



North Central State College

MASTER SYLLABUS

2025-2026

- A. Academic Division: Health Science
- B. Discipline: Radiological Sciences
- C. Course Number and Title: RADS 1275 Digital Imaging and Informatics
- D. Assistant Dean: Heidi Kreglow, PT
- E. Credit Hours: 1
Lecture: 1
- F. Prerequisites: RADS 1170, RADS 1175, RADS 1270
Co-Requisites: RADS 1221m, RADS 1251m
- G. Last Course/Curriculum Revision Date: Spring 2024 Origin date: Fall 2025
- H. Textbook(s) Title:

Digital Radiography and PACS

(Purchased in RADS 1270)

- Authors: Carter & Veale
- Copyright Year: 2022
- Edition: 4th
- ISBN: 9780323826983

Principles of Radiographic Imaging: An Art and A Science

(Purchased in RADS 1270)

- Author: Carlton, Adler and Balac
- Copyright Year: 2020
- Edition: 6th
- ISBN: 9781337711067

Bushong's Radiologic Science for Technologists: Physics, Biology, and Protection

(Purchased in RADS 1270)

- Author: Stewart Bushong
- Copyright Year: 2025
- Edition: 13th
- ISBN: 9780323765367

RadTechBootCamp - Clover Learning Student Plan, electronic resource

(Purchased in RADS 1151)

- Vendor: Clover Learning Inc.
- Copyright Year: 2023
- Edition: n/a
- ISBN: 9781951294038

- I. Workbook(s) and/or Lab Manual: None

J. Course Description: This course is designed to establish a foundation in the use of computerized systems in image acquisition, transfer, and storage of digital images. Course content establishes a knowledge base of the principles, techniques, image receptors and equipment used for image production and storage in digital radiography.

K. College-Wide Learning Outcomes:

College-Wide Learning Outcome	Assessments - - How it is met & When it is met
Communication – Written	
Communication – Speech	
Intercultural Knowledge and Competence	
Critical Thinking	
Information Literacy	
Quantitative Literacy	

L. Course Outcomes and Assessment Methods:

Upon successful completion of this course, the student shall:

Outcomes	Assessments – How it is met & When it is met
1. Discuss basic computer components and interface of hospital information systems, radiology information systems and electronic medical records.	Discussion, completed assignments, worksheets and practice quiz, test week 2, comprehensive final Week 8
2. Identify characteristics of digital imaging.	Discussion, completed assignments, worksheets educational software assignment and practice quiz, graded quiz/test week 3-4, comprehensive final Week 8
3. Classify mechanisms of image acquisition and manifestation through computerized software and post-processing manipulations.	Discussion, completed assignments, worksheets and practice quiz, graded quiz/test week 5, comprehensive final Week 8
4. Differentiate between computed radiography (CR), digital radiography (DR), image receptor components and equipment utilized with CR and DR	Discussion, completed assignments, worksheets, educational software assignment and practice quiz, test week 6, comprehensive final week 8
5. Recognize and describe devices used for transfer, storage archiving, remote network and communication of medical images	Discussion, completed assignments, worksheets, educational software assignment and practice quiz, test week 7, comprehensive final week 8
6. Use effective oral, written and nonverbal communications skills	Class discussions, assignments and testing Weeks 1-8

M. Recommended Grading Scale:

NUMERIC	GRADE	POINTS	DEFINITION
93–100	A	4.00	Superior
90–92	A-	3.67	Superior
87–89	B+	3.33	Above Average
83–86	B	3.00	Above Average
80–82	B-	2.67	Above Average
77–79	C+	2.33	Average
73–76	C	2.00	Average
70-72	C-	1.67	Below Average
67–69	D+	1.33	Below Average
63-66	D	1.00	Below Average
60-62	D-	0.67	Poor
00-59	F	0.00	Failure

N. College Procedures/Policies:

North Central State College believes that every student is a valued and equal member of the community.* Every student brings different experiences to the College, and all are important in enriching academic life and developing greater understanding and appreciation of one another. Therefore, NC State College creates an inclusive culture in which students feel comfortable sharing their experiences. Discrimination and prejudice have no place on the campus, and the College takes any complaint in this regard seriously. Students encountering aspects of the instruction that result in barriers to their sense of being included and respected should contact the instructor, assistant dean, or dean without fear of reprisal.

