RADT M03L: RADIOGRAPHIC CLINICAL LAB III

Originator
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Co-Contributor(s)

Name(s)
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College
Moorpark College

Discipline (CB01A)
RADT - Radiologic Technology

Course Number (CB01B)
M03L

Course Title (CB02)
Radiographic Clinical Lab III

Banner/Short Title
Radiographic Clinical Lab III

Credit Type
Credit

Start Term
Spring 2021

Catalog Course Description
Provides an opportunity for practical application of theory on patients in a clinical setting. Includes proper positioning of entire skeletal system, utilization of fluoroscopy for surgical procedures using the C-arm and to perform upper and lower gastrointestinal exams using proper contrast media.

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?
No

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
560
Maximum Contact/In-Class Laboratory Hours
560

Total in-Class

Total in-Class
Total Minimum Contact/In-Class Hours
560
Total Maximum Contact/In-Class Hours
560

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 M02A , RADT M02AL, RADT M02B and RADT M49

Corequisites
RADT M03, and RADT M03B

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 Radiology 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 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.

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.

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.

Entrance Skills

RADT M49

Prerequisite Course Objectives

RADT M49-execute medical imaging procedures under the appropriate level of supervision.
RADT M49-assess the patient and demonstrate efficient documentation of objective and subjective patient history before start of each exam to identify if modification is needed.
RADT M49-select technical factors to produce quality diagnostic images with the lowest possible radiation exposure.
RADT M49-integrate the use of appropriate and effective written, oral and nonverbal communication with patients, the public and members of the health care team.
RADT M49-maintain patient confidentiality standards and meet HIPPA (Hospital Insurance Portability and Accountability Act of 1996) requirements.

RADT M49-provide patient-centered, clinically effective care for all patients regardless of age, gender, disability, special needs, ethnicity or culture.
RADT M49-adapt procedures to meet age-specific, disease-specific and cultural needs of patients.
RADT M49-demonstrate computer skills and knowledge in using Radiology Information System (RIS) to input patient data.
RADT M49-demonstrate competency in principles of radiation protection standards in accordance with California Radiation Health Code (Title 17).
RADT M49-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.

Requisite Justification

Requisite Type
Corequisite

Requisite
RADT M03

Requisite Description
Course in a sequence

Level of Scrutiny/Justification
Required by statute or regulation

Requisite Type
Corequisite

Requisite
RADT M03B

Requisite Description
Course in a sequence

Level of Scrutiny/Justification
Required by statute or regulation

Requisite Type
Prerequisite

Requisite
RADT M02A

Requisite Description
Course in a sequence

Level of Scrutiny/Justification
Required by statute or regulation

Requisite Type
Prerequisite

Requisite
RADT M02AL

Requisite Description
Course in a sequence

Level of Scrutiny/Justification
Required by statute or regulation

Requisite Type
Prerequisite

Requisite
RADT M49

Requisite Description
Course in a sequence

Level of Scrutiny/Justification
Required by statute or regulation

Requisite Type
Enrollment Limitation

Requisite
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
Physical examination demonstrating general good health
No visible tattoos or visible body piercings 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

Requisite Type
Prerequisite

Requisite
RADT M02B

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's routine for each procedures.
2	evaluate the quality and the accuracy of each position and image as it appears on the finished radiographs

Course Objectives

	Upon satisfactory completion of the course, students will be able to:
1	demonstrate intermediate level skills in proper positioning and exposure of skeletal system
2	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.
3	demonstrate intermediate level skills in proper positioning and exposure of fluoroscopy using C-arm in the operating room following Radiation Safety guidelines.
4	evaluate and critique the quality of images and accuracy of each position as it appears on the finished radiograph with clinical instructor supervision.
5	select optimal technical factors to produce quality diagnostic images with the lowest possible radiation exposure possible.
6	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.
7	maintain patient confidentiality standards and meet HIPPA (Health Insurance Portability and Accountability Act of 1996) requirements.
8	provide patient-centered, clinically effective care for all patients regardless of age, gender, disability, special needs, ethnicity or culture.
9	demonstrate skills in efficient documentation of objective and subjective patient history before start of each exam to identify if modification is needed.
10	demonstrate competency in principles of radiation protection standards in accordance with California Radiation Health Code (Title 17).
11	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.

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 body parts and procedures:

- **5% - Routine cranium**
- **20% - Upper and lower gastrointestinal procedures using contrast media and fluoroscopy**
- **5% - Urinary procedures using contrast media and fluoroscopy**
- **20% - Mobile procedures**
- **20% - Surgical procedures using C-arm**
- **10% - Pediatric procedures**
- **20% - Any radiographic exams not completed from skeletal systems, such as upper and lower extremity, pelvic girdle, spinal column and skull**

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

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 will demonstrate and guide the students on the use of technology and steps on "how to" on each new exam that the students are introduced to until the students feel competent to perform the exam independently with indirect supervision from the Radiologic Technologists with a minimum of 2-year experience or the clinical instructor, as per policy.

Representative Course Assignments

Writing Assignments

Written documentation of radiographic exams in clinical portfolio such as trauma hip.

Written assignments in workbook lab manuals.

Written paperwork needed to process radiographic exams such as orthopedic procedure with more than one projection using C-arm in surgery unit.

Critical Thinking Assignments

Assess patient condition before start of exam and identify if modification is needed when performing upper gastrointestinal exam.

Organize sequence of tasks and adapt to special challenges to complete the exam with minimal discomfort to patient when performing fractured pelvis and hip.

Execute age-appropriate methods of communication when caring pediatric patients during an upper gastrointestinal or lower gastro-urinary exams.

Reading Assignments

Read peer reviewed article on "Promoting Radiation Safety Protocols in Computed Tomography" from journal of the American Society of Radiologic Technology (ASRT).

Read peer reviewed article on "Patient Dose from CT: A Literature Review" from journal of the American Society of Radiologic Technology (ASRT).

Skills Demonstrations

Demonstrate competence on use of C-arm during surgical cases such as hip pinning of a fractured hip.

Demonstrate competence on brain scan using computer tomography.

Outside Assignments

Representative Outside Assignments

Review hospital protocols before start of rotation on daily basis

Review radiographic exams in pocketbook before start of clinical rotation.

Review clinical notes before start of clinical rotation on daily basis

Articulation

Equivalent Courses at other CCCs

College	Course ID	Course Title	Units
Cabrillo College	RT 63	Advanced Positioning Lab/Clinic IV	8
Fresno City College	RAD 4B	Advanced Clinical Radiologic Technology	11
Foothill College	R T 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

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*. 10th ed., Mosby, 2020.

Resource Type
Textbook

Classic Textbook
Yes

Description
Lampignano, John and Leslie E. Kendrick. *Textbook of Radiographic Positioning and Related Anatomy.* 10th ed., Mosby, 2020.

Resource Type
Textbook

Classic Textbook
Yes

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

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
Locate and analyze a peer-reviewed article on the adverse effects of iodine-derived intravenous radiopaque contrast media.

Primary Minimum Qualification
RADIOLOGIC TECHNOLOGY

Review and Approval Dates

Department Chair
07/27/2020

Dean
08/20/2020

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
CCC000428754

DOE/accreditation approval date
MM/DD/YYYY