



Course Syllabus
SEMESTER
School of Nursing and Health Professions

<i>Course Name:</i> Pathology and Protocols in CT	
<i>Course & Section Number:</i>	MIT 254-XXX
<i>Meeting Day(s) & Time(s):</i>	Online - asynchronous
<i>Credits:</i>	Total 4
<i>Contact Hours:</i>	4.0 lecture
<i>Instructor's Name:*</i>	
<i>Student Hours (Formerly Office Hours) & Location:</i>	
<i>OCC Phone:</i>	
<i>OCC Email:**</i>	
<i>Additional Contact Information:</i>	

*Please only use your student OCC email to contact me.

Catalog Description:

Eligible students are those who hold current ARRT registration in radiography. Other imaging certifications will be considered on an individual basis by the academic department chair.

Computed tomography (CT) technologists create diagnostic images using advanced imaging techniques for interpretation by a radiologist. They also prepare for and assist the radiologist in the completion of complicated imaging examinations including a range of tissue biopsies and fluid drainages. They must maintain a high degree of accuracy in positioning and exposure technique.

CT technologists must demonstrate an understanding of physics, human sectional anatomy, physiology, pathology, pharmacology, radiation protection and safety. They prepare and administer contrast media and medications in accordance with state and federal regulations.

These technologists must remain sensitive to the physical and emotional needs of the patient through good communication, patient assessment, patient monitoring and patient care skills. They must use professional and ethical judgment and critical thinking while performing their duties.

Prerequisites Approval from Department Chair

Co-Requisites: None

Current Textbooks, Materials, Equipment (software/hardware requirements):

COMPUTED TOMOGRAPHY FOR TECHNOLOGISTS: A COMPREHENSIVE TEXT
ROMANS, LOIS
ISBN13: 9781496375858
EDITION: 2ND
FORMAT: PAPERBACK
PUBLISHER: LWW
COPYRIGHT: 9/15/2018

Recommended Texts:

Computed Tomography, 4th Edition. (2015) Seeram, E.; Saunders Elsevier; Philadelphia, PA.

Computer Requirements: available at <https://www.owens.edu/distanced/bkboardreq.html>.

What you will learn in this course:

Course Objectives:

1. Completion of this course will assist the student in passing the advanced level certification examination offered to individuals certified in Medical Imaging.
2. Upon completion of this course, the student will describe the measures necessary to achieve optimal visualization of pathologies by recognizing routine protocols and knowing how to adjust them for specific CT exams.
3. Upon completion of this course, the student will be familiar with numerous disease processes for the head and brain, the neck, spine, chest, abdomen, and musculoskeletal systems.
4. Upon completion of this course, the student will identify and manage patient safety concerns when caring for patients in the computed tomography suite.

Student Learning Outcomes:

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

1. Identify pathological conditions associated with each of the body systems.
2. Begin to recognize pathological conditions on CT images.
3. Describe common protocol parameters for specific anatomical structures and pathology.
4. Name the patient preparation required for each protocol.

5. List the range, anatomical landmarks, patient orientation and position and technical factors used to produce scout and scan images for a given protocol.
6. Provide correct information concerning the scan field of view (SFOV), display field of view (DFOV), mode, algorithm, gantry angle, technical factors, range, table increments and slice thickness (z-axis) selection for each procedure protocol.
7. Identify appropriate window width and window level for each various body systems and protocol and explain why each window width and window level is selected.
8. State which imaging planes are optimal for the specific anatomy.
9. Explain the types, dosage, route, and timing of oral and iodinated contrast media utilized in the evaluation of specific anatomy or pathologies.
10. Explain the post processing required for each anatomical structure and pathology and the capabilities of MSCT.
11. Describe the procedure for determining optimal peak enhancement of contrast for initiation of the scan.

Outcome The student will:	Where assessed (List assignments, exams, discussions, items to be graded)
Identify pathological conditions associated with each of the body systems.	All quizzes and examinations
Begin to recognize pathological conditions on CT images.	All quizzes and examinations
Describe common protocol parameters for specific anatomical structures and pathology.	All quizzes and examinations
Name the patient preparation required for each protocol.	All quizzes and examinations
List the range, anatomical landmarks, patient orientation and position and technical factors used to produce scout and scan images for a given protocol.	All quizzes and examinations
Provide correct information concerning the scan field of view (SFOV), display field of view (DFOV), mode, algorithm, gantry angle, technical factors, range, table increments and slice thickness (z-axis) selection for each procedure protocol.	All quizzes and examinations
Provide correct information concerning the scan field of view (SFOV), display field of view (DFOV), mode, algorithm,	All quizzes and examinations

gantry angle, technical factors, range, table increments and slice thickness (z-axis) selection for each procedure protocol.	
Identify appropriate window width and window level for each various body systems and protocol and explain why each window width and window level is selected.	All quizzes and examinations
State which imaging planes are optimal for the specific anatomy.	All quizzes and examinations
Explain the types, dosage, route, and timing of oral and iodinated contrast media utilized in the evaluation of specific anatomy or pathologies.	All quizzes and examinations
Explain the post processing required for each anatomical structure and pathology and the capabilities of MSCT.	All quizzes and examinations
Describe the procedure for determining optimal peak enhancement of contrast for initiation of the scan.	All quizzes and examinations

Program Outcomes

Goal 1: Students will be clinically competent.

