

# New York Chiropractic College

Masters of Science in Diagnostic Imaging (MSDI)

Graduate Program

Course Catalog Descriptions



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**AST 6556 - Preparation as a College Educator**

**30 hours, 2.0 credits**

This interactive course will explore the elements of how to prepare and deliver courses at the college level. The content will include adult education theories, current educational research and course design. Class discussion and projects will include practical and theoretical aspects of course design including: learning objectives and syllabus design; decisions in course content, preparation and delivery; assessment design, analysis and grading; and issues of instructional inclusiveness.

**RAD 5101 - Hematopoietic, Metabolic, Endocrine, and Nutritional Disturbances of Bone**

**22.5 hours, 1.5 credits**

A tutorial group (session) and laboratory course focusing upon hematopoietic, metabolic, endocrine and nutritional disturbances of bone. This course represents an intermediate level study of the pathologic and diagnostic imaging manifestations of these disorders. Additional areas to be covered include epidemiology, general diagnostic criteria, advanced imaging, management, prognosis, and associated diseases. Evaluation of plain film radiographic abnormalities will be emphasized.

**RAD 5110 - Infectious Disorders of Bone**

**7.5 hours, 0.5 credit**

A tutorial group (session) and laboratory course focusing upon infectious lesions of bone. This course represents an intermediate level study of the pathologic and diagnostic imaging manifestations of osteomyelitis and infectious related disorders. Additional areas to be covered include epidemiology, general diagnostic criteria, advanced imaging, management, prognosis, and associated diseases. Identification of plain film radiographic abnormalities will be emphasized.

**RAD 5112 - Chest Imaging**

**30 hours, 2.0 credits**

A tutorial group (session) and laboratory (film and anatomy) course focuses upon normal and pathologic conditions of the thorax. This course represents an intermediate level study of the epidemiological, plain film radiographic and advanced imaging manifestations of pathologic disorders of the chest. Additional areas to be covered include terminology, associated imaging, management, prognosis, and allied topics. Identification of plain film radiographic abnormalities will be emphasized.

**RAD 5202 - Arthritides**

**15 hours, 1.0 credit**

A tutorial group (session) and laboratory course focusing upon articular abnormalities. This course represents an intermediate level study of the pathologic and diagnostic imaging manifestations of arthritis and arthritic related disorders. Additional areas to be covered include epidemiology, general diagnostic criteria, advanced imaging, management, prognosis, and associated diseases. Identification of plain film radiographic abnormalities will be emphasized.

**RAD 5204 - Neoplastic and Neoplastic-Like Lesions of Bone** **15 hours, 1.0 credit**

A tutorial group (session) and laboratory course focuses upon neoplastic and neoplastic-like lesions of the musculoskeletal system. This course represents an intermediate level study of the epidemiological and diagnostic imaging manifestations of neoplastic and neoplastic-like lesions of the musculoskeletal system and related disorders. Additional areas to be covered include terminology, advanced imaging, management, prognosis, and associated topics. Identification of plain film radiographic abnormalities will be emphasized.

**RAD 5206 - Gastrointestinal / Genitourinary Tract Imaging** **30 hours, 2.0 credits**

A tutorial group (session) and laboratory (film and anatomy) course focuses upon disorders of the Gastrointestinal / Genitourinary Tract. This course represents an intermediate level study of the anatomic, etiologic, conventional imaging, and advanced imaging of the Gastrointestinal / Genitourinary Tract and related disorders.

**RAD 5302 - Physical Injury of the Skeletal System** **15 hours, 1.0 credit**

A tutorial group (session) and laboratory course focuses upon physical injury (trauma) of the skeletal system. This course represents an intermediate level study of the etiologic and diagnostic imaging manifestations of physical injury of the skeletal system and related disorders. Additional areas to be covered include terminology, advanced imaging, management, prognosis, and associated topics. Identification of plain film radiographic abnormalities will be emphasized.

