

University of Arkansas – Fort Smith

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General Syllabus

RADT 1104 Introduction to Radiography

Credit Hours: 4 **Lecture Hours:** 4 **Laboratory Hours:**

Prerequisites: ENGL 1203 Composition I, MATH 1403 College Algebra or MATH 1404 College Algebra (Extended Format), CPR Certification (American Heart Association “CPR for Healthcare Providers” or American Red Cross “CPR for the Professional Rescuer”) CHEM 1303 Chemical Principles, and BIOL 2203/2201 Human Anatomy/Laboratory

Prerequisite or corequisite: BIOL 2213/2211 Human Physiology/Laboratory

Corequisites: RADT 1112 Radiographic Procedures I and RADT 1124 Clinical Education I

Effective Semester: Fall 2015

I. Course Information

A. Catalog Description

Provides a broad overview of the radiological sciences profession. Varied aspects of patient care, legal and ethical concerns, pharmacology, and professional development and organizations are presented.

B. Additional Information

II. Student Learning Outcomes

A. Subject Matter

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

1. Explain the circumstances surrounding the discovery and development of the “X-ray”.
2. Use appropriate units when discussing the measurement of x-radiation.
3. Describe the radiographer’s role in relation to the radiologist, referring physician, hospital administration, nursing personnel, and other hospital staff.
4. List ways that a radiographer can contribute to the advancement of radiologic technology.
5. Define ethics.
6. Explain the rationale for confidentiality of professional communications.
7. List patient rights that the radiographer is responsible for protecting.
8. List examples of how members of diverse groups may approach health care.
9. List examples of how cultural diversity may influence or affect the communication process.
10. Demonstrate examples of nonverbal communication.

11. Locate the portions of a patient's chart containing information relevant to diagnosis, history, current status, laboratory reports, radiology reports, allergies, and medications.
12. List steps to be taken to ensure accuracy of patient identification.
13. Demonstrate safe techniques for patient moving and transferring, using the principles of good body mechanics.
14. Explain the need for radiation protection.
15. List sources of radiation and explain their significance in dose accumulation
16. Explain what is meant by maximum permissible dose for occupational workers and non-occupational workers.
17. List and explain the three types of radiation/matter interactions significant in radiology.
18. List and explain the significance of radiation effects on the total body.
19. List and describe the practical radiation protection methods for all radiographic examination.
20. List and describe instruments for monitoring personnel exposure to radiation.
21. State Maslow's hierarchy of needs and explain how it pertains to patient care.
22. Correctly assess patient vital signs
23. Perform catheterization on both male and female cath models.
24. Demonstrate proper isolation, sterile, or aseptic techniques used to protect from contagious diseases.
25. Define the terminology related to infection control.
26. Describe the various sources of nosocomial infection.
27. Compare and contrast medical and surgical asepsis
28. List the signs and symptoms of child abuse.
29. Discuss the legal, moral, and ethical responsibilities a radiographer has in the recognition and reporting of child abuse.
30. Discuss the appropriate methods for reporting child abuse.
31. Differentiate between the systems of ethics, law, and morals.
32. Use the problem-solving process of ethical analysis in decision-making when given a case study.
33. Explain three sources of moral judgment that underlie the ethical decision-making.
34. Identify moral dilemmas encountered in: 1) patient relationships 2) physician relationships 3) relationships with other health professionals.
35. Apply critical analysis to ethical decision-making.
36. Explain how to project a professional image in attire and conduct.
37. Recognize common definitions and nomenclature associated with pharmacology.
38. Describe the classifications, actions, indications, precautions, and documentation of various drugs as well as common abbreviations used in drug administration.
39. List the methods of drug administration.
40. Prepare intravenous drugs for injection.
41. Perform venipuncture using appropriate universal precautions.
42. Define and explain the differences between accreditation, credentialed, certification, licensure, and regulations.
43. Explain the benefits of continuing education as related to improved patient care and professional development.
44. Identify career advancements and opportunities for the radiographer.

B. University Learning Outcomes

This course enhances student abilities in the following areas:

Analytical Skills

Students will think critically to reach viable solutions to a problem and to justify those solutions.

Communication Skills

Students will compose coherent documents appropriate to the intended audience.
Students will effectively communicate orally in a public setting.

Technological Skills

Students will use technology to access information.

Ethics

Students will apply ethical concepts and rules to determine viable alternatives in any given situation.

III. Major Course Topics

- A. Basic Radiation Protection and Biology
- B. Introduction to Radiography – History of Medicine and X-Rays
- C. Organizational Hierarchy and Function – Professional Roles and Behaviors
- D. Professional Development, Supporting Organizations, and Career Advancement
- E. Accreditation and Credentialing
- F. Patient Care
 - 1. Communication
 - 2. Vital Signs and Oxygen
 - 3. Safety, Transfer, and Positioning
 - 4. Infection Control
 - 5. Aseptic and Non-Aseptic Techniques
 - 6. Venipuncture
 - 7. Contrast Media and Reactions
 - 8. Catheterization
 - 9. Medical Emergencies
 - 10. Child Abuse
- G. Pharmacology
- H. Legal and Ethical Issues