



El Camino College

COURSE OUTLINE OF RECORD - Official

I. GENERAL COURSE INFORMATION

Subject and Number: Radiologic Technology 328
Descriptive Title: Clinical Experience 7

Course Disciplines: Radiological Technology

Division: Health Sciences and Athletics

Catalog Description: This course continues the development of clinical skills in radiography with emphasis in specialized radiography and new modalities. Advanced clinical practice experiences are designed to provide competent performance of radiologic imaging, using sequential development, critical analysis, and evaluation in the performance of radiologic procedures and patient assessment and care. Students perform independently with appropriate supervision to assess their skills for employability. This course also reviews the entire radiologic technology curriculum, following the American Registry of Radiologic Technologists (ARRT) examination outline, to prepare the students for State and National Certification examinations.

Conditions of Enrollment: Prerequisite
Radiologic Technology 220
with a minimum grade of C

Course Length: Full Term Other (Specify number of weeks): 6

Hours Lecture: 3.00 hours per week TBA

Hours Laboratory: 32.00 hours per week TBA

Course Units: 4.50

Grading Method: Letter
Credit Status Associate Degree Credit

Transfer CSU: Effective Date: 3/15/1999

Transfer UC: No

General Education:

El Camino College: _____

CSU GE: _____

IGETC: _____

II. OUTCOMES AND OBJECTIVES

A. COURSE STUDENT LEARNING OUTCOMES (The course student learning outcomes are listed below, along with a representative assessment method for each. Student learning outcomes are not subject to review, revision or approval by the College Curriculum Committee)

1. Students will apply ALARA radiation safety principles on patients, self and others
*ALARA = As Low As Reasonably Achievable

The above SLOs were the most recent available SLOs at the time of course review. For the most current SLO statements, visit the El Camino College SLO webpage at <http://www.elcamino.edu/academics/slo/>.

B. Course Student Learning Objectives (The major learning objective for students enrolled in this course are listed below, along with a representative assessment method for each)

1. Describe career opportunities in the field of radiography and requirements for employment and certification.
Presentation
2. Demonstrate the appropriate clinical skills required to successfully complete all mandatory and elective competencies per the ARRT guidelines for the following areas: thorax, abdomen and gastrointestinal studies, urological studies, spine, pelvis, cranium and extremities.
Performance exams
3. Analyze and critique radiographic images and determine correct measures to make appropriate changes for optimum image quality.
Oral exams
4. Diagram and label the basic components of an image intensifier tube, fluoroscopic components of the imaging chain, including the viewing and recording systems, circuit boards, x-ray generator, transformer and a rectifier.
Multiple Choice
5. Compare quality control procedures to maintain fluoroscopic, digital, and radiographic equipment.
Multiple Choice
6. Demonstrate methods of reducing patient and operator dosage during radiographic and fluoroscopic procedures. Describe how patient positioning, automatic exposure control, and other technical factors as well as patient communication reduces exposure to radiation.
Clinical Evaluations
7. Review the specific sections of California regulation control (Title 17) which govern basic radiologic and fluoroscopic standards and safety.
Multiple Choice
8. Conduct a comprehensive review through discussion and examination of the Radiologic Technology program curriculum following the guidelines set forth by the American Registry of Radiologic Technologists (ARRT), and the California Department of Public Health – Radiologic Health Branch (CDPH-RHB) Title 17 Diagnostic Radiologic Technology and Fluoroscopy Permit School curriculum requirements.
Multiple Choice
9. Complete all necessary evaluation forms for continuous program improvement and outcomes assessment.

Objective Exams

III. OUTLINE OF SUBJECT MATTER (Topics are detailed enough to enable a qualified instructor to determine the major areas that should be covered as well as ensure consistency from instructor to instructor and semester to semester.)

Lecture or Lab	Approximate Hours	Topic Number	Major Topic
Lab	184	I	A. Completion of all required mandatory and elective and final radiographic examinations for clinical competency as required by the American Registry of Radiologic Technology ARRT in the following categories: Upper Extremity, Lower Extremity, Chest and Thorax, Head, Spine and Pelvis, Abdomen, Fluoroscopy, Surgical Studies, Mobile Studies, and Pediatrics.
Lab	8	II	A. Students are rotated into specialized radiography if desired: for 1-2 week cycles. To include: <ol style="list-style-type: none"> 1. Computerized tomography 2. Sonography 3. Angiography 4. Cardiac radiography 5. Magnetic resonance 6. Radiation therapy 7. Bone densitometry
Lecture	2	III	A. Patient Care <ol style="list-style-type: none"> 1. Infection control 2. Professional ethics 3. Situational judgment questions
Lecture	5	IV	A. Equipment Operation and Maintenance <ol style="list-style-type: none"> 1. Radiography 2. Fluoroscopy 3. Digital imaging
Lecture	4	V	A. Radiation Protection <ol style="list-style-type: none"> 1. Units of measurement 2. Radiobiology 3. Interpret the specific sections of California regulation control (Title 17) which govern basic radiologic and fluoroscopic standards and safety.
Lecture	3	VI	A. Radiographic Positioning and Procedures <ol style="list-style-type: none"> 1. Pathology 2. Anatomy and physiology 3. Age specific competencies 4. Medical terminology
Lecture	3	VII	A. Image Production and Evaluation <ol style="list-style-type: none"> 1. Critique
Lecture	1	VIII	A. Resume and Job Skills for Employment

Total Lecture Hours	18
Total Laboratory Hours	192
Total Hours	210

IV. PRIMARY METHOD OF EVALUATION AND SAMPLE ASSIGNMENTS

A. PRIMARY METHOD OF EVALUATION:

Skills demonstrations

B. TYPICAL ASSIGNMENT USING PRIMARY METHOD OF EVALUATION:

Demonstrate the proper positioning, technical and safety procedures for an emergency and/or trauma radiographic examination.

