North Idaho College

Radiography Technology
Associate of Applied Science

Master Plan of Education

Master Plan of Education

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NIC Radiography Program Advisement Sheet						
First Prerequisite Semester						
Course Number	**Course Name**		**Credits**	**Wk. Contact**	**SM Contact**	**Semester Completed**
MATH 123	Contemporary Math or Higher		3	3	45	
ENG101	English Composition		3	3	45	
BIO-227	Human Anatomy and Physiology I with Cadaver		4	6	90	
		Semester Total	10	12	180	
Second Pre-requisite Semester						
Course Number	**Course Name**		**Credits**			
COMM 101	Introduction to Speech Communication		3	3	45	
PSYC 101 or SOC 101	INTRO to Psychology or Sociology		3	3	45	
BIO-227	Human Anatomy and Physiology II with Cadaver		4	6	90	
CAOT-179	Medical Terminology		2	2	30	
		Semester Total	12	14	210	
First Semester FALL 1						
Professional Component:						
Course Number	**Course Name**		**Credits**	**Wk. Contact**	**SM Contact**	**Semester Completed**
RADT 111/111L	Introduction to Radiology (M,W,F)		5	14	210	
RADT 112/112L	Radiographic Procedures I (T,R)		4	10	150	
RADT 113/113L	Principles of Radiation Biology and Protection (T,R)		3	8	120	
		Semester Total	12	32	480	
Second Semester SPRING 1						
Course Number	**Course Name**		**Credits**	**Wk. Contact**	**SM Contact**	**Semester Completed**
RADT 115/115L	Radiologic Physics and Equipment (M,W)		3	4	60	
RADT 114/114L	Radiographic Procedures II (M,W)		4	10	150	
RADT 116	Clinical Radiography I (T,R)		6	18	270	
		Semester Total	13	33	480	
Third Semester Summer 1						
Course Number	**Course Name**		**Credits**	**Wk. Contact**	**SM Contact**	**Semester Completed**
RADT 118/118L	Radiographic Procedures III (M,W)		4	10	150	
RADT 119	Clinical Radiography II (T,R)		4	18	180	
		Semester Total	8	24	240	
Forth Semester FALL 2						
Course Number	**Course Name**		**Credits**	**Wk. Contact**	**SM Contact**	**Semester Completed**
RADT 211/211L	Radiographic Imaging (T,R)		4	10	150	
RADT 220	Clinical Radiography III (M,W,F)		8	24	360	
		Semester Total	12	34	510	
Fifth Semester SPRING 2						
Course Number	**Course Name**		**Credits**	**Wk. Contact**	**SM Contact**	**Semester Completed**
RADT 222	Radiologic Technology Review (M)		2	2	30	
RADT 221	Clinical Radiography IV (T,W,R,)		10	30	450	
		Semester Total	12	32	480	
		Program Total	79	181	2580	

North Idaho College

Coeur d'Alene · Health Professions & Nursing · Radiography Technology

Introduction to Radiography

RADT-111

Fall 2019 Section 100 5 Credits 08/19/2019 to 12/12/2019 Modified 08/13/2019

Contact Information

Radiology Program Director: Mr. Matthew A Nolan

Email: manolan2@nic.edu
Office: MHS-148 and RAD Suite
Phone: 2086767133

Meeting Times

Lecture & Lab

Monday, Wednesday, 8:00 AM to 11:30 AM, MHS 112

RADT 111 and RADT 111L are integrated courses. All course content for both RADT 111 & RADT 111L will be housed in the main RADT 111 Canvas course shell.

Description

This course orients students to the radiographic profession and introduces a grouping of fundamental principles, practices, and issues common to many specializations in the healthcare profession. In addition to the essential skills, students explore various healthcare delivery systems and related issues. Emphasis will be placed on patient care with consideration of both physical and psychological conditions. Topics covered in this course include: ethics, medical and legal considerations, Right to Know Law, professionalism, basic principles of radiation protection, basic principles of exposure, equipment introduction, health care delivery systems, hospital and departmental organization, hospital and technical college affiliation, medical emergencies, pharmacology/contrast agents, media,OR and mobile procedures patient preparation, death and dying, body mechanics/transportation, and patient care in radiologic sciences.

Materials

Introduction to Radiologic Sciences and Patient Care

Author: Arlene M. Adler & Richard R. Carlton
Edition: 6th Edition
ISBN: 9780323315791

Prerequisites:

BIOL-227, BIOL-228, CAOT-179, MATH-123, PSYC 101 or SOC 101, COMM 101, ENGL 101

Co-requisites:

RADT-112/112L, RADT-113/113L, RADT-111L

Co-requisites:

RADT-112/112L, RADT-113/113L, RADT-111L

Supplemental Materials

1. Learning Assessment
2. Study Stack

Outcomes

After Completion of this course students will:

1 Ethics

Order Description

1. Identify the general concepts of ethics.
2. Define terms and concepts pertaining to ethics.
3. Outline the difference between empathetic rapport and sympathetic involvement in relationships with patients and relate these to ethical conduct.
4. Relate concepts of personal honesty, integrity, accountability, competence and compassion as ethical imperatives in healthcare.

2 Medical and Legal Considerations

Order Description

1. Explain the basic principles of medical ethics.
2. Describe the Patient Bill of Rights.
3. Identify the principles of professional liability, negligence, and professional standards.
4. Explain the principles of professional liability, negligence, and professional standards.
5. Identify the concepts relating to patient consent.
6. Identify the purpose of hospital and departmental policies concerning patient records, patient information, documentation, reporting and confidentiality.
7. Describe the basic ethical and legal consideration.
8. Identify legal and professional standards and relate each to practice in health professions.
9. Identify the four sources of law to include statutory, administrative, common, and constitutional.
10. Differentiate between Civil and Criminal Liability
11. Define tort and explain the differences between intentional and unintentional torts.

3 Right to Know Law

Order Description

1. Explain the informed consent form.
2. Define terms relating to informed consent.
3. Identify examination procedures utilizing informed consent.
4. Describe how consent forms are used relative to specific radiographic procedures.

4 Professionalism

Order Description

1. Discuss the general employment outlook and economic return.
2. Identify employment and career advancement opportunities for radiographers.
3. Evaluate the potential benefits of participation in continuing education in terms of improved patient care and career enhancement.
4. Discuss mandatory continuing educational licensure requirements by the ARRT.

5. Define the terms accreditation, certification, licensure, and registration.
6. Identify accrediting agencies.
7. Describe how the essential requirements and guidelines (JRCERT Standards) of accrediting agencies for radiography programs relate to the content of accredited educational programs.
8. Explain the difference between the accreditation and credentialing process.
9. Identify national, state and district level professional organizations for radiographers.
10. Describe the purpose, function, and activities of professional organizations for radiographers.

5 Basic Principles of Radiation Protection

Order Description

1. Explain the purpose of radiation protection as it related to patients and personnel.
2. Apply the principles of radiation protection as it relates to patients and personnel.
3. Describe the student radiographer's responsibilities for radiation protection.
4. Identify personnel radiation monitoring devices.
5. Describe the advantage and disadvantage of each type of personnel radiation monitor.
6. Interpret the contents of a periodic personnel exposure report.

6 Basic Principles of Exposure

Order Description

1. Identify the basic responsibilities of student radiographers to the patient.
2. Identify concepts and terms relating to exposure and control factors, such as density, contrast, exposure equations, directional terms, and critique points of radiographs.
3. Describe the relationship between control factors and exposure factors.
4. Identify basic preparatory and examination procedures.

7 Equipment Introduction

Order Description

1. Identify basic radiographic fluoroscopic equipment.
2. Identify basic components of CR processors.
3. Identify basic radiographic accessories such as calipers, cushions, cassettes, grids, and other accessories.

8 Health Care Delivery Systems

Order Description

1. Identify the early pioneers of radiography and their contributions.
2. Describe what X-radiation is and how it is produced.
3. Describe each of the radiological modalities such as CT, Interventional Radiography, Nuclear Medicine, Magnetic Resonance Imaging, Sonography, Radiation Therapy, and Mammography.
4. Explain the function of other (non-radiographic) health care components, such as medical laboratory, physical and respiratory therapy, transcripts, and medical records.
5. Discuss the reimbursement/payment options for health care services.
6. Identify various settings involved in the delivery of health care.

9 Hospital and Departmental Organization

Order Description

1. Discuss the philosophy and mission of the hospital.
2. Identify key hospital administrative personnel.
3. Discuss the relationship between key administrative personnel and the radiology department.
4. Describe the relationship and interdependencies of departments within the hospital.
5. Identify key personnel in the radiology department.
6. Discuss the function of key personnel in the radiology department.

7. Explain patient services available in the radiology department.
8. Discuss the educational opportunities available in the radiology department.

10 Hospital and College Affiliation

Order Description

1. Describe the chain of command for hospital administration and the radiology department.
2. Describe the chain of command for the sponsoring organization.

11 Medical Emergencies

Order Description

1. Identify symptoms which manifest the following conditions: cardiac arrest, anaphylactic shock, convulsion, seizure, hemorrhage, apnea, vomiting, aspiration, fractures, and diabetic coma/insulin reaction.
2. Discuss acute care procedures for cardiac arrest, anaphylactic shock, convulsion, seizures, hemorrhage, apnea, vomiting, aspiration, fractures, and diabetic coma/insulin reaction.
3. Discuss the use of medical emergency equipment and supplies.
4. Given a simulated patient and conditions, demonstrate the use of oxygen equipment.
5. Describe the emergency medical code system for the institution and the role of the student during a medical emergency.
6. Describe the symptoms and precautions taken for a patient with a head injury.
7. Explain the types of immobilizing devices and positioning for upper and lower extremity fractures.
8. Describe the symptoms and medical interventions for a patient with a contrast agent reaction.

12 Pharmacology/Contrast Agents/Media

Order Description

1. Discuss the theory and practice of administration of diagnostic contrast agents and/or intravenous medications.
2. Define the categories of contrast media.
3. List specific examples of each contrast agent category.
4. Discuss the pharmacology of barium and iodine compounds with regards to patient history/allergy, patient precautions, patient reactions, technical composition and emergency care.
5. Describe administration methods and techniques for each type of contrast agent.
6. Evaluate laboratory data relative to contrast media administration.
7. In the laboratory environment, demonstrate preparation for injection of contrast agents/intravenous medications using aseptic technique.
8. Explain the current legal and ethical status of the radiographer's role in drug administration.
9. Explain a radiographer's professional liability concerning drug administration.
10. Explain a radiographer's professional liability concerning drug administration.

13 OR and Mobile Procedures Patient Preparation

Order Description

1. In the laboratory environment, demonstrate methods of preparing patients for routine radiographic examinations.
2. Identify proper aseptic techniques where required for surgical and mobile radiographic procedures.
3. In the laboratory environment, demonstrate the appropriate procedure for gathering information prior to performing a mobile radiographic examination.
4. Describe the initial steps in performing a mobile procedure.
5. Explain the procedure for placing an image receptor under a patient in an orthopedic bed frame.
6. Describe the special problems faced in performing procedures on a patient with a tracheotomy and specific tubes, drains and catheters.
7. Describe the procedure for producing diagnostic images in the surgical suite.
8. Explain the appropriate radiation protection required when performing mobile/surgical radiography

14 Death and Dying

Order Description

1. Describe the special needs of the terminally ill or the grieving patient in terms of radiographic imaging.
2. Define advance directives and differentiate between various types of advance directive documents.

15 Body Mechanics/Transportation

Order Description

1. Define the terms associated with body mechanics.
2. Describe the cause, signs, symptoms, and treatment of orthostatic hypotension.
3. Describe the basic principles of proper lifting and transfer techniques.
4. Identify five standard patient positions.
5. In the laboratory environment, demonstrate correct principles of body mechanics applicable to patient care.
6. In the laboratory environment, demonstrate techniques for specific types of patient transfer.
7. In the laboratory environment, demonstrate select procedures to turn patients with various health conditions.
8. Describe select immobilization techniques for various types of procedures and patient conditions.

16 Patient Care in Radiologic Sciences

Order Description

1. Identify and differentiate between culture and ethnicity.
2. Explain how a person's cultural beliefs toward illness and health affect his or health status.
3. Compare and Contrast the differences between cultures and ethnicities.
4. Explain how a person's cultural beliefs toward illness and health affect his or her health status.
5. Describe vital signs used to assess patient condition that include sites for assessment and normal values.
6. Describe and recognize abnormal respiratory patterns.
7. State the terms used to describe respiratory rates that are above and below normal values.
8. Identify terms used to describe above and below normal pulse rates.
9. In the laboratory environment, demonstrate acquisition of patient vital signs, including pulse, respiration, blood pressure and temperature and document appropriately.
10. Define terms related to infection control.
11. Describe the importance of standard precautions and isolation procedure that includes sources and modes of transmission of infection and disease and also institutional control procedures
12. Explain the special considerations necessary when performing radiographic procedures on an infant or child.
13. Explain the special considerations necessary when performing radiographic procedures on a geriatric patient.
14. Discuss family dynamics, culture, social, ethnic and lifestyle considerations and their impact on health status.
15. Identify specific types of tubes, lines, catheters and collection devices.
16. Outline the steps in the operation and maintenance of suction and oxygen equipment and demonstrate their use.
17. In the laboratory environment, demonstrate pre and post exposure precautions to include hand washing, gloving (sterile and nonsterile), Personal Protective Equipment (PPE), sanitizing and disinfection.

✔ Assessment

Methods of Instruction:

Course objectives will be met through a variety of teaching methods. These include, but limited to: individual work, group activities in lab, appropriate textbook usage, charts and diagrams, handouts, reference items, homework, class discussion and presentations, lectures and presentations with power points, and computer-based learning through Canvas in order to satisfactorily achieve course objectives while meeting each student's individual learning needs.

Description of Graded Activities:

Presentations: Students will complete and present a paper for National Radiology Technology Week (NRTW) covering one of the listed founders or contributors to Medical Imaging. *P*resentations will be completed and presented with a partner. Teamwork must be apparent throughout the reporting. Presentations and Papers will be completed by the assigned due date in order to receive full credit.

Students are encouraged to review the provided grading rubric to ensure they do not miss any required content that should be covered. When presenting Students should interact with their audience as this is a portion of the grading scale listed in the rubric. Refer any questions concerning this project to the instructor prior to presentation date.

Lab Exams and Tasks check-offs: Each student must complete and pass patient care lab exams that are required in order for the student to attend clinic. The Patient lab exams are outlined on the ARRT competency requirement and must be completed in order for any student to sit for their ARRT national Registry.

Chapter Quizzes/Tests: There will be assorted amount of homework assignments and quizzes. Questions on quizzes may consist of any of the following: Multiple choice, fill-in-the-blank, true/false, short answer, mathematical calculation, labeling of diagrams, and computer grade sheet questions.

Unit tests: As outlined on the schedule each unit will culminate with a unit test. Questions on tests may consist of any of the following: Multiple choice, fill-in-the-blank, true/false, short answer, mathematical calculation, labeling of diagrams, and computer grade sheet questions.

Cumulative Final Exam: At the end of the Course student will take a cumulative final exam that is weighted as 30% of the course. Students are encouraged to study to learn all content for the long term, because the registry will require it. Questions on the Final exam may consist of any of the following: Multiple choice, fill-in-the-blank, true/false, short answer, mathematical calculation, labeling of diagrams, and computer grade sheet questions.

Methods of Grading:

Grades will be based upon attendance and class participation (which includes reading in advance and turning in review questions, prior to class time), possible presentations, and preparation for lab demonstrations, quizzes, and final examination. Missed exams may be made up the next class day only if a doctor's excuse is provided. **Please see the instructor to make arrangements regarding make-up work, as soon as possible, after the date of absence or before the date of a known absence (e.g. a planned absence that the instructor agrees to).**

Breakdown

Unit Tests	45%
Labs Exams / Tasks / Worksheets / Quizzes	15%
Project—NRTW Presentation and Paper	10%
Final Exam	30%
Total:	100%

GRADE	QUALITY POINTS	PERCENTAGE
A	4.00	93
A-	3.67	90
B+	3.33	87
B	3.00	83

B-	2.67	80
C+	2.33	77
C	2.00	73
C-	1.67	70
D+	1.33	67
D	1.00	63
F	0	Under 63%

Course Policies

Policy on Academic Dishonesty:

Please refer to the NIC Student Handbook. Dishonesty of any type will not be tolerated. Students who violate the academic dishonesty policy may receive an F for the course.

Note:

- A 77% semester average is required to pass the course.
- A doctor's excuse is required for all missed test and exams.

*** * All tests will be given on the assigned day NO MAKE-UPS WILL BE ALLOWED WITHOUT A SIGNED DR'S EXCUSE ****

Expectations:

- **It will be expected** that each student bring his or her own book and materials to class each day. Students will not be allowed to share materials for individual in class assignments. This also includes a calculator for testing. At no time shall a cellphone be used during courses.
- It **is expected** that students arrive to class by the assigned time. If students are late they should call my office and let me know they are going to be late (if I do not answer leave a message). The door to the class will be locked and students will not be allowed to enter until it is time for class break.
- PowerPoint presentations may not be given for each chapter; it **is expected** that each student read all class material and chapters before coming to class.
- Recorded lectures will be provided to students when available; it **should not be expected** that all course material be presented in this format.
- It is expected that each student be responsible for all content located in the covered chapter. If a student does not understand a concept he/she should stay after class to discuss it.
- It is expected that each student understand that if he/she is deficient in a topic or content, it is up them to ask for extra help and that I will make every effort to help study as long as the student makes equal effort.
- It **should not be expected** that I make you learn. Learning is your job as a student. It **should be expected** that I deliver content in a way that is conducive to meet the learning needs of students.

Attendance Policy

Students should make every attempt to attend class. If a student misses 20% of the class time then he/she will be withdrawn from the course. 3 tardies to a didactic course will be equal to 1 absence.

Schedule

Course Schedule: The instructor reserves the right to revise class calendar, modify content, and/or substitute assignments in response to institutional, weather, or class situations. Changes will be announced in class. Students will be held responsible for all changes.

Date	Chapter	Title
8-19	Chapter 1	Syllabus Review / Introduction to Imaging and Radiologic Science
8-21	Chapter 7	Radiographic Imaging
8-26	Chapter 8	Radiographic and Fluoroscopic Equipment
8-28	Chapter 9	Basic Radiation Protection & Radiobiology
9-2		Chernobyl Heart Video HOLIDAY HOMEWORK
9-4		**Unit 1 Exam**
9-9	Chapter 5 & 17	Introduction to Clinical Education / Infection Control
9-11	Chapter 13 & 14	Safe Patient Movement and Handling Techniques / Immobilization Techniques
9-16		Patient Movement Check-off
9-18		**Unit 2 Exam**
9-23	Chapter 15 & 16	Vital Signs, Oxygen, Chest Tubes, and Lines / Basic Cardiac Monitoring: The Electrocardiogram
9-25	Chapter 18	Aseptic Techniques
9-30	Chapter 19	Nonaseptic Techniques
10-2		Handwashing / Gloving / Vitals Check-off
10-7		**Unit 3 Exam**
10-9	Chapter 10 & 11	Human Diversity; Patient Interactions
10-14	Chapter 12	History Taking
10-16		**Unit 4 Exam**
10-21	Chapter 20	Medical Emergencies

10-23	Chapter 21	Pharmacology
10-28		***Projects Due***
10-30	Chapter 22	Principles of Drug Administration
11-4	Chapter 23	Contrast Media and Introduction to Radiopharmaceuticals
11-6		**Unit 5 Exam**
11-11	Chapter 2	Professional Organizations
11-13	Chapter 6	Radiology Administration
11-18	Chapter 24	Professional Ethics
11-20	Chapter 25	Health Records and Health Information Management
11-25	Chapter 26	Medical Law
12-2		**Unit 6 Exam**
12-4		**Final Exam**

Institutional Policies

Academic Dishonesty
Violations of academic integrity involve using or attempting to use any method that enables an individual to misrepresent the quality or integrity of his or her work at North Idaho College. These violations include the following:

- Cheating: using or attempting to use unauthorized materials, information, or study in any academic exercise.
- Fabrication: falsifying or inventing any information or citation in an academic exercise.
- Plagiarism: knowingly representing the words or ideas of another as one's own in an academic exercise.
- Violation of Intellectual Property: stealing, altering, or destroying the academic work of other members of the community or the educational resources, materials, or official documents of the college.
- Facilitating Academic Dishonesty: knowingly helping another to attempt to violate any provisions of this policy."

Violations of academic integrity may result in failure of an assignment, failure of the course, or more serious sanctions.

"For a complete explanation of the North Idaho College Statement on Academic Honesty & Academic Integrity please refer to Policy 5.06 & Procedure 5.06.01: http://www.nic.edu/policy/

Student Code of Conduct
The Student Code of Conduct applies to any student enrolled at North Idaho College. This includes, but is not limited to, face-to-face classes and Internet classes.

NIC shall maintain a Student Code of Conduct that specifically addresses prohibited behavior and assures due process for alleged violations. The Code of Conduct shall make clear possible sanctions for such actions. Policy Manual (http://www.nic.edu/websites/default.aspx?dpt=121&pageId=) (See 5.06)

Disability Support Services and the Americans with Disabilities Act (ADA)

In compliance with the Americans with Disabilities Act of 1990 and Section 504/508 of the Rehabilitation Act of 1973, North Idaho College provides accommodations to eligible students who experience barriers in the educational setting due to learning, emotional / mental, physical, visual, or hearing disabilities. Instructors will provide accommodations to students only after having received a Letter of Accommodation from Disability Support Services (DSS).

If a student would like to request accommodations, he or she must contact DSS so that a Letter of Accommodation may be sent to the instructor. Students requesting accommodations should contact DSS as early in the semester as possible to avoid delay of accommodation due to student load. Accommodations are not retroactive. DSS provides academic accommodations, access, assistance and services at NIC and at the North Idaho Consortium of Higher Education campus.

Contact:
Disability Support Services Website
(208) 769-5947

Withdrawal
Please check the NIC Calendar (https://www.nic.edu/calendar/) for the last day students can withdraw from full-length courses.

Instructor-Initiated Withdrawal: An instructor has the right to withdraw a student for academic reasons. For more information, see the Instructor-Initiated Withdrawal Procedure (https://www.nic.edu/modules/images/websites/121/file/section5/5.04.02procedure.pdf).

Financial Aid Satisfactory Progress (SAP):Federal Regulations require North Idaho College to establish Satisfactory Academic Progress standards (SAP) for all financial aid recipients. The purpose of SAP standards are meant to ensure that students and academic institutions are held accountable to the taxpayer-funded federal student aid programs while students complete their academic goals in a timely manner. This process monitors student performance in all terms of enrollment, including terms in which the student did not receive financial aid. For more information, see the Financial Aid Satisfactory Progress (http://www.nic.edu/websites/default.aspx?dpt=29&pageId=3025) website.

For more information on withdrawals, see the NIC Student Accounts (http://www.nic.edu/websites/default.aspx?dpt=12&pageId=177)website.

Title IX

North Idaho College seeks to provide an environment that is free of bias, discrimination, and harassment. If you have been the victim of sexual harassment/misconduct/assault we encourage you to report this. If you report this to any college employee, (except for a licensed counselor or health care professional) she or he must notify our college's Title IX coordinator about the basic facts of the incident (you may choose whether you or anyone involved is identified by name). For more information about your options at NIC, please go to: www.nic.edu/titleIX (http://www.nic.edu/titleIX) or call (208) 676-7156

INSTITUTIONAL STATEMENT

Removal From Class For Non-Attendance: Attendance is based on your participation in this class. Failure to attend will result in your being removed from this class and may result in your financial aid award being reduced. You are responsible for confirming the accuracy of your attendance record.

North Idaho College

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Radiographic Procedures I

RADT-112

Fall 2019 Section 100 4 Credits 08/19/2019 to 12/12/2019 Modified 08/13/2019

Contact Information

Radiology Program Director: Mr. Matthew A Nolan

Email: manolan2@nic.edu
Office: MHS-148 and RAD Suite
Phone: 2086767133

Course Information:

Course Number: RADT 112/112L

Course Days/times: 1:00 am – 4 pm Monday, Wednesday and Friday 9:00 am – 12 pm

Credits: 4

Prerequisites:

BIOL-227, BIOL-228, CAOT-179, MATH-123, PSYC 101 or SOC 101, COMM 101, ENGL 101

Co-requisites:

RADT-111/111L RADT-112L RADT-113/113L

Description

This course introduces the knowledge required to perform radiologic procedures applicable to the human anatomy. Emphasis will be placed on the production of quality radiographs, and laboratory experience will demonstrate the application of theoretical principles and concepts. Topics include: introduction to radiographic procedures; positioning terminology; positioning considerations; procedures, anatomy, and topographical anatomy related to chest and abdomen cavities, bony thorax, upper extremities, shoulder girdle; and lower extremities.

This is a lecture/ lab course all patient care activities are required by the American Registry of Radiologic Technologist and part of the Clinical competencies required to sit for the registry.

RADT 112 LECTURE: Lecture will be held every Monday from 1:00 pm until 3:30 pm. Students who miss any lecture sessions will fall behind in course material extremely quickly, possibly resulting in course failure. Mondays 4:00 – 5:30 pm will consist of an open lab for those students that wish to review or practice any of the previous course material. A tentative lab schedule will be posted. Students will be required to work in small groups and present assigned topics orally in class. It is extremely important in the field of radiography to orally communicate with patients; therefore this class is designed to improve each student's communication skill.

RADT 112 LAB: Lab will be held after the start of lecture material. Junior students are never allowed in the lab without the direct supervision of a program faculty member. First semester students may never expose radiation in the lab without direct supervision of a program faculty member. Open labs are held every Wednesday until 6:00 pm to allow each student time to get comfortable in the lab

and obtain any extra practice needed to excel in the laboratory portion of this course.

Materials

Required Text

1. Textbook of Radiographic Positioning and Related Anatomy, 9th Edition

ISBN: 9780323481878

2. Workbook for Textbook of Radiographic Positioning and Related Anatomy, 9th Edition

ISBN: 9780323399661

Supplemental Materials

1. Learning Assessment
2. Study Stack

Outcomes

After completion of this course student will:

1 Anatomy and Routine Projections of the Chest and Abdomen Cavities, Upper

Extremity, Shoulder Girdle and Bony Thorax

Order Description

1. Describe the anatomy of the thoracic cavity and bony thorax in terms of structure visualized and function demonstrated.
2. Discuss routine and special projections/positions of the thoracic cavity and bony thorax in terms of structures visualized, functions demonstrated, and general positioning considerations.
3. Explain structures visualized, functions demonstrated, and general positioning considerations when given clinical simulations for routine and special projections of the abdominopelvic cavity.
4. Apply knowledge of radiographic procedures related to the thoracic cavity and bony thorax via performance in a laboratory environment.
5. Evaluate the accuracy of positioning, image quality and anatomical structures visualized on radiographic images.
6. Describe the anatomy of the abdominopelvic cavity in terms of structure visualized and function demonstrated.
7. Describe routine and special projections/positions of the abdominopelvic cavity in terms of structures visualized, functions demonstrated, and general positioning consideration.
8. Explain structures visualized, functions demonstrated, and general positioning considerations when given clinical simulations for routine and special projections of the abdominopelvic cavity.
9. Apply knowledge of radiographic procedures related to abdominopelvic cavity via performance in a laboratory environment.
10. Evaluate the accuracy of positioning, image quality and anatomical structures visualized on radiographic images.
11. Describe the anatomy of the upper extremities in terms of structure visualized and function demonstrated.
12. Describe routine and special projections/positions of the upper extremities in terms of structures visualized, functions demonstrated, and general positioning considerations.
13. In a laboratory environment, perform radiographic procedures related to the upper extremities.
14. Evaluate radiographic images in terms of positioning accuracy, image quality, and anatomical structures visualized.
15. Describe the anatomy of the shoulder girdle in terms of structure visualized and function demonstrated.
16. Describe routine and special projection/positions of the shoulder girdle in terms of structures visualized, functions demonstrated, and general positioning considerations.
17. Explain structures visualized, functions demonstrated, and general positioning considerations when given clinical simulations for routine and special projections of the shoulder girdle.
18. Perform radiographic procedures related to the shoulder girdle in a laboratory environment.
19. Evaluate radiographs in terms of positioning accuracy, image quality, and anatomical structures visualized.

2 Anatomy and Routine Projections of the Lower Extremities

Order Description

1. Describe the anatomy of the lower extremities in terms of structures visualized and function demonstrated.
2. Describe routine and special projections/positions of the lower extremities in terms of structures visualized, functions demonstrated, and general positioning considerations.
3. Explain the structures visualized, functions demonstrated, and the general positioning considerations involved clinical simulations for routine and special projection/positions of the lower extremities.
4. Perform radiographic procedures related to the lower extremities laboratory environment.
5. Evaluate radiographic images in terms of positioning accuracy, image quality, and anatomical structures visualized.

3 Introduction to radiographic procedures.

Order Description

1. Identify the patient using information on the requisition form.
2. Determine patient's identity by checking the wristband or questioning the patient.
3. Chart patient information on the requisition form using knowledge of medical terminology
4. Assess the radiographic requisition form to verify the accuracy and completeness of information.

4 Positioning terminology.

Order Description

1. Define position and projection, and the terms used to describe radiographic positioning.
2. Describe various positioning aid applications and their advantages/disadvantages.
3. Describe the function and application of various accessory equipment.
4. Demonstrate the use of calipers.
5. Discuss lead marker functions, types, and applications.

5 Pathology of Chest, Abdomen, Bony Thorax, Upper and Lower Extremities and

Shoulder Girdle

Order Description

1. Describe the clinical indications for the chest, abdominopelvic regions, bony thorax, upper extremity, shoulder girdle and lower extremity.
2. Identify which clinical indications are additive and destructive.
3. Adapt technical factors and exposure considerations for the pathology indicated for the chest and abdominopelvic regions, bony thorax, upper extremity, shoulder girdle and lower extremity.
4. Evaluate radiographic images of the pathology indicated for the chest and abdominopelvic regions, bony thorax, upper extremity, shoulder girdle, and lower extremity.

6 Positioning considerations

Order Description

1. Discuss general positioning considerations for radiographic procedures.
2. Describe general positioning considerations, given clinical simulations for various radiographic procedures

✔ Assessment

Methods of Instruction:

Course objectives will be met through a variety of teaching methods. These include, but limited to: individual work, group activities in lab, appropriate textbook usage, charts and diagrams, handouts, reference items, homework, class discussion and presentations, lectures and presentations with power points, and computer-based learning through Canvas in order to satisfactorily achieve course objectives while meeting each student's individual learning needs.

Description of Graded Activities:

Image Critique: Image critique is a vital part of a competent Radiology technologist role in the workplace. In order to prepare for the national registry and clinical rotations student will be require to evaluate radiographic images based on the parameters set for by the ARRT. Image critique will take place during lecture, lab, and exams, students should come to class prepared to be evaluated on any content that has been covered during their tenure in the program

Lab Exams and Tasks check-offs: Each student must complete and pass patient care lab exams that are required in order for the student to attend clinic. The Patient lab exams are outlined on the ARRT competency requirement and must be completed in order for any student to sit for their ARRT national Registry.

Chapter Quizzes/Tests: There will be assorted amount of homework assignments and quizzes. Questions on quizzes may consist of any of the following: Multiple choice, fill-in-the-blank, true/false, short answer, mathematical calculation, labeling of diagrams, and computer grade sheet questions.

Unit tests: As outlined on the schedule each unit will culminate with a unit test. Questions on tests may consist of any of the following: Multiple choice, fill-in-the-blank, true/false, short answer, mathematical calculation, labeling of diagrams, and computer grade sheet questions.

Cumulative Final Exam: At the end of the Course student will take a cumulative final exam that is weighted as 25% of the course. Students are encouraged to study to learn all content for the long term, because the registry will require it. Questions on the Final exam may consist of any of the following: Multiple choice, fill-in-the-blank, true/false, short answer, mathematical calculation, labeling of diagrams, and computer grade sheet questions.

Methods of Grading:

Grades will be based upon attendance and class participation (which includes reading in advance and turning in review questions, prior to class time), possible presentations, and preparation for lab demonstrations, quizzes, and cumulative final examination. Missed exams may be made up the next class day only if a doctor's excuse is provided. **Please see the instructor to make arrangements regarding make-up work, as soon as possible, after the date of absence or before the date of a known absence (e.g. a planned absence that the instructor agrees to).**

Criteria

Unit Tests	40%
Positioning Labs / Quizzes	20%
Tasks / Worksheets / Participation	15%
Final Exam	25%

Course Grading System:

GRADE	QUALITY POINTS	PERCENTAGE
A	4.00	93
A-	3.67	90
B+	3.33	87

B	3.00	83
B-	2.67	80
C+	2.33	77
C	2.00	73
C-	1.67	70
D+	1.33	67
D	1.00	63
F	0	Under 63%

Course Policies

Policy on Academic Dishonesty:

Please refer to the NIC Student Handbook. Dishonesty of any type will not be tolerated. Students who violate the academic dishonesty policy may receive an F for the course.

Note:

- A 77% semester average is required to pass the course.
- A doctor's excuse is required for all missed test and exams.

*** * All tests/exams will be given on the assigned day NO MAKE-UPS WILL BE ALLOWED WITHOUT A SIGNED DR'S EXCUSE ***

Attendance Policy
Students should make every attempt to attend class. If a student misses 20% of the class time then he/she will be withdrawn from the course. 3 tardies to a didactic course will be equal to 1 absence.

Schedule

Course Schedule: The instructor reserves the right to revise class calendar, modify content, and/or substitute assignments in response to institutional, weather, or class situations. Changes will be announced in class. Students will be held responsible for all changes.

Date	Chapter	Title
8-20	Chapter 1	Review of course syllabus and start chapter 1 lecture
8-22	Chapter1	Chapter 1 Review Lecture Start chapter 1 Lab
8-27	Chapter1	**Unit 1 test**
8-29	Chapter2	**Holiday**-Begin reading chapter 2 and completing the workbook

9-3	Chapter2	Chapter 2 lecture
9-5	Chapter2	Chapter 2 Lab & Review Images
9-10	Chapter10	Chapter 10 lecture
9-12	Chapter10	Chapter 10 Lab & Review Images
9-17	Chapter2&10	**Unit 2 test**
9-19	Chapter3	Chapter 3 lecture
9-24	Chapter3	Chapter3 Lab & Review Images
9-26	Chapter3	**Unit 3 Test**
10-1	Chapter4	Chapter 4 Lecture Part1 Finger, Hand, Wrist
10-3	Chapter4	Chapter 4 LAB Part 1 & Image Review
10-8	Chapter4	**Unit 4a Test**
10-10	Chapter4	Chapter 4 Lecture Part 2 Forearm, Elbow, Humerus
10-15	Chapter4	Chapter 4 LAB Part 2 & Image Review
10-17	Chapter4	**Unit 4B Test**
10-22	Chapter5	Chapter 5 lecture Part 1
10-24	Chapter5	Chapter 5 LABS Image Review
10-29	Chapter5	**Unit 5a Test**
10-31	Chapter5	Chapter 5 Lecture Part 2
11-5	Chapter5	Chapter 5 LABS Image Review
11-7	Chapter5	**Unit 5b Test**
11-12	Chapter6	Chapter 6 Lecture Part 1
11-14	Chapter6	Thanksgiving Break 22-11-25
11-19	Chapter6	Chapter 6 LABS Part 1 & Image Review

11-21	Chapter6	**Unit 6a Test**
11-26	Chapter6	Chapter 6 Lecture Part 2
12-3	Chapter6	Chapter 6 LABS Part 2 & Image Review
12-5	ALL Chapters	Final review
12-10	ALL Chapters	Final Cumulative Exam

Additional Items

Expectations:

- **It will be expected** that each student bring his or her own book and materials to class each day. Students will not be allowed to share materials for individual in class assignments. This also includes a calculator for testing. At no time shall a cellphone be used during courses.
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- Fabrication: falsifying or inventing any information or citation in an academic exercise.
- Plagiarism: knowingly representing the words or ideas of another as one's own in an academic exercise.
- Violation of Intellectual Property: stealing, altering, or destroying the academic work of other members of the community or the educational resources, materials, or official documents of the college.
- Facilitating Academic Dishonesty: knowingly helping another to attempt to violate any provisions of this policy."

Violations of academic integrity may result in failure of an assignment, failure of the course, or more serious sanctions.

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NIC shall maintain a Student Code of Conduct that specifically addresses prohibited behavior and assures due process for alleged violations. The Code of Conduct shall make clear possible sanctions for such actions. Policy Manual (http://www.nic.edu/websites/default.aspx?dpt=121&pageId=) (See 5.06)

Disability Support Services and the Americans with Disabilities Act (ADA)

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If a student would like to request accommodations, he or she must contact DSS so that a Letter of Accommodation may be sent to the instructor. Students requesting accommodations should contact DSS as early in the semester as possible to avoid delay of accommodation due to student load. Accommodations are not retroactive. DSS provides academic accommodations, access, assistance and services at NIC and at the North Idaho Consortium of Higher Education campus.

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(208) 769-5947

Withdrawal
Please check the NIC Calendar (https://www.nic.edu/calendar/) for the last day students can withdraw from full-length courses.

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For more information on withdrawals, see the NIC Student Accounts (http://www.nic.edu/websites/default.aspx?dpt=12&pageId=177)website.

Title IX

North Idaho College seeks to provide an environment that is free of bias, discrimination, and harassment. If you have been the victim of sexual harassment/misconduct/assault we encourage you to report this. If you report this to any college employee, (except for a licensed counselor or health care professional) she or he must notify our college's Title IX coordinator about the basic facts of the incident (you may choose whether you or anyone involved is identified by name). For more information about your options at NIC, please go to: www.nic.edu/titleIX (http://www.nic.edu/titleIX) or call (208) 676-7156

INSTITUTIONAL STATEMENT

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North Idaho College

Coeur d'Alene · Health Professions & Nursing · Radiography Technology

Principles of Radiation Biology and Protection

RADT-113

Fall 2019 Section 100 3 Credits 08/19/2019 to 12/12/2019 Modified 08/13/2019

Contact Information

Radiology Program Director: Mr. Matthew A Nolan

Email: manolan2@nic.edu
Phone: 2086767133

Course Information:

Course Number: RADT 112/112L

Course Days/times: Monday, Wednesday 8:30 am – 11:30 am

Credits: 3

Prerequisites:

BIOL-227, BIOL-228, CAOT-179, MATH-123, PSYC 101 or SOC 101, COMM 101, ENGL 101

Co-requisites:

RADT-111/111L RADT-112L RADT-113/113L

Description

This course introduces students to the principles of cell radiation interaction. The radiation effects on cells and factors affecting cell response are presented. Acute and chronic effects of radiation exposure are discussed. Topics include radiation detection and measurement; patient protection; personnel protection; absorbed dose equivalencies; agencies and regulations; introduction to radiation biology; cell anatomy, radiation/cell interaction; and effects of radiation.

Materials

Required text

1. Sherer, M. A., Visconti, P. J., and Ritenour, E. R. . (2014). Radiation Protection in Medical Radiography. (7th). St. Louis: Mosby.
2. Sherer, M. A., Visconti, P. J., and Ritenour, E. R. . (2014). Radiation Protection in Medical Radiography Workbook. (7th). St. Louis: Mosby.

Supplemental texts:

1. Radiologic Science for Technologist; 11th ed.; Bushong
2. Essentials of Radiation Biology and Protection; 2ed.; Forshier

Supplemental Materials

1. Learning Assessment
2. Study Stack

Outcomes

1 Radiation Detection and Measurement

Order Description

1. Define terms used to measure ionizing radiation such as rem, roentgen, rad, C/kg, seivert, and gray.
2. Distinguish between units of measure for ionizing radiation.
3. Discuss personnel monitoring devices in terms of types, purposes, characteristics, advantages, and disadvantages.
4. List types of ionization chambers.
5. Describe the theory of operation for ionization chambers.
6. List types and sources of natural radiation and man-made radiation.

2 Patient Protection

Order Description

1. Explain the relationship of beam limiting devices to patient radiation protection.
2. Discuss added and inherent filtration in terms of the effect on patient dosage.
3. Explain the purpose and importance of patient shielding.
4. Given a list of patient shielding devices and radiographic procedures, correlate the method of shielding to the radiographic procedure.
5. Explain the relationship of exposure factors to patient dosage.
6. Given various radiographic procedures, identify how to use different IRs that will result in an optimum diagnostic image with the minimum radiation exposure to the patient.
7. Discuss methods to avoid repeat radiographs
8. Explain how to reduce patient dose when performing stationary or mobile fluoroscopy, and mobile radiography.