* *Inclusive of race, color, religion, gender, gender identity or expression, national origin (ancestry), military status (past, present or future), disability, age (40 years or older), status as a parent during pregnancy and immediately after the birth of a child, status as a parent of a young child, status as a foster parent, genetic information, or sexual orientation*

Important information regarding College Procedures and Policies can be found on the syllabus supplement located at

<https://ncstatecollege.edu/documents/President/PoliciesProcedures/PolicyManual/Final%20PDFs/14-081b.pdf>



North Central State College
SYLLABUS ADDENDUM

Academic Division: Health Sciences Discipline: Radiological Sciences
 Course Coordinator: Heidi Chambers
 Course Number: RADS-1275 Course Title: Digital Imaging and Informatics
 Semester / Session: Spring 2026 / Session B Start / End Date: 3/16/2026 thru 5/8/2026

Instructor Information

Name: Heidi Chambers Credentials: BRST, R.T. (R)
 Phone Number: 419/755-4809 E-Mail Address: hchambers@nstatecollege.edu
 Office Location: Health Sciences 152 Office Hours: By appointment: in person or via Zoom
Wed: 11a-2p | Thurs: 10a-12p

I. Topical Timeline / Course Calendar (Subject to Change):

Weeks	Topics	Assignment	Due Date Activity Date
1	Medical Imaging Basic Computer Principles <ul style="list-style-type: none"> Digital Radiography Chapter 7 Rad Science for Techs Chapter 11 	CN 1 Note Packet CN 1 Review Questions	March 17 Zoom Class: March 18
2	Intro to Digital Radiography <ul style="list-style-type: none"> Digital Radiography Chapter 1 Digital Imaging Characteristics <ul style="list-style-type: none"> Digital Radiography Chapter 2 Rad Science for Techs Chapter 14 	CN 2 Note Packet CN 3 Note Packet RTBC: Digital Imaging Test 1: CN 1 Material CN 2 & CN 3 Review Questions	March 24 March 24 Zoom Class: March 25 Zoom Class: March 25
3	Digital Radiography Image Processing <ul style="list-style-type: none"> Digital Radiography Chapter 3 	CN 4 Note Packet CN 4 Review Questions RTBC: Histogram & Errors	March 31 Zoom Class: April 1 April 7
4	Digital Receptors Image Capture <ul style="list-style-type: none"> Digital Radiography Chapter 5 & 6 Rad Science for Techs Chapter 13 Principles of Imaging Chapter 22 	CN 5 Note Packet Test 2: CN 2 & 3 Material CN 5 Review Questions	April 7 Zoom Class: April 8 Zoom Class: April 8
5	Digital Receptors Image Capture <ul style="list-style-type: none"> Digital Radiography Chapter 5 & 6 Rad Science for Techs Chapter 13 Principles of Imaging Chapter 22 	RTBC: Direct & Indirect Capture Senior Case Study Presentations	April 14 April 15 On Campus 8a-2pm
6	PACS (MIMPS) Fundamentals <ul style="list-style-type: none"> Digital Radiography Chapter 9, 10 & 11 	CN 6 Note Packet Test 3: CN 4 Material	April 21 Zoom Class: April 22
7	PACS (MIMPS) Fundamentals <ul style="list-style-type: none"> Digital Radiography Chapter 9, 10 & 11 	Test 4: CN 5 Material CN 6 Review Questions CN 6 Quiz	Zoom Class: April 29 Zoom Class: April 29 May 4
8	Final exam	Comprehensive Final (CN 1-6)	May 6 In person on campus

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II. Grading and Testing Guidelines:

Final Grade Calculation

Activity	Qty	Points	Percentage
Assignments, Worksheets and Attendance <ul style="list-style-type: none">Note packet assignmentsRTBC video lessons and quizzesReview questions / worksheetsAttendance (Total attendance: 80 points possible)			10 %
Exams			65 %
Comprehensive Final Exam			25 %

Note: Minimum Course Grade

The Radiological Department believes that a grade below C+ indicates a lack of mastery of essential skills. Therefore, any student who receives less than C+ in any Radiological Science sequence course cannot continue in the Radiology Program.