C. COLLEGE-LEVEL CRITICAL THINKING ASSIGNMENTS:

1. Present a radiographic case study that includes an analysis and critique of technical factors, positioning, pathology involved, terminology and radiation protection principles utilized.
2. Demonstrate the ability to modify examination protocols of a surgical patient for a hip pinning, providing radiation protection and safety to self, patient and staff, while maintaining a sterile field.

D. OTHER TYPICAL ASSESSMENT AND EVALUATION METHODS:

Performance exams

Other exams

Written homework

Field work

Homework Problems

Multiple Choice

Completion

Other (specify):

Complete all the remaining performance evaluations(competencies) for certification eligibility for licensure

V. INSTRUCTIONAL METHODS

Laboratory

Lecture

Multimedia presentations

Other (please specify)

Image evaluation and critique presentations, skill demonstration, clinical assignment at hospital affiliate with direct and indirect supervision during the performance of radiographic procedures. Direct supervision during performance of specialized radiographic, mobile and emergency procedures.

Note: In compliance with Board Policies 1600 and 3410, Title 5 California Code of Regulations, the Rehabilitation Act of 1973, and Sections 504 and 508 of the Americans with Disabilities Act, instruction delivery shall provide access, full inclusion, and effective communication for students with disabilities.

VI. WORK OUTSIDE OF CLASS

Study

Answer questions

Skill practice

Required reading

Problem solving activities

Written work

Journal

Observation of or participation in an activity related to course content

Other (specify)

Complete clinical competencies and study for review exams

Estimated Independent Study Hours per Week: 6

VII. TEXTS AND MATERIALS

A. UP-TO-DATE REPRESENTATIVE TEXTBOOKS

D.Saia. Radiography Prep Program Review and Exam Preparation. 9th ed. ed. Appleton and Lange, 2012.

D.Saia. Radiography Exam Q&A. 7th ed. ed. Appleton and Lange, 2012.

B. ALTERNATIVE TEXTBOOKS

C. REQUIRED SUPPLEMENTARY READINGS

Merrill's Atlas of Radiographic Positions and Radiographic Procedures, 12th Ed, Vol. I, II and III; by Philip Ballinger; C.V. Mosby Company Publishers, 2012.

Radiologic Science for Technologists, Stuart Bushong, St. Louis, MO, Mosby, 10th edition, 2012

Radiation Protection in Medical Radiography, Mary Alice Statkiewicz, St. Louis, MO, Mosby, 6th edition, 2011

Digital Radiography and PACS, C. Carter, B. Veale, St. Louis, MO, Mosby, 1st edition, 2010

Syllabus on Radiation Protection; Department of Health Services, State of California, 1996

Syllabus on Fluoroscopy Radiation Protection; Department of Health Services, State of California, 1996

Excerpts from Title 17; Department of Health Services, State of California, 2013

D. OTHER REQUIRED MATERIALS

VIII. CONDITIONS OF ENROLLMENT

A. Requisites (Course and Non-Course Prerequisites and Corequisites)

Requisites	Category and Justification
Course Prerequisite Radiologic Technology-220	Sequential

B. Requisite Skills

Requisite Skills
<p>Ability to appropriately respond to patients in due to their physical condition, mental state, or age, are unable to cooperate for the procedure, while being attentive to their physical comfort, safety and needs RTEC 220 -</p> <p>Adapt to changes and varying clinical situations, and respond appropriately in emergency and non-emergency situations.</p>
<p>Demonstrate advanced image evaluation and critique and perform required modifications with 90% accuracy. RTEC 220 -</p> <p>Expand personal and technical abilities to the expected level required of a newly graduated radiologic technologist.</p> <p>RTEC 220 -</p> <p>Critique images for appropriate clinical information, patient positioning and image quality. Apply appropriate corrective action when applicable to produce a diagnostic quality image.</p>
<p>Demonstrate the ability to perform with general supervision all previously identified radiographic exams. RTEC 220 -</p> <p>Interpret written orders for radiographic exams, assist and perform radiologic examinations of all areas, including special procedures, under the appropriate level of supervision as outlined in the RT program supervision policy located in the student handbook.</p> <p>RTEC 220 -</p> <p>Demonstrate competency in the principles of radiation protection standards and select technical factors to produce quality diagnostic images with the lowest radiation exposure possible to patients.</p> <p>RTEC 220 -</p> <p>Set up the exam room and demonstrate the appropriate clinical skills required to successfully complete all mandatory, elective and final competencies as outlined in the student handbook and course syllabus.</p>

C. Recommended Preparations (Course and Non-Course)

Recommended Preparation	Category and Justification
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D. Recommended Skills

Recommended Skills

E. Enrollment Limitations

Enrollment Limitations and Category	Enrollment Limitations Impact
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Course created by Donald Visintainer on 11/01/1979.

BOARD APPROVAL DATE:

LAST BOARD APPROVAL DATE:

Last Reviewed and/or Revised by Dawn Charman on 03/22/2013