3 Personnel Protection

Order Description

1. Explain the use of primary and secondary radiation barriers.
2. Discuss protection devices influencing room construction and design.
3. Distinguish controlled areas from uncontrolled areas.
4. Explain how radiographic equipment/techniques are used to reduce personnel exposure during radiographic, fluoroscopic, mobile, and surgical procedures.
5. Explain how personnel protective devices are used to reduce personnel exposure during radiographic, fluoroscopic, mobile, and surgical procedures.
6. Explain how patient restraint devices are used to reduce personnel exposure during radiographic, fluoroscopic, mobile, and surgical procedures.

4 Absorbed Dose Equivalencies

Order Description

1. Define effective dose equivalent.
2. Determine dose equivalent in terms of SI and traditional units when given the quality factor and absorbed dose for different ionizing radiations.
3. Discuss current National Council on Radiation Protection and Measurements recommendations for occupational and general public exposures.
4. Describe dose limits related to the declared pregnant radiographer.

5 Agencies and Regulations

Order Description

1. Identify federal and state regulatory agencies.
2. Discuss historical perspectives relating to radiation protection.
3. Explain two purposes of Public Law 97-35.
4. Discuss state regulations regarding patient and personnel protection.
5. Identify components of 10 CFR part 20 related to personnel monitoring and dose limits.
6. Describe the "ALARA" concept in regards to personnel and patient protection.
7. Describe radiographer radiation protection responsibilities as they pertain to patients, personnel, and the public

6 Introduction to Radiation Biology

Order Description

1. Discuss historical evidence of the effects of radiation.
2. Describe concepts relating to the interaction of radiation with matter.
3. Discuss the information concerning the human body as it relates to atomic structure.

7 Cell Anatomy

Order Description

1. Identify the structures involved in cellular anatomy.
2. Describe the importance of the macromolecules in terms of cellular function.

8 Radiation/Cell Interaction

Order Description

1. Define radiation/cell interaction.
2. Discuss the effects of radiation on cells related to direct and indirect effect.Delineate the four basic radiation dose-response curves.
3. Discuss the cellular factors that affect the radiosensitivity of each cell.
4. Identify physical characteristics of radiation that impact cell response.
5. Differentiate between radio-protectors and radio-sensitizers.

9 Effects of Radiation

Order Description

1. Explain the terms early and late effects of radiation.
2. Describe acute exposure in terms of somatic and genetic effects.
3. Differentiate whole body responses and local responses to acute exposure.
4. Describe chronic exposure in terms of somatic and genetic effects.
5. Differentiate whole body responses and local responses to chronic exposure
6. Distinguish between stochastic and deterministic effects of ionizing radiation

✔ Assessment

Methods of Instruction:

Course objectives will be met through a variety of teaching methods. These include, but limited to: individual work, group activities in lab, appropriate textbook usage, charts and diagrams, handouts, reference items, homework, class discussion and presentations, lectures and presentations with power points, and computer-based learning through Canvas in order to satisfactorily achieve course objectives while meeting each student's individual learning needs.

Description of Graded Activities:

Lab Exams and Tasks check-offs: Each student must complete and pass patient care lab exams that are required in order for the student to attend clinic. The Patient lab exams are outlined on the ARRT competency requirement and must be completed in order for

any student to sit for their ARRT national Registry.

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Methods of Grading:

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Criteria

Unit Tests	40%
Positioning Labs / Quizzes	10%
Tasks / Worksheets / Participation	20%
Final Exam	30%

Course Grading System:

GRADE	QUALITY POINTS	PERCENTAGE
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C+	2.33	77
C	2.00	73

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D	1.00	63
F	0	Under 63%

Course Policies

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Note:

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- A doctor's Excuse is required for all missed test and exams.

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Schedule

Course Schedule: The instructor reserves the right to revise class calendar, modify content, and/or substitute assignments in response to institutional, weather, or class situations. Changes will be announced in class. Students will be held responsible for all changes.

Date	Chapter	Title
8-20	Chapter 1	Review of course syllabus and start chapter 1 lecture
8-22	Chapter 1-2	Chapter 1 Review Lecture Start chapter 2 Lecture
8-27	Chapter 2	Review chapter 2
8-29	Chapter 1-2	**Holiday**- complete the workbook for chapters 1 and 2
9-3	Chapter 1-2	**Unit 1 Test**
9-5	Chapter 3	Chapter 3 lecture
9-10	Chapter 3	Chapter3 Review
9-12	Chapter 3	**Unit 2 Test**

9-17	Chapter 4	Chapter 4 Lecture
9-19	Chapter 5	Chapter 5 lecture
9-24	Chapter 4-5	Chapter 4 and 5 Review
9-26	Chapter 4-5	**Unit 3 Test**
10-1	Chapter 6	Chapter 6 Lecture
10-3	Chapter 7	Chapter 7 Lecture
10-8	Chapter 6-7	**Unit 4 Test**
10-10	Chapter 8	Chapter 8 Lecture
10-15	Chapter 9	Chapter 9 Lecture
10-17	Chapter 8-9	Chapter 8 and 9 review
10-22	Chapter 8-9	**Unit 5 Test**
10-24	Chapter 10	Chapter 10 Lecture
10-29	Chapter 11	Chapter 11 Lecture
10-31	Chapter 10-11	Chapter 10and 11 review
11-5	Chapter 10-11	**Unit 6 Test**
11-7	Chapter 12	Chapter 12 Lecture
11-12	Chapter 13	Chapter 13 Lecture
11-14	Chapter 12-13	Chapter 12 and 13 review
11-19	Chapter 12-13	**Unit 7 Test**
11-21	ALL Chapters	**Extra Lab Days**
11-26	ALL Chapters	**Extra Lab Days**
12-3	ALL Chapters	**Extra Lab Days**
12-5	ALL Chapters	Final review

12-10	ALL Chapters	**Final Cumulative Exam**

Additional Items

Expectations:

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North Idaho College

Radiographic Procedures II RADT-114/114L

- Spring 2020
- Section 01
- 4 Credits
- 01/08/2020 to 05/04/2020

Contact Information

Division: **Health Professions & Nursing**

Instructor Information:

Name: **Matthew Nolan**

Office: MHSB Rad Suite

Office hours: Appointment or email or virtual anytime

Telephone: 2086767133

E-mail: Matthew.Nolan@nic.edu

Course Information:

Course Number: RADT 114/114L

Course Days/times: Monday, Wednesday, and Friday 1:00 am – 4 pm

Credits: 4

Prerequisites:

RADT-111/111L RADT-112L RADT-113/113L

Co-requisites:

RADT-114L RADT-115/115L RADT-116

Description

This course continues to develop the knowledge required to perform radiographic procedures in the laboratory and clinical setting. Topics include: anatomy and routine projections of the pelvic girdle; anatomy and routine projections of the spine, gastrointestinal (GI) procedures; genitourinary (GU) procedures; and biliary system procedures.

This is a lecture/ lab course all patient care activities are required by the American Registry of Radiologic Technologist and part of the Clinical competencies required to sit for the registry.

RADT 114 LECTURE: Lecture will be held every Monday, Wednesday, and Friday from 1:00 pm until 4:00 pm. Students who miss any lecture sessions will fall behind in course material extremely quickly, possibly resulting in course failure. Monday and Wednesdays 4:00 – 5:30 pm will consist of an open lab for those students that wish to review or practice any of the previous course material. A tentative lab schedule will be posted. Students will be required to work in small groups and present assigned topics orally in class. It is extremely important in the field of radiography to orally communicate with patients; therefore this class is designed to improve each student's communication skill.

RADT 114 LAB: Lab will be held after the start of lecture material. Junior students are never allowed in the lab without the direct supervision of a program faculty member. First semester students may never expose radiation in the lab without direct supervision of a program faculty member. Open labs are held every Monday and Wednesday until 5:30 pm to allow each student time to get comfortable in the lab and obtain any extra practice needed to excel in the laboratory portion of this course. Extra lab time may be requested and scheduled if a student desires more individual time in the lab to better prepare.

Required Text

1. Textbook of Radiographic Positioning and Related Anatomy, 9th Edition

ISBN: 9780323481878

2. Workbook for Textbook of Radiographic Positioning and Related Anatomy, 9th Edition

ISBN: 9780323399661

Supplemental Materials

1. Learning Assessment
2. Study Stack

Course Schedule: The instructor reserves the right to revise class calendar, modify content, and/or substitute assignments in response to institutional, weather, or class situations. Changes will be announced in class. Students will be held responsible for all changes.

Topical Outline:

Date	Chapter	Title
	Chapter 7	Review of course syllabus and start chapter 7 lecture
	Chapter 7	Chapter 7 Review Lecture Image Review
	Chapter 7	Chapter 7 Lab
		Holiday MLK
	Chapter 7	**Unit 1 Test**
	Chapter 8	Chapter 8 lecture
	Chapter 8	Chapter 8 Review Lecture Image Review
	Chapter 8	Chapter 8 Lab
	Chapter 8	**Unit 2 Test**
	Chapter 9	Chapter 9 lecture
	Chapter 9	Chapter 9 Review Lecture Image Review
	Chapter 9	Chapter 9 Lab
	Chapter 9	**Unit 3 Test**
	Chapter 12	Chapter 12 lecture
	Chapter 12	Chapter 12 Review Lecture Image Review
	Chapter 12	Chapter 12 Lab
	Chapter 12	**Unit 4 Test**
	Chapter 13	Chapter 13 Lecture
		Holiday
	Chapter 13	Chapter 13 Lecture Image Review
	Chapter 13	Chapter 13 Lab
	Chapter 13	**Unit 5 Test**
	Chapter 14	Chapter 14 lecture
	Chapter 14	Chapter 14 Review Lecture Image Review
	Chapter 14	Chapter 14 Lab
	Chapter 14	**Unit 6 Test**
	Chapter 15	Chapter 15 lecture
	Chapter 15	Chapter 15 Review Lecture Image Review
	Chapter 15	Chapter 15 Lab
	Chapter 15	**Unit 7 Test**
	Spring Break	**Spring Break**
	Chapter12-15	Student presentations
	Chapter12-15	Student presentations
	Chapter12-15	Student presentations
	ALL Chapters	Final review
	ALL Chapters	Final Cumulative Exam

Grading Criteria:

Unit Tests	40%
Positioning Labs / Quizzes	15%
Content Project	20%
Final Exam	25%

Course Grading System:

GRADE	QUALITY POINTS	PERCENTAGE
A	4.00	93
A-	3.67	90
B+	3.33	87
B	3.00	83
B-	2.67	80
C+	2.33	77
C	2.00	73
C-	1.67	70
D+	1.33	67
D	1.00	63
F	0	Under 63%

Methods of Instruction:

Course objectives will be met through a variety of teaching methods. These include, but limited to: individual work, group activities in lab, appropriate textbook usage, charts and diagrams, handouts, reference items, homework, class discussion and presentations, lectures and presentations with power points, and computer-based learning through Canvas in order to satisfactorily achieve course objectives while meeting each student's individual learning needs.

Description of Graded Activities:

Image Critique: Image critique is a vital part of a competent Radiology technologist role in the workplace. In order to prepare for the national registry and clinical rotations student will be require to evaluate radiographic images based on the parameters set for by the ARRT. Image critique will take place during lecture, lab, and exams, students should come to class prepared to be evaluated on any content that has been covered during their tenure in the program

Lab Exams and Tasks check-offs: Each student must complete and pass patient care lab exams that are required in order for the student to attend clinic. The Patient lab exams are outlined on the ARRT competency requirement and must be completed in order for any student to sit for their ARRT national Registry.

Chapter Quizzes/Tests: There will be assorted amount of homework assignments and quizzes. Questions on quizzes may consist of any of the following: Multiple choice, fill-in-the-blank, true/false, short answer, mathematical calculation, labeling of diagrams, and computer grade sheet questions.

Unit tests: As outlined on the schedule each unit will culminate with a unit test. Questions on tests may consist of any of the following: Multiple choice, fill-in-the-blank, true/false, short answer, mathematical calculation, labeling of diagrams, and computer grade sheet questions.

Fluoroscopy Content Project: Students will be required to research and present an assigned topic over either a gastrointestinal, genitourinary, or operating room fluoroscopy study. This project includes two parts consisting of a paper and a PowerPoint presentation. The rubric for each component part is attached in this syllabus.

Cumulative Final Exam: At the end of the Course student will take a cumulative final exam that is weighted as 25% of the course. Students are encouraged to study to learn all content for the long term, because the registry will require it. Questions on the Final exam may consist of any of the following: Multiple choice, fill-in-the-blank, true/false, short answer, mathematical calculation, labeling of diagrams, and computer grade sheet questions.

Methods of Grading:

Grades will be based upon attendance and class participation (which includes reading in advance and turning in review questions, prior to class time), possible presentations, and preparation for lab demonstrations, quizzes, and cumulative final examination. Missed exams may be made up the next class day only if a doctor's excuse is provided. **Please see the instructor to make arrangements regarding make-up work, as soon as possible, after the date of absence or before the date of a known absence (e.g. a planned absence that the instructor agrees to).**

Policy on Academic Dishonesty:

Please refer to the NIC Student Handbook. Dishonesty of any type will not be tolerated. Students who violate the academic dishonesty policy may receive an F for the course.

Note:

- A 75% semester average is required to pass the course.
- A doctor's Excuse is required for all missed test and exams.

*** * All tests will be given on the assigned day NO MAKE-UPS WILL BE ALLOWED WITHOUT A SIGNED DR'S EXCUSE ***

Expectations:

- **It will be expected** that each student bring his or her own book and materials to class each day. Students will not be allowed to share materials for individual in class assignments. This also includes a calculator for testing. At no time shall a cellphone be used during courses.
- It **is expected** that students arrive to class by the assigned time. If students are late they should call my office and let me know they are going to be late (if I do not answer leave a message). The door to the class will be locked and students will not be allowed to enter until it is time for class break.
- PowerPoint presentations may not be given for each chapter; it **is expected** that each student read all class material and chapters before coming to class.
- Recorded lectures will be provided to students when available; it **should not be expected** that all course material be presented in this format.
- It is expected that each student be responsible for all content located in the covered chapter. If a student does not understand a concept he/she should stay after class to discuss it.
- It is expected that each student understand that if he/she is deficient in a topic or content, it is up them to ask for extra help and that I will make every effort to help study as long as the student makes equal effort.
- It **should not be expected** that I make you learn. Learning is your job as a student. It **should be expected** that I deliver content in a way that is conducive to meet the learning needs of students.

Attendance Policy

Students should make every attempt to attend class. If a student misses 20% of the class time then he/she will be withdrawn from the course. 3 tardies to a didactic course will be equal to 1 absence.

Content Project Rubric and Instructions

This Semester we will be learning about the different fluoroscopic examinations used to visualize the Gastrointestinal and Urinary System. Because every hospital has its own very specific protocol for completion of these exams it makes it very difficult and time intensive to teach every site's protocol. Because of this challenge we will be learning the entire protocol that you could be required to perform at any given site. The successful completion of any fluoroscopic exam will always begin and end will complete, competent, and caring communication. This content project is designed to give you as a student the opportunity to enhance and improve your verbal public speaking skills as well and be informative to your peers about the given study you are assigned.

To help you gain a better understanding of the importance of Fluoroscopic Imaging, you will be required to prepare and present an informative content project to your peers. This presentation should be organized and prepared with only factual, concrete information from your textbook and scholarly papers: (Not and Blanket Google Search). Remember that you are preparing this presentation for a non-expert audience your peers and I am expecting you to become the class expert for your topic. After the completion of your presentation, the expectation is that every student walks away with a better understanding of the procedure that was presented.

Each Content Project must include the following sections of the Rubric at a minimum:

1. **Introduction**: (10 points)
   The introduction must describe at a minimum:

   A. The complete definition of the exam.
   B. An in-depth description of the body system involved with your exam
   C. Terminology that is used during the exam that is specific to the exam
   D. Indication for the exam
2. **Technical Considerations**: (25 points)
   This section must include at a minimum:

   A. Pre-procedural scheduling considerations
   B. Pre-Procedural Contraindication
   C. Contrast medias used during the exam
      a. The purpose of each
      b. Mixture weight/ volume
      c. Temperature of each
      d. Mode of delivery
      e. Single vs. double vs. biphasic
   D. Special radiologic equipment needed for the completion of the exam
   E. Room preparation
      a. Items needed
      b. Table set-up
      c. Exposure settings

3. **Discussion of the fluoroscopic portion of exam**: (25 points)
   Most institutions will complete two phases of the fluoroscopic examination. The first phase is usually completed by the Radiologist or the Fluoroscopist who is assisted by the Radiologic Technologist. This section at a minimum must include.

   A. Step-by-step process of the fluoroscopy portion of the exam
      a. Patient positions used
      b. Table positions used
      c. Images taken and description of what is shown

4. **Discussion of the Post-fluoroscopic portion of exam**: (25 points)
   After the completion of the Fluoroscopic portion of the examination, most institutions will require the Radiologic Technologist to acquire post-fluoroscopic, overhead, spot, or static radiographs. This section, at a minimum, must include:

   A. Each projection that is listed for completion by the text
      a. Patient position
      b. Part Position
      c. Central ray factors
      d. Collimation/ IR factors
      e. Structures shown
      f. Evaluation Criteria
   B. At least one image of each radiographic projection listed
5. **Discussion of two common pathologies diagnosed**: (15 points)
   These special intensive examinations are used to diagnose specific pathologies. In this section, you are to discuss at least two of the most common pathologies demonstration during your assigned examination.

   A. Define the pathology
   B. Describe the radiographic appearance of the pathology
   C. Provide an image demonstrating the pathology

NOTE: At no time should personal patient information ever leave the hospital. All radiographic images must be anonymized. If you do not understand this statement please see me.

I will be more than happy to help guide you in the organization of the presentation information. If you feel that you need help please schedule a time for me to review with you. I will not proof read the text, but only provide informational guidance about the case. Proof reading can be done by peers, tutors, and the library.

Grading of the Presentation and Information:

Each presentation will be graded as follows:

1. Content of the presentation will be graded by the instructor using the **Content Rubric** on the previous page (100 points).
2. Presentation effectiveness as graded by the instructor using the **Faculty Presentation Rubric** (63 points).

Deductions to overall grade:

1. Grammar/Spelling with the following deductions:

   Punctuation
   ___1-5 errors (-1 point) ___ 6-10 errors (-3 points) ___>10 errors (-5 points)
   Spelling
   ___1-5 errors (-1 point) ___6-10 errors (-3points) ___>10 errors (-5 points)
   Verb tense
   ___1-5 errors (-2 points) ___6-10 errors (-5 points) ___>10 errors (-10 points)
   Other errors
   ___1-5 errors (-1 point) ___6-10 errors (-2 points) ___>10 errors (-3 points)

2. Patient Identification Revealed in writing or orally:

   If the patient can be identified at any point during the presentation (in speech, writing, graphics, or any other way) a grade of zero (0) will be assigned for the case presentation and the school HIPPA policy will be followed. Please refer to your student handbook for the specifics of this policy.

Faculty Presentation Rubric – RADT CASE PRESENTATION

ELEMENT	Exemplary – 9	Proficient – 6	Partially Proficient – 3	Unsatisfactory – 0
Introduction	The introduction presents the overall topic and draws the audience into the presentation with compelling questions or by relating to the audience's interests or goals.	The introduction is clear and coherent and relates to the topic.	The introduction shows some structure but does not create a strong sense of what is to follow. May be overly detailed or incomplete and is somewhat appealing to the audience.	The introduction does not orient the audience to what will follow. The sequencing is unclear and does not appear interesting or relevant to the audience.
Sequencing of Information	Information is organized in a clear, logical way. It is easy to anticipate the next slide.	Most information is organized in a clear, logical way. One slide or piece of information seems out of place.	Some information is logically sequenced. An occasional slide or piece of information seems out of place.	Information is incomplete, out of date and/or incorrect. Sequencing of ideas is unclear.
Effectiveness	Project includes all material needed to give a good understanding of the topic. The project is consistent with the driving question.	Project is lacking one or two key elements. Project is consistent with driving question most of the time.	Project is missing more than two key elements. It is rarely consistent with the driving question.	Project is lacking several key elements and has inaccuracies. Project is completely inconsistent with driving question.
Text	The fonts are easy-to-read and point size varies appropriately for headings and text. Use of italics, bold, and indentations enhances readability. Text is appropriate in length for the target audience and to the point. The background and colors enhance the readability of text.	Sometimes the fonts are easy-to-read, but in a few places the use of fonts, italics, bold, long paragraphs, color or busy background detracts and does not enhance readability.	Overall readability is difficult with lengthy paragraphs, too many different fonts, dark or busy background, overuse of bold or lack of appropriate indentations of text.	The text is extremely difficult to read with long blocks of text and small point size of fonts, inappropriate contrasting colors, poor use of headings, subheadings, indentations, or bold formatting.
Layout	The layout is visually pleasing and contributes to the overall message with appropriate use of headings, subheadings and white space.	The layout uses horizontal and vertical white space appropriately.	The layout shows some structure, but appears cluttered and busy or distracting with large gaps of white space or uses a distracting background.	The layout is cluttered, confusing, and does not use spacing, headings and subheadings to enhance the readability.
Graphics, Sound and/or Animation	The graphics, sound and/or animation assist in presenting an overall theme and enhance understanding of concept, ideas and relationships. Original images are created using proper size and resolution, and all images enhance the content. There is a consistent visual theme.	The graphics, sound/and or animation visually depict material and assist the audience in understanding the flow of information or content. Original images are used. Images are proper size, resolution.	Some of the graphics, sounds, and/or animations seem unrelated to the topic/theme and do not enhance the overall concepts. Most images are clip art or recycled from the internet. Images are too large/small in size. Images are poorly cropped or the color/resolution is fuzzy.	The graphics, sounds, and/or animations are unrelated to the content. Graphics do not enhance understanding of the content, or are distracting decorations that create a busy feeling and detract from the content.
Delivery	Spoke at a good rate, volume and with good grammar. They maintained eye-contact while using, but not reading their notes.	Spoke a little faster or slower than necessary, or too quietly or loudly. They used acceptable grammar. They maintained eye-contact, but relied too much on their notes.	Spoke at a good rate and volume, but used poor grammar. They relied heavily on their notes.	Demonstrated having paid little attention to rate, volume or grammar. They read nearly word for word from notes.

Outcomes & Objectives
After competition of this course students will:

1 Anatomy and Routine Projections of the Pelvic Girdle

Order	Description
1.	In laboratory environment demonstrate the anatomy of the pelvic girdle in terms of structures visualized and function demonstrated.
2.	Demonstrate routine and special projections/positions of the pelvic girdle in terms of structures visualized, functions demonstrated, and general positioning considerations in a lab environment.
3.	Explain the structures visualized, functions demonstrated, and the general positioning considerations involved given clinical simulations for routine and special projections/positions of the pelvic girdle.
4.	Apply knowledge of radiographic procedures related to the pelvic girdle via performance in a laboratory environment.
5.	Evaluate images in terms of positioning accuracy image quality, and anatomical structures visualized on radiographic images.

2 Anatomy and Routine Projections of the Spine

Order	Description
1.	Describe the anatomy of the spine in terms of structures visualized and function demonstrated.
2.	Discuss routine and special projections/positions of the spine in terms of structures visualized, functions demonstrated, and general positioning considerations.
3.	Explain the structures visualized, functions demonstrated, and the general positioning considerations involved clinical simulations for routine and special views of the spine.
4.	Apply knowledge of radiographic procedures related to the spine via performance in a laboratory environment.
5.	Evaluate radiographs in terms of positioning accuracy, image quality, and anatomical structures visualized.

3 Gastrointestinal (GI) Procedures

Order	Description
1.	Describe the GI anatomy in terms of structures visualized and function demonstrated.
2.	Discuss routine and special projections/positions of the GI anatomy in terms of structures visualized; functions demonstrated; and general positioning considerations.
3.	Explain the structures visualized; functions demonstrated, and the general and positioning considerations when given clinical simulations for routine and special views of the GI anatomy.
4.	Apply knowledge of radiographic procedures related to the GI anatomy via performance in a laboratory environment.
5.	Evaluate the accuracy of positioning, image quality, and anatomical structures visualized on radiographic images.
6.	Describe the contrast media for each study in terms of type, administration methods, and quality.
7.	Describe patient preparation procedures for each contrast study.

4 Genitourinary (GU) Procedures

Order	Description
1.	Describe the GU anatomy in terms of structures visualized and functions demonstrated.
2.	Describe routine and special projections/positions of the GU anatomy in terms of structures visualized; functions demonstrated; and general positioning considerations.
3.	Explain structures visualized, functions demonstrated, and general position considerations when given clinical simulations for routine and special projections for the genitourinary (GU) anatomy.
4.	Apply knowledge of radiographic procedures related to the GU anatomy.
5.	Evaluate the accuracy of positioning, image quality and anatomical structures visualized on radiographic images.
6.	Describe the contrast media for each study in terms of type, administration methods, and quantity.
7.	Describe patient preparation procedures for each contrast study.
8.	

5	Biliary System Procedures
Order	**Description**
1.	Describe the anatomy of the biliary system in terms of structures visualized and functions demonstrated.
2.	Discuss routine and special projections/positions of the biliary system in terms of structures visualized; functions demonstrated; and general positioning considerations.
3.	Describe structures visualized, functions demonstrated, and general positioning considerations when given clinical simulations for routine and special projections of the biliary system.
4.	Apply knowledge of radiographic procedures related to the biliary system via performance in a laboratory environment.
5.	Evaluate the accuracy, image quality, and anatomical structures of the biliary system visualized on radiographic images.
6.	Describe contrast media for each study in terms of type, administration methods, and quantity.
7.	Describe patient preparation procedures for each contrast study.

6	Pathology Considerations
Order	**Description**
1.	Describe the clinical indications for the pelvic girdle, spine, GI, GU and biliary system procedures.
2.	Identify which clinical indications are additive and destructive.
3.	Adapt for the technical factors and exposure considerations for the pathology indicated pelvic girdle, spine, GI, GU, and biliary systems.
4.	Evaluate radiographic images of the pathology indicated for the pelvic girdle, spine, GI, GU, and biliary system.

Institutional Policies

Student Code of Conduct
The Student Code of Conduct applies to any student enrolled at North Idaho College. This includes, but is not limited to, face-to-face classes and Internet classes.

NIC shall maintain a Student Code of Conduct that specifically addresses prohibited behavior and assures due process for alleged violations. The Code of Conduct shall make clear possible sanctions for such actions. Policy Manual (See 5.06)

Disability Support Services (DSS)
The North Idaho College Disability Support Services (DSS) office assists students with disabilities. DSS provides academic accommodations, access, assistance, and services at NIC and at the North Idaho Consortium of Higher Education campuses.

DSS services are designed to support students throughout their academic career. Please contact DSS to learn more about eligibility, services and assistive technology, accommodations, and your rights and responsibilities.

Students requesting accommodations must contact DSS at the beginning of each semester.

Withdrawal
Please check the NIC Calendar for the last day students can withdraw from full-length courses.

Instructor-Initiated Withdrawal: An instructor has the right to withdraw a student for academic reasons. For more information, see the Instructor-Initiated Withdrawal Procedure.

Financial Aid Satisfactory Progress (SAP): Federal Regulations require North Idaho College to establish Satisfactory Academic Progress standards (SAP) for all financial aid recipients. The purpose of SAP standards are meant to ensure that students and academic institutions are held accountable to the taxpayer-funded federal student aid programs while students complete their academic goals in a timely manner. This process monitors student performance in all terms of enrollment, including terms in which the student did not receive financial aid. For more information, see the Financial Aid Satisfactory Progress website.

For more information on withdrawals, see the NIC Student Accounts website.

Title IX

North Idaho College seeks to provide an environment that is free of bias, discrimination, and harassment. If you have been the victim of sexual harassment/misconduct/assault we encourage you to report this. If you report this to any college employee, (except for a licensed counselor or health care professional) she or he must notify our college's Title IX coordinator about the basic facts of the incident (you may choose whether you or anyone involved is identified by name). For more information about your options at NIC, please go to: www.nic.edu/titleIX or call (208) 676-7156

INSTITUTIONAL STATEMENT

Removal from Class for Non-Attendance: Attendance is based on your participation in this class. Failure to attend will result in your being removed from this class and may result in your financial aid award being reduced. You are responsible for confirming the accuracy of your attendance record.

Physics and Equipment RADT-115/115L

- Spring 2020
- Section 01
- 3 Credits
- 01/08/2020 to 05/04/2020

Contact Information

Division: **Health Professions & Nursing Instructor**

Information:

Name: **Matthew Nolan**

Office: MHSB Rad Suite

Office hours: Appointment or email or virtual anytime

Telephone: 2086767133

E-mail: Matthew.Nolan@nic.edu **Course**

Information:

Course Number: RADT 115/115L

Course Days/times: Monday, Wednesday, and Friday 8:30 am – 11:30 am

Credits: 3 **Prerequisites:**

RADT-111/111L RADT-112/112L RADT-113/113L

Co-requisites:

RADT-114 RADT-115L RADT-116

Description

This course introduces content designed to establish a basic knowledge of atomic structure and terminology. Other topics include the nature and characteristics of x-radiation; ionizing and non-ionizing radiation; x-ray production; the properties of x-rays and the fundamentals of x-ray photon interaction with matter. In addition, the content of this course establishes a knowledge base in radiographic, fluoroscopic and mobile equipment requirements and design. The content also provides a basic knowledge of Automatic Exposure Control (AEC) devices, beam restriction, filtration, quality control, and quality management principles of analog and digital systems. Laboratory experiences will demonstrate applications of theoretical principles and concepts.

Required text

1. **Radiologic Science for Technologist Bushong 11th ed**

Supplemental:

Radiography in the Digital Age Carroll 3rd Ed. Supplemental

Materials

1. Learning Assessment
2. Study Stack

Course Schedule: The instructor reserves the right to revise class calendar, modify content, and/or substitute assignments in response to institutional, weather, or class situations. Changes will be announced in class. Students will be held responsible for all changes.

Topical Outline:

Date	Chapter	Title
	Chapter 1	Review of course syllabus and start chapter 1 lecture
	Chapter 1-2	Chapter 1 Review Lecture Start chapter 2 Lecture
	Chapter 2	Review chapter 2
	Chapter 1-2-3	**Holiday**- complete the workbook for chapters 1,2,and 3
	Chapter 3	Chapter 3 lecture
	Chapter 1-2-3	Chapter1-2-3 Review
	Chapter 1-2-3	**Unit 1 Test**
	Chapter 4	Chapter 4 Lecture
	Chapter 5	Chapter 5 Lecture
	Chapter 6	Chapter 6 Lecture
	Chapter 4-5-6	Chapters 4,5,6 Review
	Chapter 4-5-6	**Unit 2 Test**
	Chapter 7	Chapter 7 Lecture
	Chapter 8	Chapter 8 Lecture
	Chapter 7-8	**Unit 3 Test**
	Chapter 9	Chapter 9 Lecture
	Chapter 9	Chapter 9 review
	Chapter 9	**Unit 4 Test**
	Chapter 25	Chapter 25 Lecture
	Chapter 26	Chapter 26 Lecture
	Chapter 25-26	Chapter 25-26 Review
	Chapter 25-26	**Unit 5 Test**
	Chapter 20	Chapter 20 Lecture
	Chapter 21	Chapter 21 Lecture
	Chapter 22	Chapter 22 Lecture
	Chapter 20-21-22	**Unit 6 Test**
	ALL Chapters	**Extra Lab Days**
	ALL Chapters	**Extra Lab Days**
	ALL Chapters	**Extra Lab Days**
	ALL Chapters	**Extra Lab Days**
	ALL Chapters	Final review
	ALL Chapters	**Final Cumulative Exam**

Grading Criteria:

Unit Tests	50%
Northwestern 3rd party assessment test	15%
Homework / Worksheets /Unit quizzes	5%
Final Exam	30%

Course Grading System:

GRADE	QUALITY POINTS	PERCENTAGE
A	4.00	93
A-	3.67	90
B+	3.33	87
B	3.00	83
B-	2.67	80
C+	2.33	77
C	2.00	73
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Methods of Instruction:

Course objectives will be met through a variety of teaching methods. These include, but limited to: individual work, group activities in lab, appropriate textbook usage, charts and diagrams, handouts, reference items, homework, class discussion and presentations, lectures and presentations with power points, and computer-based learning through Canvas in order to satisfactorily achieve course objectives while meeting each student's individual learning needs.

Description of Graded Activities:

Northwestern 3rd Party Testing: Monthly each student will be administered a 100 question 3rd party registry review test to begin preparation for the ARRT Registry Exam. The actual test grade will only include those questions of content that has been covered up to that point in the program. After the test has been graded students will be required to complete a full-page handwritten correction for each missed question. The correction must be a full page in length with no more than two open lines at the bottom of each page. Corrections will cover all test questions not just the material that we have covered. Incomplete corrections will result in a grade of zero.

Chapter Quizzes: There will be assorted amount of homework assignments and quizzes. Questions on quizzes may consist of any of the following: Multiple choice, fill-in-the-blank, true/false, short answer, mathematical calculation, labeling of diagrams, and computer grade sheet questions.

Unit tests: As outlined on the schedule each unit will culminate with a unit test. Questions on tests may consist of any of the following: Multiple choice, fill-in-the-blank, true/false, short answer, mathematical calculation, labeling of diagrams, and computer grade sheet questions.

Cumulative Final Exam: At the end of the Course student will take a cumulative final exam that is weighted as 30% of the course. Students are encouraged to study to learn all content for the long term, because the registry will require it. Questions on the Final exam may consist of any of the following: Multiple choice, fill-in-the-blank, true/false, short answer, mathematical calculation, labeling of diagrams, and computer grade sheet questions.

Methods of Grading:

Grades will be based upon attendance and class participation (which includes reading in advance and turning in review questions, prior to class time), possible presentations, and preparation for lab demonstrations, quizzes, and cumulative final examination. Missed exams may be made up the next class day only if a doctor's excuse is provided. **Please see the instructor to make arrangements regarding make-up work, as soon as possible, after the date of absence or before the date of a known absence (e.g. a planned absence that the instructor agrees to).**

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Note:

- A 75% semester average is required to pass the course.
- A doctor's Excuse is required for all missed test and exams.

*** * All tests will be given on the assigned day NO MAKE-UPS WILL BE ALLOWED WITHOUT A SIGNED DR'S EXCUSE ***

Expectations:

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- It **should not be expected** that I make you learn. Learning is your job as a student. It **should be expected** that I deliver content in a way that is conducive to meet the learning needs of students.

Attendance Policy

Students should make every attempt to attend class. If a student misses 20% of the class time then he/she will be withdrawn from the course. 3 tardies to a didactic course will be equal to 1 absence.

Outcomes & Objectives

After completion of this course student will:

1 X-Ray Characteristics

Order Description

1. Describe fundamental atomic structure and characteristics of protons, neutrons, and electrons.
2. Explain the processes of ionization and excitation.
3. Compare covalent and ionic bonding.
4. Describe the relationship of energy, wavelength, and frequency on the electromagnetic spectrum.
5. Describe wavelength and frequency, and the relationship to velocity.
6. Explain the wave-particle duality phenomena.
7. Describe charged and uncharged forms of particulate radiation.
8. Differentiate between ionizing and non-ionizing radiation.
9. Describe radioactivity and radioactive decay in terms of alpha, beta and gamma emission.

2 X-Ray Production

Order Description

1. Describe target interactions and the production of bremsstrahlung and characteristic radiation.
2. Describe the conditions necessary to produce x-rays.
3. Describe the x-ray beam spectrum.
4. Describe the factors that affect emission spectra, such as kVp, mA, time, atomic number of target, distance, filtration, and voltage waveform.
5. Describe the fundamental properties of x-rays (e.g. travel in straight lines, ionize matter)
6. Describe x-ray beam characteristics (quality, quantity, primary vs. remnant/exit).

3 X-Ray Interaction with Matter

Order Description

1. Discuss the various photon interactions with matter, to include the Compton Effect, photoelectric absorption, coherent (classical scatter) and attenuation by various tissues.
2. Describe the interaction with matter and its relation to atomic number, photon energy and part density, and their applications in diagnostic radiology.

4 Radiographic Imaging Equipment Operation

Order Description

1. Identify components of the radiographic unit to include operating console, x-ray tube construction (anode, cathode, rotor/stator), automatic exposure control, and beam restriction devices.
2. Discuss x-ray tube construction, to include electron sources, target materials, induction motor.
3. Define potential difference, current (alternating and direct) and resistance.
4. Describe electrical protective devices such as ground and circuit breaker.
5. Identify the general components and functions of the tube and filament circuits.
6. Identify the function of solid-state rectification.
7. Compare generators in terms of radiation produced and efficiency.
8. Discuss basic principles of x-ray generators, transformers (step up, step down and autotransformer), and rectification systems (phase, pulse, and frequency).
9. Discuss permanent installation of radiographic equipment in terms of purpose, components, types and applications.
10. Describe the operation and applications for different types of beam-limiting devices.
11. Explain the impact beam filtration has on x-ray beam intensity, beam quality and resultant patient exposure
12. Describe the change in the half value layer (HVL) when filtration is added or removed in the beam.
13. Describe functions of components of automatic exposure control (AEC) devices.
14. Demonstrate proper use of AEC devices, to include radiation detectors, back-up timer and density adjustment (e.g. +1 or -1).
15. Identify the components of diagnostic x-ray tubes.
16. Explain protocols used to extend x-ray tube life.

5. Equipment Quality Control, Quality Management, and Maintenance

Order	Description
1.	Differentiate between quality improvement/management, quality assurance and quality control.
2.	List the benefits of a quality management program to the patient and to the department.
3.	List elements of a quality management program and discuss how each is related to the quality management program.
4.	Discuss the proper test equipment/procedures for evaluating the operation of an x-ray generator.
5.	Evaluate the results of basic QC tests, to include mAs reciprocity, mA linearity, timer accuracy, light field to radiation field alignment, collimator accuracy, central ray alignment and monitor calibration.
6.	Discuss quality control of digital imaging receptor systems, to include artifacts, maintenance, and display monitor quality assurance.
7.	Discuss quality control of lead apron and glove testing.

6. Fluoroscopy (Image Intensified Conventional and Digital Fluoroscopy)

Order	Description
1.	Explain the use of standardized radiographic technique charts.
2.	Identify components of the fluoroscopic unit (fixed and mobile), to include image intensifier, viewing systems, automatic brightness control and magnification mode.
3.	Explain conventional image-intensified and digital fluoroscopic image formation.
4.	Discuss gain and conversion factors as they relate to image intensification.
5.	Discuss automatic brightness control (ABC), image intensifier positioning, magnification mode, kerma display and last image hold.
6.	Explain brightness gain (product of flux gain and minification gain), mulitfield intensifiers, and magnification.
7.	Identify fluoroscopic recording equipment.

7. Mobile Radiography

Order	Description
1.	Discuss mobile units in terms of purpose, components, types and applications.

Institutional Policies

Student Code of Conduct
The Student Code of Conduct applies to any student enrolled at North Idaho College. This includes, but is not limited to, face-to-face classes and Internet classes.

NIC shall maintain a Student Code of Conduct that specifically addresses prohibited behavior and assures due process for alleged violations. The Code of Conduct shall make clear possible sanctions for such actions. Policy Manual (See 5.06)

Disability Support Services (DSS)
The North Idaho College Disability Support Services (DSS) office assists students with disabilities. DSS provides academic accommodations, access, assistance, and services at NIC and at the North Idaho Consortium of Higher Education campuses.

DSS services are designed to support students throughout their academic career. Please contact DSS to learn more about eligibility, services and assistive technology, accommodations, and your rights and responsibilities.

Students requesting accommodations must contact DSS at the beginning of each semester.

Withdrawal
Please check the NIC Calendar for the last day students can withdraw from full-length courses.

Instructor-Initiated Withdrawal: An instructor has the right to withdraw a student for academic reasons. For more information, see the Instructor-Initiated Withdrawal Procedure.

