

RADT M52A: NUCLEAR MEDICINE CLINICAL LAB IIIA

Originator

rdarwin

College

Moorpark College

Discipline (CB01A)

RADT - Radiologic Technology

Course Number (CB01B)

M52A

Course Title (CB02)

Nuclear Medicine Clinical Lab IIIA

Banner/Short Title

Nuclear Med Clinical Lab IIIA

Credit Type

Credit

Start Term

Summer 2023

Formerly

RADT M52 - Nuclear Med Clinical Lab III

Catalog Course Description

Provides an opportunity for advanced practical application of nuclear medicine procedures. Includes the skeletal, cardiovascular, central nervous, digestive, endocrine/exocrine, respiratory, genitourinary, and hematopoietic systems. Utilizes lab in the Nuclear Medicine department of a pre-assigned clinical affiliate.

OTHER: Materials Fee: There is a materials fee for the course. The fee varies based on market value.

Taxonomy of Programs (TOP) Code (CB03)

1225.00 - *Radiologic Technology

Course Credit Status (CB04)

D (Credit - Degree Applicable)

Course Transfer Status (CB05) (select one only)

B (Transferable to CSU only)

Course Basic Skills Status (CB08)

N - The Course is Not a Basic Skills Course

SAM Priority Code (CB09)

C - Clearly Occupational

Course Cooperative Work Experience Education Status (CB10)

N - Is Not Part of a Cooperative Work Experience Education Program

Course Classification Status (CB11)

Y - Credit Course

Educational Assistance Class Instruction (Approved Special Class) (CB13)

N - The Course is Not an Approved Special Class

Course Prior to Transfer Level (CB21)

Y - Not Applicable

Course Noncredit Category (CB22)

Y - Credit Course

Funding Agency Category (CB23)

Y - Not Applicable (Funding Not Used)

Course Program Status (CB24)

1 - Program Applicable

General Education Status (CB25)

Y - Not Applicable

Support Course Status (CB26)

N - Course is not a support course

Field trips

Will not be required

Grading method

(L) Letter Graded

Does this course require an instructional materials fee?

Yes

Fee Amount

89.44

What personal property or material does the student need that the fee pays for?

Radiation monitor (Thermoluminescence device [TLD])

Identify a specific course objective that cannot be met but for the use of the materials at issue.

- perform all the assigned advanced clinical lab procedures utilizing an actual patient and the clinical affiliate's routine for each procedure of the skeletal, cardiovascular, central nervous, digestion, endocrine, respiratory, genitourinary, hematopoietic and inflammatory systems.
- practice, through demonstration, acceptable radiation protection methods according to the California Radiation Health Code when performing all scans.
- observe, assist and perform advanced nuclear medicine scans of the skeletal, cardiovascular, central nervous, digestive, endocrine, respiratory, genitourinary, hematopoietic, and inflammatory systems in adult as well as pediatric patients.

Is the amount of materials the students must supply, or the amount that they receive in exchange for the fee that is charged, consistent with the amount of material necessary to meet the required objectives of the course?

Yes

If students pay a fee rather than furnishing their own materials, why do they have to pay a fee rather than supply the materials themselves? Is the district/college the only source of the materials? If not, is there a health or safety reason for the district/college to supply the materials? If not, will the district/college supply the materials more cheaply than they can be obtained elsewhere, AND at the district's/college's actual cost?

Students are unable to purchase the radiation monitoring device individually. The college must also review and store all radiation monitoring reports from these devices for all students in the program, forever.

Specify the month and year in which the fee amount, or list of material provided, was reviewed by the host department to ensure that the preceding standards continue to be met.

January 2021

Repeatable for Credit

No

Is this course part of a family?

No

Units and Hours**Carnegie Unit Override**

No

In-Class**Lecture****Activity****Laboratory****Minimum Contact/In-Class Laboratory Hours**

131.25

Maximum Contact/In-Class Laboratory Hours

131.25

Total in-Class**Total in-Class****Total Minimum Contact/In-Class Hours**

131.25

Total Maximum Contact/In-Class Hours

131.25

Outside-of-Class**Internship/Cooperative Work Experience****Paid****Unpaid****Total Outside-of-Class****Total Outside-of-Class****Total Student Learning****Total Student Learning****Total Minimum Student Learning Hours**

131.25

Total Maximum Student Learning Hours

131.25

Minimum Units (CB07)

2.5

Maximum Units (CB06)

2.5

Prerequisites

RADT M40 and RADT M42 and RADT M44A

Limitations on Enrollment

Criminal background clearance

Current CPR certification for health care provider (American Heart Association) or professional rescuer (American Red Cross)

Current negative TB test or chest x-ray

Drug and alcohol clearance

No acrylic or long nails in clinical settings

No visible tattoos or visible body piercings except single studs in earlobes

Others (specify)

Other Limitations on Enrollment

Admission to the Moorpark College Nuclear Medicine Program
 Current American Registry of Radiologic Technologists (ARRT) license
 BLS CPR card from American Heart Association only
 Los Angeles City Hospital Fire and Life Safety Card
 Proof of Health Insurance
 Proof of Professional Liability Insurance

Entrance Skills**Entrance Skills**

RADT M40

Prerequisite Course Objectives

RADT M40-name the basic nuclear medicine procedures included in this course.

