

# RADT M04L: RADIOGRAPHIC CLINICAL LAB IV

**Originator**

atorabyan

**College**

Moorpark College

**Discipline (CB01A)**

RADT - Radiologic Technology

**Course Number (CB01B)**

M04L

**Course Title (CB02)**

Radiographic Clinical Lab IV

**Banner/Short Title**

Radiographic Clinical Lab IV

**Credit Type**

Credit

**Start Term**

Spring 2021

**Catalog Course Description**

Provides an opportunity for practical application of the advanced radiography theory and lab content of upper and lower extremity, upper and lower gastrointestinal, and genitourinary studies using contrast media, fluoroscopy, and C-arm in surgical exams. Includes limited rotations in computer tomography, magnetic resonance, radiation therapy, ultrasound, cardiac catheterization and special interventional radiographic procedures in assigned clinical setting.

**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)**

B - Advanced 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?**

No

**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**

560

**Maximum Contact/In-Class Laboratory Hours**

560

**Total in-Class**

Total in-Class

**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**

560

**Total Maximum Student Learning Hours**

560

**Minimum Units (CB07)**

10.5

**Maximum Units (CB06)**

10.5

**Prerequisites**

RADT M03, RADT M03L, and RADT M03B

**Corequisites**

RADT M04 and RADT M14

**Limitations on Enrollment**

Criminal background clearance

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

Drug and alcohol clearance

Proof of freedom from and immunity to communicable diseases

No acrylic or long nails in clinical settings

Current negative TB test or chest x-ray

Others (specify)

Physical examination demonstrating general good health

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

**Other Limitations on Enrollment**

Admission to the Radiologic Technology Program

CPR BLS Provider 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 M03

**Prerequisite Course Objectives**

RADT M03-Describe the components of the CT (computed tomography) imaging system

RADT M03-List the computer data processing steps

RADT M03-Name the common controls found on a CT operator console and describe the how and why each is used

RADT M03-Describe the principles of CT data acquisition

RADT M03-List and describe the steps in CT image reconstruction and display

RADT M03-Explain CT image post-processing and data management

RADT M03-Discuss image quality in reference to CT acquired images

RADT M03-Discuss general anatomical structures on CT and MR (magnetic resonance)images

RADT M03-Describe the relationship of each anatomical structure to surrounding structures on CT and MR images

RADT M03-Describe the function of each anatomical structure found on CT and MR images

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**Entrance Skills**

RADT M03B

**Prerequisite Course Objectives**

RADT M03B-define basic terms related to pathology.

RADT M03B-describe the basic manifestations of pathology conditions and their relevance to radiologic procedures.

RADT M03B-describe imaging procedures used in diagnosing disease.

RADT M03B-describe the various systemic classifications of disease in terms of etiology, types, common sites, complications, and prognosis.

RADT M03B-describe the radiographic appearance of diseases.

RADT M03B-identify imaging procedures and interventional techniques appropriate for diseases common to each body system.

RADT M03B-identify and explain how to alter procedures and techniques to image specific pathologies.

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**Entrance Skills**

RADT M03L

**Prerequisite Course Objectives**

RADT M03L-Demonstrate intermediate level skills in proper positioning and exposure of skeletal system

RADT M03L-Demonstrate intermediate level skills in exposure of fluoroscopy unit to perform upper and lower gastrointestinal exams using appropriate contrast media while following radiation safety guidelines when utilizing fluoroscopy unit.

RADT M03L-Demonstrate intermediate level skills in proper positioning and exposure of fluoroscopy using C-arm in the operating room following Radiation Safety guidelines.

RADT M03L-Evaluate and critique the quality of images and accuracy of each position as it appears on the finished radiograph with clinical instructor supervision.

RADT M03L-Select optimal technical factors to produce quality diagnostic images with the lowest possible radiation exposure possible.

RADT M03L-Integrate the use of appropriate and effective written, oral and nonverbal communication with patients, the public and members of the health care team in the clinical setting.

RADT M03L-Maintain patient confidentiality standards and meet HIPPA (Health Insurance Portability and Accountability Act of 1996) requirements.

RADT M03L-Provide patient-centered, clinically effective care for all patients regardless of age, gender, disability, special needs, ethnicity or culture.

