ANTELOPE VALLEY COLLEGE

Academic Affairs
Course Outline of Record

Academic Affairs Only
X New Course 5/24/2007
☐ COR Revision
☐ COR Update
X Pre Req/Advisories 5/24/07
☐ Other Changes
X Effective Date 200870
X SLO 7/30/2008

COURSE SUBJECT & NUMBER: RADT 204

COURSE NAME: Principles and Applications of Cross-Sectional Anatomy in Imaging

COURSE UNITS: 3 **COURSE HOURS:** 3 hours weekly

COURSE REQUISITES: ***(Follow format of similar courses found in the college catalog.)***
Limitation on Enrollment: Formal admission to the Radiologic Technology program
Prerequisite: Completion of RADT 201with a grade of "C" or better
Corequisites: Concurrent enrollment in RADT 202, 202CL, 203, and 210

COURSE DESCRIPTION: ***(Write a short paragraph providing an overview of topics covered. Be sure to identify target audience--transfer, major, GE, degree/certificate, etc. If repeatable, state the number of times at end of description.)***
This course includes cross-sectional anatomy and relationships of human organs to each other as the organs appear in the sagittal, coronal, and axial planes. Practical applications of cross-sectional anatomy in computerized tomography, magnetic resonance imaging, mammography, and ultrasound will be emphasized. (CSU, AVC)

COURSE OBJECTIVES: ***(Use Bloom's taxonomy to formulate concise, performance-based measurable objectives common to all students. Objectives must be closely aligned with course content, assignments, and methods of evaluation.)***

Upon completion of course, the successful student will be able to:

1. Identify imaging modalities that utilize cross-sectional anatomy.
2. Explain the relationship of human organs in the sagittal, coronal, and axial planes.
3. Locate specific anatomical structures on recorded images of CT, MRI, mammograms, and ultrasound studies.
4. Analyze CT, MRI, mammograms, and ultrasound images for specific structures.
5. Explain ethical issues surrounding mammographic examinations.
6. Discuss quality control issues and techniques in mammography.

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COURSE CONTENT: ***(Enter course content in terms of specific topics or a specific body of knowledge that each instructor must cover. Put topics in outline form with major and minor headings. Title 5 requires that each instructor must cover all material listed below.)***

I. Cross-sectional anatomy of the head
   A. Gross cerebral compartments
   B. Ventricular system
   C. The orbits
   D. Digestive glands
   E. Foramina
   F. Sinuses

II. Cross-sectional anatomy of the neck
   A. Spinal canal
   B. Vascular structure
   C. Muscles
   D. Nodes
   E. Esophagus
   F. Trachea

III. Cross-sectional anatomy of the chest
   A. Heart and great vessels
   B. Lung
   C. Thoracic bones
   D. Thoracic muscles
   E. Breast
   F. Esophagus
   G. Airways

IV. Cross-sectional anatomy of the abdomen
   A. Liver
   B. Spleen
   C. Pancreas
   D. Kidneys
   E. Spine and muscles
   F. Stomach
   G. Small bowel and colon
   H. Lymph nodes and vessels

V. Cross-sectional anatomy of the pelvis
   A. Reproductive tract
   B. Urinary tract
   C. Spine and pelvic bones
   D. Muscles
   E. Intrauterine fetal anatomy

VI. Cross-sectional anatomy of the extremities
   A. Hip
   B. Shoulder
   C. Spine
   D. Knee joints

V. Cross-sectional anatomy of the breast
   A. Benign breast pathology
   B. Malignant breast pathology
   C. Principles of staging and treatment of breast disease

VI. Professional ethics and patient care: mammography
   A. Barriers to compliance with early detection
   B. Patient concerns, education, and coping mechanisms
   C. Communication skills, comfort, psychological support, cultural considerations, gender considerations

VII. Quality assurance issues in mammography
   A. Dedicated mammography x-ray, processor, and ancillary equipment
   B. Fundamentals of imaging quality
   C. Quality control regulations
   D. Radiation protection
   E. Risks vs. benefits
   F. Positioning
   G. Magnification and compression techniques
   H. Interventional procedures

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TYPICAL HOMEWORK ASSIGNMENTS: READING, WRITING, COMPUTATIONAL, OTHER
This information is necessary for all credit courses. Assignments should be closely related to course objectives, content, and methods of evaluation. (See sample of a "Model Outline" in the AP&P Standards & Practices handbook.) Include a range of assignments (minimum of three) from which faculty may choose when designing their syllabus.

1. ***Describe nature and frequency of typical reading assignments if applicable; note if any are required:***
Ten to twenty pages of reading from assigned text weekly.

2. ***Describe nature and frequency of typical writing assignments if applicable; note if any are required:***
Analysis of case studies weekly, 2-3 pages each

3. ***Describe nature and frequency of typical computational assignments if applicable; note if any are required:***

4. ***Describe other types of homework assignments that students may be asked to complete; note if any are required:***

5. Describe those critical thinking skills that are derived from assignments listed above; be sure that they reflect course objectives.

Analysis of images for detection of quality and identification of organs

6. ***For categories 1-4, describe the estimated time per week it would take a student to complete homework assignments.***
Title 5 uses the Carnegie formula for establishing units using a 2:1 ratio as follows: 1 hr. lecture = 2 hrs .homework; 2 hrs. lecture = 4 hrs .homework; etc. For example: reading textbook—2 hours; writing reports—3 hours.

Reading: 4 hours per week reading text

Writing: 2 hours per week writing and analyzing case studies

Computational:

Other:

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METHODS OF INSTRUCTION: ***(Methods must be consistent with content and appropriate to objectives; state in terms of what instructor will be doing in order to present course content to students: for example, lecture, demonstration, facilitate group work, etc. Do not list specific instructional equipment.)***

Lecture, audiovisuals, case studies

METHODS OF EVALUATION: ***(These must be clearly related to course content, assignments, and objectives in order to comply with Title 5 requirements. Describe what instructor will be looking for when evaluating various assignments and tests in order to determine whether students have met course objectives. Grades must be based on demonstrated proficiency in subject matter and determined, where appropriate, by essays, objective and essay tests, research papers or projects, problem solving exercises, or skills' demonstrations.)***

Multiple choice, short answer, and essay questions to assess achievement of objectives 1-6

Suggested Texts or other Instructional Materials ***(list several when possible; include title, author, publisher, date, and latest edition.)***
Bontrager, Kenneth. 2002. Pocket Atlas: Handbook of Radiographic Positioning and Techniques. 4th ed. Bontrager Publishing Inc.
RADT 204 course packet (created by faculty and updated annually)