RADT M40-list and describe the nuclear medicine terms for procedures involving the genitourinary, hematology, and respiratory systems.

RADT M40-describe gross anatomy and function for genitourinary, hematology, and respiratory systems.

RADT M40-identify structures seen on nuclear medicine images of the genitourinary, hematology, and respiratory systems.

RADT M40-describe the radiopharmaceuticals used for imaging of the genitourinary, hematology, and respiratory systems, including their physical and chemical properties, birouting, route and method of administration.

RADT M40-discuss the advantages and disadvantages of each radiopharmaceutical agent used in genitourinary, hematology, respiratory systems, and pediatric procedures.

RADT M40-specify the radiation dose range for imaging agents used in the imaging of genitourinary, hematology, respiratory systems, and pediatric procedures and discuss the resulting radiation dose to the various organs and tissues.

RADT M40-discuss any physical or pathological conditions, prior procedures, or medications that could contraindicate or interfere with imaging of the genitourinary, hematology, and respiratory systems.

RADT M40-describe any precautions that should be taken and any potential adverse reactions to the radiopharmaceuticals used while imaging the genitourinary, hematology, and respiratory systems.

RADT M40-describe the preparation of the patient for each procedure of the genitourinary, hematology, and respiratory systems.

RADT M40-describe the procedures for routine imaging of genitourinary, hematology, oncology/ inflammation, respiratory systems, and pediatric procedures, including equipment, protocol, dose and administration techniques.

RADT M40-describe the appearance of various pathologies seen on nuclear medicine images of the genitourinary, hematology, and respiratory systems.

Entrance Skills

RADT M42

Prerequisite Course Objectives

RADT M42-evaluate patient's medical history to understand and relate to the patient's illness and the pending diagnostic or therapeutic procedure

RADT M42-determine the appropriate sequence for executing multiple procedures.

RADT M42-define local, state and federal regulations in order to maintain compliance with all agencies.

RADT M42-follow proper protection procedures thereby limiting the radiation exposure to the patient, fellow workers, and self.

RADT M42-practice decontamination procedures and follow all state and federal regulations for disposing of radioactive waste.

RADT M42-evaluate the performance of scintillation cameras and probes.

RADT M42-prepare and verify quality of radiopharmaceuticals under the direction of an authorized user.

RADT M42-assist an authorized user in the preparation and application of therapeutic radionuclides for SPECT/CT, PET, and PET/CT procedures.

RADT M42-perform and evaluate quality control procedures for a SPECT camera.

RADT M42-evaluate and discuss theories and practice of radiopharmacy, including preparation, calculations of the dose to be administered, quality control, radiation safety, and applicable regulations.

Entrance Skills

RADT M44A

Prerequisite Course Objectives

RADT M44A-perform all the assigned clinical lab procedures utilizing an actual patient and the clinical affiliate's routine for each procedure of the respiratory, genitourinary, and hematopoietic systems, inflammatory/tumor pathology.

RADT M44A-evaluate the quality and accuracy of each scan of the respiratory, genitourinary, and hematopoietic systems, inflammatory/tumor pathology.

RADT M44A-practice, through demonstration, acceptable radiation protection methods according to the California Radiation Health Code when performing procedures of the respiratory, genitourinary, and hematopoietic systems, inflammatory/tumor pathology.

RADT M44A-observe, assist and perform nuclear medicine scans of the respiratory, genitourinary, hematopoietic, inflammatory systems for adult as well as pediatric patients.

Requisite Justification

Requisite Type

Prerequisite

Requisite

RADT M40

Requisite Description

Course in a sequence

Level of Scrutiny/Justification

Required by statute or regulation

Requisite Type

Prerequisite

Requisite

RAD M42

Requisite Description

Course in a sequence

Level of Scrutiny/Justification

Required by statute or regulation

Requisite Type

Prerequisite

Requisite

RADT M44A

Requisite Description

Course in a sequence

Level of Scrutiny/Justification

Required by statute or regulation

Requisite Type

Enrollment Limitation

Requisite

Admission to the Moorpark College Nuclear Medicine Program
 Current American Registry of Radiologic Technologists (ARRT) license
 BLS CPR card from American Heart Association only
 Los Angeles City Hospital Fire and Life Safety Card
 Proof of Health Insurance
 Proof of Professional Liability Insurance

Requisite Description

Credit program requisite (credit only)

Level of Scrutiny/Justification

Required by statute or regulation

Student Learning Outcomes (CSLOs)

Upon satisfactory completion of the course, students will be able to:

- | | |
|---|--|
| 1 | complete competency evaluation with at least 90% accuracy. |
| 2 | complete at least 3 clinical competencies by the end of this course. |

Course Objectives

Upon satisfactory completion of the course, students will be able to:

- | | |
|---|---|
| 1 | perform all the assigned advanced clinical lab procedures utilizing an actual patient and the clinical affiliate's routine for each procedure of the skeletal, cardiovascular, central nervous, digestion, endocrine, respiratory, genitourinary, hematopoietic and inflammatory systems. |
| 2 | evaluate the quality and accuracy of each completed scan. |
| 3 | practice, through demonstration, acceptable radiation protection methods according to the California Radiation Health Code when performing all scans. |
| 4 | observe, assist and perform advanced nuclear medicine scans of the skeletal, cardiovascular, central nervous, digestive, endocrine, respiratory, genitourinary, hematopoietic, and inflammatory systems in adult as well as pediatric patients. |
| 5 | identify the proper functional nuclear medicine unit to demonstrate the appropriate criteria for each examination. |

Course Content**Lecture/Course Content**

None

Laboratory or Activity Content

- 20% Advanced nuclear medicine procedures of the cardiovascular system
- 20% Advanced nuclear medicine procedures of the exocrine/endocrine system
- 20% Advanced nuclear medicine procedures of the skeletal system
- 20% Advanced nuclear medicine procedures of the digestive system
- 20% Advanced nuclear medicine procedures of the central nervous system

Methods of Evaluation

Which of these methods will students use to demonstrate proficiency in the subject matter of this course? (Check all that apply):

Skills demonstrations

Methods of Evaluation may include, but are not limited to, the following typical classroom assessment techniques/required assignments (check as many as are deemed appropriate):

- Clinical demonstration
- Oral analysis/critiques
- Performances
- Skills demonstrations
- Participation

Instructional Methodology

Specify the methods of instruction that may be employed in this course

- Clinical demonstrations
- Field experience/internship
- Instructor-guided interpretation and analysis
- Instructor-guided use of technology
- Problem-solving examples

Describe specific examples of the methods the instructor will use:

Clinical coordinator will follow up with the clinical preceptor or the nuclear medicine technologist on a consistent basis to make sure that the students are exposed to and perform the American Registry of Radiologic Technologists (ARRT) exam competencies required.

Representative Course Assignments

Writing Assignments

- Complete paperwork needed to process each nuclear medicine exam.
- Document nuclear medicine procedures and observations in the clinical portfolio.
- Complete written assignments in lab manuals.

Critical Thinking Assignments

- Evaluate the patient's condition (pathology, injury, age, physically/mentally challenged) to determine proper method of completing a nuclear medicine scan.
- Analyze the completed scan for diagnostic quality, such as a scan of the brain.
- Select the correct instruments and radioisotopes depending on patient size, weight, age, physical condition and pathology.

Reading Assignments

- Read California Department of Health Radiologic Health Branch Title-17 code of regulations for radiation safety.
- Read a peer reviewed article on from journal of the American Society of Radiologic Technologists (ASRT).

Skills Demonstrations

- Complete competencies in nuclear medicine imaging pertaining to the cardiovascular, exocrine/endocrine, skeletal, digestive, and central nervous systems.
- Perform quality control procedures on nuclear medicine equipment.

Outside Assignments

District General Education

A. Natural Sciences

B. Social and Behavioral Sciences

C. Humanities

D. Language and Rationality

E. Health and Physical Education/Kinesiology

F. Ethnic Studies/Gender Studies

CSU GE-Breadth

Area A: English Language Communication and Critical Thinking

Area B: Scientific Inquiry and Quantitative Reasoning

Area C: Arts and Humanities

Area D: Social Sciences

Area E: Lifelong Learning and Self-Development

Area F: Ethnic Studies

CSU Graduation Requirement in U.S. History, Constitution and American Ideals:

IGETC

Area 1: English Communication

Area 2A: Mathematical Concepts & Quantitative Reasoning

Area 3: Arts and Humanities

Area 4: Social and Behavioral Sciences

Area 5: Physical and Biological Sciences

Area 6: Languages Other than English (LOTE)

Textbooks and Lab Manuals

Resource Type

Textbook

Classic Textbook

Yes

Description

Gilmore, David, and Kristen Waterstram-Rich. *Nuclear Medicine and PET/CT: Technology and Techniques*. 8th ed., Mosby, 2016.

Resource Type

Textbook

Classic Textbook

Yes

DescriptionShackett, Pete. *Nuclear Medicine Technology: Procedures and Quick Reference*. 3rd ed., Lippincott, Williams and Wilkins, 2019.**Library Resources****Assignments requiring library resources**

Nuclear medicine journal reading assignments using the Library's print and online resources and Course Reserve materials.

Sufficient Library Resources exist

Yes

Example of Assignments Requiring Library Resources

Research professional journals for articles on nuclear medicine procedures.

Online research using the Library's health sciences databases on bone, cardiovascular, central nervous, digestive, and endocrine/exocrine systems for case study examinations.

Primary Minimum Qualification

RADIOLOGIC TECHNOLOGY

Review and Approval Dates**Department Chair**

06/04/2021

Dean

09/14/2021

Technical Review

10/07/2021

Curriculum Committee

10/19/2021

DTRW-I

MM/DD/YYYY

Curriculum Committee

MM/DD/YYYY

Board

MM/DD/YYYY

CCCCO

MM/DD/YYYY

Control Number

CCC000519094

DOE/accreditation approval date

MM/DD/YYYY