

# RADT M49: RADIOGRAPHY SUMMER PRACTICUM

**Originator**  
atorabyan

**College**

Moorpark College

**Discipline (CB01A)**

RADT - Radiologic Technology

**Course Number (CB01B)**

M49

**Course Title (CB02)**

Radiography Summer Practicum

**Banner/Short Title**

Radiography Sum Practicum

**Credit Type**

Credit

**Start Term**

Summer 2021

**Catalog Course Description**

Provides clinical experience in a pre-assigned clinical affiliate. Focuses on the improvement of clinical skills for exams of the axial and appendicular skeletal system. Includes active participation and use of fluoroscopy and contrast media to perform genitourinary, gastrointestinal exams. Furthermore, it encourages active participation in special radiographic procedures, and surgical exams using C-arm.

**Additional Catalog Notes**

A materials fee of \$40.00 will be charged at registration.  
Takes place in the radiology department of a pre-assigned clinical affiliate.

**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**

Letter Graded

**Does this course require an instructional materials fee?**

Yes

**Fee Amount**

\$40 or based on current market pricing

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

Thermoluminescent dosimeter (TLD) and associated reporting services. A TLD is a radiation monitoring device needed at all times during clinical hours.

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

Students may not go to the clinical setting without the device.

**Describe how the material has continuing value outside the classroom.**

The device's reports can be utilized for record of lifelong clinically-related radiation exposure.

**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?**

TLDs and the associated reported services are purchased in bulk by the district/college for consistent, standardized reporting of radiation exposure for the district/college's records and as required by regulation by the the California Radiation Health Board.

**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.**

September 2019 and March 2020

**Repeatable for Credit**

No

**Is this course part of a family?**

No

**Units and Hours****Carnegie Unit Override**

Yes

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

280

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

280

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

280

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

280

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

280

**Maximum Outside-of-Class Hours**

280

**Total Student Learning****Total Student Learning****Total Minimum Student Learning Hours**

280

**Total Maximum Student Learning Hours**

280

**Minimum Units (CB07)**

4.5

**Maximum Units (CB06)**

4.5

**Prerequisites**

RADT M02A, RADT M02AL, RADT M02B, RADT M02BL and RADT M12

**Limitations on Enrollment**

Criminal background clearance

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 professional liability insurance.

**Entrance Skills**

**Entrance Skills**

RADT M02A

**Prerequisite Course Objectives**

RADT M02A-explain the routine and special positions/projections for all radiographic/fluoroscopic procedures.  
RADT M02A-discuss equipment and supplies necessary to complete skull radiographic and fluoroscopic procedures.  
RADT M02A-identify the structures demonstrated on routine radiographic and fluoroscopic images.  
RADT M02A-critique radiographic and fluoroscopic images for diagnostic quality including part position, anatomy visualized, contrast, density, markers and collimation.  
RADT M02A-discuss general radiation safety and protection practices associated with radiographic and fluoroscopic examinations.  
RADT M02A-name the type, dosage and route of administration of contrast media commonly used to perform radiographic contrast and special studies.  
RADT M02A-discuss the importance of documenting and reporting patient history, symptoms, and unsafe incidences.  
RADT M02A-compare special considerations for trauma, surgical, mobile, geriatric, and pediatric patients with the normal adult.  
RADT M02A-explain angiographic and interventional procedures performed in a radiology department.  
RADT M02A-describe computed tomography, magnetic resonance imagery (MRI), ultrasound, radiation therapy, nuclear medicine and their role in diagnostic imaging.

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**Entrance Skills**

RADT M02AL

**Prerequisite Course Objectives**

RADT M02AL-execute medical imaging procedures under the appropriate level of supervision.  
RADT M02AL-select technical factors to produce quality diagnostic images with the lowest possible radiation exposure possible.  
RADT M02AL-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 M02AL-maintain patient confidentiality standards and meet HIPAA (Health Insurance Portability and Accountability Act or 1996) requirements.  
RADT M02AL-provide patient-centered, clinically effective care for all patients regardless of age, gender, disability, special needs, ethnicity or culture.  
RADT M02AL-adapt procedures to meet age-specific, disease-specific and cultural needs of patients.  
RADT M02AL-critique images for appropriate anatomy, image quality, and patient identification with the clinical instructor.  
RADT M02AL-demonstrate efficient documentation of objective and subjective patient history before start of each exam to identify if modification is needed.  
RADT M02AL-demonstrate competency in principles of radiation protection standards in accordance with California Radiation Health Code (Title 17).  
RADT M02AL-produce a minimum of eight radiographic exam competencies from the following: cranium, mobile, surgical, and pediatric exams.  
RADT M02AL-demonstrate competency in selection of appropriate contrast media with direct supervision of licensed Radiologic Technologist.