III. Examination Policy:

- Test Attendance Requirements:** Students must attend class when tests, oral presentations, and written assignments are scheduled. If the student does not attend class on these days the following deductions will be applied:
 - 1st missed test → 10% deduction from the earned score
 - 2nd missed test → 15% deduction from the earned score
 - 3rd missed test → 20% deduction from the earned score
 - Additional missed tests → result in a zero score
- Late Arrival:** A student who arrives late to class for a test for any reason may not be permitted to take the test at that time. The test will be treated as a make-up exam with appropriate deduction from the earned score:
 - Late arrival for any exam → 10% deduction from the earned score
- Excused Absences:** The reasons for which a student may be excused from taking an examination, oral presentations, and assignments and not receive a deduction in score are as follows:
 - Hospitalization (with documented verification)
 - Death in the immediate family (with documented verification)
 - Personal illness or illness in immediate family - (doctor's excuse required).
- Make Up Exam Procedure:** Any student who misses an examination (for any reason) is responsible for contacting the instructor prior to the start of class or examination through Canvas to let the instructor know the reason of absence and schedule the make-up test. Make-up exams are scheduled as close as possible to the missed test date and should occur no later than one week from the missed exam. In cases of **extreme** illness or hospitalization contact should be made no later than 24 hours from the date of absence. If the student does not contact the instructor within the allotted time, the student may be subjected to a zero on the examination. The instructor will not "chase down" the student to reschedule.
- No makeup opportunity will be given for absences of unscheduled quizzes (pop quizzes).
- Exam Administration:** Exams are administered via the Canvas course and are proctored over Zoom. The student must use two devices (phone and computer) while faculty proctor the examination. Each exam creates a real-time log of the student's activities while in the exam. Navigation away from the exam tab during the examination is not permitted for any reason. Exam logs are randomly checked by faculty after each test. Any student who navigates one time from the exam will receive a zero and a written warning. If a student navigates from the exam more than once, the student will receive a zero on the test and subjected to the college's academic misconduct process.
- Academic Support:** Any student who scores below a 77% on any examination is **required** to schedule a one on one meeting with the instructor to identify knowledge gaps of the material where tutoring may be mandated. Students who fail to schedule this required meeting will receive a 10% deduction from their final score until the

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meeting has been scheduled and attended. The meeting should be scheduled as close as possible post examination. The student should not view this as punishment but as a benefit to be as successful as they can be in the program.