RADT M03L-Demonstrate skills in efficient documentation of objective and subjective patient history before start of each exam to identify if modification is needed.

RADT M03L-Demonstrate competency in principles of radiation protection standards in accordance with California Radiation Health Code (Title 17).

RADT M03L-Demonstrate competency by completing 14 competencies from skeletal system, cranium, gastrointestinal, urinary, mobile, surgical, pediatric and geriatric exams including competency in head scan using computed tomography.

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**Requisite Justification****Requisite Type**

Corequisite

**Requisite**

RADT M04

**Requisite Description**

Course in a sequence

**Level of Scrutiny/Justification**

Required by statute or regulation

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**Requisite Type**

Corequisite

**Requisite**

RADT M14

**Requisite Description**

Course in a sequence

**Level of Scrutiny/Justification**

Required by statute or regulation

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**Requisite Type**

Enrollment Limitation

**Requisite**

Criminal background clearance  
 Drug and alcohol clearance  
 Proof of freedom from and immunity to communicable disease  
 No acrylic or long nails in clinical settings  
 Current negative TB test or chest x-ray  
 Physical examination demonstrating general good health  
 No visible tattoos or visible body piercing except single studs in earlobes  
 Other (specify)  
 Admission to the Radiologic Technology Program  
 CPR BLS Provider card from American Heart Association only  
 Los Angeles 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

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**Requisite Type**

Prerequisite

**Requisite**

RADT M03

**Requisite Description**

Course in a sequence

**Level of Scrutiny/Justification**

Required by statute or regulation

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**Requisite Type**

Prerequisite

**Requisite**

RADT M03L

**Requisite Description**

Course in a sequence

**Level of Scrutiny/Justification**

Required by statute or regulation

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**Requisite Type**

Prerequisite

**Requisite**

RADT M03B

**Requisite Description**

Course in a sequence

**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 | perform all the assigned clinical lab procedures utilizing an actual patient and the clinical affiliates routine for each procedure.  |
| 2 | evaluate the quality, and the accuracy of radiographic procedures, and the technical skills as it appears on the finished radiograph. |

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

- |    |  |
|----|--|
| 1  | demonstrate intermediate skill level in proper positioning and exposure of skeletal system.  |
| 2  | demonstrate intermediate skill level and confidence in exposure of fluoroscopy unit to perform any exam to involve contrast media while following radiation safety guidelines for self and patient to produce an optimal image.          |
| 3  | demonstrate intermediate skill level in selection of optimal exposure factors to produce quality diagnostic images with the lowest possible radiation exposure.  |
| 4  | integrate the use of appropriate and effective written, oral and nonverbal communication with patients, the public and members of the health care team in the clinical setting.  |
| 5  | maintain patient confidentiality standards and meet Health Insurance Portability and Accountability Act(HIPAA)requirements.  |
| 6  | provide patient-centered, clinically effective care for all patients regardless of age, gender, disability, special needs, ethnicity or culture.   |
| 7  | demonstrate higher level of critical thinking skills to adapt and modify procedures to meet patient needs as in age-specific, disease-specific and cultural needs of patients.   |
| 8  | evaluate and critique radiographic images for appropriate anatomy, image quality, and patient identification under the supervision of clinical instructor  |
| 9  | demonstrate competency in principles of radiation protection standards in accordance with California Radiation Health Code (Title 17).   |
| 10 | produce a minimum of eleven radiographic competencies from the axial or appendicular skeletal systems, gastrointestinal and genitourinary system and surgical procedures, and including one computed tomography competencies, head scan. |
| 11 | demonstrate skill in utilization of Radiology Information System (RIS) to efficiently document objective and subjective patient history relevant to each exam and to appropriately present it to Radiologist before start of each exam.  |
| 12 | demonstrate skills in utilization of Picture Archiving Communication System (PACS) and post-processing.  |

**Course Content****Lecture/Course Content**

none

**Laboratory or Activity Content**

- 5% Routine cranium
- 5% Computed tomography procedures
- 20% Upper and lower gastrointestinal procedures using contrast media and fluoroscopy.
- 5% Urinary procedures using contrast media and fluoroscopy
- 5% Advanced modalities rotation
- 20% Surgical procedures
- 20% Mobile procedures
- 10% Pediatric Exams
- 10% Geriatric Exams

## 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

Other (specify)

Skills demonstrations

### Other

Proactive participation, efficient use of clinical time and sustain organized clinical portfolio.

