – Foundations of Nuclear Medicine Technology (3)

Students learn a variety of Nuclear Medicine topics, including math, clinical procedures, introduction to instrumentation and venipuncture.

Prerequisite: Acceptance into a Medical Imaging Clinical program

Offered: Spring

NMT 303 – Nuclear Medicine Procedures I (3)

Students are provided with with an understanding of nuclear medicine and molecular imaging procedures, including appropriate protocol selection, instrumentation, basic pathology, patient care skills, and interpretation of images.

Prerequisite: Acceptance into a Medical Imaging Clinical program

Offered: Spring

NMT 304 – Radiation Safety and Radiobiology (3)

Students will learn concepts and physical principles that govern radioactivity and interactions of ionizing radiation with matter, principles and applications of radiation safety and protection.

Prerequisite: Acceptance into a Medical Imaging Clinical program

Offered: Spring

NMT 306 – Nuclear Medicine Procedures II and Therapeutics (3)

Students are provided with an understanding of nuclear medicine and molecular imaging procedures and therapeutics. Content covered includes protocol selection, instrumentation, pathology, patient care skills, and interpretation of images.

Prerequisite: NMT 303

Offered: Summer

NMT 311 - Radiation Safety (1)

This course covers principles and applications of radiation safety and protection. Specific topics include personal monitoring, regulations, waste disposal and radiotherapy.

Prerequisite: MEDI 201 or RADT 201, and acceptance into the medical imaging program with concentration in nuclear medicine technology program.

Offered: Spring.

NMT 321 - Diagnostic Nuclear Medicine Procedures I (3)

Topics covered are anatomy and physiology, pathophysiology, radiopharmacy, imaging techniques and the interpretation of images. The course is taught using an integrated systems approach as applied to nuclear medicine.

Prerequisite: MEDI 201 or RADT 201, and acceptance into the medical imaging with concentration in nuclear medicine technology program.

Offered: Spring.

NMT 325 - Radiation Physics (1)

This course covers concepts and physical principles that govern radioactivity and interactions of ionizing radiation with matter. Students will learn the law of radioactive decay and biological effects of radiation.

Prerequisite: NMT 301.

Offered: Summer.

NMT 332 - Clinical Diagnostic Procedures I (8)

Students learn the skills required to achieve clinical competencies in a variety of nuclear medicine procedures. Emphasis is on the integration of clinical and didactic education. 24 contact hours.

Prerequisite: RADT 201 and acceptance into the medical imaging with concentration in nuclear medicine technology.

Offered: Summer.

NMT 336 – Clinical Education I (3)

Students are introduced to clinical practice of nuclear medicine with emphasis on departmental policies and procedures, radiation safety and patientcare.  Offers practical experience observing and applying health care principles. 18 contact hours.

Prerequisite: Acceptance into a Medical Imaging clinical program.

Offered: Spring

NMT 337 – Clinical Education II (5)

Placed under direct and indirect supervision, students will learn clinical skills through observation and participation in NMT procedures. Emphasis is placed on the integration of clinical and didactic education.  30 contact hours.

Prerequisite: NMT 336

Offered: Summer

NMT 402 - Instrumentation and Radiobiology (1.5)

The principles of operation and quality control are defined for all nonimaging and imaging instruments in nuclear medicine.

Prerequisite: NMT 311.

Offered: Fall.

NMT 405 - Radiopharmacy (1)

The theory and practice of radiopharmacy and radiochemistry are defined and discussed, including preparation, calculation of doses, quality control, radiation safety, and applicable regulations.

Prerequisite: NMT 301.

Offered: Summer.

NMT 421 - Diagnostic Nuclear Medicine Procedures II (3)

This is a continuation of NMT 321.

Prerequisite: NMT 321.

Offered: Summer.

NMT 425 - Diagnostic Nuclear Medicine Procedures III (3)

This is a continuation of NMT 421.

Prerequisite: NMT 421.

Offered: Fall.

NMT 430 - Registry Review (2)

Students prepare for the national certification exam offered by the Nuclear Medicine Technology Certification Board.

Prerequisite: NMT 311.

Offered: Spring.

NMT 431 - Clinical Diagnostic Procedures II (8)

This is a continuation of NMT 332. 24 contact hours.

Prerequisite: NMT 331.

Offered: Fall.

NMT 432 - Clinical Diagnostic Procedures III (6)

This course is a continuation of NMT 431. 18 contact hours.

Prerequisite: NMT 431.