**RAD 5304 - Internal Derangement of Joints** **15 hours, 1.0 credit**

A tutorial group (session) and laboratory (film and anatomy) course focuses upon internal derangement of joints. This course represents an intermediate level study of the etiologic and advanced imaging (MRI) of internal derangement of joints and related disorders. Additional areas to be covered include principals of magnetic imaging, terminology associated with internal derangement of joints, diagnostic imaging manifestations, management, prognosis, and associated topics. Identification of advanced imaging (MRI) abnormalities will be emphasized.

**RAD 5306 - Neuroimaging** **30 hours, 2.0 credits**

An intermediate level course using tutorial group (session) and laboratory (film and anatomy) focusing upon the anatomic, etiologic, conventional imaging, and advanced imaging of the brain and spinal cord.

**RAD 5402 - Advanced Hematopoietic, Metabolic, Endocrine and Nutritional Disturbances of Bone** **22.5 hours, 1.5 credits**

A tutorial group (session) and laboratory course focusing upon hematopoietic, metabolic, endocrine and nutritional disturbances of bone. This course represents an advanced level study of the pathologic and diagnostic imaging manifestations of these disorders. Additional areas to be covered include epidemiology, general diagnostic criteria, advanced imaging, management, prognosis, and associated diseases. Evaluation of plain film radiographic abnormalities will be emphasized.

**RAD 5404 - Advanced Infectious Disorders of Bone**

**7.5 hours, 0.5 credit**

A tutorial group (session) and laboratory course focusing upon infectious lesions of bone. This course represents an advanced level study of the pathologic and diagnostic imaging manifestations of osteomyelitis and infectious related disorders. Additional areas to be covered include epidemiology, general diagnostic criteria, advanced imaging, management, prognosis, and associated diseases. Identification of plain film radiographic abnormalities will be emphasized.

**RAD 5406 - Advanced Chest Imaging**

**30 hours, 2.0 credits**

A tutorial group (session) and laboratory (film and anatomy) course focuses upon normal and pathologic conditions of the thorax. This course represents an advanced level study of the epidemiological, plain film radiographic and advanced imaging manifestations of pathologic disorders of the chest. Additional areas to be covered include terminology, associated imaging, management, prognosis, and allied topics. Identification of plain film radiographic abnormalities will be emphasized.

**RAD 5502 - Advanced Arthritides**

**15 hours, 1.0 credit**

A tutorial group (session) and laboratory course focusing upon articular abnormalities. This course represents an advanced level study of the pathologic and diagnostic imaging manifestations of arthritis and arthritic related disorders. Additional areas to be covered include epidemiology, general diagnostic criteria, advanced imaging, management, prognosis, and associated diseases. Identification of plain film radiographic abnormalities will be emphasized.

**RAD 5504 - Advanced Neoplastic and Neoplastic-Like Lesions of Bone**

**15 hours, 1.0 credit**

A tutorial group (session) and laboratory course focuses upon neoplastic and neoplastic-like lesions of the musculoskeletal system. This course represents an advanced level study of the epidemiological and diagnostic imaging manifestations of neoplastic and neoplastic-like lesions of the musculoskeletal system and related disorders. Additional areas to be covered include terminology, advanced imaging, management, prognosis, and associated topics. Identification of plain film radiographic abnormalities will be emphasized.

**RAD 5506 - Advanced Gastrointestinal/Genitourinary Tract Imaging**

**30 hours, 2.0 credits**

A tutorial group (session) and laboratory (film and anatomy) course focuses upon disorders of the Gastrointestinal / Genitourinary Tract. This course represents an advanced level study of the anatomic, etiologic, conventional imaging, and advanced imaging of the Gastrointestinal / Genitourinary Tract and related disorders.