## 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

Other (specify)

Specify other method of instruction

Job shadowing and practice positioning at clinical site.

Describe specific examples of the methods the instructor will use:

Clinical instructor or other radiologic technologists with a minimum of two year experience will demonstrate and guide student(s) on use of technology such as c-arm during surgical procedures and steps of "how to" on each new exam student to be involved.

## Representative Course Assignments

### Writing Assignments

Write documentation of radiographic exams in clinical portfolio such as pacemaker lead extraction.

Complete written assignments in workbook lab manuals.

Complete paperwork needed to process radiographic exam such as lumbar myelogram using fluoroscopy with informed consent, documentation of fluoro time and patient radiation dose.

### Critical Thinking Assignments

Demonstrate understanding and knowledge of specific critical lab values such as platelet count, or international normalizing ratio (INR) pertaining to exams such as lumbar myelogram or lumbar puncture.

Organize sequence of tasks and adapt to special challenges to complete the exam with minimal discomfort to patient when performing an exam on geriatric patient with physical disability.

Design a step by step "how to" for use and manipulation of C-arm fluoroscopy unit during surgical procedures such as retrograde cystography.

### Reading Assignments

Read peer reviewed article on "Patient-centered Radiation Safety" from journal of the American Society of Radiologic Technology (ASRT).

Read peer reviewed article on "Radiography Student Participation in Professional Organizations" from journal of the American Society of Radiologic Technology (ASRT).

### Skills Demonstrations

Demonstrate competency on use of fluoroscopy equipment during surgical cases or diagnostic exams.

Demonstrate competency on manipulation and use of portable x-ray machine for Intensive Care Unit Patients or ER Trauma Cases to demonstrate line tube placement or fractured shoulder.

## Outside Assignments

### Representative Outside Assignments

Review hospital protocols before start of clinical rotation on a daily basis.

Review radiographic exams in handbook before start of clinical rotation.

Review clinical notes before start of clinical rotation on a daily basis.

## Articulation

### Equivalent Courses at 4 year institutions

University	Course ID	Course Title	Units
Long Beach City College	DMI 40D	Clinical Radiology	11
CSU Northridge	HSCI 283	Radiologic Technology: Clinical Education IV	3
Santa Barbara City College	RT 294	Radiographic Technology Clinical Practicum 4	7.1
Foothill College	RT 63C	Radiographic Clinical Practicum III	7.5



**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**Lampignano, John and Leslie E. Kendrick. *Textbook of Radiographic Positioning and Related Anatomy*. 10<sup>th</sup> ed., Mosby, 2020.**Resource Type**

Other Instructional Materials

**Description**Lampignano, John and Leslie E. Kendrick. *Bontrager's Handbook of Radiographic Positioning and Techniques*. 10<sup>th</sup> ed., Mosby, 2020.

**Resource Type**

Textbook

**Classic Textbook**

Yes

**Description**

McQuillen Martensen, Kathy. *Radiographic Image Analysis*. 5<sup>th</sup> ed., Saunders, 2019.

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**Library Resources**

**Assignments requiring library resources**

Utilize the Library's print and online resources (CINAHL, EBSCO Health Source: Nursing/Academic Edition, and Elsevier ScienceDirect) to find articles from radiography and medical journals.

**Sufficient Library Resources exist**

Yes

**Example of Assignments Requiring Library Resources**

Peer reviewed article on shielding in medical imaging.

**Primary Minimum Qualification**

RADIOLOGIC TECHNOLOGY

**Review and Approval Dates**

**Department Chair**

08/28/2020

**Dean**

08/28/2020

**Technical Review**

09/17/2020

**Curriculum Committee**

10/6/2020

**DTRW-I**

MM/DD/YYYY

**Curriculum Committee**

MM/DD/YYYY

**Board**

MM/DD/YYYY

**CCCCO**

11/12/2020

**Control Number**

CCC000429553

**DOE/accreditation approval date**

MM/DD/YYYY