Course Abstract

If you need accommodations due to a disability, contact Disability Services in Edison Hall Room 100, 732.906.2546.

To foster a productive learning environment, the College requires that all students adhere to the Code of Student Conduct which is published in the college catalog and website.

Course ID and Name: RAD 248- Positioning Laboratory IV

Department: Radiography Education
Course Coordinator: E Dikun
Office Location: LH 108
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Prerequisites: RAD 145, 146 **Co-requisites:** RAD 247, 275, 220, 230

Course Description: Practical experience and competency evaluation covering positioning of the cranium, sella turcica, facial bones (nasal bones, zygomatic arch, mandible, and temporomandibular joints), paranasal sinuses, orbits, optic foramina and mammography.

Credits: 1 **Lecture Hours:** **Lab Hours: 2**

Learning Outcomes:
1. Demonstrate proper use of radiographic equipment and imaging systems.
2. Demonstrate routine and optional radiographic positions/projections for the area of interest.
3. Identify anatomical and bony structures for given examinations.
4. Identify exam variations to include trauma studies, mobile radiography and age specific exams.
5. Evaluate radiographs by discussing corrective measures and pathology present.
6. Demonstrate acceptable laboratory performance and progress.

Course Content Areas:

1. General positioning objectives applicable to the following anatomical areas:

a. Cranium
b. Sella Turcica
c. Facial Bones
d. Nasal Bones
e. Zygomatic arches
f. Mandible
g. Temperomandibular Joints
h. Paranasal Sinuses
i. Orbits
j. Optic Foramina

2. Mammography

***See ARRT'S/Board's Competency Tracking Form for complete laboratory proficiency list.**

Textbook Requirement:

Lampignano, J. & Kendrick L. E. (2018). *Bontrager's Textbook of Radiographic Positioning & Related Anatomy, 9th Edition*. Mosby/Elsevier

Lampignano, J. & Kendrick L. E. (2018). Workbook for *Bontrager's Textbook of Radiographic Positioning & Related Anatomy, 9th Edition*. Mosby/Elsevier

Lampignano, J. & Kendrick L. E. (2018). *Bontrager's Handbook of Radiographic Positioning & Techniques, 9th Edition*. Mosby/Elsevier

Grading Standard:

A	**94-100**
A-	**90-93.99**
B+	**88-89.99**
B	**84-87.99**
B-	**80-83.99**
C+	**78-79.99**
C	**75-77.99**
D	**70-74.99**
F	**<70**

Success Criteria:

The student must earn a minimum course grade of "C" (75%) or higher in order to continue in sequencing of radiography courses. The following course grade distribution will be utilized:

1. Laboratory competency of listed course content. P/F*
2. Midterm Demonstration Examination…… 30%
3. Final Demonstration Examination…… 30%
4. Class Assignments…… 20%
5. Class Participation …… 20%

Total- 100%

*Unsuccessful laboratory competencies will result in a 5 point final lab grade deduction per attempt.

Laboratory Experience

***In preparation for lab the student will view a video on the topic from ASRT and or Bootcamp.**

During lab the student will participate in the following:

MCC is following New Jersey Department of Health guidance consistent with Centers for Disease Control and Prevention (CDC) guidelines for institutions of higher education. These guidelines may be modified to meet additional future guidelines promulgated by the Office of the Secretary of Higher Education (OSHE) https://www.middlesexcc.edu/return-to-campus/instruction/

Demonstration:

- Participate in a hands-on demonstration

Positioning in Radiographic Rooms:

- Practice radiographic positioning skills on phantoms/fellow students
- Perform assigned radiographs as directed

Remote/ Laboratory Classroom activities:

- Participate in an image analysis session and complete an image analysis assignment vis Canvas
- Complete critical thinking assignments via Canvas
- Complete illustration or image labeling & fill-in assignments

Perform and Document Laboratory Competency:

- Competently position patients under simulated conditions for each examination listed under course content.

Success Criteria

1. Documented Laboratory Competency:

Competency Based Clinical Education (CBCE)* is a progressive approach to the clinical development of the student. Laboratory competency is a laboratory evaluation that is performed under simulated conditions. Successful completion of a laboratory evaluation requires that a student is competent to

position patients for that procedure. Student competency in each examination is at the discretion of the laboratory instructor.

***Competency Based Clinical Education Standard- NJDEP-2016**

1. Laboratory Competency Evaluations:

The student must successfully pass Laboratory Competency Category Evaluation for the following:

a. Skull
b. Facial Bones
c. Nasal Bones
d. Zygomatic arches
e. Paranasal sinuses
f. Mandible
g. Orbits

Students must be prepared to demonstrate the exam. Unsuccessful laboratory competency evaluations will require remediation. The instructor will discuss the area of failure with the students, develop and implement a remediation plan, and re-evaluate after remediation has been completed. To encourage preparedness prior to attempting laboratory competency evaluations, an unsuccessful attempt will result in a 5 point final lab grade deduction per attempt.

