

RADT M01A: RADIOGRAPHIC PRACTICE I

Originator

rdarwin

College

Moorpark College

Discipline (CB01A)

RADT - Radiologic Technology

Course Number (CB01B)

M01A

Course Title (CB02)

Radiographic Practice I

Banner/Short Title

Radiographic Practice I

Credit Type

Credit

Start Term

Spring 2021

Catalog Course Description

Focuses on routine and trauma radiographic anatomy. Includes positioning and procedures of the upper and lower extremities, shoulder girdle, bony thorax, pelvic girdle, and vertebral column.

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

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

Minimum Contact/In-Class Lecture Hours

52.5

Maximum Contact/In-Class Lecture Hours

52.5

Activity

Laboratory

Total in-Class

Total in-Class

Total Minimum Contact/In-Class Hours

52.5

Total Maximum Contact/In-Class Hours

52.5

Outside-of-Class

Internship/Cooperative Work Experience

Paid**Unpaid****Total Outside-of-Class****Total Outside-of-Class****Minimum Outside-of-Class Hours**

105

Maximum Outside-of-Class Hours

105

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

157.5

Total Maximum Student Learning Hours

157.5

Minimum Units (CB07)

3

Maximum Units (CB06)

3

Prerequisites

RADT M10A, RADT M10AL, RADT M10B and RADT M09

Corequisites

RADT M01AL, RADT M01B, RADT M01BL, RADT M11

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

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**Prerequisite Course Objectives**

RADT M09-identify and describe the principles of a safe client environment.
 RADT M09-demonstrate obtaining and recording vital signs.
 RADT M09-identify client's rights and how to assure the client's rights of confidentiality are not violated.
 RADT M09-discuss aspects of providing care for clients with various psycho-social, cultural, ethnic and gender differences.
 RADT M09-demonstrate communication techniques across the lifespan - from birth to death.
 RADT M09-use appropriate documentation in the medical record.
 RADT M09-utilize various components of a medical record, including normal ranges of lab values, to identify essential aspects of client care.
 RADT M10A-discuss the philosophy and regulations of the Moorpark College Radiography program.
 RADT M10A-describe the practice standards for the radiographer as defined by The American Society of Radiologic Technologists (ASRT) and the State of California.
 RADT M10A-recall the historic events and individuals that have contributed greatly to the field of radiology.

RADT M10A-identify the advanced imaging modalities and career opportunities in the field of radiology.
RADT M10A-describe the structure and function of a typical x-ray department.
RADT M10A-discuss the importance of documenting and reporting patient history and symptoms.
RADT M10A-identify therapeutic communication techniques and barriers; and how to overcome the barriers to effectively communicate with patients.
RADT M10A-describe the ALARA (As Low As Reasonably Achievable) concept.
RADT M10A-describe standard positioning terms and procedural considerations of radiographic exams.
RADT M10A-describe the prime factors of mA, kVp, seconds, and distance, that must be considered in radiographic technique.
RADT M10A-identify the different image receptors used for radiographic imaging.
RADT M10A-identify key components of an automatic film processor and analyze the steps in the processing cycle by providing the specific action and duration of time for each step.
RADT M10A-evaluate and critique radiographic images.
RADT M10AL-assemble the Clinical Portfolio for clinical practicum and review student handbook.
RADT M10AL-operate radiographic unit and accessories.
RADT M10AL-select the prime factors of mA (milliamperes), kVp (kilovolt peak) seconds, and distance on the x-ray console.
RADT M10AL-employ the use of radiation shielding devices for both patient and personnel.
RADT M10AL-describe techniques of radiation protection using parameters of time, distance and shielding.
RADT M10AL-apply radiation protection methods during mobile radiographic procedures.
RADT M10AL-practice, through demonstration, the basic body positions used when positioning patients for radiographic examinations.
RADT M10AL-observe, assist and perform radiographic procedures of the chest including adult, geriatric, and trauma.
RADT M10AL-observe, assist and perform radiographic procedures of the abdomen including adult, geriatric, and trauma.
RADT M10AL-demonstrate the procedures for gowning and gloving for you or another to maintain a sterile field.
RADT M10B-describe Bohr's theory of atomic structure.
RADT M10B-explain the processes of ionization and excitation
RADT M10B-describe the electromagnetic spectrum.
RADT M10B-describe wavelength and frequency and explain their relationship to velocity.
RADT M10B-explain the wave-particle duality phenomena of x-rays.
RADT M10B-identify the properties of x-rays.
RADT M10B-describe the different types of x-ray equipment, including diagnostic and fluoroscopic.
RADT M10B-define potential difference, current, and resistance.
RADT M10B-compare generators in terms of radiation produced and efficiency.
RADT M10B-identify the general components of the primary, secondary and filament circuits of an x-ray machine.
RADT M10B-discuss permanent installation of radiographic equipment in terms of purpose, components, types, and applications.
RADT M10B-describe functions of components of automatic exposure control devices (AEC).