Financial Aid Satisfactory Progress (SAP): Federal Regulations require North Idaho College to establish Satisfactory Academic Progress standards (SAP) for all financial aid recipients. The purpose of SAP standards are meant to ensure that students and academic institutions are held accountable to the taxpayer funded federal student aid programs while students complete their academic goals in a timely manner. This process monitors student performance in all terms of enrollment, including terms in which the student did not receive financial aid. For more information, see the Financial Aid Satisfactory Progress website.

For more information on withdrawals, see the NIC Student Accounts website.

Title IX

North Idaho College seeks to provide an environment that is free of bias, discrimination, and harassment. If you have been the victim of sexual harassment/misconduct/assault we encourage you to report this. If you report this to any college employee, (except for a licensed counselor or health care professional) she or he must notify our college's Title IX coordinator about the basic facts of the incident (you may choose whether you or anyone involved is identified by name). For more information about your options at NIC, please go to: www.nic.edu/titleIX or call (208) 676-7156

INSTITUTIONAL STATEMENT

Removal from Class for Non-Attendance: Attendance is based on your participation in this class. Failure to attend will result in your being removed from this class and may result in your financial aid award being reduced. You are responsible for confirming the accuracy of your attendance record.

Clinical Radiography I RADT-116

- Spring 2020
- Section 01
- 6 Credits
- 01/08/2020 to 05/04/2020

Contact Information

Division: **Health Professions & Nursing**

Instructor Information:

Name: **Matthew Nolan**

Office: MHSB Rad Suite

Office hours: Appointment or email or virtual anytime

Telephone: 2086767133

E-mail: Matthew.Nolan@nic.edu

Course Information:

Course Number: RADT 116

Course Days/times: Tuesday and Thursday, or Saturday and Sunday

Credits: 6

Prerequisites:

RADT-111/111L RADT-112L RADT-113/113L

Co-requisites:

RADT-114/114L RADT-115/115L

Description

This course introduces students to the hospital clinical setting and provides an opportunity for students to participate in or observe radiographic procedures learned in RADT112/112L. Topics include: orientation to hospital areas and procedures; orientation to mobile/surgery; orientation to radiography and fluoroscopy; participation in and/or observation of procedures related to body cavities, the shoulder girdle, upper extremities, and lower extremities. Student activities are under direct supervision.

Required Text

1. Textbook of Radiographic Positioning and Related Anatomy, 9th Edition

ISBN: 9780323481878

2. Workbook for Textbook of Radiographic Positioning and Related Anatomy, 9th Edition

ISBN: 9780323399661

1.

Course Schedule: The instructor reserves the right to revise class calendar, modify content, and/or substitute assignments in response to institutional, weather, or class situations. Changes will be announced in class. Students will be held responsible for all changes.

Grading Criteria:

Clinical profile Evaluations	60%
Clinical Assignments	30%
Final Exam	10%

Course Grading System:

GRADE	QUALITY POINTS	PERCENTAGE
A	4.00	93
A-	3.67	90
B+	3.33	87

B	3.00	83
B-	2.67	80
C+	2.33	77
C	2.00	73
C-	1.67	70
D+	1.33	67
D	1.00	63
F	0	Under 63%

Methods of Instruction:

Course objectives will be met through the student's completion of the assigned clinical rotations. All clinical documents are located in the *RADT Clinical Manual.*

Description of Graded Activities:

Clinical Profile Evaluations: Each clinical rotation will culminate with the student being evaluated by the Clinical Instructor for that site. These evaluation make up 60% of the clinical grade.

Clinical assignments: Each student will be assigned clinical assignments that must be completed during the clinical rotations. These assignment are outlined in the Clinical Manual and make up 30% of the clinical grade.

Cumulative Final Exam: At the end of the Course students will take a cumulative final exam that is weighted as 10% of the course. Students are encouraged to study to learn all content for the long term, because the registry will require it. Questions on the Final exam may consist of any of the following: Multiple choice, fill-in-the-blank, true/false, short answer, mathematical calculation, labeling of diagrams, and computer grade sheet questions.

Methods of Grading:

Grades will be based upon attendance and class participation (which includes reading in advance and turning in review questions, prior to class time), possible presentations, and preparation for lab demonstrations, quizzes, and cumulative final examination. Missed exams may be made up the next class day only if a doctor's excuse is provided. **Please see the instructor to make arrangements regarding make-up work, as soon as possible, after the date of absence or before the date of a known absence (e.g. a planned absence that the instructor agrees to).**

Policy on Academic Dishonesty:

Please refer to the NIC Student Handbook. Dishonesty of any type will not be tolerated. Students who violate the academic dishonesty policy may receive an F for the course.

Note:

- A 75% semester average is required to pass the course.

- A doctor's Excuse is required for all missed test and exams.

*** * All tests will be given on the assigned day NO MAKE-UPS WILL BE ALLOWED WITHOUT A SIGNED DR'S EXCUSE ***

Outcomes & Objectives
After completion of this course students will:

1. Perform routine diagnostic examinations on the thoracic, abdomen, pelvis, extremities, and spine, in a variety of settings which may include, outpatient, inpatient, emergency room, surgery, and mobile radiography,
2. Provide patient care for radiographic examinations which include patient transfer, evaluating physical needs, infection control, and medical intervention during an emergency,
3. Demonstrate competency of radiation protection for the patient and technologist to include proper time, distance, shielding and radiation monitoring,
4. Produce high quality radiographic examinations efficiently by means of appropriate positioning and technical factors with the lowest radiation exposure possible,
5. Demonstrate the use of effective communication with patients, the public, and members of the health care team.

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INSTITUTIONAL STATEMENT

Removal from Class for Non-Attendance: Attendance is based on your participation in this class. Failure to attend will result in your being removed from this class and may result in your financial aid award being reduced. You are responsible for confirming the accuracy of your attendance record.

Radiographic Procedures III RADT-118/118L

- Summer 2020
- Section 01
- 4 Credits
- 05/014/2020 to 07/27/2020

Contact Information

Division: **Health Professions & Nursing**

Instructor Information:

Name: **Matthew Nolan**

Office: MHSB Rad Suite

Office hours: Appointment or email or virtual anytime

Telephone: 2086767133

E-mail: Matthew.Nolan@nic.edu

Course Information:

Course Number: RADT 118/118L

Course Days/times: Monday, Wednesday, and Friday 10:00 am – 12 pm

Credits: 4

Prerequisites:

RADT-114/114L RADT-115/115L RADT-116

Co-requisites:

RADT-118L RADT-119

Description

This course continues to introduce and develop the knowledge required to perform radiographic procedures. Topics include: anatomy and routine projections of the cranium; anatomy and routine projections of the facial bones; anatomy and routine projections of the sinuses; sectional anatomy of the head, neck, thorax and abdomen. This course includes a lecture, lab section, and an oral presentation.

This is a lecture/ lab course all patient care activities are required by the American Registry of Radiologic Technologist and part of the Clinical competencies required to sit for the registry.

RADT 118 LECTURE: Lecture will be held every Monday, Wednesday, and Friday from 10:00 am until 12:00 am. Students who miss any lecture sessions will fall behind in course material extremely quickly, possibly resulting in course failure. Monday and Wednesdays 1:00 – 2:30 pm will consist of an open lab for those students that wish to review or practice any of the previous course material. A tentative lab schedule will be posted. Students will be required to work in small groups and present assigned topics orally in class. It is extremely important in the field of radiography to orally communicate with patients; therefore this class is designed to improve each student's communication skill.

RADT 118 LAB: Lab will be held after the start of lecture material. Junior students are never allowed in the lab without the direct supervision of a program faculty member. First semester students may never expose radiation in the lab without direct supervision of a program faculty member. Open labs are held every Monday and Wednesday until 2:30 pm to allow each student time to get comfortable in the lab and obtain any extra practice needed to excel in the laboratory portion of this course. Extra lab time may be requested and scheduled if a student desires more individual time in the lab to better prepare.

Required Text

1. Textbook of Radiographic Positioning and Related Anatomy, 9th Edition

ISBN: 9780323481878

2. Workbook for Textbook of Radiographic Positioning and Related Anatomy, 9th Edition

ISBN: 9780323399661

Supplemental Materials

1. Learning Assessment
2. Study Stack
3. Ballinger, P.W. Merrill's Atlas of Radiographic Positions and Radiographic Procedures (13th ed.). Volume I & II. St. Louis: Mosby

Course Schedule: The instructor reserves the right to revise class calendar, modify content, and/or substitute assignments in response to institutional, weather, or class situations. Changes will be announced in class. Students will be held responsible for all changes.

Topical Outline:

Date	Chapter	Title
	Chapter 11	Review of course syllabus and start chapter 11 lecture
	Chapter 11	Chapter 11a Lecture and Image Review
	Chapter 11	Chapter 11a Lecture and Image Review
	Chapter 11	Chapter 11a Lab
	Chapter 11	Chapter 11a Lab
	Chapter 11	**Unit 1 Test**
	Chapter 11	Chapter 11b lecture
	Chapter 11	Chapter 11b Lecture and Image Review
	Chapter 11	Chapter 11b Lecture and Image Review
	Chapter 11	Chapter 11b Lab
	Chapter 11	Chapter 11b Lab
	Chapter 11	**Unit 2 Test**
	Chapter 11	Chapter 1c lecture
	Chapter 11	Chapter 11c Lecture and Image Review
	Chapter 11	Chapter 11c Lecture and Image Review
	Chapter 11	Chapter 11c Lab
	Chapter 11	Chapter 11c Lab
	Chapter 11	**Unit 3 Test**
	Chapter 18	Chapter 18 lecture
	Chapter 18	Chapter 18 Lecture and Image Review
	Chapter 18	Chapter 18 Lecture and Image Review
	Chapter 18	Chapter 18 Lecture and Image Review
	Chapter 18	Chapter 18 Lecture and Image Review
	Chapter 18	**Unit 4 Test**
	Summer Break	**Summer Break (7/3-7-7)**
	Chapter18	Student presentations
	Chapter18	Student presentations
	Chapter18	Student presentations
	ALL Chapters	Final review
	ALL Chapters	Final Cumulative Exam

Grading Criteria:

Unit Tests	40%
Positioning Labs / Quizzes	5%
Homework and Class Assignments	10
Content Project	20%
Final Exam	25%

Course Grading System:

GRADE	QUALITY POINTS	PERCENTAGE
A	4.00	93
A-	3.67	90
B+	3.33	87
B	3.00	83
B-	2.67	80
C+	2.33	77
C	2.00	73
C-	1.67	70
D+	1.33	67
D	1.00	63
F	0	Under 63%

Methods of Instruction:

Course objectives will be met through a variety of teaching methods. These include, but limited to: individual work, group activities in lab, appropriate textbook usage, charts and diagrams, handouts, reference items, homework, class discussion and presentations, lectures and presentations with power points, and computer-based learning through Canvas in order to satisfactorily achieve course objectives while meeting each student's individual learning needs.

Description of Graded Activities:

Image Critique: Image critique is a vital part of a competent Radiology technologist role in the workplace. In order to prepare for the national registry and clinical rotations student will be require to evaluate radiographic images based on the parameters set for by the ARRT. Image critique will take place during lecture, lab, and exams, students should come to class prepared to be evaluated on any content that has been covered during their tenure in the program

Lab Exams and Tasks check-offs: Each student must complete and pass patient care lab exams that are required in order for the student to attend clinic. The Patient lab exams are outlined on the ARRT competency requirement and must be completed in order for any student to sit for their ARRT national Registry.

Chapter Quizzes/Tests: There will be assorted amount of homework assignments and quizzes. Questions on quizzes may consist of any of the following: Multiple choice, fill-in-the-blank, true/false, short answer, mathematical calculation, labeling of diagrams, and computer grade sheet questions.

Unit tests: As outlined on the schedule each unit will culminate with a unit test. Questions on tests may consist of any of the following: Multiple choice, fill-in-the-blank, true/false, short answer, mathematical calculation, labeling of diagrams, and computer grade sheet questions.

Cross-sectional Anatomy Content Project: Students will be required to research and present an assigned topic covering a cross-sectional anatomy advanced modality to include either (CT. MRI, US, PETCT, SPECT). This project includes two parts consisting of a paper and a PowerPoint presentation. The rubric for each component part is attached in this syllabus.

Cumulative Final Exam: At the end of the Course student will take a cumulative final exam that is weighted as 25% of the course. Students are encouraged to study to learn all content for the long term, because the registry will require it. Questions on the Final exam may consist of any of the following: Multiple choice, fill-in-the-blank, true/false, short answer, mathematical calculation, labeling of diagrams, and computer grade sheet questions.

Methods of Grading:

Grades will be based upon attendance and class participation (which includes reading in advance and turning in review questions, prior to class time), possible presentations, and preparation for lab demonstrations, quizzes, and cumulative final examination. Missed exams may be made up the next class day only if a doctor's excuse is provided. **Please see the instructor to make arrangements regarding make-up work, as soon as possible, after the date of absence or before the date of a known absence (e.g. a planned absence that the instructor agrees to).**

Policy on Academic Dishonesty:

Please refer to the NIC Student Handbook. Dishonesty of any type will not be tolerated. Students who violate the academic dishonesty policy may receive an F for the course.

Note:

- A 75% semester average is required to pass the course.
- A doctor's Excuse is required for all missed test and exams.

*** * All tests will be given on the assigned day NO MAKE-UPS WILL BE ALLOWED WITHOUT A SIGNED DR'S EXCUSE ***

Expectations:

- **It will be expected** that each student bring his or her own book and materials to class each day. Students will not be allowed to share materials for individual in class assignments. This also includes a calculator for testing. At no time shall a cellphone be used during courses.
- It **is expected** that students arrive to class by the assigned time. If students are late they should call my office and let me know they are going to be late (if I do not answer leave a message). The door to the class will be locked and students will not be allowed to enter until it is time for class break.
- PowerPoint presentations may not be given for each chapter; it **is expected** that each student read all class material and chapters before coming to class.
- Recorded lectures will be provided to students when available; it **should not be expected** that all course material be presented in this format.
- It is expected that each student be responsible for all content located in the covered chapter. If a student does not understand a concept he/she should stay after class to discuss it.
- It is expected that each student understand that if he/she is deficient in a topic or content, it is up them to ask for extra help and that I will make every effort to help study as long as the student makes equal effort.
- It **should not be expected** that I make you learn. Learning is your job as a student. It **should be expected** that I deliver content in a way that is conducive to meet the learning needs of students.

Attendance Policy

Students should make every attempt to attend class. If a student misses 20% of the class time then he/she will be withdrawn from the course. 3 tardies to a didactic course will be equal to 1 absence.

Content Project Rubric and Instructions

You will be learning about sectional anatomy and how to view cross sectional anatomy images on CT, MRI, US, and PET/CT scans during this semester. To help you gain a better understanding of the importance of cross-sectional anatomy, you will be required to prepare and present an informative case study. This presentation should be organized and prepared with only factual, concrete information. Remember that you are preparing this presentation for a non-expert audience. Every student should walk away from each presentation with a better understanding of the pathology that was presented.

Each case study must include the following sections in order: (Below is the Content Rubric)

1. **Introduction**: (8 points)
   The introduction must describe the case and process used to obtain all data that will be presented. Introduction defines the pathology and all processes used to diagnosis this pathology should be discussed.

2. **Discussion**: (15 points)
   This section must factually explain the type of pathology presented in the case. This section should include:

   1. Signs and symptoms of…
   2. Treatment of…
   3. Prognosis of…

3. **Summary**: (25 points)
   The summary of the case is where you will be discussing the specific case that you are presenting. This section must include the patient's history, images of the pathology, and images of a normal case for comparison. Also, please have several images with anatomy of that body part labeled for discussion. Summary section should be completely supported with documentation. Images should include both a positive and negative example. The anatomy of the body part should be demonstrated using actual case images and should be labeled.

4. **Conclusion**: (4 points)
   This section should be clear and concise to describe the importance of the modality to the diagnosis of the case pathology.

5. **Test Questions**: (1 point)
   Each student should formulate two factual concrete questions to be given after the presentation. The questions must be provided to the instructor in advance for approval and in order to create and print a quiz for all students. Each question should come directly from the presentation and not leave room for inference. I will review these questions before they are given. The results of all presentation quizzes will be averaged for a quiz grade.

NOTE: At no time should personal patient information ever leave the hospital. All radiographic images must be anonymized. If you do not understand this statement, please see me.

I will be more than happy to help guide you in the organization of the presentation information. If you feel that you need help please schedule a time for me to review with you. I will not proof read the text, but only provide informational guidance about the case. Proof reading can be done by peers, tutors, and the library.

Grading of the Presentation and Information:

Each presentation will be graded as follows:

1. Content of the presentation will be graded by the instructor using the **Content Rubric** on the previous page (53 points).
2. Presentation effectiveness as graded by the instructor using the **Faculty Presentation Rubric** (42 points).

Deductions to overall grade:

1. Grammar/Spelling with the following deductions:

   Punctuation
   ___1-5 errors (-1 point)___ 6-10 errors (-3 points)___>10 errors (-5 points)
   Spelling
   ___1-5 errors (-1 point)___6-10 errors (-3points)___>10 errors (-5 points)
   Verb tense
   ___1-5 errors (-2 points)___6-10 errors (-5 points)___>10 errors (-10 points)
   Other errors
   ___1-5 errors (-1 point)___6-10 errors (-2 points)___>10 errors (-3 points)

2. Patient Identification Revealed in writing or orally:

   If the patient can be identified at any point during the presentation (in speech, writing, graphics, or any other way) a grade of zero (0) will be assigned for the case presentation and the school HIPPA policy will be followed. Please refer to your student handbook for the specifics of this policy.

Faculty Presentation Rubric – RADT CASE PRESENTATION

ELEMENT	Exemplary – 6	Proficient – 5	Partially Proficient – 2	Unsatisfactory – 0
Introduction	The introduction presents the overall topic and draws the audience into the presentation with compelling questions or by relating to the audience's interests or goals.	The introduction is clear and coherent and relates to the topic.	The introduction shows some structure but does not create a strong sense of what is to follow. May be overly detailed or incomplete and is somewhat appealing to the audience.	The introduction does not orient the audience to what will follow. The sequencing is unclear and does not appear interesting or relevant to the audience.
Sequencing of Information	Information is organized in a clear, logical way. It is easy to anticipate the next slide.	Most information is organized in a clear, logical way. One slide or piece of information seems out of place.	Some information is logically sequenced. An occasional slide or piece of information seems out of place.	Information is incomplete, out of date and/or incorrect. Sequencing of ideas is unclear.
Effectiveness	Project includes all material needed to give a good understanding of the topic. The project is consistent with the driving question.	Project is lacking one or two key elements. Project is consistent with driving question most of the time.	Project is missing more than two key elements. It is rarely consistent with the driving question.	Project is lacking several key elements and has inaccuracies. Project is completely inconsistent with driving question.
Text	The fonts are easy-to-read and point size varies appropriately for headings and text. Use of italics, bold, and indentations enhances readability. Text is appropriate in length for the target audience and to the point. The background and colors enhance the readability of text.	Sometimes the fonts are easy-to-read, but in a few places the use of fonts, italics, bold, long paragraphs, color or busy background detracts and does not enhance readability.	Overall readability is difficult with lengthy paragraphs, too many different fonts, dark or busy background, overuse of bold or lack of appropriate indentations of text.	The text is extremely difficult to read with long blocks of text and small point size of fonts, inappropriate contrasting colors, poor use of headings, subheadings, indentations, or bold formatting.
Layout	The layout is visually pleasing and contributes to the overall message with appropriate use of headings, subheadings and white space.	The layout uses horizontal and vertical white space appropriately.	The layout shows some structure, but appears cluttered and busy or distracting with large gaps of white space or uses a distracting background.	The layout is cluttered, confusing, and does not use spacing, headings and subheadings to enhance the readability.
Graphics, Sound and/or Animation	The graphics, sound and/or animation assist in presenting an overall theme and enhance understanding of concept, ideas and relationships. Original images are created using proper size and resolution, and all images enhance the content. There is a consistent visual theme.	The graphics, sound/and or animation visually depict material and assist the audience in understanding the flow of information or content. Original images are used. Images are proper size, resolution.	Some of the graphics, sounds, and/or animations seem unrelated to the topic/theme and do not enhance the overall concepts. Most images are clip art or recycled from the internet. Images are too large/small in size. Images are poorly cropped or the color/resolution is fuzzy.	The graphics, sounds, and/or animations are unrelated to the content. Graphics do not enhance understanding of the content, or are distracting decorations that create a busy feeling and detract from the content.
Delivery	Spoke at a good rate, volume and with good grammar. They maintained eye-contact while using, but not reading their notes.	Spoke a little faster or slower than necessary, or too quietly or loudly. They used acceptable grammar. They maintained eye-contact, but relied too much on their notes.	Spoke at a good rate and volume, but used poor grammar. They relied heavily on their notes.	Demonstrated having paid little attention to rate, volume or grammar. They read nearly word for word from notes.

Outcomes & Objectives

After completion of this course students will:

1 Anatomy and Routine Projections of the Cranium

Order Description

1. Describe the anatomy of the cranium in terms of structures visualized and functions demonstrated.
2. Describe routine and special projections of the cranium in terms of structures visualized, functions demonstrated, and general positioning considerations.
3. Explain basic CT acquisition protocol for the head.
4. Given clinical simulations for routine and special projections of the cranium, explain structures visualized, functions demonstrated, and general positioning considerations.
5. In a laboratory environment, perform radiographic procedures related to the cranium.
6. Evaluate cranial positioning accuracy, image quality, and anatomical structures visualized on the image.

2 Anatomy and Routine Projections of the Facial Bones

Order Description

1. Describe the anatomy of the facial bones in terms of structures visualized and functions demonstrated.
2. Describe routine and special projections of the facial bones in terms of structures visualized, functions demonstrated, and general positioning considerations.
3. Explain structures visualized, functions demonstrated, and the general positioning considerations for routine and special projections of the facial bones.
4. Perform radiographic procedures related to the facial bones in a laboratory environment.
5. Evaluate facial positioning accuracy, image quality, and anatomical structures visualized on the image.

3 Anatomy and Routine Projections of the Sinuses

Order Description

1. Describe the anatomy of the sinuses in terms of structures visualized and functions demonstrated.
2. Describe routine and special projections of the sinuses in terms of structures visualized, functions demonstrated, and general positioning considerations.
3. Explain structures visualized, functions demonstrated, and the general positioning considerations for routine and special projections of the sinuses.
4. Perform radiographic procedures related to the sinuses in a laboratory environment.
5. Evaluate sinus positioning accuracy, image quality, and anatomical structures visualized on the image

4 **Special Radiographic Procedures**

Order Description

1. Define terms and phrases related to special procedures to include: a) arthrogram; b) endoscopic retrograde cholangiopancreatogram (ERCP); c) myelogram; d) venogram; e) surgical cholangiogram; and f) hysterosalpingogram.

2.	Discuss the indications and contraindications for the following procedures to include: a) arthrogram; b) endoscopic retrograde cholangiopancreatogram (ERCP); c) myelogram; d) venogram; e surgical cholangiogram; and f) hysterosalpingogram.
3.	Discuss imaging, equipment, and supplies used for the following procedures to include: a) arthrogram; b) andoscopic retrograde cholangiopancreatogram(ERCP); c) myelogram; d)venogram; e)surgical cholangiogram; and hysterosalpingogram.
4.	Explain various minor radiographic procedures; describe the contrast medium utilized in terms of type, administration method, and quantity.
5.	Describe the preparation and post-procedural care for each minor radiographic procedure, inclusive of adverse reactions.
6.	Identify the type of procedure performed, anatomy visualized, and any indicated pathology given specific images.
7.	Describe radiographer's role during each minor procedure.
8.	Define terms and phrases related to special procedures to include: a) arthrogram; b) endoscopic retrograde cholangiopancreatogram (ERCP); c) myelogram; d) venogram; e) surgical cholangiogram; and f) hysterosalpingogram.
5	**Pathological Considerations**
Order	**Description**
1.	Describe the clinical indications for the cranium, facial bones, sinuses, and special radiographic procedures.
2.	Identify which clinical indications are additive and destructive.
3.	Adapt technical factors and exposure considerations for the pathology indicated for the cranium, facial bones, sinuses and special radiographic procedures.
4.	Evaluate radiographic images of the pathology indicated for the cranium, facial bones, sinuses, and special radiographic procedures.
6	**Sectional Anatomy**
Order	**Description**
1.	Describe the clinical indications for the cranial CT and label basic anatomy.
2.	Describe the clinical indications for the Thoracic CT and label basic anatomy.
3.	Describe the clinical indications for the Abdominal CT and label basic anatomy.
4.	Describe the clinical indications for the Pelvic CT and label basic anatomy.

Institutional Policies

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Withdrawal
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INSTITUTIONAL STATEMENT

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Clinical Radiography II RADT-119

- Summer 2020
- Section 01
- 4 Credits
- 05/014/2020 to 07/27/2020

Contact Information

Division: **Health Professions & Nursing**

Instructor Information:

Name: **Matthew Nolan**

Office: MHSB Rad Suite

Office hours: Appointment or email or virtual anytime

Telephone: 2086767133

E-mail: Matthew.Nolan@nic.edu

Course Information:

Course Number: RADT 119

Course Days/times: **Tues**day and Thursday, or Saturday and Sunday

Credits: 4

Prerequisites:

RADT-114/114L RADT-115/115L RADT-116

Co-requisites:

RADT-118/118L

Description

This course continues introductory student learning experiences in the hospital setting. Topics include: equipment utilization; exposure techniques; attend to and/or observation of routine projections of the lower extremities, pelvic girdle, and spine; attend to and/or observation of procedures related to the gastrointestinal (GI), genitourinary (GU), and biliary systems; and attend to and/or observation of minor radiologic procedures. Execution of radiographic procedures will be conducted under direct and indirect supervision.

Required Text

1. Textbook of Radiographic Positioning and Related Anatomy, 9th Edition

ISBN: 9780323481878

2. Workbook for Textbook of Radiographic Positioning and Related Anatomy, 9th Edition

ISBN: 9780323399661

Course Schedule: The instructor reserves the right to revise class calendar, modify content, and/or substitute assignments in response to institutional, weather, or class situations. Changes will be announced in class. Students will be held responsible for all changes.

Grading Criteria:

Clinical Profile Evaluations	40%
Clinical Assignment	30%
Demo-day	20%
Final Exam	25%

Course Grading System:

GRADE	QUALITY POINTS	PERCENTAGE
A	4.00	93
A-	3.67	90
B+	3.33	87
B	3.00	83
B-	2.67	80
C+	2.33	77
C	2.00	73
C-	1.67	70
D+	1.33	67
D	1.00	63
F	0	Under 63%

Methods of Instruction:

Course objectives will be met through the student's completion of the assigned clinical rotations. All clinical documents are located in the *RADT Clinical Manual*.

Description of Graded Activities:

Clinical Profile Evaluations: Each clinical rotation will culminate with the student being evaluated by the Clinical Instructor for that site. These evaluation make up 60% of the clinical grade.

Clinical assignments: Each student will be assigned clinical assignments that must be completed during the clinical rotations. These assignment are outlined in the Clinical Manual and make up 30% of the clinical grade.

Demo-Day: During the semester each student will spend one clinical day on campus. Students will be assessed via image critique, image production in the Lab, and via a test coving all material presented in the 1st semester. Students are encouraged to spend multiple days in the lab preparing for this day.

Cumulative Final Exam: At the end of the Course students will take a cumulative final exam that is weighted as 10% of the course. Students are encouraged to study to learn all content for the long term, because the registry will require it. Questions on the Final exam may consist of any of the following: Multiple choice, fill-in-the-blank, true/false, short answer, mathematical calculation, labeling of diagrams, and computer grade sheet questions.

Description of Graded Activities:

Methods of Grading:

Grades will be based upon attendance and class participation (which includes reading in advance and turning in review questions, prior to class time), possible presentations, and preparation for lab demonstrations, quizzes, and cumulative final examination. Missed exams may be made up the next class day only if a doctor's excuse is provided. **Please see the instructor to make arrangements regarding make-up work, as soon as possible, after the date of absence or before the date of a known absence (e.g. a planned absence that the instructor agrees to).**

Policy on Academic Dishonesty:

Please refer to the NIC Student Handbook. Dishonesty of any type will not be tolerated. Students who violate the academic dishonesty policy may receive an F for the course.

Note:

- A 75% semester average is required to pass the course.
- A doctor's Excuse is required for all missed test and exams.

*** * All tests will be given on the assigned day NO MAKE-UPS WILL BE ALLOWED WITHOUT A SIGNED DR'S EXCUSE ***

Expectations:

- **It will be expected** that each student bring his or her own book and materials to class each day. Students will not be allowed to share materials for individual in class assignments. This also includes a calculator for testing. At no time shall a cellphone be used during courses.
- It **is expected** that students arrive to class by the assigned time. If students are late they should call my office and let me know they are going to be late (if I do not answer leave a message). The door to the class will be locked and students will not be allowed to enter until it is time for class break.
- PowerPoint presentations may not be given for each chapter; it **is expected** that each student read all class material and chapters before coming to class.
- Recorded lectures will be provided to students when available; it **should not be expected** that all course material be presented in this format.
- It is expected that each student be responsible for all content located in the covered chapter. If a student does not understand a concept he/she should stay after class to discuss it.
- It is expected that each student understand that if he/she is deficient in a topic or content, it is up them to ask for extra help and that I will make every effort to help study as long as the student makes equal effort.
- It **should not be expected** that I make you learn. Learning is your job as a student. It **should be expected** that I deliver content in a way that is conducive to meet the learning needs of students.

Attendance Policy

Students should make every attempt to attend class. If a student misses 20% of the class time then he/she will be withdrawn from the course. 3 tardies to a didactic course will be equal to 1 absence.

Outcomes & Objectives

After completion of this course students will:

1. Produce high quality radiographic examinations efficiently by means of appropriate positioning and technical factors with the lowest radiation exposure possible,
2. Perform increasingly difficult diagnostic examinations of the thorax, abdomen, pelvis, spine, and extremities, in a variety of settings which may include, outpatient, inpatient, emergency room, surgery, fluoroscopy, and mobile radiography,
3. Provide patient care for radiographic examinations which may include patient transfer, evaluating physical needs, infection control, and medical intervention during an emergency,
4. Demonstrate competency of radiation protection for the patient and technologist to include proper time, distance, shielding and radiation monitoring,

   Demonstrate the use of effective communication with patients, the public, and members of the health care team.

Institutional Policies

Student Code of Conduct

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Disability Support Services (DSS)

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DSS services are designed to support students throughout their academic career. Please contact DSS to learn more about eligibility, services and assistive technology, accommodations, and your rights and responsibilities.

Students requesting accommodations must contact DSS at the beginning of each semester.

Withdrawal

Please check the NIC Calendar for the last day students can withdraw from full-length courses.

Instructor-Initiated Withdrawal: An instructor has the right to withdraw a student for academic reasons. For more information, see the Instructor-Initiated Withdrawal Procedure.

Financial Aid Satisfactory Progress (SAP): Federal Regulations require North Idaho College to establish Satisfactory Academic Progress standards (SAP) for all financial aid recipients. The purpose of SAP standards are meant to ensure that students and academic institutions are held accountable to the taxpayer-funded federal student aid programs while students complete their academic goals in a timely manner. This process monitors student performance in all terms of enrollment, including terms in which the student did not receive financial aid. For more information, see the Financial Aid Satisfactory Progress website.

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North Idaho College

Introduction to Radiology RADT-211/211L

- Fall 2020
- Section 01
- 4 Credits
- 08/21/2019 to 12/14/2019

Contact Information

Division: **Health Professions & Nursing**

Instructor Information:

Name: **Matthew Nolan**

Office: MHSB Rad Suite

Office hours: Appointment or email or virtual anytime

Telephone: 2086767133

E-mail: Matthew.Nolan@nic.edu

Course Information:

Course Number: RADT 211/211L

Course Days/times: Tuesday and Thursday 9:00 am – 3:00 pm

Credits: 4

Prerequisites:

RADT-118/118L, RADT-119

Co-requisites:

RADT-221L, 220

Description

This course introduces factors that govern and influence the production of the radiographic image using analog and digital radiographic equipment found in diagnostic radiology. Emphasis will be placed on knowledge and techniques required to produce high quality diagnostic radiographic images. Topics include: Image quality (radiographic density; radiographic contrast; recorded detail; distortion; grids; image receptors and holders (analog and digital); processing considerations (analog and digital); image acquisition (analog, digital, and PACS); image analysis; and image artifacts (analog and digital). Guidelines for selecting exposure factors and evaluating images within a digital system will assist students to bridge between film-based and digital imaging systems. Factors that impact image acquisition, display, archiving and retrieval are discussed. Laboratory experiences will demonstrate applications of theoretical principles and concepts. This is a lecture/ lab course all patient care activities are required by the American Registry of Radiologic Technologist and part of the Clinical competencies required to sit for the registry.

Required text

1. Radiologic Science for Technologist Bushong 11th ed
2. Digital Radiography and PACS Carter and Veale 3rf Ed.

Supplemental:

1. Radiography in the Digital Age Carroll 3rd Ed.

Supplemental Materials

1. Learning Assessment
2. Study Stack

Course Schedule: The instructor reserves the right to revise class calendar, modify content, and/or substitute assignments in response to institutional, weather, or class situations. Changes will be announced in class. Students will be held responsible for all changes.

Topical Outline:

Date	Chapter	Title
	Chapter 10	**Northwestern** start chapter 10
	Chapter 10	Chapter 10 Bushong
	Chapter 10	Review Chapter 10 and complete NW Corrections
	Chapter 10	Chapter 10 Math and Test review
	Chapter 10	**Unit 1 Test**
	Chapter 11	Chapter 11 Bushong
	Chapter 11	Chapter 11 Math
	Chapter 11	**Unit 2 test and Northwestern after**
	Chapter 1	Chapter 1 Carter
	Chapter 2	Chapter 2 Carter
	Chapter 3	Chapter 3 Carter
	Chapter 1-3	Chapter 1, 2,and 3 review
	Chapter 1-3	**Unit 3 Test**
	Chapter 4	Chapter 4 Carter
	Chapter 15	Chapter 15 Bushong
	Chapter 4 &15	**Unit 4 Test Northwestern**
	Chapter 5	Chapter 5 Carter
	Chapter 6	Chapter 6 Carter
	Chapter 16	Chapter 16 Bushong
	Chapter 16	Chapter 16 Bushong
	Chapter 5-5,16	**Unit 5 Test**
	Chapter 17	**Northwestern** Chapter 17 Bushong
	Chapter 18	Chapter 17 Begin Chapter 18 Bushong
	Chapter 18	Chapter 18 Bushong
	Chapter 17-18	**Unit 6 Test**
	Chapter 21	Chapter 21 Bushong
	Chapter 21	Chapter 21 Bushong
	Chapter 21	**Unit 7 Test**
		ARRT Spec Review Image Production
		ARRT Spec Review Image Production
		ARRT Spec Review Image Production
		Final Review
		Final Exam

Methods of Instruction:

Course objectives will be met through a variety of teaching methods. These include, but limited to: individual work, group activities in lab, appropriate textbook usage, charts and diagrams, handouts, reference items, homework, class discussion and presentations, lectures and presentations with power points, and computer-based learning through Canvas in order to satisfactorily achieve course objectives while meeting each student's individual learning needs.

Description of Graded Activities:

Northwestern 3rd Party Testing: Monthly each student will be administered a 100 question 3rd party registry review test to begin preparation for the ARRT Registry Exam. The actual test grade will only include those questions of content that has been covered up to that point in the program. After the test has been graded students will be required to complete a full-page handwritten correction for each missed question. The correction must be a full page in length with no more than two open lines at the bottom of each page. Corrections will cover all test questions not just the material that we have covered. Incomplete corrections will result in a grade of zero.

Lab Exams and Tasks check-offs: Each student must complete and pass patient care lab exams that are required in order for the student to attend clinic. The Patient lab exams are outlined on the ARRT competency requirement and must be completed in order for any student to sit for their ARRT national Registry.

Chapter Quizzes/Tests: There will be assorted amount of homework assignments and quizzes. Questions on quizzes may consist of any of the following: Multiple choice, fill-in-the-blank, true/false, short answer, mathematical calculation, labeling of diagrams, and computer grade sheet questions.

Unit tests: As outlined on the schedule each unit will culminate with a unit test. Questions on tests may consist of any of the following: Multiple choice, fill-in-the-blank, true/false, short answer, mathematical calculation, labeling of diagrams, and computer grade sheet questions.

Cumulative Final Exam: At the end of the Course student will take a cumulative final exam that is weighted as 30% of the course. Students are encouraged to study to learn all content for the long term, because the registry will require it. Questions on the Final exam may consist of any of the following: Multiple choice, fill-in-the-blank, true/false, short answer, mathematical calculation, labeling of diagrams, and computer grade sheet questions.

Methods of Grading:

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Grading Criteria:

Unit Tests	45%
Northwestern 3rd party assessment test	20%
Labs Exams / Tasks / Worksheets / Quizzes	10%
Final Exam	30%
Total:	100%

Course Grading System:

GRADE	QUALITY POINTS	PERCENTAGE
A	4.00	93
A-	3.67	90
B+	3.33	87
B	3.00	83
B-	2.67	80
C+	2.33	77
C	2.00	73
C-	1.67	70
D+	1.33	67
D	1.00	63
F	0	Under 63%

Policy on Academic Dishonesty:

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Note:

- A 75% semester average is required to pass the course.
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Attendance Policy
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Outcomes & Ojectives

After completion of this course student will:

1. Principles of Imaging and Image Quality
Order Description

1. Analyze the relationships of factors that control and affect image exposure
2. Analyze the relationship of factors that control and affect radiographic contrast.
3. Analyze the relationships of factors that control and affect spatial resolution.
4. Differentiate between size and shape distortion.
5. Perform calculations to determine image magnification and percent magnification.
6. Summarize the relationship of factors that control and affect distortion.
7. Critique spatial resolution on various radiographic images.
8. Assess radiographic exposure on radiographic images
9. Explain the rationale for using beam restriction.
10. Describe the operation and applications for different types of beam restriction.
11. Summarize the relationship of factors affecting scattered radiation.
12. List and describe the most appropriate grid for a given clinical situation.
13. Compare and contrast grid types.

14. Summarize the factors that influence grid cutoff.
15. Evaluate grid artifacts.
16. Explain the use of standardized radiographic technique charts.
17. Compare fixed kilovoltage (kVp) and variable kVp systems
18. Apply conversion factors for changes in the following areas: distance, grid, image receptors, reciprocity law and the 15 percent rule
19. Critique images for appropriate technical, procedural and pathologic factors, and employ corrective actions if necessary.

Criteria for Image Evaluation

Order Description

1. Identify the criteria for image evaluation.
2. Apply problem-solving process for evaluating images for adequate density/brightness, contrast, recorded detail/spatial resolution and acceptable limits of distortion.
3. Identify factors relating to image identification and documentation of ordered exam/s.
4. Evaluate images to determine the appropriate use of beam restriction.
5. Identify common equipment malfunctions that affect image quality, and corrective action.
6. Differentiate between technical factor problems, procedural factor problems and equipment malfunctions.
7. Critique images for appropriate technical, procedural and pathologic factors, and Evaluation employ corrective actions if necessary.

2. Digital Imaging – Systems

Order Description

1. Define terminology associated with digital imaging systems.
2. Describe the various types of digital receptors.
3. Describe the response of digital detectors to exposure variations.
4. Define sampling frequency and Nyquist-Shannon theorem as it relates to sampling frequency.
5. Describe the impact of sampling frequency on spatial resolution.
6. Describe the impact of detector element size on spatial resolution.
7. Discuss and define digital image preprocessing and post processing applications.
8. Relate the receptor exposure indicator values to technical factors, system calibration, part/beam/plate alignment and patient exposure.
9. Identify optimal exposure indices for different imaging systems and their relationship to exposure.
10. Describe detective quantum efficiency (DQE) and modulation transfer function (MTF) as they relate to digital radiography detectors.
11. Describe the histogram and the process of histogram analysis as it relates to automatic rescaling.
12. Define region of interest (ROI).
13. Relate how the values of interest (VOI) impact image appearance.
14. Describe the response of PSP systems to background and scatter radiation.
15. Identify common limitations and technical problems encountered when using PSP systems.
16. Employ appropriate beam/part/receptor alignment to avoid histogram analysis errors.
17. Associate impact of image processing parameters to the image appearance.
18. Discuss the appropriate use of electronic masking.
19. Describe signal to noise (SNR) and contrast to noise (CNR) as it relates to digital radiography detectors.
20. Describe the conditions that cause quantum mottle in a digital image.