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**Entrance Skills**

RADT M02B

**Prerequisite Course Objectives**

RADT M02B-evaluate the basic legal and ethical principles/methods for radiation protection.  
RADT M02B-identify personnel monitoring devices in terms of type, purpose, characteristics, advantages and disadvantages.  
RADT M02B-evaluate the relationship of exposure factors to patient dosage.  
RADT M02B-identify dose equivalent limits for radiation workers and the general public.  
RADT M02B-identify the various responses of human tissue and organs as a result of radiation exposure.

RADT M02B-identify federal and state regulatory agencies and their functions.  
 RADT M02B-discuss regulations (state and federal) influencing radiation protection.  
 RADT M02B-validate the purpose of Title 17 (the California Radiation Health and Safety Act) and the National Council on Radiation Protection and Measurements (NCRP).  
 RADT M02B-differentiate between procedural factor problems and equipment malfunctions.  
 RADT M02B-evaluate the results of basic quality control tests and discuss the benefits of a quality management program to the patient and the department.  
 RADT M02B-discuss Picture Archiving and Communication Systems (PACS), Digital Imaging and Communication in Medicine (DICOM), Hospital Information System (HIS) and their integration in an imaging department.  
 RADT M02B-describe the various types of digital receptors, their function, limits and advantages.  
 RADT M02B-relate the histogram analysis to automatic rescaling and how it affects the exposure indicator.  
 RADT M02B-relate the exposure indicator value to technical factors, system calibration, part/beam/plate alignment, and patient exposure.

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### Entrance Skills

RADT M02BL

### Prerequisite Course Objectives

RADT M02BL-perform and evaluate basic equipment quality control tests for digital equipment.  
 RADT M02BL-differentiate between procedural problems and equipment malfunctions.  
 RADT M02BL-evaluate image quality on a digital image.  
 RADT M02BL-perform experiments which prove the different factors that affect image quality for digital systems.  
 RADT M02BL-analyze the relationships of factors controlling image quality for digital systems.  
 RADT M02BL-demonstrate how time, distance, and shielding may be manipulated to keep radiation exposures to a minimum.  
 RADT M02BL-explain exposure factors and considerations involved in technique selection for digital systems.  
 RADT M02BL-perform and evaluate radiation protection quality control experiments.

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### Entrance Skills

RADT M12

### Prerequisite Course Objectives

RADT M12-perform simulated lab procedures utilizing a fellow student as the mock patient using non-energized x-ray equipment.  
 RADT M12-simulate positioning for exams of the gastrointestinal tract, intravenous urogram, skull series, and pediatric exams.  
 RADT M12-show the proper way to apply gonadal shielding to the mock patient whenever possible.  
 RADT M12-perform all the assigned skills lab procedures utilizing a radiographic phantom and the energized x-ray tube.  
 RADT M12-select correct technique on the energized console, make the exposure on the phantom, and process the image.  
 RADT M12-demonstrate radiation protection methods according to the California Radiation Health Code (Title 17).  
 RADT M12- evaluate and critique the procedure performance and the radiographs exposed with the assistance of faculty.

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## Requisite Justification

### 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 M02A

**Requisite Description**

Course in a sequence

**Level of Scrutiny/Justification**

Required by statute or regulation

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**Requisite Type**

Prerequisite

**Requisite**

RADT M02AL

**Requisite Description**

Course in a sequence

**Level of Scrutiny/Justification**

Required by statute or regulation

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**Requisite Type**

Prerequisite

**Requisite**

RADT M02B

**Requisite Description**

Course in a sequence

**Level of Scrutiny/Justification**

Required by statute or regulation

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**Requisite Type**

Prerequisite

**Requisite**

RADT M02BL

**Requisite Description**

Course in a sequence

**Level of Scrutiny/Justification**

Required by statute or regulation

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**Requisite Type**

Prerequisite

**Requisite**

RADT M12

**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 affiliate's routine for each procedure.  |
| 2 | evaluate accuracy of the performed procedures and critique quality of the exposed images during diagnostic imaging, fluoroscopy and mobile exams in the presence of a supervising technologists with a minimum of 2 year of experience as Radiologic Technologist. |