Requisite Justification

Requisite Type

Corequisite

Requisite

RADT M01AL

Requisite Description

Course in a sequence

Level of Scrutiny/Justification

Required by statute or regulation

Requisite Type

Corequisite

Requisite

RADT M01B

Requisite Description

Course in a sequence

Level of Scrutiny/Justification

Required by statute or regulation

Requisite Type

Corequisite

Requisite

RADT M01BL

Requisite Description

Course in a sequence

Level of Scrutiny/Justification

Required by statute or regulation

Requisite Type

Corequisite

Requisite

RADT M11

Requisite Description

Course in a sequence

Level of Scrutiny/Justification

Required by statute or regulation

Requisite Type

Enrollment Limitation

Requisite

Admission to the Program
 Proof of Health Insurance
 Proof of Professional Liability Insurance
 Los Angeles City Hospital Fire and Life Safety Card
 CPR BLS Provider card from American Heart Association only.
 No visible tattoos or visible body piercings except single studs in earlobes.
 Physical examination demonstrating general good health.
 Current negative TB test or chest x-ray
 No acrylic or long nails in clinical settings
 Proof of freedom from and immunity to communicable diseases
 Drug and alcohol clearance
 Criminal background clearance.

Requisite Description

Credit program requisite (credit only)

Level of Scrutiny/Justification

Required by statute or regulation

Requisite Type

Prerequisite

Requisite

RADT M10A, RADT M10AL, RADT M10B and RADT M09

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 | describe the procedures for upper extremity, lower extremity, shoulder girdle and vertebral exams. |
| 2 | evaluate and critique upper extremity, lower extremity, shoulder girdle and vertebral exams for image quality. |

Course Objectives

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

- | | |
|----|--|
| 1 | name the basic body positions used when positioning patients for radiographic examinations. |
| 2 | list and describe the terms employed in radiographic positioning using lines, planes, bony landmarks and localization points. |
| 3 | recall the methods of basic radiation protection for both patient and personnel, especially time, distance and shielding. |
| 4 | discuss the importance of documenting and reporting patient history and symptoms, and reporting of incidents. |
| 5 | list the projections, both routine and special, for each anatomical area. |
| 6 | identify on radiographs and drawings the anatomy and positions for each anatomical area. |
| 7 | describe and explain each examination assigned utilizing the prescribed position of part, direction of the central ray, anatomical structures, and pathology demonstrated. |
| 8 | critique each image for diagnostic quality including part position, anatomy visualized, contrast, density, markers, and film size. |
| 9 | compare and contrast special considerations for trauma in pediatric and geriatric patients with the normal adult. |
| 10 | discuss the establishment of rapport with the patient considering cultural awareness, clinical situations, communications barriers, and radiation safety concerns. |

Course Content**Lecture/Course Content**

- 5% Radiologic positioning nomenclature
- 20% Anatomy and positioning of the upper extremity
- 20% Anatomy and positioning of the lower extremity
- 10% Anatomy and positioning of the bony thorax (sternum and ribs)
- 10% Anatomy and positioning of the pelvic girdle
- 25% Anatomy and positioning of the spinal column, cervical, thoracic, lumbar, sacrum and coccyx
- 5% Pathology of the extremities, joints, and spine
- 5% Trauma, pediatric, and geriatric considerations in radiography

Laboratory or Activity Content

None

Methods of Evaluation

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

- Problem solving exercises
- Written expression

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):

- Classroom Discussion
- Essay exams
- Group projects
- Oral analysis/critiques
- Objective exams
- Problem-solving exams
- Participation
- Quizzes

Instructional Methodology

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

Audio-visual presentations
 Collaborative group work
 Class discussions
 Distance Education
 Demonstrations
 Lecture
 Small group activities

Describe specific examples of the methods the instructor will use:

Instructor will use PowerPoint presentations to illustrate course content such as procedures for lower extremity imaging.

Representative Course Assignments

Writing Assignments

Written essay questions on exams.
 Written assignment on evaluating radiographic exams for quality.

Critical Thinking Assignments

Analyze and critique radiographic images.
 Assess and formulate trauma situations.
 Assess and formulate geriatric and pediatric situations.