Exposure Indicator Determination

Order Description

1. Describe the difference between dose area product (DAP) measured with a flat panel system vs. the vendor specific exposure indicators for a PSP-based system.
2. Identify optimal value ranges for exposure indicators and relationship to patient exposure.
3. Describe the exposure precautions and limitations associated with PSP-based systems.
4. Examine the potential impact of digital radiographic systems on patient exposure and methods of practicing the as low as reasonably achievable (ALARA) concept with digital systems.

Analog vs. Digital Imaging Systems

Order Description

1. Describe the components of Picture Archival and Communications System (PACS) and its function.
2. Identify modality types that may be incorporated into a PACS.
3. Describe the components of the PACS, RIS, HIS, and the DICOM standard.
4. Describe data flow for a DICOM image from an imaging modality to a PACS.
5. Identify common problems associated with retrieving/viewing images within a PACS
6. Identify the primary uses of the diagnostic display workstation and clinical display workstation.
7. Describe patient benefits gained through the use of teleradiology.
8. Describe HIPAA concerns with electronic information.
9. Discuss and define digital image processing, to include equalization, smoothing, electronic masking, edge enhancement, and grayscale (bit depth, look up table– LUT).

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Students requesting accommodations must contact DSS at the beginning of each semester.

Withdrawal
Please check the NIC Calendar for the last day students can withdraw from full-length courses.

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For more information on withdrawals, see the NIC Student Accounts website.

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Clinical Radiography III RADT-220

- Summer 2020
- Section 01
- 8 Credits
- 05/014/2020 to 07/27/2020

Contact Information

Division: **Health Professions & Nursing**

Instructor Information:

Name: **Matthew Nolan**

Office: MHSB Rad Suite

Office hours: Appointment or email or virtual anytime

Telephone: 2086767133

E-mail: Matthew.Nolan@nic.edu

Course Information:

Course Number: RADT 220

Course Days/times: Monday, Wednesday, Friday, Saturday and Sunday

Credits: 8

Prerequisites:

RADT 118/118L RADT 119

Co-requisites:

RADT-211/211L

Description

This course provides students with continued hospital setting work experience. Students continue to develop proficiency in executing procedures introduced in Radiographic Procedures. Topics include: patient care; behavioral and social competencies; performance and/or observation of minor special procedures; special equipment use; and participation in and/or observation of cranial and facial radiography. Execution of radiographic procedures will be conducted under direct and indirect supervision.

Required Text

1. Textbook of Radiographic Positioning and Related Anatomy, 9th Edition

ISBN: 9780323481878

2. Workbook for Textbook of Radiographic Positioning and Related Anatomy, 9th Edition

ISBN: 9780323399661

Course Schedule: The instructor reserves the right to revise class calendar, modify content, and/or substitute assignments in response to institutional, weather, or class situations. Changes will be announced in class. Students will be held responsible for all changes.

Grading Criteria:

Clinical Profile Evaluations	20%
Clinical Competencies	30%
Clinical Assignment	10%
Demo-day	20%
Final Exam	20%

Course Grading System:

GRADE	QUALITY POINTS	PERCENTAGE
A	4.00	93
A-	3.67	90
B+	3.33	87
B	3.00	83
B-	2.67	80
C+	2.33	77
C	2.00	73
C-	1.67	70
D+	1.33	67
D	1.00	63
F	0	Under 63%

Methods of Instruction:

Course objectives will be met through the student's completion of the assigned clinical rotations. All clinical documents are located in the *RADT Clinical Manual*.

Description of Graded Activities:

Clinical Profile Evaluations: Each clinical rotation will culminate with the student being evaluated by the Clinical Instructor for that site. These evaluation make up 60% of the clinical grade.

Clinical assignments: Each student will be assigned clinical assignments that must be completed during the clinical rotations. These assignment are outlined in the Clinical Manual and make up 30% of the clinical grade.

Demo-Day: During the semester each student will spend one clinical day on campus. Students will be assessed via image critique, image production in the Lab, and via a test coving all material presented in the 1st semester. Students are encouraged to spend multiple days in the lab preparing for this day.

Cumulative Final Exam: At the end of the Course students will take a cumulative final exam that is weighted as 10% of the course. Students are encouraged to study to learn all content for the long term, because the registry will require it. Questions on the Final exam may consist of any of the following: Multiple choice, fill-in-the-blank, true/false, short answer, mathematical calculation, labeling of diagrams, and computer grade sheet questions.

Description of Graded Activities:

Methods of Grading:

Grades will be based upon attendance and class participation (which includes reading in advance and turning in review questions, prior to class time), possible presentations, and preparation for lab demonstrations, quizzes, and cumulative final examination. Missed exams may be made up the next class day only if a doctor's excuse is provided. **Please see the instructor to make arrangements regarding make-up work, as soon as possible, after the date of absence or before the date of a known absence (e.g. a planned absence that the instructor agrees to).**

Policy on Academic Dishonesty:

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Note:

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*** * All tests will be given on the assigned day NO MAKE-UPS WILL BE ALLOWED WITHOUT A SIGNED DR'S EXCUSE ***

Expectations:

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Attendance Policy
Students should make every attempt to attend class. If a student misses 20% of the class time then he/she will be withdrawn from the course. 3 tardies to a didactic course will be equal to 1 absence.

After completion of this course Students will:

1. Produce high quality radiographic examinations in a variety of settings which may include, outpatient, inpatient, emergency room, surgery, fluoroscopy, and mobile radiography. The images must be produced efficiently by means of appropriate positioning and technical factors with the lowest radiation exposure possible.
2. Perform routine diagnostic exams of the entire body including the skull using a variety of x-ray equipment,
3. Demonstrate abilities in advanced procedures such as radiography during surgery, genitourinary studies, and gastrointestinal examinations,
4. Provide patient care in a variety of settings which may include outpatient, inpatient and emergency settings.
5. Demonstrate competency of radiation protection for the patient and technologist.

Demonstrate the use of effective communication with patients, the public, and members of the health care team in a variety of settings.

Institutional Policies

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Clinical Radiography IV RADT-221

- Spring 2021
- Section 01
- 8 Credits
- 05/014/2020 to 07/27/2020

Contact Information

Division: **Health Professions & Nursing**

Instructor Information:

Name: **Matthew Nolan**

Office: MHSB Rad Suite

Office hours: Appointment or email or virtual anytime

Telephone: 2086767133

E-mail: Matthew.Nolan@nic.edu

Course Information:

Course Number: RADT 221

Course Days/times: Tuesday, Wednesday, Thursday, or Friday, Saturday and Sunday

Credits: 10

Prerequisites:

RADT 211/211L RADT 220

Co-requisites:

RADT-222

Description

This course provides students with continued hospital setting work experience. Students demonstrate increased proficiency levels in skills introduced in all of the radiographic procedures courses and practiced in previous clinical radiography courses. Topics include: patient care; behavioral and social competency; advanced radiographic anatomy; equipment utilization; exposure techniques; sterile techniques; integration of procedures and/or observation of angiographic, interventional, minor special procedures; integration of procedures and/or observation of special equipment use; integration of procedures and/or observation of routine and special radiographic procedures; and final completion of all required clinical competencies. Execution of radiographic procedures will be conducted under direct and indirect supervision.

Required Text

1. Textbook of Radiographic Positioning and Related Anatomy, 9th Edition

ISBN: 9780323481878

2. Workbook for Textbook of Radiographic Positioning and Related Anatomy, 9th Edition

ISBN: 9780323399661

Course Schedule: The instructor reserves the right to revise class calendar, modify content, and/or substitute assignments in response to institutional, weather, or class situations. Changes will be announced in class. Students will be held responsible for all changes.

Grading Criteria:

Clinical Profile Evaluations	30%
Clinical Competencies	40%
Clinical Assignment	10%
Final Exam	20%

Course Grading System:

GRADE	QUALITY POINTS	PERCENTAGE
A	4.00	93
A-	3.67	90
B+	3.33	87
B	3.00	83
B-	2.67	80
C+	2.33	77
C	2.00	73
C-	1.67	70
D+	1.33	67
D	1.00	63
F	0	Under 63%

Methods of Instruction:

Course objectives will be met through the student's completion of the assigned clinical rotations. All clinical documents are located in the *RADT Clinical Manual*.

Description of Graded Activities:

Clinical Profile Evaluations: Each clinical rotation will culminate with the student being evaluated by the Clinical Instructor for that site. These evaluation make up 60% of the clinical grade.

Clinical assignments: Each student will be assigned clinical assignments that must be completed during the clinical rotations. These assignment are outlined in the Clinical Manual and make up 30% of the clinical grade.

Demo-Day: During the semester each student will spend one clinical day on campus. Students will be assessed via image critique, image production in the Lab, and via a test coving all material presented in the 1st semester. Students are encouraged to spend multiple days in the lab preparing for this day.

Cumulative Final Exam: At the end of the Course students will take a cumulative final exam that is weighted as 10% of the course. Students are encouraged to study to learn all content for the long term, because the registry will require it. Questions on the Final exam may consist of any of the following: Multiple choice, fill-in-the-blank, true/false, short answer, mathematical calculation, labeling of diagrams, and computer grade sheet questions.

Description of Graded Activities:

Methods of Grading:

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At the completion of this course, the student will:

1. Produce high quality radiographic examinations with minimal supervision and high level skills of critical thinking and problem solving. The images must be produced efficiently by means of appropriate positioning and technical factors with the lowest radiation exposure possible.
2. Perform routine diagnostic exams of the entire body including the skull using a variety of x-ray equipment
3. Demonstrate abilities in advanced procedures such as radiography during surgery, genitourinary studies, and gastrointestinal examinations.
4. Provide patient care in a variety of settings which may include, outpatient, inpatient, emergency room, surgery, fluoroscopy, and mobile radiography.
5. Demonstrate competency of radiation protection for the patient and technologist.
6. Demonstrate the use of proficient communication abilities with patients, the public, and members of the health care team in a variety of settings.
7. Demonstrate the knowledge and skills of an entry level Radiologic Technologist.

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Radiologic Technology Review RADT-222

- Spring 2021
- Section 01
- 2 Credits
- 01/08/2020 to 05/04/2020

Contact Information

Division: **Health Professions & Nursing Instructor**

Information:

Name: **Matthew Nolan**

Office: MHSB Rad Suite

Office hours: Appointment or email or virtual anytime

Telephone: 2086767133

E-mail: Matthew.Nolan@nic.edu **Course**

Information:

Course Number: RADT 222

Course Days/times: Monday, 9am – 11 am

Credits: 2 **Prerequisites:**

RADT-211/211L, RADT-220

Co-requisites:

RADT-221

Description

This course provides a review of basic knowledge from previous courses and helps the student prepare for national certification examinations for radiographers. Topics include: image production and evaluation; radiographic procedures; anatomy, physiology, pathology, and terminology; equipment operation and quality control; radiation protection; and patient care and education.

Required text

1. **All program texts will be necessary for this Review Course**

Course Design:

Students in the Radiology review course will be tested in multiple forms to prepare them for the National ARRT Registry.

Each week students will take a Northwestern Exam or an ARRT Sectional exam and the results of the exams will be reviewed that day. Areas of class weakness have been identified over the last year utilizing these assessments and lecture topics will be directed toward the class weakness.

All tests taken in this course will be taken under a timed environment. The ARRT gives each student 60 seconds per question on the national registry; test and exams during this course will allow the same per question.

Students are assigned a cumulative capstone project that must be completed in its entirety to be graded. Students who fail to complete the ARRT Spec. outline by the end of the course will be given an Incomplete for the course until the assignment is completed. The format for this outline is as follows:

New Times Roman font

Section Title: Bold and 14pt

Subsection Title: Bold 12pt

Subsection Content: Standard 10pt

All content must be reference from a textbook and list name of text and page number of its location.

Course Schedule: The instructor reserves the right to revise class calendar, modify content, and/or substitute assignments in response to institutional, weather, or class situations. Changes will be announced in class. Students will be held responsible for all changes.

Topical Outline:

Date	Chapter	Registry Review RADT 222
		Syllabus Review and Review Test 1
		Northwestern, ARRT Section A review test
		Review the test and finish Specs.
		Final Patient Care Test and ARRT SECTION A Specs DUE
		Northwestern, ARRT Section B test
		Review the test and finish Specs.
		Final Safety Test and ARRT SECTION B Specs DUE
		Northwestern, ARRT Section C test
		Review the test and finish Specs.
		Final Image Production and ARRT SECTION C Specs DUE
		Northwestern, ARRT Section D test
		Review the test and finish Specs.
		Final Procedures Test and ARRT SECTION D Specs DUE
		Northwestern, Finish Revision Specs
		Review Test 2, Finish Revision Specs
		Review Test 3, Finish Revision Specs
		Final Exit exam, All Revision specs must be finished

Grading Criteria:

Unit and Northwestern Tests	50%
Class Assignment and Homework	5%
ARRT Capstone Project	20%
Final Exam	25%

Course Grading System:

GRADE	QUALITY POINTS	PERCENTAGE
A	4.00	93
A-	3.67	90
B+	3.33	87
B	3.00	83
B-	2.67	80
C+	2.33	77
C	2.00	73
C-	1.67	70
D+	1.33	67
D	1.00	63
F	0	Under 63%

Methods of Instruction:

Course objectives will be met through a variety of teaching methods. These include, but limited to: individual work, group activities in lab, appropriate textbook usage, charts and diagrams, handouts, reference items, homework, class discussion and presentations, lectures and presentations with power points, and computer-based learning through Canvas in order to satisfactorily achieve course objectives while meeting each student's individual learning needs.

Description of Graded Activities:

Northwestern 3rd Party Testing: Monthly each student will be administered a 100 question 3rd party registry review test to begin preparation for the ARRT Registry Exam. The actual test grade will only include those questions of content that has been covered up to that point in the program. After the test has been graded students will be required to complete a full-page handwritten correction for each missed question. The correction must be a full page in length with no more than two open lines at the bottom of each page. Corrections will cover all test questions not just the material that we have covered. Incomplete corrections will result in a grade of zero. ***A one-day late penalty of minus ten (10) points will be incurred for late corrections. Corrections not received by 5:00 pm the following day will not be accepted and result in a grade of zero.***

Chapter Quizzes: There will be assorted amount of homework assignments and quizzes. Questions on quizzes may consist of any of the following: Multiple choice, fill-in-the-blank, true/false, short answer, mathematical calculation, labeling of diagrams, and computer grade sheet questions.

Unit tests: As outlined on the schedule each unit will culminate with a unit test. Questions on tests may consist of any of the following: Multiple choice, fill-in-the-blank, true/false, short answer, mathematical calculation, labeling of diagrams, and computer grade sheet questions.

Cumulative Final Exam: The final exam will consist of an array of questions that will mimic what the student may see when he/she sits for the ARRT National Exam. Questions may come from any material covered during the student's tenure in the program. Students are encouraged to review all course materials and ask any questions over material that is not understood. It is required that the student pass the exit exam with a 75 or greater in order to receive credit for the course. Students will be given three attempts to pass the final exit exam, if the student fails to pass the exit exam with a 75 or greater on the 3rd attempt he/she will be required to retake the review class.

Methods of Grading:

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Outcomes & Objectives

After completion of this course students will:

1 Image Production and Evaluation

Order Description

1. Review factors affecting recorded detail, density, distortion, and contrast.
2. Discuss the relationships among density, distortion, contrast, and recorded detail.
3. Identify factors that govern the selection of detectors, screens, and grids.
4. Discuss the relationship between detectors material and speed.
5. Identify the effect of factors influencing exposure control such as the nature of the radiographic procedure; detectors, screens, and grids selected; power setting used; and beam limitation and scatter.
6. Perform exposure calculations for various radiographic procedures.
7. Describe the advantages and disadvantages associated with automatic exposure control.
8. Discuss factors affecting the decision to use automatic exposure controls.
9. select exposure factors from a technique chart for a simulated radiographic procedure.
10. Describe CR image receptor storage considerations.
11. Outline radiographic identification procedures.
12. Discuss the daily and periodic maintenance for automatic film processors.
13. Discuss the procedures for loading and unloading.
14. Discuss the exposure indicators for the 3 major computed radiography systems.

15. Describe the effects of frequency, contrast, and noise on digital image quality.
16. Discuss the function of digital image window level and width controls.
17. Describe picture archival and communication systems (PACS).
18. Discuss film archival.
19. Discuss the criteria used to evaluate the diagnostic quality of radiographs.
20. List the possible causes of poor radiograph quality.

2 Radiographic Procedures

Order	Description
1.	Define positioning terminology.
2.	Describe types and functions of immobilization and positioning devices.
3.	State the appropriate breathing instructions for the patient when given a radiographic procedure.
4.	Discuss positioning and technique variations for various radiographic procedures.
5.	Discuss various radiographic procedures, describe the requisite procedures for patient preparation.
6.	List the types of contrast media.
7.	Match contrast media with radiographic procedures.
8.	List the indications, contraindications, and the adverse reactions associated with its use when given a specific contrast medium.
9.	Explain the steps for patient preparation and patient positioning when given a list of routine and special radiographic procedures.
10.	Select the equipment needed and the exposure settings that are consistent with A.R.R.T. specifications when given a list of routine and special radiographic procedures.

3 Anatomy, Physiology, Pathology, and Terminology

Order	Description
1.	Label each anatomical structure with its accepted medical term when given diagrams of the skeletal, digestive, circulatory, respiratory, reproductive, urinary, and nervous/ sensory systems.
2.	Define a list of terms relating to physiology and pathology.
3.	Evaluate radiographic images of the skeletal, digestive, circulatory, respiratory, genitourinary, and nervous/sensory systems in terms of positioning accuracy, image quality, and anatomical structures and physiological functions visualized.
4.	Evaluate radiographic images of the skeletal, digestive, circulatory, respiratory, genitourinary, and nervous/sensory systems in terms of pathologies revealed.

4 Equipment Operation and Quality Control

Order	Description
1.	The student will label diagrams of the component parts of various radiographic equipment and accessories.
2.	The student will describe equipment used for computed radiography and digital radiography.
3.	The student will discuss the differences in various types and models of portable radiographic equipment.
4.	The student will discuss the differences in portable and non-portable radiographic equipment.
5.	The student will describe the theory of operation of an X-ray tube.
6.	The student will describe the construction and function of an X-ray tube.
7.	The student will determine the maximum allowable exposure factor for various radiographic procedures using an X-ray tube rating chart.

8. The student will determine the rate of anode and tube housing cooling when given simulations of radiographic exposures and anode and tube housing cooling charts.
9. The student will review X-ray tube warm-up procedures for radiographic equipment from various manufacturers.
10. The student will perform safety checks of radiographic equipment and accessories such as lead aprons and gloves and collimator accuracy.
11. The student will identify symptoms of malfunctions in radiographic equipment.
12. The student will discuss reporting procedures for malfunctions of radiographic equipment.

5 Radiation Protection

Order	Description
1.	Describe the use and function of beam limiting devices, beam filtration, and shielding devices.
2.	Describe the relationship between exposure factors and patient dosage.
3.	Describe the nature and function of the ten-day rule.
4.	Determine the film, screen, and exposure setting combinations that will minimize the radiation dosage that patients receive when given various radiographic procedures.
5.	Discuss methods to avoid repeat radiographs.
6.	Describe the purpose of primary and secondary radiation barriers and room construction and design in terms of personnel protection.
7.	Discuss the radiographic equipment and techniques used to reduce personnel exposure during radiographic, fluoroscopic, mobile, and surgical procedures.
8.	Discuss the types and purposes of personnel protective devices used during radiographic, fluoroscopic, mobile, and surgical procedures.
9.	Describe the types, uses, and purposes of patient restraint devices for reducing personnel radiation exposure.
10.	Describe personnel monitoring devices in terms of purposes, types, characteristics, advantages, and disadvantages.

6 Patient Care and Education

Order	Description
1.	Describe the validation the patient's identity by asking the patient and/or by checking the wristband.
2.	Describe validate the radiographic procedure requested by checking the procedure requisition form.
3.	Define and list the principles of body mechanics applicable to patient care.
4.	Demonstrate procedures for patient transfer such as table-to-table, table to wheelchair, wheelchair to bed, bed to stretcher, the three-man lift, and draw sheet lift.
5.	Describe the procedures for turning patients who have severe trauma, unconsciousness, disorientation, or amputated limbs.
6.	List the patient preparation steps when given various radiographic procedures.
7.	State the appropriate instructions to be given to the patient for various radiographic procedures.
8.	List the appropriate contrast agent for various radiographic procedures when given procedures using contrast agents
9.	Discuss patient preparation in terms of procedures, indications, contraindications, and symptoms of and treatment for adverse reactions to contrast agents when given various radiographic procedures.
10.	Describe the disinfection and sterilization procedures in terms of types and methods used when given various radiographic procedures and patient information.

11. Demonstrate the procedures for scrubbing, donning gowns and gloves, removing gowns and gloves, and handling sterile instruments.
12. Discuss procedures for handling and disposing of infectious wastes.
13. Describe the function, purpose, and procedures for each when given a list of isolation techniques.
14. Discuss the psychological considerations for the management of infectious patients.
15. Describe the vital signs used to assess patient condition.
16. Identify and list normal values for measurements of temperature, pulse, blood pressure, and respiration
17. Demonstrate the clinical measurement and recording of temperature, pulse, blood pressure, and respiration.
18. Describe the symptoms of cardiac arrest, anaphylactic shock, convulsion, seizure, hemorrhage, apnea, emesis, aspiration, fractures, and diabetic coma/insulin reaction.
19. Describe the acute care procedures for cardiac arrest, anaphylactic shock, convulsion, seizure, hemorrhage, apnea, emesis, aspiration, fractures, and diabetic coma/insulin reaction.
20. Describe the use of medical equipment and supplies in treating medical emergencies.

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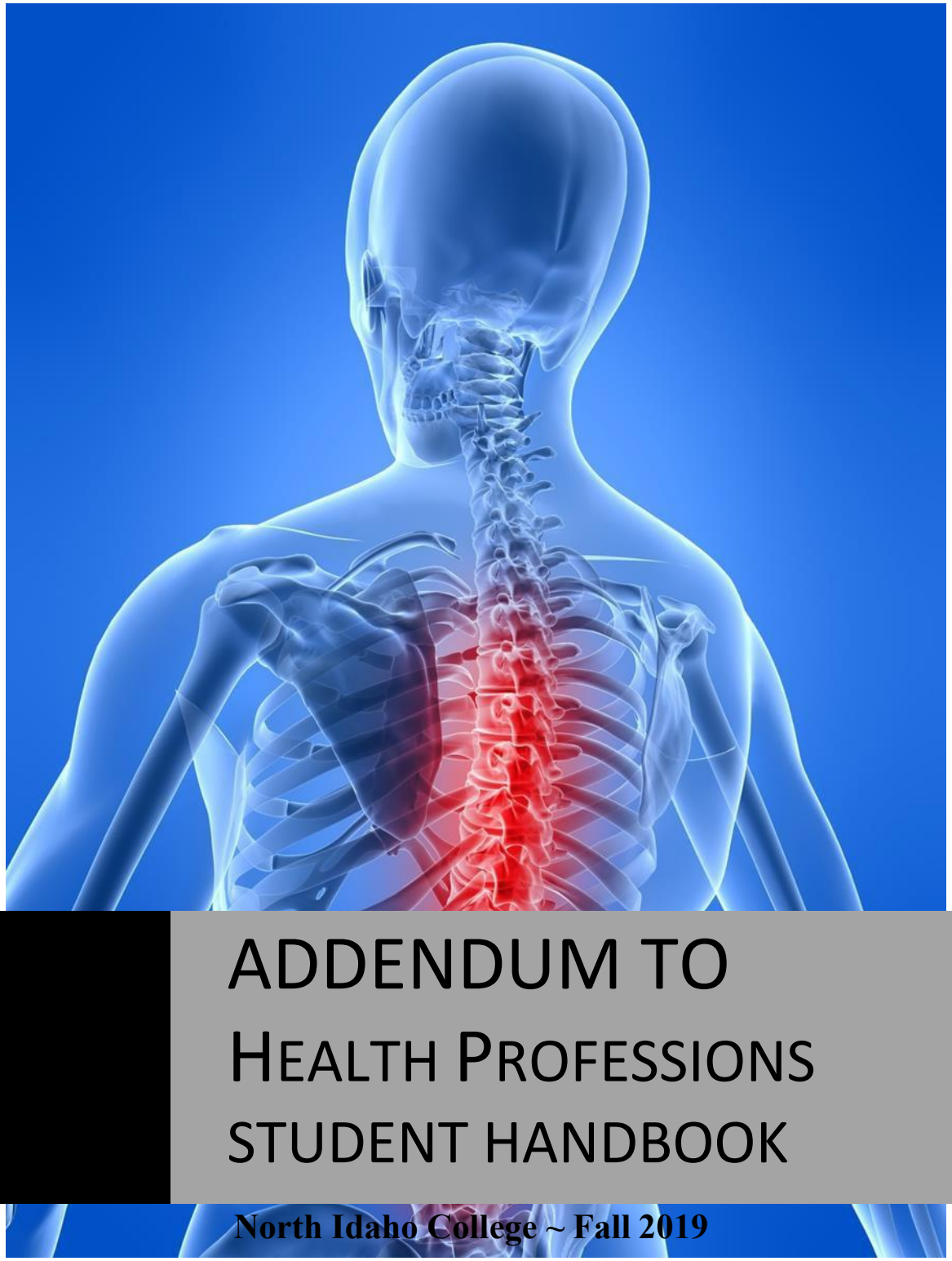
For more information on withdrawals, see the NIC Student Accounts website.

Title IX

North Idaho College seeks to provide an environment that is free of bias, discrimination, and harassment. If you have been the victim of sexual harassment/misconduct/assault we encourage you to report this. If you report this to any college employee, (except for a licensed counselor or health care professional) she or he must notify our college's Title IX coordinator about the basic facts of the incident (you may choose whether you or anyone involved is identified by name). For more information about your options at NIC, please go to: www.nic.edu/titleIX or call (208) 676-7156

INSTITUTIONAL STATEMENT

Removal from Class for Non-Attendance: Attendance is based on your participation in this class. Failure to attend will result in your being removed from this class and may result in your financial aid award being reduced. You are responsible for confirming the accuracy of your attendance record.



ADDENDUM TO HEALTH PROFESSIONS STUDENT HANDBOOK

North Idaho College ~ Fall 2019

Program Introduction

North Idaho College welcomes you to the Radiography Program and we hope that your time spent here will fully exceed any expectations. Our interest is the professional growth of each of our students who have chosen to study the field of radiography. It is our goal to help you succeed in any possible way and can promise you that your success will be in direct proportion to the effort you choose to put forth in this study.

The Health Professions Student Handbook (HP Handbook), Radiography Program Handbook Addendum (handbook addendum), and Clinical Manual (manual) have been compiled to guide you through the process of successfully completing the program. You will find that the handbook addendum and manual will provide you with the guidelines and procedures that directly affect you as a radiography student. The guidelines and procedures listed in the addendum are solely intended to supplement those that are stated in the North Idaho College Catalog and HP Handbook. You will want to keep all of these materials and the college catalog as references throughout your tenure in the program. Any changes in the established procedures provided in the HP Handbook, handbook addendum, and manual will be provided to you in writing.

Addendum to Student Handbook

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PROGRAM DOCUMENTS: Essential Abilities

ESSENTIAL ABILITIES

The following are considered to be essential abilities, which are necessary for admission to and continuance in, the Radiography Technology Program. Individuals entering the field are expected to meet the following standards with or without reasonable accommodations.

1. **The Radiologic Technologist must have sufficient strength, motor coordination and manual dexterity to:**
   a. Transport, move, lift and transfer patients from wheelchair or cart to an x-ray table or to a bed.
   b. Move, adjust and manipulate a variety of radiographic equipment, including the physical transportation of mobile radiographic machines, in order to arrange and align the equipment with respect to the patient and the image receptor according to established procedure and standards of speed and accuracy.

2. **The Radiologic Technologist must be capable of:**
   a. Handling stressful situations related to technical and procedural standards and patient care situations.
   b. Providing physical and emotional support to the patient during the radiographic procedure, being able to respond to situations requiring first aid and providing emergency care to the patient in the absence of or until the physician arrives.
   c. Communicate verbally in an effective manner in order to direct patients during radiographic examinations.
   d. Reading and interpreting patient charts and requisitions for radiographic examinations.

3. **The Radiologic Technologist must have the mental and intellectual capacity to:**
   a. Solve basic mathematical problems dealing with proportions, simple algebraic problems and geometry required when determining proper exposure levels and radiographic positioning requirements.
   b. Apply knowledge acquired in the classroom to practical application when determining exposure factors, planning procedure sequencing and evaluating radiographic image quality.

Effective: 01/16/07; Revised: 06/16/14, ***06/01/16***

PROGRAM DOCUMENTS: Formal Review Strategies

North Idaho College shall promote national certification exam success by offering a formal review course for students.

PROCESS

A mandatory two credit course is offered in the final semester of the program.

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

1. Be prepared to take the American Registry of Radiologic Technologists certification examination for radiography.

2. Pass a practice Mock Registry review test with a minimum score of 75.

3. Complete the Capstone project covering the American Registry of Radiologic Technologists certification examination content specification.

Effective: 01/11/10; Revised: 06/16/14, 06/01/16; ***01/01/19***

PROGRAM DOCUMENTS: Master Plan

A Master Plan of Education has been developed for the program in accordance with the Joint Review Committee in Education in Radiologic Technology (JRCERT) standards. Copies of the Master Plan have been submitted to JRCERT and a copy of the Master Plan will be kept on file for public access at North Idaho College. All communities of interest will have access to the Radiography Technology program's educational plan and policies which is available in the Health Professions Division Office and the office of the Program Director.

PROCESS

The Master Plan includes at a minimum the following areas:

1. Program Mission and Goals

2. Program Curriculum Plan

3. Didactic Courses:
   - course syllabi including course outcomes

4. Clinical Education Plan:
   - scheduling formats
   - clinical area evaluation criteria
   - exam and area competency forms

5. Program evaluation documents

6. Program documents and standards

7. Program Evaluation Plan

8. Affiliation documents

Effective: 01/16/07; Revised: 06/16/14; 06/01/16; ***01/01/19***

PROGRAM DOCUMENTS: Mission and Goals

NIC Mission
North Idaho College meets the diverse educational needs of students, employers, and the northern Idaho communities it serves through a commitment to student success, educational excellence, community engagement and lifelong learning.

Radiography Technology Program Mission
The Mission of the North Idaho College Radiography Program is to provide a comprehensive didactic and clinical education, which prepares graduates with the skills necessary to obtain entry-level employment as a radiographer. Upon successful completion of this program, students will graduate with an Associate of Applied Science Degree and be eligible to become certified by taking the registry examination of the American Registry of Radiologic Technologists (ARRT).

The program has established 4 goals to demonstrate that we are adhering to our mission statement. Each of the goals are broken down by individual Student Learning Outcomes and demonstrate each student's individual progression throughout the program. It is the responsibility of the program director to ensure that these goals and outcomes are assessed and evaluated for continual program improvement.

Goals
Goals are established which support the successful implementation of the mission of the program. These goals are accompanied by measurable desired outcomes, which meet or exceed the standards for an accredited educational program in radiologic sciences, providing a means to evaluate program effectiveness and to assist in making program changes when appropriate.

Upon completion of the program:

GOAL 1	**Students will demonstrate clinical competence.**		
SL Outcome	**Measure**	**Measurement Tool**	**Course assigned**
SLO 1	80% of students will demonstrate appropriate positioning skills during the Chest imaging lab examination on the first attempt.	Student performance on the RADT chest positioning lab exam.	RADT 112/112L
SLO 2	80% of students will demonstrate appropriate positioning skills during the PCXR imaging lab examination on the first attempt.	Student performance on the RADT PCXR positioning lab exam.	RADT 112/112L
SLO 3	80% of students will demonstrate appropriate positioning skills during the Lumbar Spine imaging lab examination on the first attempt.	Student performance on the RADT Lumbar Spine positioning lab exam.	RADT 114/114L
SLO 4	90% of students will demonstrate appropriate positioning skills during Chest imaging on the first attempt.	Student performance on the ARRT Competency Sheet Section 3.	RADT 116
SLO 5	90% of students will demonstrate appropriate positioning skills during PCXR imaging on the first attempt.	Student performance on the ARRT Competency Sheet Section 3.	RADT 119
SLO 6	90% of students will demonstrate appropriate positioning skills during Lumbar spine imaging on the first attempt.	Student performance on the ARRT Competency Sheet Section 3.	RADT 221

PROGRAM DOCUMENTS: Mission and Goals

GOAL 2	**Students will communicate effectively.**		
SL Outcome	**Measure**	**Measurement Tool**	**Course assigned**
SLO 1	80% of students will properly explain the assigned examination protocol during laboratory examination of the C-spine on his/her first attempt.	Student performance on the RADT Laboratory Positioning exam.	RADT 112/112L
SLO 2	70% of students will demonstrate effective communication skills during the oral presentation over his/her assigned fluoroscopic examination.	Student performance on oral presentation rubric.	RADT 114/114L

GOAL 3	**Students will employ critical thinking skills.**		
SL Outcome	**Measure**	**Measurement Tool**	**Course assigned**
SLO 1	60% of students will properly critique a repeated image on the first attempt.	Student performance on the Image Critique form.	RADT 116
SLO 2	70% of students will properly critique a repeated image on the first attempt.	Student performance on the Image Critique form.	RADT 119
SLO 3	80% of students will properly critique a repeated image on the first attempt.	Student performance on the Image Critique form.	RADT 220
SLO 4	90% of students will properly critique a repeated image on the first attempt.	Student performance on the Image Critique form.	RADT 221
SLO 5	80% of students will successfully manipulate and alter technical factors when given a trauma scenario.	Student performance on the Demo-Day 2 Trauma Scenario Image Production assignment.	RADT 220

GOAL 4	**Students will demonstrate professional growth and development.**		
SL Outcome	**Measure**	**Measurement Tool**	**Course assigned**
SLO 1	80% of students will successfully critique a professional article and apply it to current radiol technology practice.	Student performance on the Radiologic Technology Article Critique Rubric.	RADT 116
SLO 2	80% of student will successfully research and present an oral presentation on an advance modality covering sectional anatomy and pathology.	Student performance on the RADT Content Project Rubric.	RADT 118/118L

Effective: 01/16/07; Revised: 06/16/14; 06/01/16; ***01/01/19***

PROGRAM DOCUMENTS: Mission and Goals, Continued

Program Effectiveness Measures (Program Outcomes)

- At least 80% of students from each cohort will complete the program.
- Graduates will have a five-year average credentialing examination pass rate of not less than 75% at first attempt.
- The average five-year job placement rate of graduates seeking employment will be 75% or more within twelve (12) months of graduation.
- Seventy-five percent of graduates will indicate adequate preparation to perform as entry-level technologists.
- Seventy-five percent of employers will indicate satisfaction with graduates' overall job training/preparation.

Note: Program effectiveness data is available online on the Joint Review Committee on Education in Radiologic Technology (JRCERT) web site: https://portal.jrcertaccreditation.org/

Effective: 01/16/07; Revised: 08/27/10, 06/10/11, 03/20/12, 12/20/12, 03/18/14, 06/16/14, 06/01/16; ***01/01/19***

PROGRAM DOCUMENTS: Pinning Ceremony

Graduates of the Radiography Technology Program may have a pinning ceremony after the final semester. Family and friends are invited to this celebration.

PROCESS

All phases of the planning will be discussed with the Program Director of Radiography.

1. Radiography Technology pins must be ordered through the Dean of Health Professions & Nursing office by the end of the second week in April.

2. A student planning committee will be formed by the end of the second week in April and will meet with the Program Director of Radiography.

3. The Radiography Technology Program will provide $100.00 to assist in paying for the expenses directly involved with the ceremony. Direct payment to vendors is encouraged for items such as flowers and refreshments. Notification of expenses must be made to the Radiography Technology Program Director and to the Dean of Health Professions and Nursing office.

4. Dress for the ceremony will be determined by the class.

5. The ceremony is held during the week before graduation.

6. The location should be confirmed by the end of the second week in June, if possible. Notification must be made to the Dean of Health Professions and Nursing office.

7. The program is to be discussed with the Program Director of Radiography. While this is the student's program, the ceremony is public and must be in good taste. All images must reflect the character and integrity that North Idaho College stands for.

8. Programs and/or invitations should be ready by the second week of June. The Senior Administrative Assistant for Health Professions has samples of invitations and will make copies, if desired. Other arrangements may be made at the discretion of the class.

9. Arrangements will be made with the Program Director of Radiography to ensure insurance coverage for the event.

Effective: 01/11/10; Revised: 06/16/14, ***06/01/16***

PROGRAM DOCUMENTS: Professional Activities

Students are encouraged to join professional radiology organizations and attend professional activities.

PROCESS

Attendance at professional meetings is encouraged by allowing time off from clinical and/or classroom time as appropriate.

1. Students must be in good standing to receive time off to attend professional conferences.

2. If the student misses class time, makeup work may be assigned.

3. Students who attend society functions will not be required to make up clinical time. Those students who do not attend the conference will be required to attend clinical education.

4. Those students attending the conference are expected to attend seminars. Students must provide documentation of attendance.

5. Students that do not provide proof of attendance will be required to make up clinical time and class assignments.

6. Requests for conference attendance must be submitted to the Program Director in writing. Attendance is subject to approval by the Program Director.

Effective: 01/16/07; Revised: 06/16/14, ***06/01/16***

PROGRAM DOCUMENTS: Program Evaluation Plan

The Radiography Technology program has a structured evaluation plan to measure program effectiveness and identify opportunities for continuing program improvement. This plan incorporates program self-evaluation, and measurable student and program outcomes.

PROCESS

The following activities will be done in order to monitor performance and program effectiveness:

- Instructional Evaluation: The students will evaluate each course and instructor on effectiveness and content, as specified in college policies and procedures.
- Clinical Preceptor Evaluation: Students will evaluate the Clinical Preceptor each semester.
- Clinical Facility Evaluation: Students will evaluate the clinical facility each semester.
- Course Review: Program Director and appropriate instructor(s) shall review course content annually and shall recommend changes to the Curriculum Council when appropriate. The course curriculum will include the American Society of Radiologic Technologists curriculum recommendations.
- Mission Statement, Goals, and Assessment Plan: Reviewed annually by the Program Director and Advisory Committee.
- Outcomes Assessment Data: Collected and analyzed annually by the Program Director and Advisory Committee, and compared to student and program goals.
- Program Standards, Procedures, and Publications: Reviewed every two years by the Program Director. Facility Clinical Preceptors will provide policies and/or procedures pertinent to the clinical area.
- Physical Resources: Program Director shall review current resources (physical plant, instructional aids, etc.) annually and will maintain appropriate resources to promote the goals of the program.
- Graduate Surveys: In order to maintain a curriculum which prepares the student to function at current standards for the field, the program will conduct surveys to determine graduate success. Graduate surveys shall include:
  1. A graduate survey - a written questionnaire asking the graduate to rate the program with respect to technical and clinical preparation. Also included in the survey is the student's current employment status and future plans.
  2. A graduate employment survey - a survey is submitted to the employer of a graduate to rate the graduate's clinical and technical ability. This shall be completed via an online survey tool.
- The above surveys shall be mailed to the graduate within six months of their graduation. Follow-up telephone calls shall be made in the event of no response and the program director will hand deliver surveys if needed.
- Data received from the above evaluation tools will be used to incorporate appropriate changes to the program. Significant changes shall be reviewed and discussed with the Advisory Committee.

Effective: 01/16/07; Revised: 06/16/14; ***06/01/19***

PROGRAM DOCUMENTS: Transfer Students

Transfer applicants will be accepted and placed into the North Idaho College (NIC) Radiography Program on a space available basis. The Program Director will determine the appropriate placement of the transferring applicant into the NIC Radiography Program. Applicants who have completed prior coursework towards their radiography education at a college other than NIC may request to transfer into NIC's Radiography Technology Associate of Applied Science Degree program. The following criteria must be met to be eligible for consideration:

1. All prerequisites for admission to NIC's Radiography Technology program have been completed with grades of C+/2.3 or higher.
2. All courses (radiography and general education) prerequisite to the course of entry into the NIC Radiography Program must have been completed with a grade of C+/2.3 or higher.
3. Request for transfer must be made within one year of exit from previous program.
4. The applicant left her/his previous program in good standing.