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

- |    |  |
|----|--|
| 1  | execute medical imaging procedures under the appropriate level of supervision.   |
| 2  | assess the patient and demonstrate efficient documentation of objective and subjective patient history before start of each exam to identify if modification is needed.  |
| 3  | select technical 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.  |
| 5  | maintain patient confidentiality standards and meet HIPPA (Hospital Insurance Portability and Accountability Act of 1996) requirements.  |
| 6  | provide patient-centered, clinically effective care for all patients regardless of age, gender, disability, special needs, ethnicity or culture.   |
| 7  | adapt procedures to meet age-specific, disease-specific and cultural needs of patients.  |
| 8  | demonstrate computer skills and knowledge in using Radiology Information System (RIS) to input patient data.   |
| 9  | demonstrate competency in principles of radiation protection standards in accordance with California Radiation Health Code (Title 17).   |
| 10 | produce a minimum of 17 radiographic exam competencies from axial/appendicular skeletal system, genito-urinary/ gastro-intestinal system, special radiographic procedures, pediatric/geriatric patient exams, and surgical procedures. |

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

none

**Laboratory or Activity Content****Radiographic imaging techniques in the skills lab and in a hospital setting for the following procedures:**

- 10% - Fluoroscopy Procedures (Gastro-urinary/Gastro-intestinal exams with contrast media)
- 20% - Surgical Procedures (Orthopedic/non-orthopedic surgical procedures)
- 5% - Pediatric Procedures
- 25% - Mobile Procedures
- 10% - Special Radiographic Procedures (lumbar puncture, myelogram, joint injection, hysterosalpingogram)
- 10% - Trauma Procedures
- 5% - Geriatric Procedures
- 15% - Axial and Appendicular Skeletal Procedures (skull, upper/lower extremities, abdomen, chest, and pelvic girdle)

**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)  
Participation  
Skills demonstrations

**Other**

Organization and maintenance of clinical portfolio

**Instructional Methodology**

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

Clinical demonstrations  
Field experience/internship  
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 will introduce students to new exams and explain sequence of tasks and protocol.
- Clinical instructor will hold classes once a month to review images with positioning and technical errors to encourage critical thinking.

**Representative Course Assignments**

**Writing Assignments**

Document of all radiographic exam in the clinical portfolio such as lumbar myelogram

Write radiographic technique required for each exam in their positioning pocket book such as pediatric 2 view (Anteroposterior (AP)/ Lateral) chest x-ray.

Complete required paperwork (informed consent, time-out, radiation dose) needed for each exam as part of department protocol such as joint injection.

**Critical Thinking Assignments**

Appraise radiographic image of pediatric abdominal x-ray for quality criteria.

Assess patient condition to see if any modification is needed before the start of a trauma case to diagnosis cervical fracture.

Develop a step-by-step procedure for each exam, such as lumbar myelogram, or hysterosalpingogram

**Reading Assignments**

Read peer reviewed article on "Intussusception Sonographic Findings to Fluoroscopic Reduction in Pediatrics" from the American Society of Radiologic Technology (ASRT).

Read peer reviewed article on "Emergency Chest Imaging" from the American Society of Radiologic Technology (ASRT).

**Skills Demonstrations**

Demonstrate competency on radiography of fluoroscopic procedure such as joint injection of shoulder to diagnose rotator-cuff tear.

Demonstrate competency on performing lower gastro-urinary examination such as retrograde cystogram.

**Outside Assignments**

**Representative Outside Assignments**

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

Review positioning pocketbook on daily basis.

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



**Articulation****Equivalent Courses at other CCCs**

<b>College</b>	<b>Course ID</b>	<b>Course Title</b>	<b>Units</b>
Cabillo City College	RT 53A	Radiologic Technology Lab/Clinic	5.5
Foothill City College	RT 63A	Radiographic Clinical Practicum	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****Course is CSU transferable**

Yes

**CSU Baccalaureate List effective term:**

fall 1995

## 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

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.

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### 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.

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### 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

Research the benefits of artificial intelligence in medical imaging for discussion with clinical staff.

### Primary Minimum Qualification

RADIOLOGIC TECHNOLOGY

## Review and Approval Dates

### Department Chair

06/06/2020

### Dean

06/08/2020

### Technical Review

09/03/2020

### Curriculum Committee

09/15/2020

### DTRW-I

MM/DD/YYYY

### Curriculum Committee

MM/DD/YYYY

### Board

MM/DD/YYYY

### CCCCO

11/05/2020

### Control Number

CCC000567162

### DOE/accreditation approval date

MM/DD/YYYY