Offered: Spring.

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NMT 434 – Radiation Physics and Advanced Instrumentation (3)

Students learn design, operation, and quality control of different detectors used in nuclear medicine. Also covered: concepts and physical principles that govern radioactivity and interactions of ionizing radiation with matter.

Prerequisite: NMT 306

Offered: Fall

NMT 435 – NMT Registry Review (3)

Students are asked to make connections between the introductory lectures and clinical practice.  This course prepares students for the national certification exams.

Prerequisite: NMT 434

Offered: Spring

NMT 436 – Clinical Education III (5)

Students learn, under supervision, clinical skills through observation and participation in Nuclear Medicine procedures. Emphasis is placed on the integration of clinical and didactic education leading to proficiency. 30 contact hours.

Prerequisite: NMT 337

Offered: Fall

NMT 437 – Clinical Education IV (4)

Students learn, under supervision, further clinical skills through observation and participation in Nuclear Medicine procedures. Emphasis is placed on the integration of clinical and didactic education leading to proficiency. 24 contact hours

Prerequisite: NMT 436

Offered: Spring

After PBAD –Public Administration

RAD Radiography

RAD 331 – Foundations of Radiography (3)

Students are introduced to radiography, imaging equipment, and the radiography clinical environment. Topics include terminology, positioning and imaging principles, and radiation safety.

Prerequisite: Acceptance into a Medical Imaging Clinical program

Offered: Spring

RAD 332 – Radiographic Procedures I (3)

Students will learn positioning skills for chest, abdomen, and upper and lower extremities. Students will be introduced to basic pathologies related to anatomy included in this course.

Prerequisite: Acceptance into a Medical Imaging Clinical program

Offered: Spring

RAD 333 – Radiographic Procedures II (3)

Students will learn positioning skills for spine, bony thorax, cranium, facial bones, sinuses and contrast examinations.

Prerequisite: RAD 331

Offered: Summer

RAD 334 – Principles of Radiography (4)

Students are asked to make connections between the introductory lectures and clinical practice.  This course prepares students for the national certification exams.

Prerequisite: Acceptance into a Medical Imaging Clinical program

Offered: Spring

RAD 335 – Radiation Physics (3)

Students will learn about x-ray circuit components, methods of rectification, and construction of the x-ray tube. Topics include X-ray interactions and the absorption of radiation and effects upon tissue and tissue recovery.

Prerequisite: RAD 331

Offered: Summer

RAD 336 – Clinical Education I (3)

Students are introduced to the clinical environment with emphasis on radiography department procedures, radiation safety, and patient care. Students gain practical experience observing and applying imaging principles.  18 contact hours.

Prerequisite: Acceptance into a Medical Imaging Clinical program

Offered: Spring

RAD 338 – Clinical Education II (5)

Student learn general radiography procedures, radiation safety, and patient care with emphasis radiographer skills. They will gain practical experience applying imaging principles.  30 contact hours.

Prerequisite: RAD 336

Offered: Summer

RAD 432 –Advanced Principles of Radiobiology (4)

Students learn the concepts of creating and capturing digital images including preprocessing, processing, and postprocessing. Students will also learn principles of radiobiology and radiation protection.

Prerequisite: RAD 334

Offered: Fall

RAD 433 – Clinical Education III (5)

Students perform routine radiography procedures in various clinical settings on all patient types with emphasis on exposure factors and gaining independence in the clinical environment . 30 contact hours

Prerequisite: RAD 338

Offered: Fall

RAD 434-- Advanced Procedures in Radiography (3)

Students will learn about advanced procedures in radiography, including trauma, mobile, and surgical radiography, pediatrics, arthrography, hysterosalpingography, myelography, orthoroentgentography, and biliary duct procedures. Emphasis will be on case studies.

Prerequisite: RAD 432

Offered: Spring

RAD 435 – Registry Review (3)

Students will review the specifications of the ARRT Radiography examination, the guidelines for application, study strategies, and content included in the exam.

Prerequisite: RAD 432

Offered: Spring

RAD 436 – Clinical Education IV (4)

Students will perform routine radiography procedures in various clinical settings on all patient types with an emphasis on critical thinking and problem solving in the clinical environment . 24 contact hours

Prerequisite: RAD 433

Offered: Spring

**Note, the next set of courses will be:**

**RADT –Radiologic Technology**

**These courses remain in the catalog until the cohort taking them has graduated, then a proposal will be submitted to have these and other older Medical Imaging courses deleted.**