Reading Assignments

Read American Society of Radiologic Technology (ASRT) journal articles.
 Read American Society of Radiologic Technology (ASRT) journal articles about how to take care of a spinal cord trauma patient.

Outside Assignments

Representative Outside Assignments

Assigned readings from textbook to prepare for midterm exam.
 Online research and assignments on extremities and vertebral column.

Articulation

Equivalent Courses at 4 year institutions

University	Course ID	Course Title	Units
Cabrillo College	RT 51	Radiographic Positioning I	2
Mt. San Antonio College	RAD 61A	Theory of Radiologic Technology	4
Foothill College	R T 51A	Fundamentals of Radiologic Technology I	4

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

Description

Lampignano, John, and Leslie Kendricks. *Bontrager's Textbook of Radiographic Positioning and Related Anatomy*. 9th ed., Mosby, 2017.

Resource Type

Textbook

Description

Martensen, Kathy McQuillen. *Radiographic Image Analysis*. 5th ed., Mosby, 2019.

Resource Type

Textbook

Description

Lampignano, John, and Leslie Kendrick. *Workbook for Bontrager's Textbook of Radiographic Positioning and Related Anatomy*. 9th ed., Mosby, 2017.

Library Resources**Assignments requiring library resources**

Radiographic and medical journal reading assignments using the Library's print and online resources, particularly specialized databases in the area of medicine.

Sufficient Library Resources exist

Yes

Example of Assignments Requiring Library Resources

Research, using the Library's online medical databases, to locate articles on radiation protection.

Distance Education Addendum**Definitions****Distance Education Modalities**

Hybrid (51%–99% online)

Hybrid (1%–50% online)

100% online

Faculty Certifications

Faculty assigned to teach Hybrid or Fully Online sections of this course will receive training in how to satisfy the Federal and state regulations governing regular effective/substantive contact for distance education. The training will include common elements in the district-supported learning management system (LMS), online teaching methods, regular effective/substantive contact, and best practices.

Yes

Faculty assigned to teach Hybrid or Fully Online sections of this course will meet with the EAC Alternate Media Specialist to ensure that the course content meets the required Federal and state accessibility standards for access by students with disabilities. Common areas for discussion include accessibility of PDF files, images, captioning of videos, Power Point presentations, math and scientific notation, and ensuring the use of style mark-up in Word documents.

Yes

Regular Effective/Substantive Contact

Hybrid (1%–50% online) Modality:

Method of Instruction	Document typical activities or assignments for each method of instruction
Asynchronous Dialog (e.g., discussion board)	<p>The online instructor will provide lesson plans that require activities such as reading course material from a mandatory textbook. Additionally, the instructor may engage students using the following communication activities available in the online classroom: contact students via e-mail within the course shell, by campus e-mail, and/or MyVCCCD. Learning objectives; students may complete homework through the workbook system provided by a publishing company and use a "discussion" tool to post questions and interact with the instructor and classmates.</p> <p>Students may test their knowledge with interactive online quizzes provided by the publishing company.</p> <p>Students may engage in internet searches and library online database resources on topics corresponding to course content</p> <p>Students may submit questions to the instructor by email or ask in person in a virtual classroom; the instructor may create student groups or group activities using the online course.</p> <p>Quizzes may be issued (using a course-specific timeline) in which students will be tested on their knowledge of the material. Assignments may include exercises through which students explore course concepts using a textbook and/or additional research. Students can submit their assignments online and get feedback from the instructor and/or students as determined per assignment. This can be an interactive process in that students can receive feedback and then be able to improve their submittal if necessary.</p>
E-mail	<p>Contact students via e-mail within the course shell, bu campus e-mail, and/or MyVCCCD.</p>
Other DE (e.g., recorded lectures)	<p>The online instructor will provide lesson plans that require activities such as reading course material from a mandatory textbook and participating in discussion forums or chat room topics. The "Announcement" tool will be used to remind students of important assignments and due dates. To provide students with an online schedule of class events the "calendar" tool will be used to schedule virtual classroom sessions in the online course shell.</p>
Synchronous Dialog (e.g., online chat)	<p>Meet with students for study sessions and online office hours using an online communication tool. Additionally, the instructor may engage students using the following communication activities available in the online classroom.</p> <p>Students may view publisher based PowerPoint slides and/or text-based lessons corresponding to course content and learning objectives. Students may complete homework through the online course, and/or using the workbook provided by the publishing company; students may test their knowledge with interactive online quizzes provided by the publishing company. Students may engage in internet searches and library online database resources on topics corresponding to course content and learning objectives.</p> <p>Quizzes/tests may be issued (using a course-specific timeline) in which students will be tested on their knowledge of the material. Assignments may include exercises through which students explore course concepts using a textbook and/or additional research. Students can submit their assignments online and get feedback from the instructor. Students may submit questions to the instructor by email or ask in person. The instructor may create student groups or group activities using the online course.</p>

Video Conferencing

It will include lectures and study sessions.

