RTAP 287 – Image Production and Evaluation

INSTRUCTORS

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Course Information

Name: RTAP 287 – Image Production and Evaluation
Units: 2
Location: Online through Blackboard offered over nine modules in an 11 to 12 week period. It is a fully online course.

Instructor

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Course Description

RTAP 287 – Image Production and Evaluation (2 units): Provides instruction in the principles of radiographic theory and technique. Covers the physical factors involved in imaging processing, and techniques for obtaining the optimum radiography under any situation. Examines the role of image intensified fluoroscopy in radiology. Provides instruction in the use of digital imaging technology in radiology, including: digital imaging equipment, picture archival and communications systems, radiology information systems, hospital information systems, and various other radiology related applications. Advanced techniques focus on operation, quality assurance, and radiation safety.

Learning Materials

Textbook: Bushong, S., <u>Radiologic Science for Technologists</u>, Physics, Biology, and Protection, 9th Edition, Elsevier Mosby,

Modules: Modules are provided on Canvas

Software: Access to the Canvas learning management system https://llu.instructure.com
Adobe PDF Reader

Misc: Other materials and web links provided as assigned

The majority of the course material has been taken from the Medical Radiography program at Loma Linda University. Additional course material (such as graphics) has been taken from the textbooks listed below:

1. Bontrager, K., Lampingnano, J., <u>Textbook of Radiographic Positioning and Related Anatomy</u>, 7th Edition, Mosby-Elsevier, 2010
2. Carter, C., Vealé, B., <u>Digital Radiography and PACS</u>, Mosby-Elsevier, 2008
3. Saia, D.A., <u>Radiography Prep - Program Review and Exam Prep</u>, 5th Edition, Mc Graw-Hill, 2009

4. Statkiewicz-Sherer, M., Visconti, P., Ritenour, E. R., <u>Radiation Protection in Medical Radiography</u>, 5th Edition, Mosby-Elsevier, 2006

Course Objectives

At the completion of the course, the student should be able to:

1. Choose kVp, mA, time or AEC to achieve optimum image quality.
2. Discuss the proper use of grids.
3. Select appropriate technical factors to ensure safe exposures.
4. Describe the steps involved in the automatic processing of x-ray film.
5. Identify common image artifacts.
6. Explain how to properly store x-ray film to avoid film artifacts.
7. Evaluate radiographic images for adequate density, contrast, recorded detail, distortion, and demonstration of anatomical structures.
8. Compare the basic principles behind a cassette-based with a cassette-less environment.
9. Interpret the exposure index of a digital image and explain its significance to the radiographer.
10. Describe how a PACS works and the standardized format images are stored in.

Methods of Instruction

Methods of instruction for this course include:

1. Online learning modules
2. Online quizzes
3. Proctored final exam

Getting Help

In an online course, it is important for you to get help when you need it. Your instructor will make every effort to respond to your emails within 12-24 hours. You can also call the instructor during the week day, day-time hours if you have questions.

Modules

This course is organized into four modules:

1. Module 1 – Technical Factors
2. Module 2 – Image Processing
3. Module 3 – Image Evaluation
4. Module 4 – Digital Imaging

Due Dates

Module Quizzes

All module quizzes be available starting on the first day of the quarter and can be taken at any time during the course.   All module quizzes must be completed by midnight on the last Monday of the quarter.

Comprehensive Final Exam

The comprehensive final exam must be completed by midnight on the last Wednesday of the quarter.

Grading

Letter Grades and Percentages

A	95-100%
A-	92-94%
B+	89-91%
B	85-88%
B-	82-84%
C+	79-81%
C	75-78%
D	69-74%
F	68% and below

A grade of 75% or lower will result in a review for academic probation.

Assignment Weighting

28%	Module quizzes
72%	Comprehensive final exam

Course Content

Module	Topic
1	Technical Factors
2	Image Processing
3	Image Evaluation
4	Digital Imaging

Course Policies

Quizzes

Quizzes will be taken online and will be open-note. You can take the quiz only once and it must be completed once it is opened. Quizzes will be timed.

Final Comprehensive Exam

The final comprehensive examination must be proctored by an approved person. The student must make arrangements with a local college, university, or library with their proctoring service. Students can also make arrangements to take their proctored exams at Loma Linda University.

University Policies

Americans with Disabilities Act (ADA) Policy

It is the policy of Loma Linda University to fully comply with the provisions of the Americans with Disabilities Act and Section 504 of the Rehabilitation Act. Requests for accommodation should be made to Dr. Craig Jackson, Dean, School of Allied Health Professions (Nichol Hall 1603), accompanied by appropriate documentation that he/she is qualified as defined by the Americans with Disabilities Act. To view the Disability Accommodation Policy please go to: http://www.llu.edu/llu/handbook/6e.htm

Academic Integrity Policy

Acts of dishonesty including theft, plagiarism, giving or obtaining information in examinations or other academic exercises, or knowingly giving false information are unacceptable. Substantiated violations are to be brought before the dean for disciplinary action. Such action may include, but is not limited to, academic probation or dismissal from the program. To view the Standards of Academic Conduct Policy please visit: http://www.llu.edu/llu/handbook/6r.htm

Protected Health Information

The purpose of the Protected Health Information (PHI) policy is to provide guidance and establish clear expectations for students regarding the appropriate access to and use of PHI during course studies and related program activities. Under the Health Insurance Portability and Accountability Act (HIPAA), patient health information is protected. Please go to: http://www.llu.edu/llu/students/documents/phi-guidelines.pdf