

Minnesota State College Southeast

RADT 2601: Introduction to Radiologic Sciences

A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: 3

Lab Hours/Week: 2

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: None

MnTC Goals: None

This course introduces students to the role of radiography in healthcare. The first section provides the student with an overview of radiography and the health-care systems. Topics include professional organizations, the ARRT Code of Ethics and Standard Practices, Ethics and medico-legal issues that enable the student to understand parameters of professional practice and major areas of responsibility. The second section provides the student with the basic concepts of patient care, including consideration for the physical and psychological needs of the patient and their family. Communication skills, routine emergency patient procedures and infection control procedures using standard precautions are explored. Special and basic fluoroscopy procedures will be introduced along with pharmacology and contrast media, drug administration and venipuncture. Fluoroscopy, mobile and surgical equipment will be introduced. In addition, an on-line medical terminology component will be included in this course. (Prerequisite: Admission to the radiography program) (Prerequisite or concurrent: RADT2605, RADT2611) (4 credits: 3 lecture/1 lab)

B. COURSE EFFECTIVE DATES: 02/12/2013 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Examine the role of the radiographer in the healthcare environment
2. Analyze legal & ethical issues in healthcare
3. Learn basic patient care standards, procedures, and precautions
4. Develop critical thinking skills in patient care
5. Understand a radiographers role in trauma situations and drug reactions
6. Learn general pharmacology principles and drug classes

D. LEARNING OUTCOMES (General)

1. Examine the role of the radiographer in the healthcare environment
2. Discuss administrative organization in hospitals and radiology departments as part of the health care team
3. Explore the fundamentals of the health science professions, professional organizations, accreditation professional credentialing and regulatory agencies
4. Describe the practice standards for the radiographer as defined by the ASRT and ARRT code of conduct, practice standards, and state licensure
5. Explore effectiveness of care and HIPAA requirements
6. Promote professional development and advancement as a means to improve patient care and professional enhancement
7. Discuss the interrelationship between personal, community and societal values and how these influence patient care
8. Differentiate between culture and ethnicity and explore cultural beliefs as they relate to illness
9. Discuss family dynamics, culture, social, ethnic and lifestyle considerations and their impact on health status
10. Consider death and dying from both the patient and radiographers viewpoint
11. Explain concepts of personal honesty, integrity, accountability, competence and compassion as ethical imperatives in health care
12. Discuss the origins of medical ethics and analyze legal and ethical issues in healthcare including legal doctrine, patient's bill of rights and patient consent
13. Explain the legal implications of professional liability, malpractice, professional negligence; as well as institutional and professional liability protection typically available to the radiographer
14. Discuss the Patients' Bill of Rights
15. Promote professionalism and good communication in patient care that includes methods for determining the correct patient/correct exam & using various communication devices
16. Understand a radiographer's role in health and safety in the hospital setting
17. Explore material safety data sheets
18. Understand the implications of manipulation of electronic data in a patient's record
19. Demonstrate and apply critical thinking skills in communication and interaction with the patients of all age groups (infant, toddler, adolescent, teen, adult, and geriatric)
20. Develop assessment skills in taking patient histories and evaluating physical needs and developing the ability to explain specific aspects of a radiologic procedure to the patient
21. Demonstrate immobilization techniques for various procedures and patient conditions while keeping patient safety and comfort the first priority
22. Understand the purpose, legal considerations and procedures for reporting an accident or incident
23. Examine medical emergencies and trauma in radiology and identify symptoms related to specific emergency situations (including contrast reactions)
24. Examine the student's role and radiographer's role during a medical emergency (code)
25. Describe the symptoms and precautions taken for a patient with a traumatic injury including the types of immobilization devices and positioning aids for upper and lower extremity fractures
26. Demonstrate the use of specific medical emergency equipment and supplies
27. Describe the monitoring, pre- and post-procedural care, drug administration and special precautions for a patient undergoing invasive procedures
28. Identify current practice status and informed consent
29. Describe the importance for infection control including sources, modes of transmission of infection and diseases, and institutional control procedures
30. Apply and demonstrate isolation, and standard precaution techniques

31. Explore the purpose, precautions, and care of tubes, lines, catheters, and collection devices and special problems associated in performing procedures on a patient with a tracheotomy, or specific tubes, drains, or catheters
32. Exercise surgical and medical asepsis procedures
33. Discuss oxygen therapy and respiratory needs of the patient and the steps in the operation and maintenance of suction and oxygen equipment during a radiographic examination
34. Demonstrate proper body mechanics with patient transfer and procedures to turn patients with various health conditions
35. Obtain skills in recording patient vital signs and assessing patient condition. This also includes recognizing normal/abnormal values for respiration, blood pressure, and pulse.
36. List the normal ranges for specific laboratory studies
37. Obtain skills in venipuncture
38. Interpret orders, requests and diagnostic reports
39. Explain pharmacology principles and drug classifications
40. Discuss six rights to drug safety and drug routes
41. Differentiate among the methods of drug administration
42. Identify, describe, and document complications associated with venipuncture and appropriate actions to resolve these complications
43. Discuss the various elements of initiating/discontinuing an IV
44. Discuss drug categories of relevance to Radiology (side effects, uses, impacts on medical imaging)
45. Explain the methods and techniques for administering contrast media (agents) and preparations for barium studies and urography
46. Prepare for injection of contrast agents/IV medications using aseptic technique
47. Identify the current legal and ethical status of the radiographer's role in drug administration and professional liability associated with it
48. Apply the word-building process and distinguish between prefix, suffix and word roots
49. Define and pronounce medical words accurately
50. Organize word parts appropriately; combining vowels when necessary
51. Translate medical abbreviations and symbols
52. Explore mobile and surgical radiography
53. Explore fluoroscopy, ERCP, cystography, cystourethrography, hysterosalpingography, arthrography, myelography, bone age and bone survey studies in radiography

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

External Standards:

1. The Word-Building Process
2. Medical Abbreviations and Symbols
3. Understanding Orders, Requests and Diagnostic Reports
4. Health Care Team
5. Professionalism and Communication in Patient Care
6. Patient/Radiographer Interactions
7. Safety and Transfer Positioning
8. Evaluating Physical Needs
9. Immobilization Techniques
10. Infection Control
11. Handling and disposal of hazardous and toxic material.
12. Material Safety Data Sheets.
13. Medical Emergencies and trauma.
14. Tubes, Catheters, Lines & Collection Devices
15. Drug Nomenclature
16. Methods of Drug Classification
17. General Pharmacologic Principles
18. Six Rights of Drug Safety
19. Drug Categories of Relevance to Radiography
20. Routes of Drug Administration
21. Vital Signs
22. Venipuncture
23. Contrast studies and agents
24. Reactions to contrast agents
25. Procedural considerations for contrast studies
26. Current Practice Status
27. Patient Consent
28. Ethics and Ethical Behavior
29. Ethical Issues in Health Care
30. Legal Issues
31. The Health Science Professions
32. The Health Care Environment
33. The Healthcare Team
34. Hospital/Radiology Organizations
35. Accreditation
36. Regulatory Agencies
37. Professional Credentialing
38. Professional Organizations
39. Professional Development and Advancement
40. Mobile and Surgical Radiography
41. Biliary System
42. Genitourinary System