The instructor may involve students in active learning with the following activities:

Students may view instructor shared power points slides, video lessons and/or text-based lessons corresponding to course content and learning objectives. Students may complete homework through the online course. Students may use the workbook provided by the publishing company.

Students may engage in internet searches and library online database resources on topics corresponding to course content. Students may test their knowledge with interactive online quizzes provided by the publishing company. Students may submit questions to the instructor via email or ask in person in a virtual classroom; the instructor may create student groups or group activities using the online course.

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Hybrid (51%–99% online) Modality:**Method of Instruction****Document typical activities or assignments for each method of instruction**

Asynchronous Dialog (e.g., discussion board)

The online instructor will provide lesson plans that require activities such as reading course material from a mandatory textbook. Additionally, the instructor may engage students using the following communication activities available in the online classroom: contact students via e-mail within the course shell, by campus e-mail, and/or MyVCCCD.

Learning objectives; students may complete homework through the workbook system provided by a publishing company and use a "discussion" tool to post questions and interact with the instructor and classmates.

Students may test their knowledge with interactive online quizzes provided by the publishing company.

Students may engage in internet searches and library online database resources on topics corresponding to course content

Students may submit questions to the instructor by email or ask in person in a virtual classroom; the instructor may create student groups or group activities using the online course.

Quizzes may be issued (using a course-specific timeline) in which students will be tested on their knowledge of the material. Assignments may include exercises through which students explore course concepts using a textbook and/or additional research. Students can submit their assignments online and get feedback from the instructor and/or students as determined per assignment. This can be an interactive process in that students can receive feedback and then be able to improve their submittal if necessary.

E-mail

Contact students via e-mail within the course shell, bu campus e-mail, and/or MyVCCCD.

Other DE (e.g., recorded lectures)

The online instructor will provide lesson plans that require activities such as reading course material from a mandatory textbook and participating in discussion forums or chat room topics. The "Announcement" tool will be used to remind students of important assignments and due dates. To provide students with an online schedule of class events the "calendar" tool will be used to schedule virtual classroom sessions in the online course shell.

Synchronous Dialog (e.g., online chat)

Meet with students for study sessions and online office hours using an online communication tool. Additionally, the instructor may engage students using the following communication activities available in the online classroom.

Students may view publisher based PowerPoint slides and/or text-based lessons corresponding to course content and learning objectives. Students may complete homework through the online course, and/or using the workbook provided by the publishing company; students may test their knowledge with interactive online quizzes provided by the publishing company. Students may engage in internet searches and library online database resources on topics corresponding to course content and learning objectives.

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Telephone

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100% online Modality:

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E-mail	<p>Contact students via e-mail within the course shell, bu campus e-mail, and/or MyVCCCD.</p>
Other DE (e.g., recorded lectures)	<p>The online instructor will provide lesson plans that require activities such as reading course material from a mandatory textbook and participating in discussion forums or chat room topics. The "Announcement" tool will be used to remind students of important assignments and due dates. To provide students with an online schedule of class events the "calendar" tool will be used to schedule virtual classroom sessions in the online course shell.</p>
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It will include lectures and study sessions.

The instructor may involve students in active learning with the following activities:

Students may view instructor shared power points slides, video lessons and/or text-based lessons corresponding to course content and learning objectives. Students may complete homework through the online course. Students may use the workbook provided by the publishing company.

Students may engage in internet searches and library online database resources on topics corresponding to course content. Students may test their knowledge with interactive online quizzes provided by the publishing company. Students may submit questions to the instructor via email or ask in person in a virtual classroom; the instructor may create student groups or group activities using the online course.

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Examinations**Hybrid (1%–50% online) Modality**

Online
On campus

Hybrid (51%–99% online) Modality

Online
On campus

Primary Minimum Qualification

RADIOLOGIC TECHNOLOGY

Review and Approval Dates**Department Chair**

04/29/2020

Dean

04/30/2020

Technical Review

04/30/2020

Curriculum Committee

05/05/2020

DTRW-I

10/08/2020

Curriculum Committee

09/15/2020

Board

11/10/2020

CCCCO

12/02/2020

Control Number

CCC000620291

DOE/accreditation approval date
MM/DD/YYYY