**RAD 5508 - Special Topics in Clinical Radiology I**

**30 hours, 2.0 credits**

This course is an in-depth examination of a specific topic in radiology. The graduate student will assess the state of the current literature on a specific subject with purpose of communicating the information in the form of a case study suitable for publication. Content will be based on the subject selected and will discuss the epidemiology and pathogenesis, clinical presentation, diagnostic features with an emphasis on diagnostic radiology, treatments, prognosis and outcomes.

**RAD 5602 - Advanced Physical Injury of the Skeletal System** **15 hours, 1.0 credit**

A tutorial group (session) and laboratory course focuses upon physical injury (trauma) of the skeletal system. This course represents an advanced level study of the etiologic and diagnostic imaging manifestations of physical injury of the skeletal system and related disorders. Additional areas to be covered include terminology, advanced imaging, management, prognosis, and associated topics. Identification of plain film radiographic abnormalities will be emphasized.

**RAD 5604 - Advanced Internal Derangement of Joints** **15 hours, 1.0 credit**

A tutorial group (session) and laboratory (film and anatomy) course focuses upon internal derangement of joints. This course represents an advanced level study of the etiologic and advanced imaging (MRI) of internal derangement of joints and related disorders. Additional areas to be covered include principals of magnetic imaging, terminology associated with internal derangement of joints, diagnostic imaging manifestations, management, prognosis, and associated topics. Identification of advanced imaging (MRI) abnormalities will be emphasized.

**RAD 5606 - Advanced Neuroimaging** **30 hours, 2.0 credits**

An advanced level course using tutorial group (session) and laboratory (film and anatomy) focusing upon the anatomic, etiologic, conventional imaging, and advanced imaging of the brain and spinal cord.

**RAD 5608- Business of Radiology** **30 hours, 2.0 credits**

A business course designed for the Masters of Science in Diagnostic Imaging in which the basic fundamentals of business will be discussed. This course will assist residents in accounting, marketing, strategic planning, organizational framework of a chiropractic radiology practice. Students will be able to identify potential markets, streamline practice growth, and have a basic understanding of the business culture related to health care. They will be able to apply these basic principles to their radiology practice. This course will assist students in identifying the marketing trends that are pertinent in the health care industry. As the health care market evolves it is necessary for the health care profession to understand the principles and applications of business in the health care environment. This will be a graduate level business course with a health care concentration.

**RAD 5702 - Congenital Anomalies and Skeletal Dysplasias** **30 hours, 2.0 credits**

A tutorial group (session) and laboratory course focusing upon congenital anomalies and skeletal dysplasias. This course represents an advanced level study of the pathologic / genetic and diagnostic imaging manifestations of congenital anomalies and skeletal dysplastic related disorders. Additional areas to be covered include epidemiology, general diagnostic criteria, advanced imaging, management, prognosis, and associated diseases. Identification of plain film radiographic abnormalities will be emphasized.

**RAD 5704 - Principles of Diagnostic Imaging** **30 hours, 2.0 credits**

A tutorial group (session) and laboratory course focusing upon principals of diagnostic imaging. This course represents an advanced study of the physical principals involved in obtaining plain film radiographs, radiation protection, radiobiology, and advanced imaging.

**RAD 5706 - Teaching Practicum I**

**30 hours, 2.0 credits**

This course is the first in a series of three teaching practicum where the graduate student will be directing the instruction of professional level courses at NYCC. The student will take the responsibility of course director for one radiology course in the DC program. The teaching experience will vary, depending upon course offerings at the time, but will typically include one of the following: physics of diagnostic imaging, normal spinal radiological anatomy, normal extraspinal radiological anatomy, soft tissue and advanced imaging, radiographic positioning or an elective class. The MSDI student will act under the guidance of the MSDI director.

**RAD 5802 - Special Topics in Clinical Radiology II**

**30 hours, 2.0 credits**

This course is a second look at an in-depth examination of a specific topic in radiology. The graduate student will assess the state of the current literature on a specific subject with purpose of communicating the information in the form of a case study suitable for publication. Content will be based on the subject selected and will discuss the epidemiology, pathogenesis, clinical presentation, diagnostic features with an emphasis on diagnostic radiology, treatments, prognosis and outcomes.