PROCESS

1. The applicant must submit in writing a request to transfer into the (NIC) Radiography Technology Associate of Applied Science Degree Program. This request must be received by:

    a. March 15th for consideration into the Fall Semester
    b. September 7th for consideration into the Spring Semester
    c. January 15th for consideration into the Summer Session

2. The applicant will provide the following items for review by the NIC program faculty and administration:

    a. A letter of recommendation from the Program Director or a faculty member of the radiography program previously attended.
    b. A copy of transcripts.
    c. A copy of the course syllabus for all radiography courses which applicant has taken and would like to receive credit.

3. Course transcripts and syllabus will be evaluated to determine NIC course equivalency. Courses awarded credit must be similar or equivalent to the NIC course.

4. A determination will be made regarding eligibility for acceptance into NIC's Radiography Program and the applicant will be notified in writing of this decision. If the applicant is eligible and there is space available for the applicant to enter, the applicant will continue with the transfer procedure. If the applicant is not eligible, the applicant will be informed of the reasons for lack of eligibility.

5. The applicant will be required to successfully complete a skills evaluation. The requirement for theory testing will be evaluated on a case-by-case basis. Clinical competency knowledge base must be demonstrated. Upon approval, the student will be notified to proceed with the transfer process which will include:

PROGRAM DOCUMENTS: Transfer Students, Cont'd

a. Demonstration of the knowledge base by completing the final exam of the Radiography Technology course that is prerequisite to the course for which admission was requested. A minimum passing score of 75% is required on the exam.
b. Demonstration of satisfactory performance of clinical competencies previously attained with a minimum passing score of 75%. Testing of skills will be scheduled on an individual basis.

6. The applicant will be notified in writing of the decision on his/her request.

7. All competencies and course grades which are approved will be recorded in the student's permanent grade record.

8. At least 51% of the Radiography Technology program courses are required to be completed at NIC.

9. All transfer procedures need to be completed by the following deadlines:

   a. May 1st for admission into the Fall Semester
   b. December 1st for admission into the Spring Semester
   c. April 1st for admission into the Summer Session

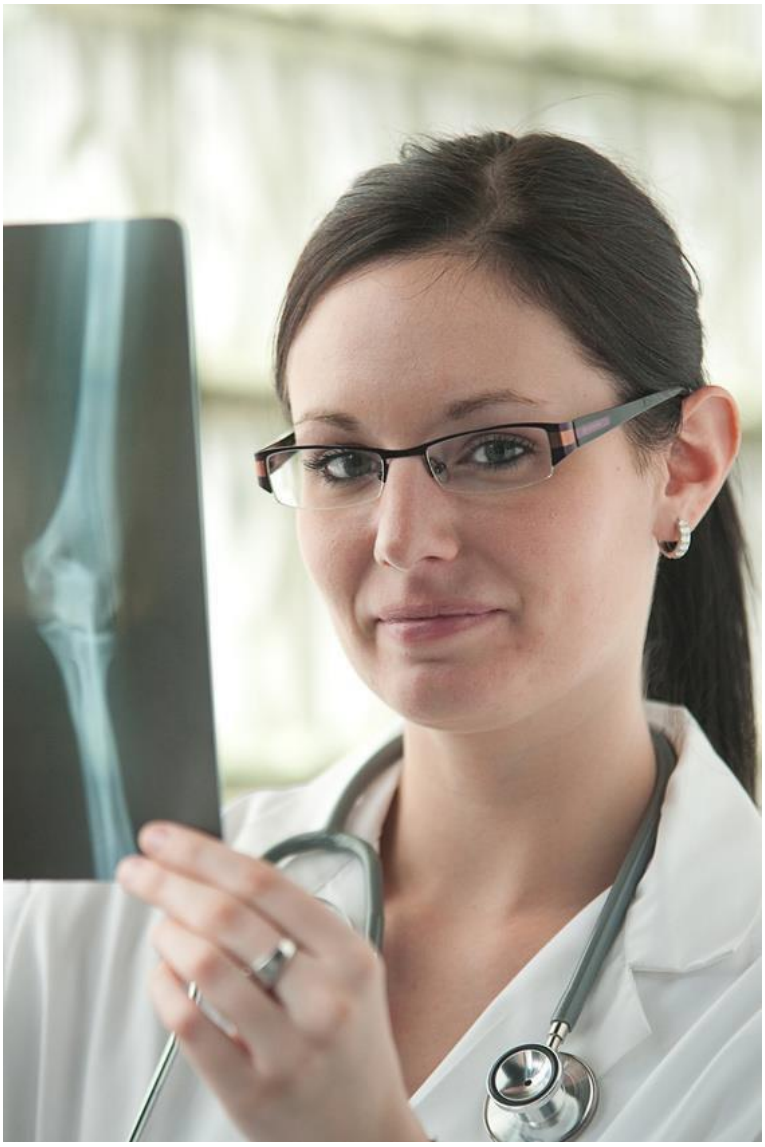
10. If accepted, the applicant will follow the application process to North Idaho College, which includes:

- Completing a college application to North Idaho College
- Submitting official transcripts from all colleges previously attended to North Idaho College
- Registering for appropriate radiography and general education courses
- Acquiring Professional Liability Insurance
- Acquiring a Criminal Background Check
- Current CPR Card
- Current Immunization and Required Titers

11. Students are required to carry health insurance or be self-insured.

12. There may be a non-refundable fee for skills evaluation.

Effective: 01/16/07; Revised: 12/23/10, 06/16/14, ***06/01/16; 01/01/19***



PROGRAM STANDARDS

PROGRAM STANDARDS: Absence **STANDARD: 1.0**

STANDARD

Students are responsible for attending the courses in which they are enrolled. Failure to attend during the first two weeks of a full-semester course or first week of short-term or summer courses will result in a drop for non-attendance. If necessary, student's financial aid awards and veteran's benefits will be adjusted if they are dropped for non-attendance.

Classroom, lab and clinical or externship attendance is expected and considered essential as the content presented is considered vital to the student's learning. Students are expected to attend planned learning experiences, which occur outside the classroom.

Classroom or Lab Absences

See Health Professions Student Handbook, Section Two: Health Professions Standards, Absenteeism for classroom and lab attendance policies.

Clinical Absences

The following standard for clinical absences supersedes the standard outlined in the Health Professions Handbook:

Clinical attendance is mandatory. Students are responsible for informing the Program Director AND the facility at least one hour prior to the clinical, dental clinic, externship or internship start time. An important component of learning and practicing ethical work behavior includes the student being required to take responsibility for good attendance. If a student misses up to 1 hour of clinical time, they will be allowed to make up that time by extending their clinical time on another day, not to exceed 40 hours per week. If more than 1 hour of clinical time will be missed, the entire day must be made up. All clinical time missed must be made up prior to the end of the semester in which the student is absent. This make-up time is to be scheduled by the Program Director and then he/she will schedule with the clinical facility. Failure to make up the time by the end of the semester will result in an incomplete grade in clinical practice for the semester. If the time is not made up by the first clinical day of the next semester, the student will receive an "F" in clinical practice. Furthermore, make-up days cannot take place on school holidays. The school campus must be open in order for make-up time to take place. This can be accomplished on faculty leave days or at the conclusion of the semester.

Effective: 01/16/07; Revised: 06/06/13, 06/16/14, 06/01/16; ***01/01/19***

PROGRAM STANDARDS: Academic/Professional Honesty **STANDARD: 2.0**

STANDARD

To maintain North Idaho College's academic atmosphere and integrity, academic honesty is of the utmost importance. **All forms of dishonesty, including but not limited to cheating, lying and plagiarism, are unacceptable behaviors** for any student enrolled in Health Professions programs at North Idaho College. Instructors and students are responsible for maintaining academic standards and integrity in their classes.

See Health Professions Student Handbook, Section One: College Policies and Procedures, Academic/Professional Honesty for further details.

Effective: 01/16/07; Revised: 06/16/14; ***06/01/16***

PROGRAM STANDARDS: Admissions **STANDARD: 3.0**

STANDARD

Consistent with North Idaho College Affirmative Action/Equal Opportunity Standard the radiography program has an admission process which does not discriminate on the basis of race, color, religion, national origin, sex, age, disability, or status as a Vietnam-era veteran. Admission criteria and an admission procedure have been established by the Program Director of Radiography Technology with the approval of the Dean of Health Professions and Nursing. The admission process is applied fairly and consistently to all qualified applicants. Students may also be admitted through the program's Readmission Standard (Standard 15.0).

PROCESS

Students will submit their application to the Admissions Office by the deadline as outlined on the program website. In addition to the regular college admissions requirements, students applying for the Radiography Technology Program need to complete a Radiography Technology Application, which consists of:

1. Radiography Technology Program Application (applications will be available in the spring).
2. High school and college transcripts.
3. Applicant must be 18 years old at the time of program entry.
4. Top 30 applicants based off the GPA points system will be invited to campus to:
   a. Take the PSB Health Occupations assessment student will then be ranked by PSB score;
      Take PSB Health Occupations assessment (3.5 hour test) ($25). The categories are:
      i. Academic Aptitude – 90 questions
      ii. Spelling – 60 questions
      iii. Reading Comprehension – 50 questions
      iv. Natural science – 90 questions
      v. Vocational Adjustment – 90 questions

      Total Questions: 380

   A. Students must score 210/380 on the total exam score.
   B. Students must score 150/230 of the combined Academic aptitude (90), Reading Comprehension (50), and the Vocational adjustment score (90).
   C. Students must score 50 or greater on the Academic Aptitude section
   D. Students must score 60 or greater in the Vocational adjustment section.

   b. Personal statement stating your reason for applying to the Radiography Technology Program.
      - Write an essay that is approximately 1/2 page (500 words) in length describing why you have decided to pursue a career in Radiologic Technology. Responses should include the important events that led to your decision to choose Radiography Technology, any goals or expectations you have envisioned for yourself, and why you feel you are capable of practicing as a radiologic technologist.

Admissions Requirements

1. High School diploma or GED.
2. Application to the Radiography Technology program.
3. The Radiography Technology program is a competitive entry program. Ten students are admitted to the Professional Component of the program every other year. Applications are accepted and reviewed spring semester. A minimum grade point average of C+/2.3 is required in all prerequisite and program courses. For program-specific requirements, please refer to the program webpage.
4. **Prerequisites:**
   - GEM 3 Mathematical Ways of Knowing 3-5
   - ENGL-101 English Composition 3

- BIOL-227 Human Anatomy and Physiology I with Cadaver 4

Semester Total 10-12

- COMM-101 Introduction to Speech Communication 3
- PSYC-101 or SOC 101 Intro to Psychology or Sociology 3
- BIOL-228 Human Anatomy and Physiology II with Cadaver 4
- CAOT-179 Medical Terminology 2

Semester Total 12

5. All lab science courses which were completed more than seven years prior to application must be repeated.
6. Criminal background check will be required upon acceptance. Violations may result in denied access to clinical sites and therefore inability to complete the program.

*Effective: 01/16/07; Revised 09/17/10, 11/30/10, 05/07/12, 06/16/14; 06/01/16**; 01/14/19***

PROGRAM STANDARDS: Classroom Standards **STANDARD: 4.0**

STANDARD

In order to maintain an environment conducive to learning for all students, appropriate classroom standards will be adhered to during all classes and labs. Where appropriate, accommodations may be made for qualified individuals with a disability.

A professional image is also a part of your classroom environment. Since it is the practice of the program and the institution to invite professionals on campus to view our classroom and facilities, it is the requirement of this program that each student presents the best possible image at all times.

To support this concept, the following types of apparel **will not** be acceptable:

1. Jeans
2. Tank Tops
3. Tee Shirts
4. Mesh Shirts
5. Short Skirts
6. Shorts
7. Outfits that allow for a bare midriff, or exposed chest.

Failure to comply with the dress code:

1. You will be asked to leave and change your attire.
2. You will receive demerits according to the severity of the violation.

Appropriate dress is considered one that you would wear to any professional interview, your church, or other public dress events, or times you wish to make a positive impression on a health professional.

See Health Professions Student Handbook, Section Two: Health Professions Standards, Classroom for further details.

*Effective: 01/16/07; Revised: 06/16/14, 06/01/16**; 01/01/19***

PROGRAM STANDARDS: Clinical Uniform Standards **STANDARD: 5.0**

STANDARD

Students in any clinical setting will be dressed in a uniform which identifies them as a student of North Idaho College's Radiography Technology Program.

Clinical Uniform Standard

Full uniform, including name badge**,** is to be worn when students are in the clinical area and/or representing NIC at any facility. Uniforms may be worn to class when time restrictions prevent students from being able to change prior to clinical.

1. The required uniform will consist of **black shoes, Cherokee brand pewter pants and scrub shirt.** Exact style numbers of clothing will be given out at orientation. Hospital surgical scrubs will be worn for all surgical experiences. Students are expected to wear appropriate under-garments, which are not visible when in uniform. Clothing must be of adequate size, length and style so that normal body mechanics do not cause exposure. Pants must come to the ankles. Scrub shirts will not be tucked in. Undershirts, if worn, must be plain white and short- sleeved.

2. Scrub shirts and the laboratory jacket must include the North Idaho College Radiography Technology Student designation with the NIC logo on the left chest pocket.

3. Name badges must be worn on the upper left side of uniform. Students are to wear name badges at all times in the clinical setting. A radiation monitor must be worn at all times at the collar level. Additionally, students are required to have their markers with them, or they are considered out of uniform.

4. Uniform-style black shoes or black athletic shoes that are well maintained, functional and quiet are preferred. No canvas tennis shoes or sandals are permitted. Clogs with heel straps are allowed (no holes on the top). White, grey or dark color non-patterned socks may be worn with pants.

Students arriving to clinical in violation of the Clinical Uniform Standard will be sent home until they return in proper attire.

Clinical time lost under these circumstances must be made up.

Students will follow institutional dress code standards in all facilities.

Effective: 01/11/10; Revised: 06/04/12, ***06/01/16***

PROGRAM STANDARDS: JRCERT Complaint Resolution Non-compliance **STANDARD: 6.0**

STANDARD

North Idaho College Radiography Technology Program is committed to maintaining the highest standards of program integrity. The following procedures have been developed to resolve any issues or concerns regarding compliance with standards established by the Joint Review Committee on Education in Radiologic Technology (JRCERT).

PROCESS

1. North Idaho College's Radiography Technology Program is fully accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT). We are pleased to follow the comprehensive standards set forth by the JRCERT and it is your right to know these standards and report any allegations of non-compliance to the JRCERT. Located within this Radiography Program Handbook you will find the most up-to-date program outcomes and reports. In addition any JRCERT accredited program information may also be obtained by visiting the JRCERT's Website at (https://www.jrcert.org/) below you will find the reporting allegations excerpt pulled from the JRCERT's website.

2. The JRCERT is required to be responsive to allegations of non-compliance with any of its Standards. Please be advised the JRCERT cannot advocate on behalf of any one student. An investigation into allegations of non-compliance addresses only the program's compliance with accreditation standards and will not affect the status of any individual student. The JRCERT takes seriously and follows up appropriately any allegation that an accredited program is not maintaining compliance with its accreditation standards. Before the JRCERT will take action to investigate the program, however, it must be assured that the complainant has addressed the matter internally. Did you follow the program's/institution's due process through to its final appeal? If you have addressed the matter internally and wish to make a formal complaint, please complete an allegations reporting form. The allegations must reference the specific accreditation standards/objectives with which you believe the program to be in non-compliance. The Standards for an Accredited Program in Radiologic Sciences can be found under the Program and Faculty menu.

3. All records of the complaint will be kept on file in the Program Director's office.

4. In the event that the above actions are not satisfactory, the person initiating the complaint may take the matter to either the Vice President for Instruction or directly to JRCERT.

    - Vice President for Instruction: Telephone number 208.769.3305

    - JRCERT: Telephone number 312.704.5300

Effective: 02/01/08; Revised: 06/16/14, 06/01/16, ***0101/19***

PROGRAM STANDARDS: Confidentiality **STANDARD: 7.0**

STANDARD

Students are to maintain patient confidentiality as outlined by the Health Insurance Portability and Accountability Act (HIPAA). Breach of confidentiality may be in violation of federal and or state statutes and regulations and may be subject to prosecution under law.

It is a primary responsibility of every health care worker to respect the confidentiality of patients and other health team members. "The radiologic technologist respects confidences entrusted in the course of professional practice, respects the patient's right to privacy and reveals confidential information only as required by law or to protect the welfare of the individual or the community" (ASRT, 2003, Code of Ethics). This includes information that is observational, verbal, or in writing.

North Idaho College health programs are committed to honoring each individual's privacy by maintaining their confidentiality. Confidentiality will apply to both the academic and clinical settings. A breach of confidentiality by students may result in immediate termination or dismissal from the program.

PROCESS

Guidelines for Maintaining Confidentiality when Working with Patients:

1. Read and follow agency policies on confidentiality.
2. Discuss individual cases only in the health care or educational setting, and only with health care professionals.
   a. Professional or educational conferences will be held in areas which ensure privacy.
   b. Patients will not be discussed at any time in areas that do not ensure privacy.
   c. Patient-centered discussions are appropriate for learning purposes only, and are **never** otherwise discussed.
   d. The patient shall be referred to by initials only in clinical or classroom conferences. There shall be no patient identifying information on images or reports brought to class from the clinical site.
   e. Always keep medical records and images containing protected health information away from public view
3. If you don't know if data is to be maintained as confidential, ask your instructor.
4. Computer passwords and access codes will not be shared. If a student suspects unauthorized use their password report this to the Clinical Preceptor or supervisor immediately.
5. When disposing of protected health information use appropriate bin, shredder, or send to medical records for shredding.
6. Courteously refuse inappropriate or unauthorized requests for confidential information.
7. Share information only with those who have a legitimate right to know, which will be determined by your Clinical Preceptor. (Right-to-know is based on a **need** to know in order to provide care.)

Effective: 01/16/07; Revised: 06/16/14, ***06/01/16***

PROGRAM STANDARDS: Confidentiality of Student Records **STANDARD: 7.1**

STANDARD

FERPA – FEDERAL EDUCATION RIGHTS AND PRIVACY ACT OF 1974

FERPA is a federal law which protects the privacy of student education records. Generally, NIC must obtain the student's permission to share or release this type of information. Students have the right to review their records and to request corrections to records they believe are inadequate. NIC is not required to gain permission to share directory information about a student. For more information on this law visit the NIC website www.nic.edu, About NIC > Campus Resources > Registrar's Office > Student Privacy (FERPA) or visit the U.S. Department of Education website at www.ed.gov, Laws > FERPA.

Effective: 01/16/07; Revised: 09/17/10, 06/16/14, ***06/01/16***

PROGRAM STANDARDS: Grading Standards **STANDARD: 8.0**

STANDARD

The Health Professions programs adhere to the established North Idaho College policies and procedures regarding grading. Letter grades are used to indicate a student's quality of achievement in a given course. Each of the grades are also assigned an equivalency number, which is used to compute grade point averages. See NIC College Catalog www.nic.edu, +More > Student Resources> Classes > Catalog > 2016-2017 Catalog for additional information on grading, the NIC website www.nic.edu, +More > Student Resources > Campus Resources > Registrar's Office > Academic & Registration Information > Grading Policies, and the Health Professions Student Handbook, Section Two: Health Professions Standards, Grading for further details.

Radiography Technology

1. Each course syllabi will reflect the grading policies and procedures.

2. Students enrolled in the program are expected to obtain a minimum final grade of C+/2.3 in all program courses. Failure to meet this standard is grounds for immediate termination from the program.

3. Assignment of final course grades will be made according to the following criteria:

93-100%	A	4.0	Excellent
90-92	A-	3.7	Excellent
88-89	B+	3.3	Good
83-87	B	3.0	Good
80-82	B-	2.7	Good
78-79	C+	2.3	Average
75-77	C	2.0	Average
70-74	C-	1.7	Average
68-69	D+	1.3	Poor
63-67	D	1.0	Poor
60-62	D-	0.7	Poor
59	F	0.0	Failing
	NR		No Report
	NG		No Grade

ROUNDING OF GRADES: Only final course grades **will** be rounded (using the 10th decimal column) to the next whole number. For example: 75.5 becomes 76 and 75.4 will remain at 75.

INCOMPLETE GRADES: A grade of "**I**" (incomplete grade) may only be recorded for a student whose work is incomplete due to circumstances beyond the student's control. The "**I**" grade must be removed before the student can progress to the next course.

MIDTERM GRADES: Students will receive a midterm grade for didactic and clinical education during the spring and fall terms.

Effective: 05/29/08; Revised: 06/16/14, ***06/01/16***

PROGRAM STANDARDS: Graduation Requirements **STANDARD: 9.0**

STANDARD

All academic and clinical requirements must be met to graduate from North Idaho College's Radiography Technology Program. Students must meet NIC's Associate of Applied Science degree requirements.

Students must have completed all program related courses successfully, including but not limited to:

1. Minimum number of clinical practicum hours,

2. Required ARRT exam competencies and ARRT area competencies,

3. Demonstrate an understanding and acceptance of the principles of Medical Ethics and Professional Conduct as described by the American Registry of Radiologic Technologists.

See Health Professions Student Handbook, Section One: College Policies and Procedures, Graduation for details regarding the graduation ceremony and Application for Graduation.

Effective: 01/16/07; Revised: 06/16/14, ***06/01/16***

PROGRAM STANDARDS: Harassment **STANDARD: 10.0**

STANDARD

The Health Professions programs adhere to the established North Idaho College policies and procedures regarding harassment. Harassment is inconsistent with the efforts to foster an environment of respect for the dignity and worth of all individuals. Harassment of any kind is unacceptable.

Harassment is defined as verbal or physical conduct which has the intent or effect of:

1. Unreasonably interfering with an individual's or a group's educational and/or work performance or,
2. Creating an intimidating, hostile or offensive educational and work environment on or off campus.

Please refer to the NIC Student Handbook, Section 7: Policies.

Effective: 01/16/07, Revised: 12/20/10, 06/16/14, ***06/01/16***

PROGRAM STANDARDS: Occupational Health Risks **STANDARD: 11.0**

STANDARD

To eliminate or minimize occupational exposure to Hepatitis B Virus (HBV), Human Immunodeficiency Virus (HIV) and other blood borne pathogens, students will follow the procedures listed below.

PROCESS

MEETING OSHA BLOOD BORNE STANDARDS

Methods of Eliminating or Minimizing Exposure:

Employee and student protection is to be provided in a manner consistent with a high standard of care using a combination of the following:

1. Engineering and work practice controls.
2. Personal protective clothing and equipment.
3. Training and education.
4. HBV vaccination/positive titer.
5. Signs and labels.

Exposure Control Program:

A. Purpose:

To identify tasks and or positions associated with occupational exposures to blood or other potential infectious materials and to document the schedule of implementation of the measures that will be used. To require the development of procedures to be used in the evaluation of the circumstances surrounding exposure incidents.

B. To include:

1. Universal precaution procedures.
2. HBV vaccine and titer.
3. Training and education, to include:
   a. Understanding the risk
   b. Proper work practices
   c. Engineering controls
   d. Disposal of regulated waste
4. Post exposure evaluation and treatment.

Exposure Determination:

A. Persons at risk of exposure

1. Faculty working in the Health Professions Programs at North Idaho College.
2. Students attending the Health Professions Programs at North Idaho College.

B. Task and procedures involved in occupational risks

1. Specific tasks and procedures included:
   a. Emptying bedpans and urinals
   b. Collection of specimens such as wound drainage or urine.
   c. Disposing of sharps
   d. Disposal of hazardous waste

PROGRAM STANDARDS: Occupational Health Risks, Cont'd **STANDARD: 11.0**

2. Specific jobs
   a. Student: The student will carry out only those tasks and procedures in a clinical setting after being taught.

3. Method of Compliance:
   a. All Health students and faculty will start the series of HBV vaccines prior to beginning the first clinical experience and a follow-up titer six months after the completion of the series.
   b. Should the titer be negative, the student will follow up with booster HBV vaccine.
   c. Students in the Health programs are taught and practice prior to clinical experience in a patient facility:
      1) Standard precautions which includes wearing the appropriate protective clothing and equipment.
      2) Aseptic hand washing techniques.
   d. In addition, students are taught and practice the following skills prior to clinical experience in patient facility:
      1) Disposal of sharps.
      2) Proper disposal of hazardous waste.

4. Implementation of plan:
   a. Health Professions students and faculty follow procedures that have been implemented in each facility.

Effective: 01/16/07; Revised: 06/16/14, ***06/01/16***

PROGRAM STANDARDS: Outside Employment **STANDARD: 12.0**

STANDARD

The Health Professions Division promotes successful student outcomes by recommending students limit the number of hours they work, or abstain from employment, while enrolled in Health Professions programs. Students may be employed during times when there is no scheduled school or clinical/externship hours.

PROCESS

Any student enrolled in the Radiography Technology program that currently holds a Limited Radiographer Certificate or is employed as an uncertified radiographer may be employed outside as a radiologic technologist under the following conditions:

1. They will function under normal program regulations during their scheduled clinical and didactic hours and all program policies shall apply.

2. They will be identified as student radiographers during scheduled school clinical hours.

3. Clinical work done during outside employment as a radiographer will not count towards their clinical hours.

4. Students may not use their NIC radiation dosimeter for outside employment.

Effective: 01/16/07; Revised: 06/16/14, 06/01/16; ***01/01/19***

PROGRAM STANDARDS: Professional Conduct **STANDARD: 13.0**

STANDARD

Students are expected to read and comply with the Student Code of Conduct, which may be found at www.nic.edu/Policy Manual, Section V: STUDENTS > 5.06 E. STUDENT CODE OF CONDUCT > Procedure.

See Health Professions Student Handbook, Section Two: Health Professions Standards, Student Conduct for further details.

In addition, although NOT an all-inclusive list, the following examples are behaviors which violate professional standards of the Radiography Technology Program:

1. Disobedience or noncompliance with clinical expectations
2. Failure to follow the Code of Ethics for the profession
3. Failure to follow the practice standards of the profession
4. Inappropriately using the internet in the laboratory or clinical setting
5. Radiating self, patient, or anyone without a written physician's order
6. Radiation self, patient or anyone unnecessarily to obtain practice or a competency

Unprofessional conduct may be subject to immediate suspension and/or dismissal from a program.

Effective: 01/11/10; Revised: 06/16/14, **06/01/16**

PROGRAM STANDARDS: Radiation Safety **STANDARD: 14.0**

STANDARD

Student's exposure to radiation will be carefully monitored to comply with the Federal Regulations and ALARA principle (Keeping radiation doses As Low As Reasonably Achievable). An exposure over 1 mSv (100 mREM) in one month will be documented. The Program Director and Clinical Preceptor will discuss possible causes and preventative measures with the student. (See "*Documentation of Radiation Monitoring Badge Readings over 1 mSv (100mREM)*" found in this manual)

PROCESS

1. When performing radiologic procedures, students must always remember the cardinal rules of time, distance, and shielding. Keep the radiation exposure time to a minimum. Students and faculty need to keep the most distance as possible from the radiation source and remember to use shielding to protect from radiation exposure.

2. Students using the energized laboratory must request permission from faculty in advance and be supervised by a qualified radiographer who is readily available. Students will be directly supervised in the laboratory until they have achieved competency in radiation safety procedures.

3. Students and faculty will always wear protective apparel or stand behind a lead shield during an x-ray procedure. Protective apparel includes lead (or equivalent) aprons, thyroid shields, and lead lined gloves if the hands may be in the direct beam.

4. During mobile radiography, students and faculty will instruct anyone who is not required to be in the room to leave the area. Announce this in an audible voice and wait for them to leave. Anyone who is not able to leave the room (and within 6 feet) must be provided with protective shielding. Inform anyone who left the area when you are finished.

5. Students and faculty will wear a personal radiation monitor during their clinical rotations and laboratory work. The radiation monitor badge is worn at the collar level and outside the lead apron if an apron is worn. Badges are exchanged quarterly and must be stored in a radiation free location when not in use. Report lost badges to the school so that a replacement will be given. Replacement badge fees are the responsibility of the student. All standard badges fees are included in the student's laboratory fees.

6. Students will be responsible for checking their personal dosimetry report. Reports are available online at www.myldr.com .

7. Students and faculty will not hold patients as a method of immobilization during an x-ray procedure.

8. Pregnant women or minors must never assist in holding a patient during an x-ray.

9. The effective dose limits are 12.5 mSv (1250 mREM) per calendar quarter and 50mSv (5000 mREM) per year. Exposures exceeding 1 mSv (100 mREM) will be investigated by the Program Director.

PROGRAM STANDARDS: Radiation Safety, Cont'd **STANDARD: 14.0**

PROCESS, Cont'd

10. The Program Director will review each radiation dosimeter report to ensure compliance with the dose limits. Students who exceed a tenth of the dose limit will meet with the Program Director in order to investigate. An action plan will be developed to ensure future radiation safety of the student. The action plan may include issuing a monthly dosimeter to the student, clinical rotation adjustments, taking an incomplete that semester (if the dose exceeds the limit), or readmission the following year.

11. Should a student be on leave for an extended period of time, the student may be required to recomplete previous competencies prior to graduation and follow the readmission process (Standard 15.0).

12. Regardless of circumstance, all students must meet requirements prior to graduation.

Effective: 01/16/07; Revised: 02/01/08, 12/17/10, 1/12/11, 06/24/11, 06/16/14, 06/01/16; ***01/01/19***

PROGRAM STANDARDS: Readmission Standard and Procedure **STANDARD: 15.0**

STANDARD

A student may be readmitted one time only (exception, withdrawal due to crisis). See Health Professions Student Handbook, Section Three: Rights and Responsibilities, Readmission.

Effective: 01/16/07; Revised: 10/12/10, 06/16/14, ***06/01/16***

PROGRAM STANDARDS: Student Clinical Supervision **STANDARD: 16.0**

STANDARD

The care and safety of the patient is of primary importance during the education of Radiography Technology students; therefore all students will be supervised during their clinical practicum assignments. Direct supervision, which requires that the staff technologist or Clinical Preceptor observe the student during the entire radiological procedure, will be provided until the student has been evaluated and judged as competent in a given procedure. Students will never operate radiation-producing equipment unsupervised.

PROCESS

1. All students will be directly or indirectly supervised when performing radiographic procedures. The following are definitions of supervision:
   a. Direct supervision requires a qualified radiographer to:
      - review the request in relation to student competency
      - evaluate patient condition in relation to student's competency
      - observe the procedure and review and approve the completed radiographs
   b. Indirect supervision requires that:
      - A qualified radiographer is immediately available to assist a student regardless of the student's competency level. "Immediately available" is defined as the presence of a qualified radiographer within a voices call such as in an adjacent room.
2. Repeat radiographs must be performed under the direct supervision of a qualified radiographer (meaning the technologist must be physically present in the exam room) and the technologist must approve of the student's procedure prior to re-exposure.
3. Students may not be assigned to a radiographic room or area unless a qualified radiographer is also assigned to the specific area.
4. Students judged competent in a specific procedure or area of radiography may perform procedures under indirect supervision (except for critically ill patients). A radiologic technologist must be immediately available if the student needs assistance.
5. The student / technologist ratio for students must be maintained at 1:1 at all times. The only exception to this rule is if there is an uncommon procedure and more than one student can be temporarily assigned to one technologist at that time.
6. Students will not perform any genitourinary (GU) examinations unless under direct supervision of a radiologic technologist.
7. To ensure patient safety in the radiation therapy rotation, students shall not administer radiation treatments to patients.

Mobile (portable) Radiography:

To promote patient safety, quality of care and to protect the student from injury students will be under the direct supervision of a qualified radiologic technologist at all times when performing mobile examinations, including bedside radiography and c-arm fluoroscopy.

Effective: 02/01/08; Revised: 12/20/10, 6/24/11, 06/16/14, 06/01/16; ***01/01/19***

PROGRAM STANDARDS: Student Concerns/Grievance **STANDARD: 17.0**

STANDARD

Students have a process to voice concerns and have their concerns addressed. See Health Professions Student Handbook, Section Three: Rights and Responsibilities, Student Concerns and Grievance for further details.

Effective: 12/19/11; Revised: 06/16/14, ***06/01/16***

PROGRAM STANDARDS: Student Incident/Injury Response and Reporting **STANDARD: 18.0**

STANDARD

If medical treatment is necessary and the incident/injury took place on the North Idaho College campus and Student Health Services is open, the student should go there (unless a life threatening injury, then call 911). If medical treatment is necessary and the incident/injury took place off campus, the student will need to be treated at a local hospital or urgent care facility.

See Health Professions Student Handbook, Section Two: Health Professions Standards, Incident/Injury Response Reporting for further details.

Effective: 01/16/07; Revised: 06/16/14, ***06/01/16***

STANDARD

North Idaho College has procedures in place to protect the pregnant student and her fetus. In the event a student becomes pregnant, it is her right to inform or withhold the information from the program. The Nuclear Regulatory Commission (NRC) has established guidelines for the pregnant worker. The NRC recommends that the equivalent dose limit to the embryo and fetus should not exceed 0.5 rem (5 mSv) over the entire pregnancy or not exceed 0.5 rem/month (0.5 mSv/month).

PROCESS

As a pregnant student radiographer, you may be exposed to a minimal amount of radiation. The following guidelines were made to protect you and your baby. Your fetal dose will be monitored closely and will be limited to 5 mSv (500 mRem) for the entire pregnancy. It is your choice to declare or not declare your pregnancy.

1. Declaration of student pregnancy is voluntary. Students are advised to inform the program director, IN WRITING, of their pregnancy as soon as possible and include the estimated conception date and estimated due date.

2. General radiography assignments will be allowed. During pregnancy, the time spent in fluoroscopy, surgery and on portables, will be carefully controlled.

3. If the student declares the pregnancy, a second radiation monitor will be provided to be worn at the waist level under the lead apron. This monitor will be identified as the fetal dose monitor.

4. The student's radiation exposure will be continuously monitored to ensure that the maximum permissible dose of 5 mSv (500mR) during the nine months is not exceeded. .5mSv (50 mREM / month)

5. When the program director is notified that the student is pregnant, the monthly radiation report will be discussed by the program director and the student.

6. If the student exceeds the maximum gestational dose, she will be withdrawn from all clinical courses for the remainder of her pregnancy. Students may receive an extension to complete the requirements of the remainder of the clinical hours that were missed due to the pregnancy. All attendance, absence, and make-up policies will be equally enforced among all students.

7. If the student must completely withdraw from the Radiologic Technology Program because of pregnancy or delivery, the student may be readmitted into the Program according to the Re-admission procedure found on in the Health Professions Handbook at North Idaho College.

8. In compliance with Federal Law, students may "un-declare" their pregnancy at any time; however, this must also be done "IN WRITING".

I, _____, have read the pregnancy policies for Radiologic Technology Program applicants.

_____ _____

Student Signature Date

Declaration of Pregnancy

As a pregnant Radiologic Technology student: (check one)

1. _____ I am not declaring my pregnancy and will continue in the program **without** modifications or interruptions. I understand a fetal badge will not be ordered.

2. _____ I am declaring my pregnancy and will continue in the program **without** modifications or interruptions. I understand a fetal badge will be ordered when the written declaration of pregnancy is submitted to the program director.

3. _____ I am declaring my pregnancy and will continue in the program with the following modifications. I understand that a fetal badge will be ordered when the written declaration of pregnancy is submitted to the program director.

    a. The student can perform all fluoro procedures such as getting the patient ready, taking any overheads, and assisting the patient after the examination. During the actual fluoroscopy of the patient, the student will remain behind the control panel window and observe to avoid any excess radiation.
    b. The student will be able to go on portable exams with the technologist. She will be able to do everything such as patient positioning, but cannot make the actual exposure. She will need to be out of the room while the technologist makes the exposure. Furthermore, she must wear a lead apron during any exposure to further reduce her exposure levels.
    c. The performances of surgery can be mocked. The student can perform one C-Arm procedure protected with a lead apron to complete their competency for surgery. After the competency is completed the student is to remain out of surgery for the remainder of her pregnancy.

_____ _____

Student Signature Date

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4. _____ I am withdrawing my declaration of pregnancy. I understand that my fetal badge will be discontinued

_____ _____

Student Signature Date

Effective: 02/01/08; Revised: 05/17/11, 06/16/14, ***06/01/16***

EVALUATION OF STUDENT LEARNING

EVALUATION OF STUDENT LEARNING: Clinical Education Evaluation

North Idaho College promotes successful student outcomes and insures a clinical experience which progresses through increasing difficulty by setting certain student performance expectations as outlined in the course syllabus. The successful completion of these tasks are documented by utilizing the following evaluation tools:

PROCESS

1. ARRT Exam Competencies
   Students will perform clinical competency evaluations for each radiographic procedure, see clinical competency plan in the clinical manual.

2. Area Competencies
   Students will perform area competency evaluations (e.g. Fluoroscopy, Surgery, etc.)

3. Student Performance Evaluation
   Students will be evaluated by the Clinical Preceptor using the Student Performance Evaluation. The student will be evaluated on their professional behavior, clinical ability, and technical ability, strengths, and areas of improvement.

4. Self-Evaluation
   Students will submit a self-evaluation each semester of their professional behavior, clinical ability, technical ability, and didactic ability, strengths, areas of improvement, and goals.

Students will meet with the Program Director at the end of the semester to go over their evaluations. Students who consistently score below average or lower will be counseled and placed on probation. Students must achieve scores of 75% at the acceptable, competent level or higher in order to graduate.

Note: Additional information on clinical practicum grades is found in the clinical manual and course syllabi.

Effective: 01/11/10; Revised: 06/16/14, ***06/01/16***

CLINICAL GUIDELINES

CLINICAL GUIDELINES: ARRT Competency Requirements

RADIOGRAPHY DIDACTIC AND CLINICAL COMPETENCY REQUIREMENTS

Eligibility Requirements Effective January 2017*

Candidates for certification are required to meet the Professional Requirements specified in Article II of the *ARRT Rules and Regulations*. This document identifies the minimum didactic and clinical competency requirements for certification referenced in the *Rules and Regulations*. Candidates who complete a formal educational program accredited by a mechanism acceptable to the ARRT will have obtained education and experience beyond the requirements specified here.

Didactic Requirements

Candidates must successfully complete coursework addressing the topics listed in the *ARRT Content Specifications for the Examination in Radiography*.

Clinical Requirements

As part of their educational program, candidates must demonstrate competence in the clinical activities identified in this document. Demonstration of clinical competence means that the program director or designee has observed the candidate performing the procedure, and that the candidate performed the procedure independently, consistently, and effectively. Candidates must demonstrate competence in the areas listed below. NIC has adopted the following requirements that exceed the ARRT standards.

- Ten mandatory general patient care activities.
- Thirty-nine mandatory imaging procedures.
- Fifteen elective imaging procedures to be selected from a list of 35 procedures.
- One elective imaging procedure from the head section.
- Two mandatory imaging procedures from the fluoroscopy studies section (Upper GI or a Barium Enema).

Documentation

The following pages identify specific clinical competency requirements. Candidates may wish to use these pages, or their equivalent, to record completion of the requirements. The pages do NOT need to be sent to the ARRT.

To document that the didactic and clinical requirements have been satisfied, candidates must have the program director (and authorized faculty member if required) sign the ENDORSEMENT SECTION of the **Application for Certification** included in the *Certification Handbook.*

CLINICAL GUIDELINES: ARRT Competency Requirements, Cont'd

Radiography
Clinical Competency Requirements

The clinical competency requirements include the six general patient care activities listed below and a subset of the 66 imaging procedures identified on subsequent pages. Demonstration of competence should include variations in patient characteristics (e.g., age, gender, medical condition).

1. General Patient Care

Requirement: Candidates must demonstrate competence in all six patient care activities listed below. The activities should be performed on patients; however, simulation is acceptable (see footnote) if state or institutional regulations prohibit candidates from performing the procedures on patients.