Laboratory competency evaluations that are not successfully demonstrated by the deadline set forth in the agenda will result in a 5 point final lab grade deduction.

2. Mid-term Demonstration Examinations:

During mid-term each student will be evaluated using the Laboratory Competency Evaluation Form. The student will **not** know what examination he or she will be required to perform until exam time, and therefore must be prepared to perform all radiographic examinations presented prior to mid-term.

3. Final Demonstration Examination:

At the end of the semester each student will be evaluated using the Laboratory Competency Evaluation Form. The student will **not** know what examination he or she will be required to perform until exam time, and therefore must be prepared to perform all radiographic examinations presented during the course of the entire semester.

4. Class Assignments:

Image Analysis:

Image evaluation assignments will be completed on laboratory radiographic images or images provided on Canvas.

Critical Thinking Assignment via Canvas:

These written assignments are designed to promote problem solving skills. Students are encouraged to understand the desired outcome/s, note observations, list possible options and their consequences and select the best available option/s.

Illustration/Labeling & Fill-in Assignments:

During the course of each lab the student is given an illustration to label or a fill-in assignment to complete. These assignments are designed to enhance the student's retention of radiographic anatomy.

5. Class Participation:

Students are required to attend all lab sessions. Attendance of a three-hour lab will earn a 100%. Students arriving late to lab will earn 80% OR less. Students leaving early will also incur a lab grade deduction. If the student is absent for lab, he or she will be required to attend open lab to make up the missed material.

Student Class Absence Due to Covid-19-related Illness:

- If you need to miss a class due to COVID-19-related illness, you are responsible for contacting your instructor to let them know of the need as soon as possible.
- You are responsible for completing any work that you might miss due to COVID-19-related illness, including assignments, quizzes, tests, and exams.
- If you might need to miss more than two consecutive weeks of classes in any one semester due to COVID-19-related illness, you must contact the Dean of the Division of your major (Dr. Theresa Orosz, TOrosz@middlesexcc.edu, Liberal Arts Division; Dr. Donna Howell (DHowell@middlesexcc.edu) Business, STEM, and Health Professions Division). You may be required to provide a doctor's note of explanation. The Dean will communicate the receipt of the note (with expected end date) to the relevant faculty.

Program Policy and Regulation Compliance:

- Students are expected to attend all classes.
- Any student found cheating or plagiarizing will, at minimum, receive a grade of zero for that test or assignment. The instructor reserves the right to fail the student for the course and/or pursue further action including the enforcement of the "Code of Student Conduct." Students are encouraged to become familiar with the "Code of Student Conduct" as described in the College Catalog- **http://www.middlesexcc.edu/registrar/images/cosc.pdf**. Cheating and/or plagiarism will not be condoned and will result in a course grade of "F".
- No make-up tests will be given. If you arrive late for a test and a student has handed in a test, you will not be permitted to take that test.
- Assignments are due on the date specified by the instructor. Late assignments will receive a grade penalty.

General Course Objectives:

Radiographic Positioning Protocols

1. Identify a basic protocol/procedure for performing a radiographic examination.

2. Demonstrate the use of the protocol/procedure for performing a radiographic examination.
3. Discuss and demonstrate “trauma” and “mobile” radiography protocols/procedures.
4. Demonstrate “age specific” protocols/procedures.
5. Adapt procedures for variations in body habitus types and body mass indices.
6. Discuss methods and barriers of communication and describe how each may be used or overcome effectively during patient interaction and education.
7. Explain radiographic procedures to patients/family members.
8. Develop an awareness of cultural factors that necessitate adapting stands exams protocols while practicing on your fellow students.

Radiographic Equipment

9. Identify, locate and demonstrate the proper use of the radiographic table, tube, Bucky tray, vertical Bucky device, and x-ray console in each radiographic suite.
10. Locate and identify accessory equipment in each radiographic suite.
11. Demonstrate proper start-up, warm-up, and shut-down procedures for each radiographic unit.
12. Demonstrate appropriate technical factor selection for a given examination.
13. Demonstrate basic operating use of the Digital Radiography (DR) System.
14. Demonstrate basic operating use of the Computed Radiography (CR) System.
15. Evaluate radiographs for image quality.

General Positioning Objectives

16. Demonstrate all routine radiographic projections for each of the listed examinations.
17. Demonstrate the proper use of body mechanics and patient transfer techniques.
18. Review radiographic images for “structures best shown,” pathology and technical quality.
19. Identify anatomical structures as demonstrated in each radiographic projection.
20. Discuss optional projections used during specific examinations, where applicable.
21. Evaluate radiographs to identify positioning errors.

Mammography Positioning Objectives

1. Identify all routine radiographic projections used for radiography of the breast under simulated conditions.
2 .Simulate a general procedure for providing patient education during mammography.
3. Identify anatomical structures as demonstrated in each radiographic projection.
4. Review radiographic images for structures, pathology and technical quality.
5. Discuss optional projections used to image the breast.