

RADT M03B: RADIOGRAPHIC PATHOLOGY

Originator

rdarwin

College

Moorpark College

Discipline (CB01A)

RADT - Radiologic Technology

Course Number (CB01B)

M03B

Course Title (CB02)

Radiographic Pathology

Banner/Short Title

Radiographic Pathology

Credit Type

Credit

Start Term

Spring 2021

Catalog Course Description

Introduces advanced concepts in radiography and various types of diseases encountered in radiology. Examines the skeletal, respiratory, central nervous, gastrointestinal, genito-urinary, hepatobiliary, hematopoetic, and reproductive systems.

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

35

Maximum Contact/In-Class Lecture Hours

35

Activity

Laboratory

Total in-Class

Total in-Class

Total Minimum Contact/In-Class Hours

35

Total Maximum Contact/In-Class Hours

35

Outside-of-Class

Internship/Cooperative Work Experience

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

70

Maximum Outside-of-Class Hours

70

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

105

Total Maximum Student Learning Hours

105

Minimum Units (CB07)

2

Maximum Units (CB06)

2

Prerequisites

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

Corequisites

RADT M03 and RADT M03L

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

Current 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 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.

RADT M02AL-execute medical imaging procedures under the appropriate level of supervision.

RADT M02AL-assess the patient and record clinical history.

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 clerical duties needed to process the exam.

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 six radiographic exam competencies from the following: cranium, gastrointestinal, mobile, surgical, and pediatric exams.

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.

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.

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 M03AL

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

RAD M02B, RADT M02BL, RADT M02A , RADT M02AL and 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 | identify pathological and traumatic conditions of the major body systems in radiographic images. |
| 2 | describe how to adjust to patient conditions for improved image quality of the pathology or trauma. |

Course Objectives

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

- | | |
|---|---|
| 1 | define basic terms related to pathology. |
| 2 | describe the basic manifestations of pathology conditions and their relevance to radiologic procedures. |
| 3 | describe imaging procedures used in diagnosing disease. |
| 4 | describe the various systemic classifications of disease in terms of etiology, types, common sites, complications, and prognosis. |
| 5 | describe the radiographic appearance of diseases. |
| 6 | identify imaging procedures and interventional techniques appropriate for diseases common to each body system. |
| 7 | identify and explain how to alter procedures and techniques to image specific pathologies. |

Course Content**Lecture/Course Content**

10% General principles of pathology
 20% Respiratory system
 10% Hepatobiliary system

- 10% Central nervous system
- 20% Gastrointestinal system
- 10% Genito-urinary/Reproductive system
- 20% Skeletal system

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
- Objective exams
- Oral presentations
- Projects
- Problem-solving exams
- Participation
- Reports/Papers/Journals

Instructional Methodology

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

- Audio-visual presentations
- Case studies
- Distance Education
- Lecture

Describe specific examples of the methods the instructor will use:

PowerPoint presentation addressing skeletal pathologies and group breakout sessions.

Representative Course Assignments

Writing Assignments

- Written answers to discussion questions in the text.
- Written essay questions on exams addressing gastrointestinal (GI) pathologies.
- Written essays on assigned topics such as compound fractures.

Critical Thinking Assignments

- Assess and formulate how to image various pathologies including for the genitourinary system.
- Analyze and identify pathologies and pathological changes on radiographic images.
- Deliver an oral PowerPoint presentation to the class on an assigned pathology.

Reading Assignments

- Read articles found in the American Society of Radiologic Technologists' (ASRT) publication.
- Read medical journal articles on pathologies of the hepatobiliary system.

Outside Assignments

Representative Outside Assignments

- Conduct research for an oral presentation on an assigned pathology such as pneumonia.
- Complete assigned readings from radiographic journals.
- Perform search for radiographic images of a chosen pathology such as small bowel obstruction.

Articulation**Equivalent Courses at 4 year institutions**

University	Course ID	Course Title	Units
Bakersfield College	RADT B11	Radiographic Pathology	2
Santa Barbara City College	RT 230	Radiographic Pathology	3
Chaffey College	RADTEC 77	Radiographic Pathology	3
El Camino College	R TECH 91	Radiographic Pathology and Film Critique	2
Yuba College	RADT 8	Radiographic Pathology and Film Critique	3
City College of San Francisco	DMI 56	Pathology	2

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

Kowalczyk, Nina. *Radiographic Pathology for Technologists*. 7th ed., Mosby, 2018.

Resource Type

Textbook

Classic Textbook

Yes

Description

Dutton, Andrea, and TerriAnn Ryan. *Torres' Patient Care in Imaging Technology*. 9th ed., Wolters Kluwer, 2019.

Library Resources

Assignments requiring library resources

Radiographic and medical journal reading assignments which may use the Library's print and online resources.

Sufficient Library Resources exist

Yes

Example of Assignments Requiring Library Resources

Research, using the Library's print and online medical databases, in preparation for an oral presentation on an assigned pathology such as pneumonia.

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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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

CCC000620292

DOE/accreditation approval date
MM/DD/YYYY