	General Patient Care	Date Completed	Competence Verified By
1.	CPR		
2.	Vital signs (blood pressure, pulse, respiration, temperature, and pulse oximetery)(5 activites)		
3.	Sterile and aseptic technique		
4.	Venipuncture		
5.	Transfer of patient		
6.	Care of patient medical equipment (e.g., oxygen tank, IV tubing)		

Note: The ARRT requirements specify that certain clinical procedures may be simulated. Simulations must meet the following criteria: (a) the student is required to competently demonstrate skills as similar as circumstances permit to the cognitive, psychomotor, and affective skills required in the clinical setting; (b) the program director is confident that the skills required to competently perform the simulated task will generalize or transfer to the clinical setting, and, if applicable, the student will evaluate related images. Examples of acceptable simulation include: demonstrating CPR on a mannequin, positioning a fellow student for a projection without actually activating the x-ray beam, and performing venipuncture by demonstrating aseptic technique on another person, but then inserting the needle into an artificial forearm or grapefruit.

CLINICAL GUIDELINES: ARRT Radiography Clinical Competency Requirements, Cont'd

2. Imaging Procedures

Requirement: Candidates must demonstrate competence in all thirty-nine procedures identified as mandatory (M). Procedures should be performed on patients; however, up to eight mandatory procedures may be simulated (see previous page) if demonstration on patients is not feasible.

Candidates must demonstrate competence in 15 of the 34 elective (E) procedures. Candidates must select one elective procedure from the head section. Candidates must select either Upper GI or Barium Enema plus one other elective from the fluoroscopy section. Elective procedures should be performed on patients; however, electives may be simulated (see previous page) if demonstration on patients is not feasible.

Institutional protocol will determine the positions or projections used for each procedure.

Demonstration of competence includes requisition evaluation, patient assessment, room preparation, patient management, equipment operation, technique selection, positioning skills, radiation safety, image processing, and image evaluation.

Imaging Procedure	Mandatory or Elective	Date Completed	Patient or Simulated	Competence Verified By
Chest and Thorax				
1. Chest Routine	M			
2. Chest AP (Wheelchair or Stretcher)	M			
3. Ribs	M			
4. Chest Lateral Decubitus	E			
5. Sternum	E			
6. Upper Airway (Soft-Tissue Neck)	E			
Upper Extremity				
7. Thumb or Finger	M			
8. Hand	M			
9. Wrist	M			
10. Forearm	M			
11. Elbow	M			
12. Humerus	M			
13. Shoulder	M			
14. Trauma: Shoulder (Scapular Y, Transthoracic or Axillary)*	M			
15. Clavicle	M			
16. Scapula	E			
17. AC Joints	E			
18. Trauma: Upper Extremity (Nonshoulder)*	M			

* Trauma is considered a serious injury or shock to the body. Modifications may include variations in positioning, minimal movement of the body part, etc.

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CLINICAL GUIDELINES: ARRT Radiography Clinical Competency Requirements, Cont'd

Imaging Procedure	Mandatory or Elective	Date Completed	Patient or Simulated	Competence Verified By
Lower Extremity				
19. Toes	E			
20. Foot	M			
21. Ankle	M			
22. Knee	M			
23. Tibia-Fibula	M			
24. Femur	M			
25. Trauma: Lower Extremity*	M			
26. Patella	E			
27. Calcaneus (Os Calcis)	E			
Head – Candidates must select at least one elective procedure from this section.				
28. Skull	E			
29. Paranasal Sinuses	E			
30. Facial Bones	E			
31. Orbits	E			
32. Zygomatic Arches	E			
33. Nasal Bones	E			
34. Mandible	E			
Spine and Pelvis				
35. Cervical Spine	M			
36. Trauma: Cervical Spine (Cross Table Lateral)*	M			
37. Thoracic Spine	M			
38. Lumbar Spine	M			
39. Pelvis	M			
40. Hip	M			
41. Cross Table Lateral Hip	M			
42. Sacrum and/or Coccyx	E			
43. Scoliosis Series	E			
44. Sacroiliac Joints	E			
Abdomen				
45. Abdomen Supine (KUB)	M			
46. Abdomen Upright	M			
47. Abdomen Decubitus	E			
48. Intravenous Urography	E			

* Trauma is considered a serious injury or shock to the body. Modifications may include variations in positioning, minimal movement of the body part, etc.

CLINICAL GUIDELINES: ARRT Radiography Clinical Competency Requirements, Cont'd

Imaging Procedure	Mandatory or Elective	Date Completed	Patient or Simulated	Competence Verified By
Fluoroscopy Studies – Candidates must select either Upper GI or Barium Enema plus one other elective procedure from this section.				
49. Upper GI Series (Single or Double Contrast)	M			
50. Barium Enema (Single or Double Contrast)	M			
51. Small Bowel Series	E			
52. Esophagus	E			
53. Cystography/Cystourethrography	E			
54. ERCP	E			
55. Myelography	E			
56. Arthrography	E			
Surgical Studies				
57. C-Arm Procedure (Orthopedic)	M			
58. C-Arm Procedure (NonOrthopedic)	M			
Mobile Studies				
59. Chest	M			
60. Abdomen	M			
61. Orthopedic	M			
Pediatrics (age 6 or younger)				
62. Chest Routine	M			
63. Upper Extremity	E			
64. Lower Extremity	E			
65. Abdomen	E			
66. Mobile Study	E			
Geriatrics (age 65 or older)				
62. Chest Routine	M			
63. Upper Extremity	M			
64. Lower Extremity	M			
65. Abdomen	E			
66. Mobile Study	E			

CLINICAL GUIDELINES: Clinical Competency Requirements

Students are required to complete the following Radiologic Procedures for Clinical Competency:

SEMESTER CLINICAL COMPETENCY REQUIREMENTS

SEMESTER	Semester Minimum Requirements
1st Fall	10 Patient Care competencies
1st Spring	8 Exam Competencies
1st Summer	13 additional Exam Competencies Area Competency/s: General Diagnostic, Surgery, Fluoroscopy, and Trauma/ER**.
2nd Fall	15 additional Exam Competencies, Area Competency/s: General Diagnostic, Surgery, Fluoroscopy and Trauma/ER if not already completed.
2nd Spring	18 additional Exam Competencies (Overall total of 64, including the Patient Care Comps) must be completed in order to graduate.

Students must follow the clinical competency plan in order to complete ARRT category competencies. This plan is outlined in the clinical manual and reviewed with every student during program orientation. For additional information on exam categories see the American Registry of Radiologic Technologists (ARRT) clinical competency requirements. Any student may get more than the minimum number of competencies.

*Continued Competencies may not be duplicated within a given semester.

**Students may complete competencies after rotating through specific areas and once competency has been achieved. See the course syllabus for additional information.

Effective: 01/20/10; Revised: 05/10/12, 06/16/14, 06/01/16, ***01/01/19***

CLINICAL GUIDELINES: Clinical Education Record

Clinical education will connect the didactic curriculum in order to provide the student the opportunity to complete required competencies. Clinical and didactic course work for students will not exceed forty (40) hours per week. Students in the Radiography Technology Program are expected to complete the clinical hours during the four clinical semesters of training. Failure to complete the required hours may require an extension of the student's clinical training (see clinical absence information). All students enrolled in the Radiography Technology Program shall be issued timesheets and will be responsible for maintaining these timesheets as a record of their clinical practicum hours. Accurate records of all clinical practicum hours completed will be kept by the student and submitted to the program for record-keeping in order to meet accreditation standards. It will be the responsibility of the Program Director of Radiography to insure the maintenance of timekeeping records for verifying student's clinical hours.

Student clinical hours are usually during the clinical facility's day shift which varies between 7:30/8:30 am until 4/5pm. The students will rotate during the evening and/or weekend shift for additional trauma experience. The evening and weekend assignments will not exceed 25% of the total clinical hours.

PROCESS

Students will be required to submit clinical practicum timesheets throughout their training on a bi-weekly basis. These timesheets will be verified by a Clinical Preceptor.

3. Individual timesheets will be issued each student and be available on-line
4. Students will write in their check-in time, lunch time and check-out time for every clinical day worked
5. Students will obtain a signed verification of time worked from a Clinical Preceptor or supervisor
6. Students will submit the completed and signed timesheet to the program at the end of each time period
7. The timesheets will be kept on file and clinical time recorded into the program's database
8. Failure to submit a timesheet within two (2) weeks of the end of a time period may result in the clinical hours not counting toward the required total
9. Students are expected to keep track of their clinical hours and verify total hours with the Program Director on a regular basis throughout the semester. Students will be held accountable for completing all clinical hours within the semester schedule.

Effective: 06/25/09; Revised: 06/16/14, ***06/01/16***

CLINICAL GUIDELINES: Clinical Expectations/Orientation

Students will report to the designated Clinical Preceptor at the beginning of their clinical shifts and remain at their assigned rotation or area. Management of the student's clinical experience requires that the student is accountable for his or her time and presence. Clinical Preceptors must be aware of the student's whereabouts **at all times** for proper supervision to take place. Students are expected to follow the student code of conduct while at clinical sites.

PROCESS

1. All students are to find and report to the designated Clinical Preceptor or lead technologist at the beginning and end of each shift

2. Students assigned to specific radiographic rooms or areas are to remain in that area. If the student is not directly involved in a patient exam the student should be observing the work of the technologist

3. Students must adhere to all clinical site rules and regulations

4. Students should not use personal cell phones during scheduled clinical hours

5. Students are expected to maintain competency in exams once achieved. Failure to maintain clinical expectations may result in probation or dismissal (see Professional Conduct Standard 13.0 for additional information). Examples of clinical expectations include: patient safety, radiation protection, proper marker placement on images, and professional behaviors. Any student that does not perform at the expected level or endangers patient safety may be dismissed regardless of previous competency attainment. Students that do not maintain competencies on an average patient may have those competencies revoked

ORIENTATION

All students will receive an orientation to their assigned clinical site prior to or the start of their rotation. Students must keep a copy of their health records, CPR card, and liability certificate available for the clinical site as some facilities will request this information. Students are expected to contact the lead Clinical Preceptor to arrange orientation once they receive their clinical schedule. Students are to return verification of facility orientation that includes policies and procedures for hazards (fire, electrical, and chemical) emergency preparedness, medical emergencies, HIPAA, and Standard Precautions.

Effective: 01/16/07; Revised: 12/20/10, 06/16/14, ***06/01/16***

CLINICAL GUIDELINES: Markers

The proper use of markers is considered a competency that needs to be mastered prior to graduation. In order to meet that need, all students are required to have their markers available whenever they are scheduled for a clinical rotation. This requirement will be periodically evaluated by having students demonstrate proof they have markers in their possession.

PROCESS

1. Each student will be required to maintain a spare set of markers. This assures the Program Director that students will always have markers available to them. If a student needs to use their 'spare set' they will be required to purchase a new set to replace the 'spare set'.

2. Should-a-student not have markers during clinical, they will be denied the opportunity to go to their clinical rotation. Time lost due to missing markers will have to be made up.

3. Ordering markers is the responsibility of the student. The program will provide marker resources for students including the template that the student will follow.

4. Since PB anatomical markers are a permanent part of the patient record they must be maintained and used on every image produced.

Effective: 01/11/10; Revised: 06/16/14, 06/01/16, ***01/01/19***

CLINICAL GUIDELINES: Parking at Health Care Facilities

Parking at Health Care Facilities

1. Students and faculty must park in areas designated by the facility when attending scheduled clinical practicum experiences.

2. Specific parking guidelines and location of designated parking areas will be provided by the Clinical Preceptor or facility as a part of clinical orientation.

Effective: 01/16/07; Revised: 06/16/14, ***06/01/16***

CLINICAL GUIDELINES: Student Image Quality Control

Responsibility for checking student images falls to the following:

1. Clinical Preceptors
2. Radiology Supervisors and/or
3. Staff Technologists assigned to the student.

If there is a question regarding the necessity of repeating an image, the above responsible person shall sign the front of the requisition assuming responsibility from the student if the exam is questioned at a later date.

It is the student's responsibility to ask for such verification and if it is not forthcoming to indicate same on the request.

If a student is required to repeat an image, the student must be allowed to see the first image in order to correct any positioning or technical problem.

Examinations that need to be repeated shall be repeated by the person who performed the examination originally. Students shall not repeat examinations for technologists and technologists shall not repeat examinations for students if at all possible. Students repeating an image shall do so under direct supervision.

Effective: 01/11/10; Revised: 06/16/14, ***06/01/16***

APPENDICES

Appendix A

STUDENT PREGNANCY DECLARATION FORM

To: _____

In accordance with the Nuclear Regulatory Commission's regulations at 10 CFR 20.1208, "Dose to an embryo/fetus," I am voluntarily declaring that I am pregnant. I believe I became pregnant in _
(only the month and year need be provided).

I understand the radiation dose to my embryo/fetus during my entire pregnancy will not be allowed to exceed 0.5 rem (5 mSv for the total pregnancy) or 0.05 rem per month (0.5 mSv per month) unless that dose has already been exceeded between the time of conception and submitting this letter. If the dose limit is exceeded during the pregnancy I understand an action plan will be developed (see Standard 19.0).

I also understand that I have the option of withdrawing from this declaration at any time by submitting my request in writing.

_____ _____
Student Signature Date

_____
Student Name (please print)

Effective: 01/16/07; Revised 12/17/10, 05/17/11, 06/16/14, ***06/01/16***

Appendix B

STUDENT PREGNANCY INSTRUCTION ACKNOWLEDGEMENT FORM

On_____I reviewed the student Pregnancy Standard 19, United States Nuclear Regulatory Commission Guide 8.13 Instruction Concerning Prenatal Radiation Exposure, and Guide 8.29 Instruction Concerning Risks from Occupational Radiation Exposure.

I also had the opportunity to discuss any questions that I have related to radiation safety during my pregnancy with the Program Director. I understand and comprehend the information supplied in the Guides and through my discussion with the Program Director. I further understand that I am to wear a radiation dosimeter at the level of the abdomen and under any shielding to be exchanged monthly. This is in addition to the radiation dosimeter that I am to wear at the collar level.

_____ _____
Student Signature Date

_____
Student Name (please print)

Effective: 01/16/07; Revised 06/16/14, **06/01/16**

Appendix C

STUDENT PREGNANCY RELEASE FORM

As a pregnant student radiographer, you may be exposed to a minimal amount of radiation. The following guidelines were made to protect you and your baby. Your fetal dose will be monitored closely and will be limited to 5 mSv (500 mRem) for the entire pregnancy. It is your choice to declare or not declare your pregnancy.

1. Declaration of student pregnancy is voluntary. Students are advised to inform the program director, IN WRITING, of their pregnancy as soon as possible and include the estimated conception date and estimated due date.
2. General radiography assignments will be allowed. During pregnancy, the time spent in fluoroscopy, surgery and on portables, will be carefully controlled.
3. If the student declares the pregnancy, a second radiation monitor will be provided to be worn at the waist level under the lead apron. This monitor will be identified as the fetal dose monitor.
4. The student's radiation exposure will be continuously monitored to ensure that the maximum permissible dose of 5 mSv (500mR) during the nine months is not exceeded. .5mSv (50 mRem / month)
5. When the program director is notified that the student is pregnant, the monthly radiation report will be discussed by the program director and the student.
6. If the student exceeds the maximum gestational dose, she will be withdrawn from all clinical courses for the remainder of her pregnancy. Students may receive an extension to complete the requirements of the remainder of the clinical hours that were missed due to the pregnancy. All attendance, absence, and make-up policies will be equally enforced among all students.
7. If the student must completely withdraw from the Radiologic Technology Program because of pregnancy or delivery, the student may be readmitted into the Program according to the Re-admission procedure found on in the student handbook.
8. In compliance with Federal Law, students may "un-declare" their pregnancy at any time; however, this must also be done "IN WRITING".

I, _____, have read the pregnancy policies for Radiologic Technology Program applicants.

_____ _____

Student Signature Date

Declaration of Pregnancy

As a pregnant Radiologic Technology student: (check one)

1. _____ I am not declaring my pregnancy and will continue in the program **without** modifications or interruptions. I understand a fetal badge will not be ordered.

2. _____ I am declaring my pregnancy and will continue in the program **without** modifications or interruptions. I understand a fetal badge will be ordered when the written declaration of pregnancy is submitted to the program director.

3. _____ I am declaring my pregnancy and will continue in the program with the following modifications. I understand that a fetal badge will be ordered when the written declaration of pregnancy is submitted to the program director.

    a. The student can perform all fluoro procedures such as getting the patient ready, taking any overheads, and assisting the patient after the examination. During the actual fluoroscopy of the patient, the student will remain behind the control panel window and observe to avoid any excess radiation.
    b. The student will be able to go on portable exams with the technologist. She will be able to do everything such as patient positioning, but cannot make the actual exposure. She will need to be out of the room while the technologist makes the exposure. Furthermore, she must wear a lead apron during any exposure to further reduce her exposure levels.
    c. The performances of surgery can be mocked. The student can perform one C-Arm procedure protected with a lead apron to complete their competency for surgery. After the competency is completed the student is to remain out of surgery for the remainder of her pregnancy.

_____ _____

Student Signature Date

---

4. _____ I am withdrawing my declaration of pregnancy. I understand that my fetal badge will be discontinued

_____ _____

Student Signature Date

Effective: 01/16/07; Revised: 06/16/14, 06/01/16; ***01/01/19***

Appendix D

Exit/Withdrawal Interview Form

Student Name: _____

Semester: _____

1. Exit from:
   North Idaho College Radiography Technology Program: _____

2. Reason(s) for Exit:
   Academic _____ Clinical _____ Financial _____ Health _____

   Personal _____ Relocation _____ Other: _____

3. Readmission Policy:
   Reviewed with student _____
   Copy given to student _____
   Sent by mail in lieu of personal interview _____ Date mailed: _____

4. Interview Summary

5. Faculty Recommendation

6. Returned film badge: yes_____no_____North Idaho College ID badge: yes_____no _____

   Clinical Facility Identification badge: yes_____no _____

Student Signature: _____ Date: _____

Program Director Signature: _____ Date: _____

Copy to: Student and Student's Permanent Record

Effective: 01/16/07; Revised 09/29/09, 06/16/14, ***06/01/16***

Appendix E

STUDENT AGREEMENT

All accepted applicants to the Program are expected to sign and abide by the stipulations spelled out in the Student Agreement Form and to abide by all College policies and program standards as written in the Student Manual.

Agreement

In consideration of the granting of admission to North Idaho College's Radiography Technology program, I the undersigned understand and agree to the following:

It is agreed that I have been informed of the existence and location of copies of the Program Master Plan, located in both the Health Professions Division Office and the office of the Program Director.

It is agreed that I understand all program requirements.

I understand that graduation from the Radiography Technology program is contingent upon successful completion of all clinical education and academic course work.

I understand that violations which appear on the criminal background check may result in denied access to a clinical site and therefore inability to complete the program.

I understand that students may be dismissed from the Radiography Technology program for:

1) Failure to adhere to program requirements.
2) Breach of any –rules and regulations of North Idaho College or clinical affiliation site.
3) Failure to maintain the required academic standards.

_____ _____

Student Signature Date

_____

Student Name (please print)

_____ _____

Program Director Signature Date

Effective: 03/27/09; Revised: 06/16/14, ***06/01/16***

Appendix F

Previous Radiation Exposure Form

PREVIOUS RADIATION WORK EXPERIENCE

Prior to entering North Idaho College's Radiography Technology Program:

_____I have not had any previous work experience around radiation

_____I have had previous work experience around radiation

You are responsible for obtaining your previous radiation exposure records and submitting these records to the Program Director of Radiography.

_____ _____
Student Signature Date

_____
Student Name (please print)

Effective: 01/16/07; Revised: 06/16/14, ***06/01/16***

North Idaho College

Health Professions and Nursing

RADIOGRAPHY TECHNOLOGY
Clinical Handbook
2019-2021

Contents

North Idaho College
Radiography Technology Program

Introduction

The North Idaho College Radiography Technology program is designed so that thorough academic preparation will lead the student into the clinical environment. However, the best classroom teaching cannot fully simulate the "real world" of the hospital. Therefore, in order to achieve the program's ultimate goal—to prepare outstanding radiologic technologists—it is essential that effective clinical instruction be available to the student.

To this end, a qualified Clinical Preceptor is necessary to bridge the gap between practice and performance, that is, to ease the transition from the classroom to the clinical setting and eventually to the "real world".

This handbook is designed to give the student, as well as the Clinical Preceptor guidelines to ensure effective clinical learning. Every effort has been made to address all the areas of clinical education so that continuity exists between the academic and clinical setting.

It is the hope of this program that this handbook will help the Clinical Preceptor to provide fair, effective, and professional clinical instruction for each student.

Message to the Clinical Preceptors

Students entering the clinical environment come with very few pre-conceived notions about how the radiology department functions or how their clinical training is going to affect them. Most are scared, many are eager, and all believe that everyone at the site is excited to have them there and will be happy to help them. It doesn't take long for students to gauge the "acceptance" level of the entire radiology department.
As professionals, it is your duty to ensure that students are receiving the best possible training available. This can be an awesome task; there will be times that even the students themselves will interfere in the learning process. Despite this, the task still exists—the student, and especially the profession—deserves the highest level of training.

Hospital Site Responsibilities

By entering into an affiliation agreement with North Idaho College, the clinical site has agreed to provide time and service for the purpose of training students to become Radiologic Technologists. If at some point any of the provisions by the site are no longer being met, it may become necessary to remove students from the site. This is a serious move never taken lightly by either the college or the clinical site. The most important issue at any clinical site is the proper, adequate, quality education available to the students. When a clinical site or the college feels that the time, personnel, and training required by the affiliation agreement and which has been set forth in the JRCERT Standards can no longer be provided, the college should be contacted immediately so that arrangements for uninterrupted continuance of training may be arranged. Changes in administration of the clinical site, serious decreases in patient load, changes in community needs, and financial problems, all may contribute to the necessary removal of students from the clinical site. It is important that the college be informed as soon as the possibility if disaffiliation exists.

Clinical Preceptor

In each clinical setting, a technologist is designated to be the Clinical Preceptor. In addition to their responsibilities for the day-to-day operation of the department, these individuals are responsible for the supervision of the clinical education.

Clinical Preceptors should:

1. Be knowledgeable of the program goals
2. Understand the clinical objectives and clinical evaluation system
3. Understand the sequencing of didactic instruction and clinical education
4. Provide students with clinical instruction and supervision
5. Evaluate student's clinical competence and performance
6. Maintain competency in the professional discipline and instructional and evaluative techniques through continuing professional development
7. Maintain current knowledge of program policies, procedures, and student progress

Clinical Preceptors shall form a ratio of 1:10 at each clinical site. This JRCERT rule states that no more than 10 students shall be assigned to one (1) Clinical Preceptor. In addition, students are held to a 1:1 ratio in relation to technologists. No technologist shall be responsible for more than 1 clinical student at any time throughout the clinical assignment.

Professional Guidance

Students learn by example as well as practice. Being able to perform examinations with technical perfection is only a part of the overall picture of a radiologic technologist. The student must also be proficient in:

- Relationships with other students, faculty, staff and physicians
- Quality performance under stressful conditions
- Desire to improve the profession
- Positive attitudes towards patients and patient care

In order for the student to achieve competence in these areas, the Clinical Preceptor must be an example and strive for improvement through communication with students, technologists and administration. Typically, problems with students' attitudes can be linked to the attitudes of one or more people with whom the student is working. This is not an easy task, but it can be accomplished when reinforcement of these goals occurs through the clinical instruction. For this reason, it is critical that the policies and procedures set forth in the program manual be followed closely.

Discipline

There will be occasions when students are not adhering to the guidelines and need some sort of disciplinary measure. These measures must be consistent and equally served. Specific examples of problems and disciplinary measures for those problems are difficult to make black and white—however, the following is a list of possible disciplinary measures:

1. Counseling—all counseling sessions, whether private or in a group must be documented. Counseling may range from a minor to a severe disciplinary measure. Please contact the Program Director to discuss the counseling and submit the documentation for record keeping.
2. Sending the student to campus—may be used as a disciplinary measure for items that cannot be resolved on the site, or when the best interest of the student and clinical site is better met by sending the student back to campus. Please contact the Program Director prior to taking this action to discuss the situation. Also, please document the incident and submit it for record keeping.
3. Meeting with Program Director—may be used when there is a need for the Clinical Preceptor, student, and program director to meet to discuss disciplinary measures.
4. Removal of the student from the clinical site—this measure requires mutual agreement by both the program and clinical site, and requires documentation prior to the point of removal. Based on the seriousness of the infraction, the student may be removed immediately by the program faculty without previous documentation.
5. Reduction in course final grade—Clinical performance evaluations, competencies, Faculty competencies, Task evaluations, Article Reviews, and Rotation descriptions are all used to calculate clinical grades. Absences and demerits provide cause for grade reduction. Proper evaluation of each student is essential and documentation of specific areas where weakness is shown is critical. If the student challenges the grade, proper documentation must be shown to uphold the grade.

Supervision

Until a student achieves and documents competency in any given procedure, all clinical assignments shall be carried out under the **DIRECT SUPERVISION** of qualified radiographers. The parameters of direct supervision are:

1. A qualified radiographer reviews the request for examination in relation to the student achievement
2. A qualified radiographer evaluates the condition of the patient in relation to the student's knowledge
3. A qualified radiographer is present during the examination process
4. A qualified radiographer reviews and approves the radiographs

In support of professional responsibility for provision of quality patient care and radiation protection, **unsatisfactory radiographs shall be repeated only in the presence of a qualified radiographer, regardless of the student's level of competency.**

After demonstrating competency, students may perform procedures with **INDIRECT SUPERVISION**. Indirect supervision is defined as that supervision provided by a qualified radiographer **immediately available** to assist students regardless of the level of student achievement. **"Immediately available" is interpreted as the presence of a qualified radiographer adjacent to the room or location where a radiographic procedure is being performed.** This availability applies to all areas where ionizing radiation equipment is in use.

Student Employment Procedure

It is not recommended that students work during the program because of the heavy academic load. In addition, work can often interfere with clinical hours and the shift rotations that are required.
Students employed at any clinical facility will not be allowed to receive credit for student clinical time or performances or competencies performed during those working hours. Student time, clinical performances, and competencies will only be performed during regularly scheduled clinical hours. Any student who attempts performances or competencies during paid employee time or any time outside clinical hours may be removed from the program.

Students who are performing duties related to their employment may not wear student program-radiation badges, use student timesheets or wear any part of the student uniform including nametags or program patches.

Students will spend no more than 40 hours per week in the didactic and clinical components of the program.

Clinical Dress Code

It is the belief of the Radiography program faculty that a professional appearance contributes greatly to a professional image for the student and the school. The dress code is established in order to promote a professional image. During each clinical experience, the student is expected to:

1. Uniforms must be modest, conservative, neat, clean, pressed, and appropriate for your department at all times. Appropriate underclothing must be worn and inconspicuous.
2. Sweaters/lab coats should match uniform color.
3. NIC Program name badges will be worn at all times.
4. Shoes must be clean, safe, well fitted and professional in appearance. Shoes must have closed toes and backs, low heels and non-skid soles. Shoes protect employees from exposure to hazards that might injure the foot.
5. Jewelry should be limited to prevent the spread of infection. A wedding band is acceptable. Visible piercings are limited to the ears and should not dangle.
6. Hair (including facial hair) must be neat, clean well groomed, and of a natural occurring hair color. Hair must not interfere with the safe delivery of patient care or the completion of work duties. Long hair in patient care areas must be tied back, pulled up, and away from the collar and face.
7. Nails must be neat and clean and trimmed to 1 mm above the pad. No artificial nails are allowed.
8. Tobacco scents, perfume, after-shave and cologne can be harmful as well as inconsiderate to both patients and peers and will not be worn.
9. Tattoos - Any tattooing on the body must be covered.

Clinical Uniform Standard

Full uniform, including name badge an**,** is to be worn when students are in the clinical area and/or representing NIC at any facility. Uniforms may be worn to class when time restrictions prevent students from being able to change prior to clinical.

1. The required uniform will consist of **black shoes, Cherokee brand pewter pants and scrub shirt.** Exact style numbers of clothing will be given out at orientation. No other outer garments (sweaters or jackets) may be worn with the uniform. Hospital surgical scrubs will be worn for all surgical experiences. Students are expected to wear appropriate under-garments, which are not visible when in uniform. Clothing must be of adequate size, length and style so that normal body mechanics do not cause exposure. Pants must come to the ankles. Scrub shirts will not be tucked in. Undershirts, if worn, must be plain white.

Pre-requisite Paperwork for Entry into the Radiography Technology Program

In order to gain access to the clinical sites that are affiliated with the Radiography Technology Program at North Idaho College, students must ensure that they are healthy and fit for duty. Each student will be required to complete, or have completed, the following forms prior to the first day of clinical rotations. Failure to provide the appropriate

documentation will prevent students from entering the clinical portion of the program and could jeopardize continuance in the program. The Radiography Program participates in a multi-state consortium called Clinical Placement Northwest (CPNW) that acts as a clearing house for clinical requirements and documents. Students will be provided information about access to this site upon acceptance. CPNW will outline all clinical requirements that each student must complete. Below is a simple, but not exhaustive, list of requirements. Please login to your CPNW account for current clinical requirements:

1. PPD (within the past year—must be completed annually)
    a. If more than 1 year old, must have 2-step PPD
2. Record of immunizations to include:
    a. Current Tetanus
    b. Mumps, Measles and Rubella vaccinations
    c. Varicella Titer or 2 Varivax Boosters
    d. Annual Flu
3. Students must have a valid CPR card by the first day of class
    a. CPR certification is offered through the NIC campus.
4. Possible 10 panel Urine toxicology screening including OxyContin screening
5. Criminal Background check
6. Radiography Technology Program Entrance Assessment
7. MRI Safety Form(See Appendix)
8. CPNW modules
9. Recommended Vaccines:
    a. Hepatitis B

Clinical Education Settings and Primary Clinical Preceptors

Clinical Education Settings and Primary Clinical Preceptors

Matthew Nolan RT. R, N
North Idaho College
1000 W. Garden Ave.
Coeur d'Alene, ID 83814
(208) 676-7133 (o)
(229) 977-6496 (c)

Nichole Rouse Kootenai Health 2003 Lincoln Way Coeur d'Alene, ID 83814 (208) 666-2907	Shea Jones Bonner General Hospital 502 N. 3rd Avenue Sandpoint, ID 83864 (208) 265-1142
Julie Nelson Kootenai Outpatient Imaging Center 700 Ironwood Dr. Coeur d'Alene, ID 83814 (208) 666-3200	Steve Kinney Newport Hospital & Health Services 714 West Pine Street Newport, WA 99156 (509) 447-7920
Rachel Lytle Kootenai Outpatient Imaging Center 1300 East Mullen Avenue Post Falls, ID 83854	Josh Hasty Northwest Specialty 1593 East Polston Avenue Post Falls, ID 83854
Gary Trayford Kootenai Ortho Center 700 Ironwood Dr. Coeur d'Alene, ID 83814 (208) 666-3200	

Procedure for Reporting Serious Illness or Disease / Attendance

If students become ill and cannot perform their duties or may be contagious, then they should stay home. They must call the Program Director and the clinical site at least 30 minutes prior to the beginning of their shift. If students become ill at the clinical site, they must notify the Program Director immediately, **before** leaving the facility. The student should make contact daily if the illness will continue to keep them from attending class or clinical. The student will also be required to provide medical documentation of any illness resulting in more than a single absence from class or clinical.

1. The student must inform the program faculty as soon as a serious illness or communicable disease is detected. A serious illness is considered to be any sickness that may continue for more than 1 week. A communicable disease is any disease that can be transmitted directly or indirectly from one person to another.
2. The longevity and seriousness of the illness is evaluated to determine if the student will be able to continue with the course of study.
3. After the student is released from the doctor's care to return to school, a plan between the student and faculty will be made for continuation of educational activities.
4. Accidental exposure to a communicable disease is to be reported to the Program Director who will follow the clinical setting's guidelines. Additionally, the Program Director should be made aware of the exposure.

Although illness does occur, attendance in the clinical setting is crucial to the overall learning environment within this program. As aspiring professionals, it is vital to embrace the characteristics of a strong work ethic. Just as there are rules that govern attendance in a professional job, there are similar rules that must be followed within the program. Students who have excessive absences may be terminated from the program or have to retake clinical courses at the next available semester. **Students are allowed 1 absence from clinical per semester. Each successive absence will result in a 10 point reduction in the overall clinical grade.**

Make-Up Time

All clinical time that is missed must be made up prior to the end of the semester in which the student is absent. This make-up time is to be scheduled with the Program Director. Failure to make up the time by the end of the semester will result in an incomplete grade in clinical practice for the semester. If the time is not made up by the first clinical day of the next semester, the student will receive an "F" in clinical practice. Furthermore, make-up days cannot take place on school holidays. The school campus must be open in order for make-up time to take place. This can be accomplished on faculty leave days or at the conclusion of the semester. In addition, in the event that a student will miss up to 1 hour of clinical time, they will be allowed to make up that time by extending their clinical time on another day, not to exceed 40 hours per week. If more than 1 hour of clinical time will be missed, the entire day must be made up.

Communicable Diseases

Students should use personal protective equipment (PPE) for all procedures in which there may be contact with body fluids (urine, blood, excretion, saliva, etc…) Most contact will be on patients who have not yet been diagnosed, and therefore, the precautionary procedure of wearing PPE's is of utmost importance. Students must follow infection control procedures as outlined in the procedure manual or infection control manual at the clinical site.

Accidents

All accidents that occur while in the clinical area or x-ray lab resulting in patient, hospital personnel, or personal injury, and/or damage to the equipment must be reported to the Program Director immediately. Students may be required to fill out an incident and/or accident report. Students are required to fully understand the proper method of performing procedures and operation of equipment before undertaking the procedure, and must have completed the X-ray Tube and Task sheet.

Orientation for Workplace Hazards

The students will undergo a hospital orientation at their clinical site that will include MSDS and OSHA Guidelines for workplace hazards, fire, safety, hospital codes and policies. The orientation must be completed before attending clinical rotations in the freshman spring semester. Students are also, required to complete an MRI safety video, prescreening checklist, and sign acknowledgement that he/she understand the potential dangers of MRI. (See appendix for forms)

Procedure for Radiation Exposure

Students are not to hold patients or image receptors during radiation exposures. Student's exposure to radiation will be carefully monitored to comply with the Federal Regulations and ALARA principle. (Keeping radiation doses **A**s **L**ow **A**s **R**easonably **A**chievable). An exposure over 100 mREM in one month will be documented. The Program Director and Clinical Preceptor will discuss possible causes and preventative measures with the student. (See "*Documentation of Radiation Monitoring Badge Readings Over 100mRem*" found in this manual)

Procedure on Specialty Exams

During the course of the program, students will have the opportunity to encounter "special" examinations during their clinical internship. In those instances, students may be "invited" to participate by the clinical staff once patient consent has been given.

Mammography Procedure

It is the current requirement of the Joint Review Committee on Education in Radiologic Technology that all radiologic technology programs make every effort to afford the same opportunities for training in all areas equally; male or female. For training in mammography, if the female students are being afforded the opportunity to experience hands-on training in mammography, then the program must document the attempts to equitably provide any male interested in hands-on training in mammography. This position is supported by the JRCERT's (Position Statement on Mammography Clinical Rotations April 2016) and is documented in the programs self-study.

Procedure for Repeat Examinations

In support of professional responsibility for provision of quality patient care and radiation protection, unsatisfactory radiographs must be repeated only in the presence of a qualified radiographer regardless of the student's level of competency. All repeat examinations will require proper documentation. **Students must document any repeat radiographs on the" *repeat sheet*" and on the "*daily practicum*" form and utilize that information to complete the "*Repeat Analysis*" form.**

Any student that repeats a radiograph without a technologist present may be terminated from the clinical component of the Radiography Technology program, which will result in dismissal from the program at the conclusion of the term.

Professional Conduct of the Student

1. You are expected to treat the patients with kindness, courtesy, and respect. Upon initial contact with a patient, introduce yourself and include that you are a student with North Idaho College. Attempt to establish rapport. Once the patient is in the radiography suite, keep the door closed to protect patient privacy and make sure that undressed patients are properly gowned and covered to maintain modesty.
2. Professional behavior is not limited to your conduct with patients. It is reflected in your attitude and in the way you communicate with physicians, supervisors, and other students.
3. Eating and drinking is permitted only in designated areas.
4. All clinical sites, as well as the college campus are "smoke-free" campuses. On campus, smoking is only allowed in a personal vehicle. Please check with each clinical site regarding their rules for designated smoking areas. Respect the rules. Remember, you are a guest.
5. Students will not leave their assigned area at any time without permission.
6. Students will not remain in the Radiology Department after regular assigned hours. If for any reason it is necessary to return or stay late, prior approval must be obtained from the Program Director.
7. When not actively engaged in radiologic work or other duties, students will remain in their assigned areas and not congregate in offices, halls, etc…; additionally, there are always "housekeeping" duties that need to be performed: rooms can be stocked, equipment can be cleaned, etc...
8. **Students are highly encouraged to practice positioning and working with the equipment during down times**. Personal telephone calls are discouraged. Students should not be called from working areas except in an emergency. Never leave a patient to talk on the telephone.
9. **CELLPHONES ARE NOT PERMITTED IN THE CLINICAL AREA!**
10. Studying during slow periods, if not tempered, can become a problem. If there is work to be done, studying should cease. The clinical environment is designed for "hands-on" learning. Classroom activities and time away from school are for studying. The Clinical Preceptors are given full permission to instruct students to put their books away if this becomes a problem.

Drug Screen Procedure

Please be aware that some clinical settings require criminal background checks and 10-panel drug screening* on all people working in their facilities. As a student, you will fall under the policies of the institution in which you will do your clinical rotations. Students must pay for hospital orientation drug tests which may include urine, blood, or Breathalyzer testing.

If students are unable to meet the clinical setting's policies and are denied clinical access by any clinical setting, they may be terminated from the program.

*If you are taking any prescription drug that will or may show up in a drug screen, you must be able to produce a valid drug prescription in your name.

Clinical Environment

You will notice many differences between the academic environment to which you have been accustomed and the clinical environment which you are entering. Most of the differences will prove exciting and stimulating; some will prove to be frustrating and aggravating. How successfully you function and learn in the clinical setting depends, in part, on how you approach and deal with these differences.

Efficient, effective operation of the department to deliver optimal patient services and care is the top priority. This means that the ***patient's welfare is considered first***. This is consistent with the goals and needs of clinical education. Compared to learning activities conducted on campus in the classroom setting, the learning activities in the clinical setting are frequently much less structured. You must take a **more active** and **responsible** role for integrating the academic preparation you had with the individual examinations you are observing and performing.

Generally, in the classroom setting, you work independently as you pursue your academic goals. Teamwork and cooperation among the students is not a necessity to achieve academic goals. In the clinical setting, you must pursue your educational goals within the overall goals of the department to deliver quality patient services efficiently and effectively. Rather than functioning independently of the departmental goals, you become part of the healthcare delivery system and function cooperatively within a team to achieve educational and department goals. This includes not only developing the ability to expand your attention so that it includes the mechanics of producing radiographs of optimal quality, but also being aware of the patient as a person and not simply an exam to be completed.

Developing Proficiencies

Clinical skills can be developed by the following systematic step-by-step approach:

Academic Preparation:	Completed on campus by studying radiographic anatomy and positioning and fundamentals of radiography.
Observation:	Observing registered technologists in the clinical setting
Assisting:	Assisting registered technologists in performing exams
Supervised Trial Performance:	Completing the entire examination under **Direct Supervision** of a registered technologist
Performance Evaluation:	Performing a particular examination by yourself under **direct supervision** and having the technologist do a performance evaluation for that examination.
Performance Maintenance:	Perfecting your skills by performing an examination with **direct or indirect supervision**. If however, a repeat exposure should be necessary, a qualified technologist must be present to provide **direct supervision**.