**RAD 5806 – Teaching Practicum II**

**30 hours, 2.0 credits**

This course is the second in a series of three teaching practicum where the graduate student will be directing the instruction of professional level courses at NYCC. The student will take the responsibility of course director for one radiology course in the DC program. The teaching experience will vary, depending upon course offerings at the time, but will typically include one of the following: physics of diagnostic imaging, normal spinal radiological anatomy, normal extraspinal radiological anatomy, soft tissue and advanced imaging, radiographic positioning or an elective class. The MSDI student will act under the guidance of the MSDI director.

**RAD 5902 - Special Topics in Clinical Radiology III**

**30 hours, 2.0 credits**

This course is an in-depth examination of four specific topics in radiology. The graduate student will assess the state of the current literature of four specific subjects with the purpose of communicating the information in the form of a presentation to interns enrolled in the doctor of chiropractic program and their supervising clinicians. The selected topics should be based upon clinical cases encountered by the graduate student during his/her residency and must include the following: three musculoskeletal case studies all of which must have plain films, at least one must be of the spine, and at least one must have advanced imaging; and one other case study, in either chest, abdomen, or neuroradiology areas. Content will be based on the subject selected and will discuss the epidemiology, pathogenesis, clinical presentation, diagnostic features with an emphasis on diagnostic radiology, treatments, prognosis and outcomes.

**RAD 5906 - Teaching Practicum III**

**30 hours, 2.0 credits**

This course is the third in a series of three teaching practicum where the graduate student will be directing the instruction of professional level courses at NYCC. The student will take the responsibility of course director for one radiology course in the DC program. The teaching experience will vary, depending upon course offerings at the time, but will typically include one of the following: physics of diagnostic imaging, normal spinal radiological anatomy, normal extraspinal radiological anatomy, soft tissue and advanced imaging, radiographic positioning or an elective class. The MSDI student will act under the guidance of the MSDI director.

**RES 5208 - Experimental Design and Research Methodologies** **30 hours, 2.0 credits**

A discussion meeting / on-line course designed to introduce the graduate student to typical biomedical research methods. This advanced course will require the student to critically review a number of current journal articles in the field of Radiology.

**RES 5308 - Experimental Analysis** **30 hours, 2.0 credits**

A discussion / on-line course designed to introduce the graduate student to typical methods in analyzing biomedical data using descriptive and inferential statistics. This course will help guide the graduate student in developing research studies, conducting statistical analyses and reading / evaluating the literature.

**RES 5410 - Thesis I** **30 hours, 2.0 credits**

This course is an intermediate step in the creation of the graduate student's thesis project. The graduate student will determine a hypothesis or question to answer in the field of diagnostic imaging, perform a literature review and develop a research methodology to answer that question. Content will be based on the subject selected and will discuss the feasibility of the project, introduction, method, discussion, conclusion of the literature review, and sample, measures, design, procedures of the methodology.

**RES 5810 - Thesis II** **30 hours, 2.0 credits**

This course is the second intermediate step in the creation of the graduate student's thesis project. After having previously formulated a research hypothesis, performed a literature review and developed a research method, the student will examine the research data and present the results analysis. Content will be based on the subject selected and will discuss the data preparation, descriptive statistics and conclusion validity.

**RES 5910 - Thesis III** **30 hours, 2.0 credits**

This course is the final step in the creation of the graduate student's thesis project. After having previously formulated a research hypothesis, performed a literature review, developed a research method, analyzed the research results, the student will finalize the project by developing an introduction, discussing the results, giving recommendations and concluding on the project. Content will be based on the subject selected and will include the creation of a title page, structured abstract, introduction, methods, results, discussion, recommendations, conclusion and references. Emphasis will be placed on the introduction and discussion portions of the thesis, as the methods and results have been previously assessed.