IV. Class Attendance and Homework Make-Up Policy:

1. **Class Attendance Requirements:** Students are expected to attend ALL scheduled live online Zoom lectures, which are necessary to acquire the knowledge required to be successful in the course. Classes will meet once a week with a link to the class provided in the Canvas course.
2. **Class Attendance Grading:** Attendance is recorded and factored into the final course grade.
 - a. **Present:** Joining the session at or before the scheduled start time and remaining until the scheduled end time and returning from scheduled breaks on time (10 points).
 - b. **Late:** Joining the session one minute after the scheduled start time OR leaving the session one before the scheduled end time OR returning one minute after scheduled break times (5 points).
 - c. **Absent:** Joining the session 15 minutes or more after the scheduled start time; leaving 15 minutes or more before the scheduled end time; returning 15 minutes or more from scheduled breaks OR not returning after scheduled breaks/exams. (0 points).
3. **Notification Requirements:** In any circumstance where a student will miss an online class, the student must send a message to the instructor through Canvas **prior** to the start of the class or lab. If a student is absent from the online class due to illness, the student is not permitted to attend lab for that day. If the student is absent from the online class without notification to the instructor, the student is not permitted to attend lab for that day.
4. **Excused Absences:** The reasons for which a student may be excused from class without a deduction are as follows:
 - a. Hospitalization (with documented verification)
 - b. Death in the immediate family (with documented verification)
 - c. Personal illness or illness in immediate family - (doctor's excuse required).
5. **Technical Difficulties:** Technical issues should be communicated to the instructor as soon as possible, preferably before class via Canvas message or email. However, technical issues will not be accepted as an excused reason for tardiness or absence. Students experiencing persistent issues should contact the IT help desk immediately at helpdesk@ncstatecollege.edu or 419-755-4737.
6. **Attendance Make-Up Policy:** students marked absent or late are not eligible for full participation points for that session. Recoded sessions (when available) do not substitute for attendance and participation.
7. **Homework and Other Assignments:**
 - a. Completed, on time submissions receive full credit only when submitted by the due date and time.
 - b. Late assignments receive a 50% deduction.
 - c. Submissions one minute past the due date and time are considered late.
 - d. Assignments are accepted up to 7 days after the original due date for partial credit.
 - e. Assignment submission after 7 days will receive a score of zero (0).
 - f. Missing assignments will receive a score of zero (0).
 - g. Technology issues are not an excuse for late submission and are subject to the late assignment deduction.
 - h. It is the student's responsibility to follow submission due dates and times.
8. **Academic Integrity:** All homework assignments, presentations, written assignments and projects must reflect the student's own work. Copying other students work or using AI tools (i.e., Chat GPT or other generative AI software) to complete an assignment is prohibited. AI tools may only be used when explicitly stated by the instructor for specific assignments. Work found to be completed by copying or with unauthorized AI assistance will be considered a violation of academic integrity and may be subjected to disciplinary actions and/or the college's misconduct process.

V. Classroom Expectations:

1. **Hybrid Course Delivery Guidelines:** Since this is a hybrid course, part of the course content is delivered outside of the classroom and in your home. It is expected that you have a designated learning space in your home or other outside classroom accommodations. **This space should be free of distractions (i.e., pets,**

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children, siblings, parents, significant others, music, and television). You will not be permitted to attend to these distractors during class or during at test. In this space, you will have adequate lighting, an area to sit upright, all electronic devices needed, textbooks, and note assignments.

2. Zoom Lectures:

During online class lectures, the student will:

- Be appropriately dressed, sitting upright (preferably at a table or desk), with the camera on unless otherwise instructed
- Take care of personal needs (restroom) prior to the beginning of the class
- Remove all distractors from the Zoom area
- Mute your mic, unless answering or asking questions
- Use the raise hand feature to ask questions or get the instructors attention
- Complete the required weekly content prior to class (i.e., reading assignments, homework assignments)
- Be prepared to participate in class (ask and answer questions)
- Have the required material on hand at the time of class (i.e., note packets, textbooks, etc.)
- Review the day's material or complete other assignments as the student waits for others to finish a test or in class assignment
- Stay on task when given in class activities and group assignments

3. Demonstrate professional oral and written communication (emails, class discussion, group activities)

4. Unless otherwise instructed, cell phone use is not permitted in hybrid courses or in person labs. If a student has their cellphone out distracting others or the instructor, the student will pay a donation of \$1.00 to the Robert L. Garber scholarship fund. Examples (but not a complete list) of cell phone distractors are as follows:

- Texting
- Cell phone ringing or vibrating loudly
- Answering and conversing over the phone
- Watching videos

5. Treat classmates and instructors with respect at all times

- Actively listen when others speak
- Do not interrupt others; allow all students a chance to speak
- Challenge ideas, not people
- Value differences as strengths
- Disruptive behavior will not be tolerated

6. Use course resources wisely. Examples include:

- Assigned reading material
- Recorded lectures, notes, and power points
- Practice quizzes
- Rad Tech Boot Camp (RTBC)
- Worksheets
- Group activities
- Class discussion
- Tutoring
- Review of prior exams
- Instructor office hours