Clinical Grade Determination

The clinical grade will be determined by averaging grades in the following categories during each semester:

1. Clinical Profile Evaluations
2. Competencies (a specific amount per semester)
3. Task Evaluation Sheets
4. Clinical Assignments (article Reviews, rotation descriptions)
5. Demo Day (students work in the lab performing examinations and critiquing images)
6. Final Examinations (comprehensive written examination)

Additionally, the following items will be reviewed for completeness:

1. Time Sheets (all time shall be accounted for—including make-up days)
2. Daily & Monthly Practicum
3. Repeat Analysis

The clinical grades will be assigned a percentage based on the semester in which the student is enrolled. All clinical requirements are due at certain times throughout the semester (All clinical assignments will be uploaded into the clinical courses in Canvas) ***Failure to turn in clinical forms, etc…will result in a zero for that particular item. Late items will result in a 5 point reduction of the grade per day up to 3 days.***

The following is a breakdown of how grades are calculated per Clinical semester:

Assignment	1st Semester	2nd Semester	3rd Semester	4th Semester
Clinical Profile Evaluations	60%	40%	40%	60%
Clinical Assignments	30%	30%	30%	30%
Demo Day	0%	20%	20%	0%
Final Examination	10%	10%	10%	10%

Student Responsibilities in the Hospital

The primary function of the hospital is patient care. Under no circumstances should the presence of students downgrade the quality of patient care. Therefore, it is your responsibility to:

1. Follow the administrative policies established by the radiology department and the clinical site.
2. Report to your assigned work area on time.
3. Notify the Program Director and Clinical Site at least 15 minutes before your scheduled time in case of illness or absences which are beyond your control.
4. Wear your radiation-monitoring badge as instructed by the program faculty (at the collar level outside of any protective lead aprons or devices.)
5. Always have your lead anatomical side markers while at clinical.
6. Check with a registered technologist before leaving the assigned work center. *You must speak with the Program Director if you are leaving early.*
7. Follow the directions provided by the registered technologist.
8. Ask for advice when indicated. DO NOT experiment with patients. Be industrious and ask questions.
9. Accept constructive criticism and be humble. You are an invited guest at the site.
10. Do not discuss clinical information with patients, relatives, or anyone outside of the radiology department. Furthermore, do not discuss patient information with anyone who does not have a "Need to Know".
11. Be proactive and have a strong intuition. What you gain from your clinical experience primarily rests upon your shoulders. Few, if any technologist will "force" you to come with them to perform an examination. If they are busy, you should be busy with them.

Routine Duties:

1. Students will be assigned to their clinical area by the Program Director.
2. Clinical Rotations are not open to debate. Any changes must be approved by the Program Director. Failure to be in your assigned clinical area may result in disciplinary actions.
3. Students will be responsible for:
    a. Introducing themselves to the staff technologists upon entering a new clinical site.
    b. Introducing themselves to patients upon initial contact and making the patient aware that they are a student at North Idaho College.
    c. Being respectful to all staff, peers, physicians and patients in the clinical site. Remember, you are representative of the college and will behave in a way that brings honor and dignity to our institution.
    d. Always maintain integrity and behave in a way that is morally upright.
    e. Performing all examinations assigned to them by a staff technologist.
    f. Checking all supplies and linen in the area to which assigned at the start of each shift.
    g. Keeping their assigned areas neat and clean.
    h. Shielding the patient whenever possible.
    i. Maintaining a professional appearance and attitude.
4. Students will not leave their assigned areas for break, lunch, or at the end of the day until all work assigned to their room has been completed, or until relieved by the Clinical Preceptor or other supervisory personnel. Immediately upon returning from break or lunch, the student will report to the technologist in charge of their assigned area.

Clinical Hours

The student's clinical training varies according to the semester in which they are in and the site at which they are rotating. Clinical time is slowly added over each semester as knowledge is gained. This allows the student to carefully apply the knowledge that they have learned in a progressive manner.

The following chart demonstrates the clinical schedule per semester:

	1st Semester	2nd Semester	3rd Semester	4th Semester
Hours in Clinical Per week	18	18	24	30

In addition to the "day shift" rotations, an evening shift and weekend shifts will also be scheduled multiple times throughout the program. This gives the student the opportunity to see how the department changes with a reduction in staff, and also provides them more of a 1 on 1 experience with the technologists. In accordance with the JRCERT rules, evening and weekend shifts will not comprise more than 25% of the total clinical hours attained by any student in the Radiography Technology program. The Program Director bears the responsibility of assuring that clinical hours are established accordingly.

Breaks may be taken as time permits. The lunch period is 30 minutes, scheduled by the Clinical Preceptor.

Time sheets are available to the students online through the clinical courses in Canvas. A student must have the timesheet signed by the Clinical Preceptor or registered technologist **that day**. **Time sheets should not be signed after the date of attendance.** These time sheets should be kept in the clinical notebook and submitted in the appropriate drop box in Canvas when completed. Any falsification of records for time and attendance will result in disciplinary action, up to and including program termination.

Students are assigned to multiple clinical educational settings during the program. Performance of clinical procedures is supervised by Registered Technologists. Clinical performance is evaluated by registered technologists, the Clinical Preceptor, or the Program Director and all clinical forms are signed by them. On rare occasions, at the discretion of the Clinical Preceptor (within the site) or by the Program Director, (site to site) the student will be shifted from the scheduled area to an area of greater need of patient care. All changes in schedules or clinical assignments will be made through the Program Director.

Clinical Rotation Assignments

RADT 116: CLINICAL RADIOGRAPHY I (Freshman Spring)

This course introduces students to the hospital clinical setting and provides an opportunity for students to participate in or observe radiographic procedures learned in RADT112/112L. Topics include: orientation to hospital areas and procedures; orientation to mobile/surgery; orientation to radiography and fluoroscopy; participation in and/or observation of procedures related to body cavities, the shoulder girdle, upper extremities, and lower extremities. Student activities are under **direct supervision**.

Areas of Rotation and Emphasis

Observe and Assist

Patient Transport	2 days/week
Routine Radiography / Fluoroscopy	
Trauma Radiography	
Surgical and Portable Radiography	
Introduction to PACS	

Active Participation

Routine Radiography / Fluoroscopy

Focus Areas

Thorax, Abdomen, Upper extremities, and Lower extremities

RADT 119: CLINICAL RADIOGRAPHY II (Freshman Summer)

Continues introductory student learning experiences in the hospital setting. Topics include: equipment utilization; exposure techniques; performance and/or observation of routine projections of the lower extremities, pelvic girdle, and spine; performance and/or observation of procedures related to the gastrointestinal (GI), genitourinary (GU), and biliary systems; and performance and/or observation of procedure related to minor radiologic procedures. Execution of radiographic procedures will be conducted under **direct and indirect supervision.**

Areas of Rotation and Emphasis

Observe and Assist

Routine Radiography / Fluoroscopy	2 days/week
Surgical and Portable Radiography	
Trauma Radiography	

Active Participation

Routine Radiography / Fluoroscopy
Surgical and Portable Radiography
Thorax, Abdomen, Upper extremities

Focus Areas

Lower extremities, Vertebral Column, Gastrointestinal Tract

RADT 220: CLINICAL RADIOGRAPHY III (Sophomore Fall)

Provides students with continued hospital setting work experience. Students continue to develop proficiency in executing procedures introduced in Radiographic Procedures. Topics include: patient care; behavioral and social competencies; performance and/or observation of minor special procedures, special equipment use, and participation in and/or observation of cranial and facial radiography. Execution of radiographic procedures will be conducted under **direct and indirect supervision**.

Areas of Rotation and Emphasis

Observe and Assist

Routine Radiography / Fluoroscopy	3 days/week
Surgical and Portable Radiography	
Computerized Tomography	

Active Participation

Routine Radiography / Fluoroscopy
Trauma Radiography
Surgical and Portable Radiography
Lower extremities, Vertebral Column, Gastrointestinal Tract

Focus Areas

Skull, Sterile Technique, Advanced Fluoroscopic Procedures

RADT 221: CLINICAL RADIOGRAPHY IV (Sophomore Spring)

Provides students with continued hospital setting work experience. Students demonstrate increased proficiency levels in skills introduced in all of the radiographic procedures courses and practiced in previous clinical radiography courses. Topics include: patient care; behavioral and social competency; advanced radiographic anatomy; equipment utilization; exposure techniques; sterile techniques; integration of procedures and/or observation of angiographic, interventional, minor special procedures; integration of procedures and/or observation of special equipment use; integration of procedures and/or observation of routine and special radiographic procedures; and final completion of all required clinical competencies. Execution of radiographic procedures will be conducted under **direct and indirect supervision.**

Areas of Rotation and Emphasis

- Focus Areas
  - Completion of remaining competencies — 3 days/week
  - Introduction to advanced modalities
- Active Participation
  - Routine Radiography / Fluoroscopy
  - Trauma Radiography
  - Surgical and Portable Radiography
  - Advanced Fluoroscopic Procedures
- Observe and Assist
  - Computerized Tomography
  - MRI
  - Interventional Procedures
  - Nuclear Medicine

Competency Evaluations

Starting with the Clinical Radiography I, the student will perform unassisted radiographic procedures under **DIRECT SUPERVISION** of a registered technologist for evaluation and grade. A total of fifty-four (54) (39 mandatory and 15 electives—Upper GI and Barium Enema have been deemed mandatory for this program) ARRT Competencies must be completed in order to graduate from the Radiography Technology program.

The forms for the competency evaluations are contained online. Each student is required to print copies of the evaluation sheets that they will need for that semester and keep those copies in their clinical notebooks. A registered technologist will fill out the competency sheet during the performance of the examination. Anatomy sections will be completed when appropriate performances are completed.

Students must inform the technologist **before** beginning the study that they wish to demonstrate competency on an examination. Competencies **will not** be given if the student has not clearly stated that they wish to attempt a competency check **prior** to the start of the study. Students must be aware of the protocols for each site that they are attempting to perform competency. There will be no communication between students and technologists or other students during a competency. **Students are required to provide technical factors for each exam**.

In the event that a student "fails" a competency examination, the competency form will be kept by the Clinical Preceptor and given directly to the clinical coordinator.

Although the minimum requirements for each semester are listed below, students are highly encouraged to "work ahead" to finish competency requirements earlier in the program whenever possible.

Clinical notebooks must be kept with the student at all times during clinical rotations until graduation from the program. The students will upload all clinical documents into the appropriate Canvas folder by scanning them into a PDF file. All documents are due by the assigned deadline in the syllabus.

Competencies will be completed as follows:

2nd Semester	8
3rd Semester	13 (21)
4th Semester	15 (36)
5th Semester	18 (54)

Clinical competencies **must** be performed at the students' assigned clinical site during assigned clinical time. This JRCERT rule must be followed.

ALL clinical competencies must be completed prior to graduation. The clinical notebook must be with you when you enter your clinical rotations. It is your responsibility to document your exams and repeats and to have them readily available when you are in the hospital.

Clinical Competency Categories

2nd SEMESTER
Chest
Bony Thorax
Abdomen
Upper extremities
Lower extremities

8 New competencies

3rd SEMESTER
Chest
Bony Thorax
Abdomen
Upper extremities
Lower extremities
Pelvic Girdle
Spines
Thoracic, Cervical, Lumbar, Pelvis and Sacroiliac joints.
Contrast studies
(Esophagus, Upper GI, Small Bowel,
Barium Enema, IVP Cystogram, Digital Fluoroscopy and radiography)

13 New Competencies

4th SEMESTER
Cranium
Pelvic Girdle
Spines
Thoracic, Cervical, Lumbar, Pelvis and Sacroiliac joints.
Contrast studies
(Esophagus, Upper GI, Small Bowel,
Barium Enema, IVP Cystogram, Digital Fluoroscopy and radiography)

15 New Competencies

5th SEMESTER
Cranium
Pelvic Girdle
Spines
Thoracic, Cervical, Lumbar, Pelvis and Sacroiliac joints.
Contrast studies
(Esophagus, Upper GI, Small Bowel,
Barium Enema, IVP Cystogram, Digital Fluoroscopy and radiography)

18 New Competencies

Clinical Competency Plan

Each student enrolled in the Radiography Technology Program will be responsible for documentation of competency for radiographic examinations and procedures. The clinical competency evaluation is designed to ensure that the student has successfully combined knowledge gained in the classroom and the laboratory with the clinical aspects of his/her training. As previously stated, students must complete a total of fifty-two (54) (39 mandatory and 15 electives—Upper GI and Barium Enema have been deemed mandatory for this program) competencies in order to graduate from the Radiography Technology Program.

Student observation in clinical education begins with an observation period and moves into a more active phase with the student assisting a registered radiologic technologist in the completion of assigned tasks. As the student gains experience in various procedures, he/she will gradually move into an independent clinical performance stage, actually performing radiographic procedures under the **indirect supervision** of a radiologic technologist.

A specific number of radiologic examinations commonly performed in the radiology department are required for competency. After a student has been graded on a performance exam in the laboratory environment, he or she may then begin the competency examinations under **direct supervision**. Students are required to perform two (2) practices on a particular exam prior to attempting competency. Competency for an exam is achieved when a student has performed the specified number of exams and the competency has been achieved with a passing grade. Failure on any portion of the competency exam results in immediate failure of the exam. The student must repeat the examination and cannot obtain higher than a 90% on a repeated competency. Each failure will constitute an additional attempt up to a maximum of three attempts. A student cannot achieve higher than 80% on the third attempt. If the student fails the third and final attempt, he/she will return to the laboratory to identify problem areas and receive additional instruction.

Projections and examinations will vary among the clinical sites. Students are responsible for understanding which views are parts of the standard protocol at the site that they are located. If the site does not do, at least, the minimum views that are required for that competency, then the student may not perform a competency on that examination. For example, scout views for MRI are often AP and Lateral only. If that is normally the number of films taken for this examination, then competency may be obtained; however, if the examination normally requires obliques in order to be complete, then competency cannot be obtained for this particular examination.

Clinical performances and competencies **must** be performed at the student's assigned clinical site during assigned clinical times. This JRCERT rule must be followed.

The clinical competency plan is designed to allow each student to progress at an individual rate with gentle guidance. All competency examinations must be completed before the end of the program, for the student to be eligible for graduation.

Clinical Competency Requirements

Imaging Procedure	Mandatory or Elective
Chest & Thorax	
Chest Routine	M
Chest AP (Wheelchair or Stretcher)	M
Ribs	M
Chest Lateral Decubitus	E
Sternum	E
Upper Airway (Soft-Tissue Neck)	E
Upper Extremity	
Thumb or Finger	M
Hand	M
Wrist	M
Forearm	M
Elbow	M
Humerus	M
Shoulder	M
Trauma: Shoulder (Scapular Y, Transthoracic or Axillary)*	M
Clavicle	M
Scapula	E
AC Joints	E
Trauma: Upper Extremity (Non-Shoulder)*	M
Lower Extremity	
Toes	E
Foot	M
Ankle	M
Knee	M
Tibia-Fibula	M
Femur	M
Trauma: Lower Extremity *	M
Patella	E
Calcaneus (Os Calcis)	E
Head--Candidates must select one elective procedure from this section	
Skull	E
Paranasal Sinuses	E
Facial Bones	E
Orbits	E
Zygomatic Arches	E
Nasal Bones	E
Mandible	E
Temporomandibular Joints	E
Surgical Studies	
C-Arm Procedure (Requiring Manipulation to Obtain More Than One Projection)	M
Surgical C-Arm Procedure (Requiring Manipulation Around a Sterile Field)	M
Spine and Pelvis	
Cervical Spine	M
Thoracic Spine	M
Lumbar Spine	M
Cross Table (Horizontal Beam Lateral Spine)	M
Pelvis	M
Hip	M
Cross Table (Horizontal Beam Lateral Hip)	M
Sacrum and/or Coccyx	E
Scoliosis Series	E
Sacroiliac Joints	E
Abdomen	
Abdomen Supine (KUB)	M
Abdomen Upright	M
Abdomen Decubitus	E
Intravenous Urography	E
Fluoroscopic Studies	
Upper GI Series (Single or Double Contrast)	M
Barium Enema (Single or Double Contrast)	M
Small Bowel Series	E
Esophagus	E
Cystography / Cystourethrography	E
ERCP	E
Myelography	E
Arthrography	E
Hysterosalpingography	E
Mobile Studies	
Chest	M
Abdomen	M
Orthopedic	M
Pediatrics	
Chest Routine	M
Upper Extremity	E
Lower Extremity	E
Abdomen	E
Mobile Study	E
Geriatrics	
Chest Routine	M
Upper Extremity	M
Lower Extremity	M

Simulation of Exams

Simulation studies are highly discouraged. Exams that are simulated are worth 50 points instead of 100 points. Additionally, students must meet very strict requirements in order to simulate a study. Of the examinations listed below, all are considered "Elective" Competencies according to the ARRT.

Simulation Studies for the Student's Last Semester

- **Sternum**
- **Soft tissue neck**
- **A/C joints**
- **Patella**
- **Calcaneus**
- **Facial Bones**
- **Orbits**
- **Zygomatic Arches**
- **Nasal Bones**
- **Mandible**
- **Scoliosis Series**
- **Sacroiliac Joints**
- **Scapula**
- **Sacrum /Coccyx**
- **AC Joints**

In order to comp with a simulation the student must:

(a) The student is required to competently demonstrate skills as similar as circumstances permit to the cognitive, psychomotor, and affective skills required in the clinical setting.
(b) Student must evaluate real images for anatomical landmarks and positioning errors.

The program director is confident that the skills required to competently perform the simulated task will generalize or transfer to the clinical setting.

Per the ARRT

Examples of acceptable simulation include: demonstrating CPR on a mannequin; positioning a fellow student for a projection without actually activating the x-ray beam, and evaluating an image from a teaching file; performing venipuncture by demonstrating aseptic technique on another person, but then inserting the needle into an artificial forearm or grapefruit.

All simulations must be performed in the campus laboratory. There is no exception to this rule.

Forms That the CP or RT Completes

Time Sheet

This form documents the time the student arrives at the clinical site and leaves the clinical site. The Clinical Preceptor or RT acknowledges the times that are recorded and documents their approval by initialing the form in the appropriate clinical day and time. This is completed on a daily basis. This form will stay in the clinical notebook until notebooks are checked. As time sheets are completed, they must be uploaded into the appropriate folder so that the program director can ensure proper clinical attendance.

Make-up Sheet

In the event that a student has missed a clinical day, a make-up day will be scheduled by the program director. Upon making up the missed hours, the technologist will sign the make-up sheet documenting that the student was there on that day and that the hours have been satisfied. This form will be uploaded into the appropriate Canvas folder.

Clinical Profile Evaluations

This form is completed at the end of each clinical rotation. It is designed to give an overview of the student's conduct within the clinical setting. These forms should be completed by the Clinical Preceptor; however, the RT who has spent the majority of time with the student on their rotation should have strong input in the evaluation process. If the Clinical Preceptor is not the person who fills out the form, they are required to sign the form under the technologist's name indicated that they have reviewed it.

It is the student's right to know how their performance is perceived or what changes are necessary to improve. This evaluation is also a time to emphasize strengths and areas in which the student excels. This form will be uploaded into the appropriate Canvas folder.

Task Sheet(s)

Patient Care

This form should be completed during the student's first semester in the Radiography Technology Program. It is a one-time form that demonstrates that the student has an understanding of what could or should be expected during a typical patient interaction. The CP or RT will complete this form and sign it indicating that the requirements have been successfully met. This form will be uploaded into the appropriate Canvas folder.

Geriatric

This form should be completed during the student's first semester in the Radiography Technology Program. It is a one-time form that demonstrates that the student has interacted with geriatric patients and understands their specific needs. The CP or RT will complete this form and sign it indicating that the requirements have been successfully met. This form will be uploaded into the appropriate Canvas folder.

Pediatric

This form should be filled out during the student's first semester in the Radiography Technology Program. It is a one-time form that demonstrates that the student has interacted with pediatric patients and understands their specific needs. The CP or RT will complete this form and sign it indicating that the requirements have been successfully met. This form will be uploaded into the appropriate Canvas folder.

Radiation Protection

This form should be completed during the student's first semester in the Radiography Technology Program. It is a one-time form that demonstrates that the student has a basic understanding of radiation protection and how to safely interact within the energized radiation environment. The CP or RT will complete this form and sign it indicating that the requirements have been successfully met. This form will be uploaded into the appropriate Canvas folder.

Evening Rotation

This form should be completed during each evening rotation in the Radiography Technology Program. This form should demonstrate progressive competency depending on the semester that the student is assigned to. The CP or RT will complete this form and sign it indicating that the requirements have been successfully met. This form will be uploaded into the appropriate Canvas folder.

X-Ray Tube and Table

This form should be completed during each new rotation in the Radiography Technology Program. **This form shall be completed within the first two-weeks of a new clinical rotation assignment**. Once this form has been completed on a particular room, it does not need to be repeated. It is a one-time form that demonstrates that the student has the basic knowledge and skills required to successfully manipulate the radiography equipment in each room of every clinical location. **This form must be completed prior to attempted competency within a room**. The CP or RT will complete this form and sign it indicating that the requirements have been successfully met. This form will be uploaded into the appropriate Canvas folder.

AART Category Competency Evaluation

ARRT Category Competency Evaluation

This form should be completed each time a student attempts to prove competency on a specific examination. The **CLINICAL COMPETENCY PLAN** (outlined above) lists the specific requirements for attempting and evaluating competency. The CI or RT will complete this form and sign it indicating that the requirements have been successfully met. This form will be uploaded into the appropriate Canvas folder.

C-Arm Competency Evaluation

This form should be completed each time a student attempts to prove competency on a C-Arm examination. The **CLINICAL COMPETENCY PLAN** (outlined above) lists the specific requirements for attempting and evaluating competency. The CP or RT will complete this form and sign it indicating that the requirements have been successfully met. This form will be uploaded into the appropriate Canvas folder.

Venipuncture Competency Evaluation

This form should be completed when a student attempts to prove competency on a venipuncture procedure. The **CLINICAL COMPETENCY PLAN** (outlined above) lists the specific requirements for attempting and evaluating competency. The CI or RT will complete this form and sign it indicating that the requirements have been successfully met. This form will be uploaded into the appropriate Canvas folder. Like all other competency checks, this competency is mandated by the ARRT.

Minor Rotation Evaluations

Magnetic Resonance Imaging

This form should be completed during the student's rotation in MRI. It is a form that demonstrates that the student has a basic understanding of magnetic resonance imaging and how to safely interact within the MR environment. As with all minor rotation evaluations, there is a specific list of questions that must be answered in order for this form to be deemed complete. The CP or RT will complete this form and sign it indicating that the requirements have been successfully met. This form will be uploaded into the appropriate Canvas folder.

Computerized Tomography

This form should be completed during the student's rotation in CT. It is a form that demonstrates that the student has a basic understanding of computerized tomography and how to safely interact within the CT environment. As with all minor rotation evaluations, there is a specific list of questions that must be answered in order for this form to be deemed complete. The CP or RT will complete this form and sign it indicating that the requirements have been successfully met. This form will be uploaded into the appropriate Canvas folder.

Invasive Cardiovascular / Special Procedures

This form should be completed during the student's rotation in invasive cardiovascular / special procedures. It is a form that demonstrates that the student has a basic understanding of the interventional radiology environment and how to safely interact with the equipment, personnel, and sterile field. As with all minor rotation evaluations, there is a specific list of questions that must be answered in order for this form to be deemed complete. The PI or RT will complete this form and sign it indicating that the requirements have been successfully met. This form will be uploaded into the appropriate Canvas folder.

Nuclear Medicine

This form should be completed during the student's rotation in nuclear medicine. It is a form that demonstrates that the student has a basic understanding of nuclear medicine and how to safely interact within that environment. As with all minor rotation evaluations, there is a specific list of questions that must be answered in order for this form to be deemed complete. The CP or RT will complete this form and sign it indicating that the requirements have been successfully met. This form will be uploaded into the appropriate Canvas folder.

Ultrasound

This form should be completed during the student's rotation in Ultrasound. It is a form that demonstrates that the student has a basic understanding of sonography and how to interact with patients and staff members within that environment. As with all minor rotation evaluations, there is a specific list of questions that must be answered in order for this form to be deemed complete. The CP or RT will complete this form and sign it indicating that the requirements have been successfully met. This form will be uploaded into the appropriate Canvas folder.

Forms that the Student Completes

Daily Practicum

This form outlines the procedures that the student is directly involved with on a daily basis. The level of interaction can be **Aided or Performed**. The student must list the date, the accession number of the examination, the type of examination that was performed, the patient's age, the level of interaction, number of films, and number of repeated images (if any). This form will be uploaded into the appropriate Canvas folder.

Monthly Practicum

This form outlines the procedures that the student is directly involved with on a monthly basis. The level of interaction can be **Aided or Performed**. The student must add the number of films completed under a

particular category taken from the daily practicum and enter the information on this form. Additionally, the patient ages are important to note and must also be completed under their respective sections. This form will be uploaded into the appropriate Canvas folder.

Repeat Analysis

Although this evaluation is not directly a part of the student's grade, the repeat analysis can help the Clinical Preceptor and the student to determine problem areas and to plan for improvement. It is important that the student keep a record of all examinations including the number of repeated films, and the reason for the repeat on the "Daily Practicum" form. This information will be used in conjunction with the "Repeat Analysis" form to determine the primary reason for repeated radiographs and the percentage of repeats. This form will be completed each rotation. This form will be uploaded into the appropriate Canvas folder.

Rotation Experiences

This evaluation tool is not a form, but rather an opportunity for the student to reflect on their experiences at each clinical rotation and describe the experience that they had and ascertain what they have learned from that experience. Furthermore, it is an opportunity for feedback from the student to the program faculty regarding the clinical staff at each of the clinical sites. This form will stay in the clinical notebook until notebooks are checked. During the Advisory Committee meetings, anonymous excerpts from these findings will be shared with the clinical management staff regarding their technologists.

Article Critique

This evaluation tool is not a form; however, it is an opportunity to engage the student in professional enrichment. Because registered radiologic technologists must obtain continuing educational units upon becoming licensed, this tool serves as an opportunity for students to begin implementing that practice into their professional life by requiring them to read professional journal articles, summarize the information and relate it to their current clinical experiences. This process also aids the student in staying abreast with current trends, technology and best practice models that are happening within the field of Radiologic Technology. Students are required to find an article that is closely related to the field of radiology. One (1) article critique will be due each semester. This form will be uploaded into the appropriate Canvas folder.

Clinical Preceptor Evaluation and Feedback

This evaluation tool is used to evaluate the Clinical Preceptors at each site to determine how their interactions with students are perceived. This is an ongoing process to ensure that the Clinical Preceptors are performing their duties and maintaining the appropriate level of interest and concern for the students overall success. These evaluation forms are due at the end of each rotation and will stay in the clinical notebook until notebooks are checked. The student information will remain confidential; however, the findings will be shared with the Clinical Preceptor to promote continual achievement and motivation.

North Idaho College
Health Professions and Nursing

Documentation of Radiation

Radiography Technology Program
Documentation of Radiation Monitoring Badge Reading over 1 mSv (100 mRem)

Student: _____ Date: _____
Clinical Site: _____
Radiation Badge Reading: _____mSv for the month of _____

If a student's radiation badge reading is over 100 mREM for any month, the following procedure will be followed and documented:

		DATE
1.	Discussion between student and program director concerning Reasons for overexposure.	_____
2.	Discussion with the Clinical Preceptor concerning possible reasons for overexposure.	_____
3.	Recommendations made by the Clinical Preceptor to prevent future overexposure.	_____

POSSIBLE REASONS AND RECOMMENDATIONS
_____
_____
_____
_____

_____ _____
Signature of Student Date

_____ _____
Signature of Program Director Date

_____ _____
Signature of Clinical Preceptor Date

North Idaho College
Health Professions and Nursing

Procedure on Pregnancy

As a pregnant student radiographer, you may be exposed to a minimal amount of radiation. The following guidelines were made to protect you and your baby. Your fetal dose will be monitored closely and will be limited to 5 mSv (500 mRem) for the entire pregnancy. It is your choice to declare or not declare your pregnancy.

1. Declaration of student pregnancy is voluntary. Students are advised to inform the program director, IN WRITING, of their pregnancy as soon as possible and include the estimated conception date and estimated due date.
2. General radiography assignments will be allowed. During pregnancy, the time spent in fluoroscopy, surgery and on portables, will be carefully controlled.
3. If the student declares the pregnancy, a second radiation monitor will be provided to be worn at the waist level under the lead apron. This monitor will be identified as the fetal dose monitor.
4. The student's radiation exposure will be continuously monitored to ensure that the maximum permissible dose of 5 mSv (500mR) during the nine months is not exceeded.
   (.5mSv (50 mREM) / month)
5. When the program director is notified that the student is pregnant, the monthly radiation report will be discussed by the program director and the student.
6. If the student exceeds the maximum gestational dose, she will be withdrawn from all clinical courses for the remainder of her pregnancy. Students may receive an extension to complete the requirements of the remainder of the clinical hours that were missed due to the pregnancy. All attendance, absence, and make-up policies will be equally enforced among all students.
7. If the student must completely withdraw from the Radiography Technology Program because of pregnancy or delivery, the student may be readmitted into the Program according to the Re-admission procedure found on in the program handbook at North Idaho College.
8. In compliance with Federal Law, students may "un-declare" their pregnancy at any time; however, this must also be done "IN WRITING".

I, _____, have read the pregnancy policies for Radiography Technology Program applicants.

_____ _____ _____

Student Signature Date

Declaration of Pregnancy

As a pregnant Radiography Technology student: (check one)

1. _____ I am not declaring my pregnancy and will continue in the program **without** modifications or interruptions. I understand a fetal badge will not be ordered.

2. _____ I am declaring my pregnancy and will continue in the program **without** modifications or interruptions. I understand a fetal badge will be ordered when the written declaration of pregnancy is submitted to the program director.

3. _____ I am declaring my pregnancy and will continue in the program with the following modifications. I understand that a fetal badge will be ordered when the written declaration of pregnancy is submitted to the program director.
    a. The student can perform all fluoro procedures such as getting the patient ready, taking any overheads, and assisting the patient after the examination. During the actual fluoroscopy of the patient, the student will remain behind the control panel window and observe to avoid any excess radiation.
    b. The student will be able to go on portable exams with the technologist. She will be able to do everything such as patient positioning, but cannot make the actual exposure. She will need to be out of the room while the technologist makes the exposure. Furthermore, she must wear a lead apron during any exposure to further reduce her exposure levels.
    c. The performances of surgery can be mocked. The student can perform one C-Arm procedure protected with a lead apron to complete their competency for surgery. After the competency is completed the student is to remain out of surgery for the remainder of her pregnancy.

_____ _____

Student Signature Date

---

4. _____ I am withdrawing my declaration of pregnancy. I understand that my fetal badge will be discontinued.

_____ _____

Student Signature Date

Appendixes

Example Student Time sheet

North Idaho College Radiography Student Time Sheet

: Facility : Student Name

: Rotation 9/24/2018

This time sheet is for only scheduled clinical time do not put make up time on this sheet. 10/7/2018

All make up time must be recorded on the make up time sheet provided within the digital clinical notebook.

Day		Time in	Tech. Initials	Lunch	Time out	Tech. Initials	Total
Monday	9/24/2018						
Tuesday	9/25/2018						
Wednesday	9/26/2018						
Thursday	9/27/2018						
Friday	9/28/2018						
Saturday	9/29/2018						
Sunday	9/30/2018						
Monday	10/1/2018						
Tuesday	10/2/2018						
Wednesday	10/3/2018						
Thursday	10/4/2018						
Friday	10/5/2018						
Saturday	10/6/2018						
Sunday	10/7/2018						
	Total hours						

Student Signature Date

NIC Program Director Signature Date

Step 1 Students should write the time that he/she arrives to the clinical site in the slot titled "Time In"
Step 2 A technologist must confirm that the student arrived to the clinical site at the recorded time by initialing in the slot titled "tech initials'. this
Step 3 Students should document time taken for lunch this time must not exceed 30 minutes
Step 4 Students should write the time that he/she leaves to the clinical site in the slot titled "Time Out"
Step 5 A technologist must confirm that the student arrived to the clinical site at the recorded time by initialing in the slot titled "tech initials'. this

Time will be totaled by the NIC Program Director only and reviewed with each student.
Students who miss a Clinical day should record the Absence with the letter "**A**" being placed in the time total slot for that day, and draw a line across/through the other time slots

Clinical Time will be recorded and graded by taking the actual hours "A" that the student obtained without make up time divided by total required hours "**R**" for that semester.

A/R=% GRADE 196/203=96.5%

Make-up time

RADIOGRAPHY TECHNOLOGY
PROGRAM
Make-up Time Sheet

MAKE-UP TIME

NAME

DATE(S) AND HOURS MISSED

DATE(S) TO MAKE UP TIME

TOTAL TIME MADE UP

TECHNOLOGIST SIGNATURE

APPROVED BY
INSTRUCTOR

MAKE-UP TIME

NAME

DATE(S) AND HOURS MISSED

DATE(S) TO MAKE UP TIME

TOTAL TIME MADE UP

TECHNOLOGIST SIGNATURE

APPROVED BY
INSTRUCTOR

MAKE-UP TIME

NAME

DATE(S) AND HOURS MISSED

DATE(S) TO MAKE UP TIME

TOTAL TIME MADE UP

TECHNOLOGIST SIGNATURE

APPROVED BY
INSTRUCTOR

MAKE-UP TIME

NAME

DATE(S) AND HOURS MISSED

DATE(S) TO MAKE UP TIME

TOTAL TIME MADE UP

TECHNOLOGIST SIGNATURE

APPROVED BY
INSTRUCTOR

RADIOGRAPHY TECHNOLOGY PROGRAM

Clinical Evaluation Form

Student Name: _____ Course:_____
Clinical Site: _____ Date: _____
Evaluator (Print):_____

Instructions: Please read each statement and place an "X" or "√" over the appropriate box of the descriptor that best identifies the student. The student should be assessed on the level that he/she SHOULD be for his/her tenure in the program. The tenure is indicated in the "course" section above. It may be helpful to look at the students peer group to gain an understanding of where they could/should be clinically. Include comments if needed and return this form to the student. If you are not comfortable returning the sheet directly to the student, you may seal the evaluation in an envelope and have the student bring it to the college. Forms must have the signature of that facilities clinical liaison if another staff member completes the form.

Overall Impression of the Student's performance associated with his/her level of education within the Radiography Technology Program (Please circle one)

Below Average 4	Average 5	Above Average 6	Excellent 7

Evaluating Technologist: _____ Date: _____
Clinical Preceptor: _____ Date: _____
Student Signature: _____ Date: _____
Evaluator Comments:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Student Comments:

_____

_____

_____

_____

_____

_____

Category	4	5	6	7
Punctuality	Often late or tardy (three or more tardies)	Seldom late or tardy (two tardies)	Occasionally late (one Tardy)	Always punctual; never late
Attendance	Three or more absences	Two absences	One absence	No absences noted
Appearance / Attire	Appearance is untidy and unkempt; hygiene is inadequate.	Meets uniform guidelines, but hygiene is inadequate.	Meets Uniform Guidelines; good hygiene is demonstrated	Uniform is not only clean, but also pressed; shoes are polished. Hygiene is a priority.
Professional behavior / Interactions	Rude, impolite; disrespectful; uncaring	Polite, but lacks discretion; May be loud and/or aggressive; or is unable to interact with patients, superiors or co-workers	Polite; developing positive relations with others; handles common patient issues	Courteous and respectful; interacts very well w/ others; handles difficult situations with ease
Reaction to Criticism	Does not accept criticism well	Accepts criticism, but does not attempt to utilize suggestions	Accepts criticism and sometimes attempts to utilize suggestions	Accepts criticism and consistently attempts to utilize suggestions
Initiative	Needs constant motivation; unwilling to perform tasks	Needs more motivation than normal; Frequently must be told what to do	Adequately motivated; often looks for things to do; seldom "idle"	Highly motivated; completes work quickly and moves onto the next task without hesitation
Equipment and Supply Management	Cannot utilize equipment; wastes supplies; does not stock rooms	Struggles with equipment performance; room is often missing needed supplies	Utilizes equipment and supplies satisfactorily and safely; rooms are stocked daily	Utilizes equipment skillfully and safely; stocks multiple rooms
Organization of Work	Unacceptable; often hinders patient flow; very inefficient	facilitates patient flow but is extremely slow with exam performance	Works at a steady, acceptable rate	Works very quickly; performs exams without hesitation or indecision
Progress	Progress at this stage is unacceptable	Progress at this stage is fair, beginning to develop understanding	Progress at this stage is good. Equal with peer group	Progress at this stage is excellent. Teaches others.
Radiation Safety	Seldom follows proper radiation safety guidelines; dangerous to staff/peers/patients	Occasionally follows radiation safety guidelines; does not routinely shield	Usually conscientious about radiation protection; shields routinely	Always uses proper collimation and shielding and strives to protect others
Competency of Procedures / Positioning Skills	Very little knowledge of procedures / positioning; lacks skills	Fair knowledge; needs more than normal instruction; requires frequent correction	Knowledgeable for acceptable performance; positions skillfully most of the time	Outstanding knowledge of procedures / positioning; very skillful
Supervision and Judgment	Requires maximum supervision; unable to grasp new ideas	Requires maximum supervision; takes more time than normal to understand new concepts or material	Requires normal supervision; learns reasonably well	Requires less than normal supervision; intelligent and grasps new concepts quickly
Quality of Work	Careless performance; errors are routine/constant	Below average performance; errors are frequently made	Average performance; errors are infrequent / occasional	Excellent performance; errors, if any, are rare
Image Evaluation	Incompetent in critiquing images; lacks basic understanding of radiographic principles	Below average ability to critique images; understands some concepts of radiographic principles, but lacks acceptable knowledge	Adequate ability to critique images; Can recognize abnormal results	Critiques work skillfully; able to recognize abnormalities and correct problems without guidance

North Idaho College

ARRT Category Competency Evaluation

Student: _____ (Print) Student Signature:_____

Evaluator: _____ (Print) Hospital:_____

Current Date: _____ Exam: _____

Clinical Evaluator

Have student fill in all appropriate information prior to being assessed for competency. When evaluating for competency please evaluate on a "yes" and "no" basis. Elaborations may be made on the reverse of this form under comments section. **Sections 1-8 must be completed without error. Any failure of these sections will constitute a failure and the exam must be repeated. Anatomy Section 9: Student will lose 5 points for each anatomical part that he/he is unable to identify.** Students must have documented at least two practice exams before he/she will be allowed to comp. an exam.

Exam accession numbers: (2 practices, 1 competency)

1._____ 2._____ 3._____

1. Evaluation of Requisition: **Yes / No: _____**

1. Identified procedures to be performed
2. Noted clinical pathology of relevance (Diagnosis)
3. Identified patient location and mode of transportation

2. Patient Communication/Assessment: **Yes / No: _____**

1. Identified patient using 2 identifiers
2. Properly introduced self to patient
3. Had patient properly gowned/artifacts were removed
4. Was able to explain the procedure correctly
5. Checked for female pregnancy status
6. Spoke to patient in a professional manner
7. Documented patient history on the requisition

3. Patient Positioning: **Yes / No: _____**

1. Positioned the patient correctly for all projections as described by the Hospital protocol.
2. Utilized immobilization/positioning devices when warranted

4. Mechanical Operations: **Yes / No: _____**

1. Maneuvered the tube and bucky adequately for the examination
2. Selected the appropriate size and orientation of the cassette/grid
3. Positioned the central ray correctly with the appropriate patient part.
4. Positioned the central ray correctly to the image receptor.
5. Chose the proper FFD (SID) for the examination
6. Angled tube appropriately when needed
7. Correctly processed image

5. Markers: **Yes / No: _____**

1. Marked the correct side with the correct marker for that exam. Marker must be visible.

6. Technical Factors: **Yes / No: _____**

1. Was able to set the correct technique without any assistance.(please list below)

kVp: a)_____ b)_____ c)_____ d)_____ e)_____ f)_____

mAs: a)_____ b)_____ c)_____ d)_____ e)_____ f)_____

2. Selected the correct technical components. (focal spot, AEC, etc)
3. Used the appropriate imaging method. (Grid, Bucky, table-top)
4. Record the exposure index or (S) number below for each projection:

a)_____ b)_____ c)_____ d)_____ e)_____ f)_____

7. Image Quality: **Yes / No: _____**

1. Image demonstrated acceptable density / Student could manipulate if needed
2. Image demonstrated acceptable contrast / Student could manipulate if needed
3. Correct placement of markers
4. Correctly positioning the part
5.
6. Evidence of proper collimation

8. Radiation Protection: **Yes / No: _____**

1. Central ray was collimated to the correct IR size.
2. Patient was shielded properly.
3. All staff was clear of central ray during exposure.

9. Anatomy Identification:

Clinical Evaluator: The student technologist will be required to identify three anatomical features for the part that was being imaged. Any anatomy may be chosen as long as it is related to the anatomical part being demonstrated.

1._____ 2._____
3._____

Students are required to maintain appropriate technical factors on all examinations. Below is a list of the acceptable ranges for many of the "common" imaging systems in our clinical service area. **If the resulting index is outside of the "acceptable film" category on any film in the series, the competency has been failed due to poorly executed technical factors and must be repeated.**

Konica			Kodak (CR)		Carestream (DR)			Carestream (DR)			Seimens (DR)	Indication
CXR / Skull / Hip	Other	Extrem	Other	Extrem	CXR / Skull / Hip	Other	Extrem	CXR / Skull / Hip	Other	Extrem	All	
< 130	< 140	< 150	< 1850	<2150	< 1250	< 1550	< 1850	< 211	< 270	< 318	< 500	**Tech Review**
130- 253	140-480	150- 480	1850-2150	2150-2450	1250-1549	1550-1850	1850-2150	211-399	270-680	318-790	500-800	**Acceptable**
>254	> 480	> 480	> 2150	> 2450	> 1549	> 1850	> 2150	> 399	> 680	> 790	> 800	**Failure**

Comments:

I verify that the student has successfully completed the above competency without error, and has demonstrated competency according to the above form.

_____ Evaluating Technologist _____Clinical Preceptor

North Idaho College

ARRT Category C-Arm Competency Evaluation

Student: _____ (Print) Student Signature:_____

Evaluator:_____ (Print) Hospital:_____

Current Date: _____ Exam: _____

Clinical Evaluator:
Have student fill in all appropriate information prior to being assessed for competency. When evaluating for competency please evaluate on a yes and no basis. Elaborations may be made on the reverse of this form under comments. Any area that the student is unable to complete without error will constitute failure of the competency and require a repeat. Students must have documented at least two practice exams before he/she will be allowed to comp. an exam. All items under each section may not apply to the particular comp, please evaluate only the factors that apply.

Exam accession numbers: (2 Practices, 1 Competency)
1._____ 2._____ 3._____

Exam and Patient Preparation: Yes / No:

1. Set up room by typing in the patient information and setting up C-ARM
2. Check a least two patient Identifiers

Markers: Yes / No:

1. Marked the correct side with the correct marker for that exam.

C-ARM Operations: Yes / No:

1. Positioned the C-ARM central ray correctly with the appropriate part.
2. Proper anatomy was visualized.
3. The student was able to position the C-ARM in appropriate positions throughout the exam if needed.

Technical Factors: Yes / No:

1. The student must set a manual technique on the C-ARM before or after the exam to demonstrate his/her ability to do this if the circumstance arises. Please record below
   MAS: _____ KVP: _____
2. The student oriented the image correctly.

Image Quality: Yes/No:

1. The images demonstrated acceptable density and contrast

Radiation Protection: Yes/No:

1. Central ray was collimated to the correct size.(if applicable)
2. Patient was shielded properly. (if applicable)
3. All staff were clear of central ray during exposure.

Anatomy Identification:
Clinical Evaluator: The student will be required to identify three anatomical features for the part that was being imaged. Any anatomy may be chosen as long as it is related to the anatomical part being demonstrated and anatomy are worth 5 points each.
1._____ 2._____
3._____

If the Student receives a No in any section of this form he/she will be required to repeat the competency in its entirety.
Comments:

I verify that the student has successfully completed the above competency without error, and has demonstrated competency according to the above form.

_____: Signature of Evaluating Technologist

_____ : Signature of Clinical Preceptor

Daily Practicum Record

NORTH IDAHO COLLEGE
RADIOGRAPHY TECHNOLOGY PROGRAM

Daily Practicum Record

Student_____

DATE	ACCESSION NUMBER	EXAMINATION	PATIENT AGE	AIDED	NOT AIDED	# OF FILMS	# OF REPEATS	REASON FOR REPEAT

NORTH IDAHO COLLEGE
RADIOGRAPHY TECHNOLOGY PROGRAM

Monthly Practicum Record

STUDENT		MONTH, YEAR		SITE / AREA	

EXAMINATION	NUMBER OF EXAMS	
	AIDED	NOT AIDED
EXTREMITIES		
Upper Extremity		
Finger		
Hand		
Wrist		
Forearm		
Elbow		
Humerus		
Shoulder		
Clavicle		
Scapula		
Lower Extremity		
Toes		
Foot		
Ankle		
Leg		
Knee		
Femur		
Hip		
Other (list)		
TOTAL		
SPINE AND PELVIS		
C-Spine		
Thoracic Spine		
Lumbar Spine		
Sacrum		
Coccyx		
Sacroiliac Joints		
Pelvis		
TOTAL		
THORACIC CAVITY		
Chest		
Ribs		
Sternum		
Chest Fluoroscopy		
TOTAL		

EXAMINATION	NUMBER OF EXAMS	
	AIDED	NOT AIDED
GENITO-URINARY		
IVP		
Retrograde Pyelogram		
VCUG		
Infusion IVP		
TOTAL		
ABDOMINAL AND DIGESTIVE		
Supine Abdomen		
Erect Abd, Decub		
Barium Swallow		
Upper GI		
Small Bowel		
Barium Enema		
Air-Contrast Enema		
Oral Cholecystography		
T-Tube Cholangiogram		
ERCP		
TOTAL		
HEAD AND NECK		
Routine Skull		
Mastoids		
Mandible		
Facial Bones		
Sinuses		
Zygomatic Arches		
TMJ		
Orbits, Optic Foramen		
Cervical Spine		
Other		
TOTAL		

EXAMINATION	NUMBER OF EXAMS	
	AIDED	NOT AIDED
PORTABLES AND OPERATING ROOM		
Reduction Surgery (Specify Exam)		
Neuro		
Pacemaker Insertion		
C-Arm Hip Pinning		
Orthopedic (Specify Exam)		
Chest		
Other		
TOTAL		
SPECIAL STUDIES		
NEURO		
Venogram		
Abdominal Angiogram		
Angiocardiogram		
Femoral Arteriogram		
Other		
TOTAL		
MISCELLANEOUS		
Pelvimetry		
Bronchoscopy		
Hysterosalpingogram		
Tomogram		
Scanogram		
Bone Age Study		
Metastatic Series		
Metabolic Series		
Arthrogram		
Other		
TOTAL		

EXAMINATION	NUMBER OF EXAMS	
	AIDED	NOT AIDED
COMPUTED TOMOGRAPHY		
Brain		
Abdomen		
Spine		
Other		
TOTAL		
TOTAL HOURS		
MRI		
TOTAL HOURS		
RADIATION THERAPY		
TOTAL HOURS		
ULTRASOUND		
TOTAL HOURS		
Thyroid		
Abdomen		
Aorta		
Kidney		
Pelvis		
O.B.		
Other		
TOTAL		
PEDIATRICS		
Age in years (0 - 1)		
2 – 6		
7 – 12		
13 – 15		
TOTAL		
GERIATRICS 65+		

North Idaho College
Health Professions and Nursing

RADIOGRAPHY TECHNOLOGY PROGRAM

Repeat Analysis

Name: _____ Date: _____

Site: _____ Rotation: _____

Reasons for Repeat	Number of Films
Exposure Index was too low	_____
Motion	_____
Positioning (Clipped Anatomy, off-centered)	_____
Other	_____
	_____
	_____
	_____
	_____

Repeat Percentage

Total number of films taken during this rotation. _____

Total number of repeats taken during this rotation. _____

Calculate 2/1 _____
Multiply by 100 to get % of repeats _____

Analysis

Analyze the above information and give reasons for repeated films.

What is the common reason for repeat? _____

_____

_____

How can you correct this problem? _____

_____

_____

_____

North Idaho College
Health Professions and Nursing

Radiologic Technology Article Critique

Student Name: _____ Article Name: _____
Date of Article: _____

Article Description (magazine name, page, etc…)

_____
_____
_____

Summary

_____
_____
_____
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Article Critique Rubric

Find Radiology related **article**, from, a magazine, or journal. The campus library is an excellent source for finding radiologic technology journals and periodicals. Each of these magazines contain various articles from industry and peer review papers that can be used. In addition to the library, there are articles available in the classroom that can prove to be helpful.

Each article review should contain the information that is found in the "Introduction Header" section of the rubric. The student should summarize the main points of the article. The student should state why they chose this particular article, how the information has been helpful to furthering their knowledge and understanding, and they should list at least three ways that the information contained in the article can be used to further enhance or advance the field of radiology.

Selecting the proper article to review should take some time and thought. This is not simply a "writing" assignment, but rather an opportunity to learn about various techniques and strategies that are being researched within the field.

Write a summary report on this article, using the following information rubric.

Each article summary that is completed must have this rubric stapled to the front cover. A copy of the article should be stapled to the back of the report.

Item Criteria	Points Possible	Points Received
1. Introduction Header a. Your name b. was this a topical or scholarly article c. the name of the "article" in quotation marks d. the *name of the magazine/journal/* Italicized e. the volume/issue f. the date of publication g. page number from magazine/journal h. Ensure that the article was not taken from website	10 Points	
2. Body Summary a. The student summarized the main points of the article	20 Points	
3. Conclusion a. Tell me why you chose this article. b. State how the information has been helpful to you in furthering your knowledge and understanding in the field. Be specific. c. How this information has advanced or will advance the field of Radiology Technology. List at least three ways.	20 Points 20 Points 10 Points each	
Total Points	100	

North Idaho College
Health Professions and Nursing

RADIOGRAPHY TECHNOLOGY

Rotation Description

Student Name: _____

Rotation Location: _____

Dates of Rotation: _____Assigned Area: _____

Please feel free to discuss any positive or negative findings about your rotation. Be assured that these comments are kept in strict confidence. Also, please list anything that you have learned from this rotation experience. *

Summary

Clinical Site Instructor Evaluation

Site: _____ **Rotation Dates:** _____

Availability	Clinical Preceptor was often unavailable for help or questions.	Clinical Preceptor was occasionally available for help or questions.	Clinical Preceptor was readily available for help or questions.	Clinical Preceptor was readily available and often accompanied students on examinations.
Helpfulness	Clinical Preceptor was not helpful to students. Student often felt alienated.	Clinical Preceptor was occasionally helpful but only when asked.	Clinical Preceptor offered assistance without being asked and was helpful with day-to-day tasks.	Clinical Preceptor was extremely helpful. Students were welcomed into the department and made to feel comfortable in their environment.
Professionalism	Clinical Preceptor was often rude / impolite. Degraded students in the presence of others. Made students feel inferior or incompetent.	Clinical Preceptor was occasionally rude or impolite. Appeared to be annoyed by student presence.	Clinical Preceptor was polite. Modeled professionalism most of the time.	Clinical Preceptor was courteous and respectful. Treated students with dignity, kindness and fairness. Modeled professionalism at all times.
Understanding of Program Policies and Procedures	Clinical Preceptor showed no knowledge of program policies, procedures or rules.	Clinical Preceptor lacked specific knowledge regarding program policies, procedures and rules.	Clinical Preceptor had appropriate knowledge of program policies, procedures and rules.	Clinical Preceptor was well-versed on program policies, procedures and rules. Additionally, was a resource for students regarding program goals and learning outcomes.
Understanding of Student Expectations	Clinical Preceptor lacked understanding of student expectations. Did not understand the course progression.	Clinical Preceptor often lacked knowledge of student expectations. Unaware of what the students were responsible for.	Clinical Preceptor had appropriate understanding of student expectations. Seemed to know where the student should be at a given level.	Clinical Preceptor had a strong understanding of student expectations. Understood student learning outcomes and encouraged students to reach their goals.
Student Feedback	Clinical Preceptor did not give feedback. Evaluation form lacked comments and there was no verbal feedback throughout the clinical rotation.	Clinical Preceptor gave only written feedback and only on the evaluation form. No verbal feedback was presented.	Clinical Preceptor gave verbal and written feedback during evaluation process. Goals and a plan of action were established.	Clinical Preceptor gave verbal and written feedback during the evaluation process and at the end of each day. Goals were established and a plan of action was implemented

RADIOGRAPHY TECHNOLOGY PROGRAM
CLINICAL PERFORMANCE EVALUATION

Patient Care Task Sheet

In the radiology department students will be given instruction and laboratory practice in patient care techniques. Students will be evaluated on the performance of the following patient care tasks:

1. How did the student receive patients on arrival in the area? i.e., introduce self, technologist, and/or physician.
2. Determine patient's identity using information on request form and confirm by checking wristband and by questioning patient.
3. Assist patient to dress/undress when necessary prior to or after procedure.
4. Provide safe storage for the patient's personal belongings, which may be removed during the procedure.
5. Question the patient, review the patient's chart and x-ray request form for clinical history that relates to the radiographic examination.
6. Assist the patient on or off the table or stool to avoid patient injury using proper body mechanics and "lifters" to avoid personal injury.
7. Describe the radiographic procedures that will be followed during the x-ray process using terminology understandable to the person involved, to help put the patient at ease and gain cooperation.
8. Instruct the patient correctly about exam prep e.x. what to eat and/or drink relative to an examination, including any medication, which might need to be self-administered.
9. Observe appropriate protective technique when imaging a patient in isolation to provide for effective infection control.
10. Clean, wash disinfect and/or sterilize facilities and equipment and dispose of contaminated items in preparation for next examination.
11. When requested, assist radiologist or doctor by observing vital signs.
12. Recognize the need to administer first aid to patient during emergency situations (i.e., bleeding, seizure, respiratory or cardiac distress, etc.).
13. Maintain medical equipment attached to patient (IV's, oxygen, etc.) during the radiographic procedure, using knowledge of hospital equipment and procedures.
14. Use sterile technique as required to help prevent patient infection.
15. Transport patients safely in wheelchairs or stretchers.

EVALUATION: Successful completion of the assignment will be attained when ALL of the above tasks have been mastered.

Student: _____
Evaluator: _____
Date: _____

Comments:

RADIOGRAPHY TECHNOLOGY PROGRAM
CLINICAL PERFORMANCE EVALUATION

Geriatric Radiologic Task Sheet

Competency Area Upon successful completion of the following clinical assignment, the student technologist will be able to:	Yes	No
1. Demonstrate professional judgment by evaluating the patient's age and condition and determining the appropriate method for positioning the patient.		
2. Demonstrate professional judgment by evaluating the patient's age and condition and determining the appropriate method for imaging the *geriatric* patient.		
3. Demonstrate professional judgment by planning the filming sequence to eliminate multiple body movements of *geriatric* patients.		
4. Demonstrate concern for radiation safety by requiring all unnecessary personnel and visitors be removed from the immediate area while performing portable radiographic procedures.		
5. Demonstrate concern for radiation safety by requiring all necessary personnel and visitors to have proper protective apparel while performing portable radiographic procedures in their presence.		
6. Demonstrate competence by correctly setting appropriate exposure factors to obtain optimum radiographic images of *geriatric* patients using radiographic, fluoroscopic, or mobile equipment.		
7. Demonstrate professionalism by exhibiting proper professional skills and behaviors in gaining the confidence of *geriatric* patients.		
8. Demonstrate concern for the *geriatric* patient's well-being, by providing nursing care as needed.		
9. Demonstrate professional competence by selecting and properly using appropriate accessory equipment, i.e. grids, cassette holders, required for radiographic/fluoroscopic studies.		
10. Demonstrate concern for the patient's well-being by having: Adequate supplies, necessary furnishings, and accessories properly placed and safely positioned.		
11. Follow program guidelines by having a radiographer present for **ALL** repeated studies.		
12. Demonstrate professional competence by evaluating the finished radiograph for positioning accuracy and technical quality.		
13. Demonstrate professional competence by correctly obtaining information for radiologists, staff and family members, regarding the *geriatric* patient's history, condition, and/or other pertinent data.		
14. Demonstrate professional competence by completing required studies in an acceptable amount of time.		
15. Demonstrate professional conduct by properly maintaining patient's records and confidentiality.		
TOTALS for each category:		
Maximum possible passing score	15	0
Satisfactory Score (First Year):	11	4
Satisfactory Score (Second Year):	14	1
Circle whether the student passed or failed	pass	fail

Student: _____Evaluator:_____Date:_____

Comments:

RADIOGRAPHY TECHNOLOGY PROGRAM
CLINICAL PERFORMANCE EVALUATION

Pediatric Radiologic Task Sheet

Competency Area Upon successful completion of the following clinical assignment, the student technologist will be able to:		Yes	No
1.	Demonstrate professional judgment by evaluating the patient's age and condition and determining the appropriate method for positioning the patient.		
2.	Demonstrate concern for patient safety by using protective devices, collimation or by using cones to limit exposure to area of interest.		
3.	Demonstrate professional judgment by planning the filming sequence to eliminate multiple body movements of *pediatric* patients.		
4.	Demonstrate concern for radiation safety by requiring all unnecessary personnel and visitors be removed from the immediate area while performing *pediatric* radiographic procedures.		
5.	Demonstrate concern for radiation safety by requiring all necessary personnel and visitors to have proper protective apparel while performing *pediatric* radiographic procedures in their presence.		
6.	Demonstrate professional competence by correctly setting appropriate exposure factors to obtain optimum radiographic images of *pediatric* patients using radiographic, fluoroscopic, or mobile equipment.		
7.	Demonstrate professionalism by exhibiting proper professional skills and behaviors in gaining the confidence of *pediatric* patients and their families.		
8.	Demonstrate concern for the *pediatric* patient's well-being, by providing nursing care as needed.		
9.	Demonstrate professional competence by selecting and properly using appropriate accessory equipment, i.e. grids, cassette holders, required for radiographic/fluoroscopic studies.		
10.	Demonstrate concern for the patient's wellbeing by having: Adequate supplies, necessary furnishings, and accessories properly placed and safely positioned.		
11.	Follow program guidelines by having a radiographer present for **ALL** repeated studies.		
12.	Demonstrate professional competence by evaluating the finished radiograph for positioning accuracy and technical quality.		
13.	Demonstrate professional competence by correctly obtaining information for radiologists, staff and family members, regarding the pediatric patient's history, condition, and/or other pertinent data.		
4.	Demonstrate professional competence by completing required studies in an acceptable amount of time.		
15.	Demonstrate professional conduct by properly maintaining patient's records and confidentiality.		
	TOTALS for each category:		
	Maximum possible passing score	15	0
	Satisfactory Score (First Year):	11	4
	Satisfactory Score (Second Year):	14	1
	Circle whether the student passed or failed	pass	fail

Student: _____Evaluator:_____Date:_____

Comments:

RADIOGRAPHY TECHNOLOGY PROGRAM
CLINICAL PERFORMANCE EVALUATION

Radiation Protection Task Sheet

Upon completion of any rotation in the radiology department involving the use of radiation, the student will be able to:

1. Question female patients of childbearing age about menstrual cycle and/or possible pregnancy to alert the radiologist and/or referring physician, using knowledge of "10-day rule".

2. When indicated place a gonadal shield over male and female reproductive organs prior to taking radiograph.

3. Stand behind screen, leaded wall, or wear a lead apron while activating x-ray equipment, to provide protection from radiation exposure.

4. Wear a monitoring device while on duty to obtain a record of radiation exposure over a given period of time.

5. Place protective shield over radiosensitive organs (other than gonads) in or near the primary beam prior to exposure, when repeated examination or high dosage levels are required for procedure.

6. Remove all unnecessary persons from area prior to taking x-ray to reduce risk of exposure to radiation.

7. Collimate beam to the area of the film cassette to limit radiation exposure to the area of interest.

EVALUATION: **Successful completion of the assignment will be attained when ALL of the above tasks have been mastered.**

Student: _____
Evaluator: _____
Date: _____

Comments:

RADIOGRAPHY TECHNOLOGY PROGRAM
CLINICAL PERFORMANCE EVALUATION

Evening Rotation

Competency Area Upon successful completion of the following clinical assignment, the student will be able to:	Yes	No
With indirect supervision, the student technologist can evaluate the patient's condition and determine the appropriate method for positioning the patient.		
The student technologist has demonstrated critical thinking and problem solving skills by evaluating the patient's condition and determining the appropriate method for imaging the patient by planning the filming sequence to eliminate multiple body movements of trauma patients.		
Student technologist experienced pressure/crisis situations and responded accordingly.		
Demonstrate concern for radiation safety by requiring all unnecessary personnel and visitors be removed from the immediate area while performing portable radiographic procedures.		
Displays initiative for radiation safety by requiring all necessary personnel and visitors to have proper protective apparel while performing portable fluoroscopic and surgical procedures.		
Willingness to accept responsibility by correctly setting appropriate exposure factors to obtain optimum radiographic images using radiographic, fluoroscopic, or mobile equipment.		
Demonstrates self-confidence by exhibiting proper professional skills and behaviors in gaining the confidence of other professional staff.		
Can select and properly use appropriate accessory equipment, i.e. grids, cassette holders, required for radiographic/fluoroscopic studies without direct supervision.		
Student should demonstrate the ability to assist other professional staff in maintaining life support during emergency procedures.		
Follow program guidelines by having a registered technologist present for ALL repeated studies.		
Demonstrate professional competence by evaluating the finished radiograph for positioning accuracy and technical quality.		
Patient's with limited or no identification, the student should correctly transmit information to or from the ER physician and staff regarding the patient's history, condition, and/or other pertinent data.		
With minimal assistance, the student can complete trauma/portable/stat studies in an acceptable amount of time.		
Pursue the ability to reason, interpret, and use discretion in carrying out assignments.		
TOTALS for each category:		
Satisfactory Score (1st Semester)	6	8
Satisfactory Score (2nd semester)	9	5
Satisfactory Score (3rd & 4th semester)	11	3
Circle whether the student passed or failed	pass	fail

Student_____Clinical Preceptor: _____Evaluator:_____
Date: _____ Comments:

NORTH IDAHO COLLEGE

Venipuncture Competency Evaluation

Student:_____(Print) Evaluator: _____ (Print)

Site:_____ Current Date: _____

Clinical Evaluator

When evaluating for competency please evaluate on a "yes" and "no" basis. Elaborations may be made on the reverse of this form under comments section. **All Sections must be completed without error. Any failure will constitute a failure and the procedure must be repeated.** Students must have documented at least three practices before he/she will be allowed to prove competency.

Practice exam accession numbers:

1._____ 2._____ 3._____ 4._____

1. Pre-Procedure: **Yes / No:**

1. Verified need for IV placement
2. Gathered pertinent supplies
3. Washes Hands
4. Correctly Identifies patient

2. Setup for Procedure: **Yes / No:**

1. Properly introduced self to patient
2. Was able to explain the procedure correctly
3. Spoke to patient in a professional manner
4. Assesses patient and selects appropriate vascular access device based on exam
5. Prepares all equipment before venipuncture

3. Procedure: **Yes / No:**

1. Applies tourniquet properly.
2. Selects site for venipuncture with regard to procedure/treatment constraints, Patient preference, previous venipuncture, history of mastectomy/lymphadenopathy, etc…
3. Cleanses area according to policy without subsequent contamination
4. Successfully performs venipuncture using access device on first attempt
5. Connects tubing and cap. Verifies placement by aspirating blood and flushing. Maintains positive pressure flush by clamping tubing while flushing or withdrawing syringe while injecting.

4. Post-procedure: **Yes / No:**

1. Dresses, tapes and label IV according to policy.
2. Documents according to policy.
3. Removes IV and attends to IV site as needed

Comments:

I verify that the student has successfully completed the above competency without error, and has demonstrated competency according to the above form.

Evaluating Technologist _____Clinical Preceptor_____

RADIOGRAPHY TECHNOLOGY PROGRAM
CLINICAL PERFORMANCE EVALUATION

Tube/Table, Room/Equipment Task Sheet

Competency Area Upon successful completion of the following clinical assignment, the student will be able to:	Yes	No
1. Can locate available crash carts within the Radiology department		
2. Can Detent the X-Ray Tube Transversely and Vertically		
3. Can align the X-Ray Tube and Bucky Tray		
4. Can angle the X-Ray Tube cephalic and caudally		
5. Can adjust the collimator to the correct film size		
6. Can locate and operate the centering light (collimation light)		
7. Can center the X-Ray Tube to the wall Bucky correctly		
8. Can properly place the film in the wall Bucky lengthwise and crosswise, and/or can manipulate the wall stand from lengthwise to crosswise orientation		
9. Can correctly set tube positioning for table top X-Ray work		
10. Can correctly set table height with table controls		
11. Can identify and explain the difference between tabletop, table, and wall Bucky settings		
12. Demonstrated cleaning, disinfecting and/or sterilizing facilities and equipment and disposing of contaminated items in preparation for the next examination		
13. Can properly set exposure parameters on portable radiographic units		
14. Can manually manipulate the kVp, mA, and time variables on a fixed radiographic console/unit		
15. Can identify primary locations within the service area of the department, i.e., ER, outpatient waiting areas, Operating Room entry point, other subunits of Radiology (MRI, U/S, NM, CT, etc…)		
16. Can identify the clean linen location and has demonstrated restocking of rooms as needed		
17. Can identify the location of the soiled linen storage area and removes soiled linen as needed.		
18. Demonstrates the use of appropriate written, oral and nonverbal communication with patients, the public, and members of the healthcare team		
19. Maintains patient confidentiality and follows HIPPA guidelines		
TOTALS for each category:		

Student: _____ Clinical Preceptor: _____
Evaluator: _____ Date: _____

Comments:

North Idaho College
Health Professions and Nursing

RADIOGRAPHY TECHNOLOGY PROGRAM

Minor Rotation Evaluation Form (CT)

Student's Name: _____ Site: _____

Rotation: _____ Date: _____

For an mark of (1), please explain below		*Unsatisfactory 1*	*Below Average 2*	*Average 3*	*Excellent 4*
1.	Attendance				
2.	Punctuality				
3.	Appearance				
4.	Proper Uniform				
5.	Professional Attitude				
6.	Acceptance of Criticism				
7.	Responsible				
8.	Communication Skills				
9.	Initiative				
10.	Completion of Objectives				

Comments:

_____

_____

_____

Evaluator Signature_____

Student Signature _____

RADIOGRAPHY TECHNOLOGY PROGRAM
MINOR ROTATION EVALUATION FORM

Computerized Tomography (general):

Competency Area Upon successful completion of the following clinical assignment, the student will be able to:	Yes	No
1. Program the equipment correctly for computerized tomography studies		
2. Position the tube correctly for computerized tomography studies		
3. Demonstrate professional concern for the patient's safety by correctly assisting in the preparation of contrast media for automatic injector.		
4. Demonstrate professional concern for the patient's safety by correctly setting-up and operating the automatic injector.		
5. Assist the technologist in obtaining patient data pertinent to the examination.		
6. Demonstrate professional concern for the patient's and personnel safety by providing radiation protection.		
7. Use appropriate accessories such as restraining devices, head and foot holders.		
8. Operate the operator's console to perform scans.		
9. Assist with recording and storage of data.		
10. Assist in display console operation.		
11. Demonstrate professional concern for the patient by correctly positioning the patient for various scans.		
12. Demonstrate professional concern for the patient by giving proper breathing instructions.		
13. Assist in patient preparation.		
14. Assist in recording scans on the x-ray film using the multi-format camera.		
15. Describe as least five scans and their purposes.		
TOTALS for each category:		
Maximum possible passing score	15	0
Satisfactory Score:	11	4
Circle whether the student passed or failed	pass	fail

Student: _____ Evaluator: _____

Date: _____

Comments:

North Idaho College
Health Professions and Nursing

RADIOGRAPHY TECHNOLOGY PROGRAM

Minor Rotation Evaluation Form (MRI)

Student's Name: _____ Site: _____

Rotation: _____ Date: _____

For an mark of (1), please explain below		*Unsatisfactory 1*	*Below Average 2*	*Average 3*	*Excellent 4*
1.	Attendance				
2.	Punctuality				
3.	Appearance				
4.	Proper Uniform				
5.	Professional Attitude				
6.	Acceptance of Criticism				
7.	Responsible				
8.	Communication Skills				
9.	Initiative				
10.	Completion of Objectives				

Comments:

_____
_____
_____
_____
_____

Evaluator Signature _____

Student Signature_____

RADIOGRAPHY TECHNOLOGY PROGRAM
MINOR ROTATION EVALUATION FORM

Magnetic Resonance Imaging (general)

Competency Area Upon successful completion of the following clinical assignment, the student will be able to:	Yes	No
1. Demonstrate oral communication skills by obtaining the **PROPER** medical history of all MRI patients. Describe on the back of the form.		
2. List three implants that are always contra-indicated for MRI studies (On a separate sheet of paper):		
3. List the type/s of contrast media used and under what circumstances (On a separate sheet of paper):		
4. Describe general safety precautions when working near the magnetic field (On a separate sheet of paper):		
5. Identify at least two surface coils and describe their purpose (On a separate sheet of paper):		
6. Was able to set patients up for at least three different types of scans. (On a separate sheet of paper):		
7. Maintain safe working environment in relationship to MR's special needs.		
8. Understands and can evaluate patients for possible adverse reactions to contrast.		
9. Can properly explain one procedure to a patient.		
10. Responds to the patient's needs.		
11. Maintains confidentiality of patient information.		
TOTALS for each category:		
Maximum possible passing score	11	0
Satisfactory Score:	9	2
Circle whether the student passed or failed	pass	fail

Student: _____ Evaluator: _____

Date: _____

Comments:

North Idaho College
Health Professions and Nursing

RADIOGRAPHY TECHNOLOGY PROGRAM
Minor Rotation Evaluation Form (NM)

Student's Name: _____ Site: _____

Rotation: _____ Date: _____

For an mark of (1), please explain below		*Unsatisfactory 1*	*Below Average 2*	*Average 3*	*Excellent 4*
1.	Attendance				
2.	Punctuality				
3.	Appearance				
4.	Proper Uniform				
5.	Professional Attitude				
6.	Acceptance of Criticism				
7.	Responsible				
8.	Communication Skills				
9.	Initiative				
10.	Completion of Objectives				

Comments:
_____
_____
_____
_____
_____

Evaluator Signature Student Signature

RADIOGRAPHY TECHNOLOGY PROGRAM
MINOR ROTATION EVALUATION FORM

Nuclear Medicine (general)

Competency Area Upon successful completion of the following clinical assignment, the student will be able to:	Yes	No
1. Explain the difference between imaging with x-ray and radio isotopes.		
2. Identify basic camera components.		
3. Identify 3 of the common examinations performed in nuclear medicine.		
4. Describe and list the energy of the most common imaging isotopes.		
(Describe all objectives on a separate sheet of paper)		
TOTALS for each category:		
Maximum possible passing score	4	0
Circle whether the student passed or failed	pass	fail

Student:_____

Evaluator:_____

Date:_____

Comments:

North Idaho College
Health Professions and Nursing

RADIOGRAPHY TECHNOLOGY PROGRAM

Minor Rotation Evaluation Form (Ultrasound)

Student's Name: _____ Site: _____

Rotation: _____ Date: _____

For an mark of (1), please explain below		*Unsatisfactory 1*	*Below Average 2*	*Average 3*	*Excellent 4*
1.	Attendance				
2.	Punctuality				
3.	Appearance				
4.	Proper Uniform				
5.	Professional Attitude				
6.	Acceptance of Criticism				
7.	Responsible				
8.	Communication Skills				
9.	Initiative				
10.	Completion of Objectives				

Comments:

_____

_____

_____

_____

Evaluator Signature_____

Student Signature_____

RADIOGRAPHY TECHNOLOGY PROGRAM
MINOR ROTATION EVALUATION FORM

Ultrasound Imaging (general)

Competency Area Upon completion of this rotation, the student will be able to:	Yes	No
1. Explain the difference between imaging with x-ray and sound waves.		
2. Identify basic scanner components.		
3. Identify 3 of the common examinations performed using ultrasound.		
4. Identify the range of wave length of diagnostic ultrasound.		
5. Name the unit of amplitude of ultrasound.		
(Describe all objectives on a separate sheet of paper)		
TOTALS for each category:		
Maximum possible passing score	5	0
Circle whether the student passed or failed	pass	fail

Student: _____

Evaluator: _____

Date: _____

Comments:

North Idaho College
Health Professions and Nursing

RADIOGRAPHY TECHNOLOGY PROGRAM

Minor Rotation Evaluation Form (Interventional Cardiovascular / Special Procedures)

Student's Name: _____Site: _____

Rotation: _____ Date: _____

For an mark of (1), please explain below		*Unsatisfactory 1*	*Below Average 2*	*Average 3*	*Excellent 4*
1.	Attendance				
2.	Punctuality				
3.	Appearance				
4.	Proper Uniform				
5.	Professional Attitude				
6.	Acceptance of Criticism				
7.	Responsible				
8.	Communication Skills				
9.	Initiative				
10.	Completion of Objectives				

Comments:

_____
_____
_____
_____

Evaluator Signature:_____

Student Signature:_____

RADIOGRAPHY TECHNOLOGY PROGRAM
MINOR ROTATION EVALUATION FORM

Interventional Cardiovascular / Special procedures (general)

Competency Area Upon completion of this rotation, the student will be able to:	Yes	No
1. Identify the Special radiographic equipment, i.e., image intensifier, automatic injector, digital (computed) radiography, etc…		
2. Identify supplies used in special procedures such as catheters, guide wires and needles.		
3. Identify monitoring devices and first aid equipment, including the crash cart and common drugs contained therein.		
4. Practice aseptic and sterile techniques.		
5. Assist in setting up procedural tables for special procedures.		
6. Identify the difference between digital imaging and conventional x-ray imaging.		
7. Assist in manipulating the images in an actual special procedures study.		
8. Understands and can evaluate patients for possible adverse reactions to contrast media.		
9. Can properly manipulate (pan) the table during a special procedures case.		
10. Can properly explain at least one procedure to a patient.		
11. Responds to patient's needs.		
(Describe all objectives on a separate sheet of paper)		
TOTALS for each category:		
Maximum possible passing score	11	0
Circle whether the student passed or failed	pass	fail

Student: _____

Evaluator: _____

Date: _____

Comments:

North Idaho College
Radiography Technology Program

Confidentiality Requirements

Medical records (*including radiographs)* and all diagnostic information produced in any medium) are the property of the hospital/imaging center. They are maintained for the benefit of the patient, the medical staff, and the clinical facility providing the patient care services. It is everyone's responsibility to safeguard both the records and the information content against loss, defacement, tampering, and from use by unauthorized individuals while the patient is in the hospital. You may not view or access patient information (yours or anyone else's) as a student unless given specific instructions by the clinical institution while in the performance of your duties. _____ (initial here)

A patient record is **not** to be removed **without authorization** from the appropriate person in charge. NIC provides a learning environment that will from time to time require use of studies performed at our clinical institutions for teaching purposes. Under **no circumstances** may a student remove any portion of the patient's medical record **without direct authorization** of an appropriate department supervisor. The student must safeguard the patient's rights to privacy by using appropriate methods to mask the identity of the patient and institution where the patient received their medical care. _____ (initial here)

As a guest in our clinical facilities, you must understand that failing to comply with confidentiality (HIPAA) requirements may cause your removal from the facility, dismissal from the program and possible litigation. At the least you will be issued three (3) demerits for failing to maintain appropriate patient care.
_____ (initial here)

I acknowledge that I received information related to the HIPAA requirements and issues related to patient confidentiality.
_____ (initial here)

The undersigned hereby acknowledges his/her responsibility under State and Federal laws regarding confidentiality of patient information at our clinical facilities. _____ (initial here)

I _____ understand State and Federal law protects the patient's right to privacy and that failure to respect that confidentiality may cause removal from the facility and/or program.

Student Signature:_____ Date: _____

Witness: _____

North Idaho College
Health Professions and Nursing

Radiography Technology Program
MRI Safety Screen Form

The MR System has a very strong magnetic field that may be hazardous to individuals entering the MR environment or MR system room if they have certain metallic, electronic, magnetic, or mechanical implants, devices or objects. Therefore, **all** individuals are required to complete this form BEFORE entering the MR environment or MR system room. Be advised, the MR system magnet is **ALWAYS** on.

Date:____/____/_____

Name:_____ Student ID #: _____

---

1. Have you had prior surgery or an operation of any type? ☐ No ☐ Yes

   Surgery Date_/__/ Surgery Type of surgery: _____
   Date_/__/ Surgery Date_/_/ Type of surgery: _____
   Type of surgery: _____

2. Have you had an eye injury involving metal (e.g., BB, bullet, metal shavings, etc.)? ☐ No ☐ Yes
   If yes, please describe: _____

3. Have you ever been injured by a metallic object (e.g., BB, Bullet, shrapnel, etc.)? ☐ No ☐ Yes
   If yes, please describe: _____

WARNING: Certain implants, devices, or objects may be hazardous to you in the MR environment or MR system room. **DO NOT ENTER** the MR environment or MR system if you have any questions or concerns regarding an implant, device, or object until you have been "cleared" by appropriate personnel.

Please indicate if you have any of the following:

- ☐ Yes ☐ No Aneurysm Clip(s)
- ☐ Yes ☐ No Cardiac Pacemaker
- ☐ Yes ☐ No Implanted cardioverter defibrillator
- ☐ Yes ☐ No Electronic implant or device
- ☐ Yes ☐ No Magnetically-activated implant
- ☐ Yes ☐ No Neurostimulation system
- ☐ Yes ☐ No Spinal cord stimulator
- ☐ Yes ☐ No Cochlear implant
- ☐ Yes ☐ No Insulin or infusion pump
- ☐ Yes ☐ No Implanted drug infusion device
- ☐ Yes ☐ No Prosthesis or artificial limb
- ☐ Yes ☐ No Any type of prosthesis or implant
- ☐ Yes ☐ No Metallic fragment or foreign body
- ☐ Yes ☐ No External or internal metallic object
- ☐ Yes ☐ No Hearing aid
- ☐ Yes ☐ No Other implant _____
- ☐ Yes ☐ No Other device _____

IMPORTANT INSTRUCTIONS

Remove all metallic objects before entering the MR environment or MR system room including hearing aids, beeper, cell phone, keys, eyeglasses, hair pins, barrettes, jewelry (including body piercing jewelry), watch, safety pins, paperclips, money clip, credit cards, bank cards, magnetic strip cards, coins, pens, pocket knife, nail clipper, steel-toed boots/shoes, and tools. Loose metallic objects are especially prohibited in the MR system room and MR environment.

Please consult the MRI Technologist or Radiologist if you have any question or concern BEFORE you enter the MR system room.

I attest that the above information is correct to the best of my knowledge. I have read and understand the entire contents of this form and have viewed the MR safety video located at http://www.acr.org/quality-safety/radiology-safety/mr-safety. Furthermore, I have had the opportunity to ask questions regarding the information in this form.

If, at any time during my tenure in the Radiography Technology program, my medical/surgical status changes, I understand that it is my responsibility to make the faculty aware of these changes so appropriate measures can be taken if so warranted.

Signature of Person Completing Form: _____ Date:____/____/____
Signature

Form Information Reviewed by: _____ _____
Print Name Signature

PROGRAM ACKNOWLEDGEMENTS

PART A

NIC RADIOGRAPHY TECHNOLOGY PROGRAM

SIGNATURE SHEETS

I have been informed of the recommended guidelines for radiation exposure of fertile women and have received a copy and read and understand the information regarding prenatal radiation exposure

Signed _____ Date _____

Witnessed by _____

**Must be signed and turned in to the program director

PART B

NIC RADIOGRAPHY TECHNOLOGY PROGRAM

I have reviewed the Program Handbook & Clinical Manual and understand all of the requirements. In addition, I realize that there are repercussions, including dismissal, for failure to comply with these requirements.

Signed _____ Date _____

Witnessed by _____

*Must be signed and turned in to the program director

NIC RADIOGRAPHY TECHNOLOGY PROGRAM

ARRT Criminal Disclosure Statement

The following signature sheet is to have you state by signature that you are aware of issues related to previous offenses that may disallow you taking the American Registry of Radiologic Technologist's certification exam as well attending clinical sites approved for the radiography program.

1. **I am aware that the ARRT must be made aware of any previous criminal offenses or drug related issues.**
2. **That the clinical sites will have access to the criminal background check and may refuse to allow you to participate in clinical training at their facility.**

_____ _____

Student signature Date

The consequences of being a convicted felon or having been convicted of a drug related offense are:

A. Not being employed by clinical institutions.
B. Not being allowed to sit for the ARRT Exam.

If you have a concern about any of the above, please speak with the Radiography Technology Program Director.

** Sign and turn in this sheet to the program director.