Goal 2: Students will utilize critical thinking skills.

Goal 3: Students will be able to communicate effectively.

Institution General Education Outcomes

As a student at Owens Community College, you will take General Education Courses as part of your degree program. While specific to the General Education Courses, will be reinforced in many of your degree program major courses and may be measured in your capstone course or others identified.

1. Communicate effectively.
2. Act with professional responsibility.
3. Demonstrate sensitivity to other's beliefs and values.
4. Think analytically, critically, and creatively.

Institution General Education Competency	Where Assessed
Communicate effectively.	
Act with professional responsibility.	All quizzes and examinations
Demonstrate sensitivity to others' beliefs and values.	
Think analytically, critically, and creatively.	All quizzes and examinations

Technology, Lab, & File Requirements:

The Blackboard Learning System is an online course environment available for all Owens courses, even those that are not web-based. Blackboard offers students a resource where they can communicate and collaborate with instructors and fellow students outside of the physical classroom. The Radiologic Technologies Department integrates Blackboard into each course, and it is essential for all students to become familiar with the system. Check the STUDENT HELP AND RESOURCES tab on the blackboard shell for information on technical support and Software/Hardware requirements for utilizing Blackboard to complete assignments and communicate with peers and faculty.

Calculators: Please be sure that you have a calculator available as necessary for lecture class and testing sessions. Cell phones/iPads or laptops may be used for testing but may not be used as calculators. When testing, the Respondus calculator will be activated.

Specific download and installation Instructions are posted in Blackboard.

Academic Support

Disability Services Resource Center: If you have a disability or acquire one, you may be entitled to receive reasonable accommodation intended to assure you an equal opportunity to participate in and benefit from the program. To receive more information or to register for accommodation, please contact the Disability Resource Center at 567-661-7007, email disability@owens.edu, visit <https://www.owens.edu/disability/>, or stop by College Hall 124.

Tutoring Services: Owens Community College offers academic tutoring and assistance in a variety of subjects including: accounting, computing, economics, mathematics, science, and writing. For more information go to: <https://www.owens.edu/successcenters/>.

Counseling Services: Counseling Services provides assistance to students experiencing personal, educational, interpersonal/relationship, family, social, or psychological difficulties. If you feel you may benefit from this service, please contact them at counselingservices@owens.edu. More information is at <https://www.owens.edu/counseling/>.

Campus and Community Connections: The Center for Campus and Community Connections (College Hall 123) is a walk-in office created to provide retention support through resource stability initiatives and community connections. Go here for more information: <https://www.owens.edu/connection/> or contact connections@owens.edu

Owens Library: The Owens Library offers two locations (Toledo and Findlay) as well as online resources. For more information visit <https://www.owens.edu/library/>.

Students can find more information on campus resources, student support, student life, and security at this [link](#).

General Information

Student Code of Conduct: All students are expected to follow Owens Community College's [Student Code of Conduct](#), which includes academic honesty, encompassing plagiarism. See the [Board Policy](#) for more information.

Anti-Discrimination and Harassment & Title IX/Sexual Misconduct: All students, faculty, and staff are expected to follow Owens Community College's [Anti-Discrimination and Harassment Policy](#) and the College's [Title IX Policy](#)/Sexual Misconduct Procedures and Guidelines. The College strictly prohibits and will not tolerate harassment, discrimination, intimidation, or hostile/offensive working or learning environments.

Religious Accommodations: A student seeking an accommodation for an absence permitted under Ohio's Testing Your Faith Act must provide the instructor with a written email notice with the specific dates for an absence, and must do so not later than fourteen (14) days after the first day of instruction. Alternative accommodations are not retroactive, and no academic penalty will be imposed for an absence under the policy*. The request for an alternative accommodation will be kept confidential. Students with questions about a religious accommodation under Ohio's Testing your Faith Act may contact the College's Office of Academic Affairs: provost@owens.edu/

The policy may be found on the Owens website: [3358:11-2-63 Accommodation](#) for a Student Absence for the Observance of Religious Beliefs and Practices Policy

Document Collection: Throughout the semester, your instructors may ask for a variety of assignments including tests and/or quizzes for student learning of institutional general education competencies or program assessment. Please save all your class materials until the end of the semester.

Classroom Admittance: OCC classes shall only be attended by the officially registered OCC students or perspective students, instructor of record, guest lecturer, or substitute. Visitors are not permitted to be in the classroom and should not be invited to attend or participate in the class. See [FERPA](#) regulations for more information.

Use of AI Tools:

This course permits you to use artificial intelligence (AI) tools, such as chatbots, text generators, paraphraser, summarizers, or solvers, to get guidance on assignments, as long as you do so in an ethical and responsible manner. Essentially, you can think of these tools as ways to help you learn but not to entirely create work for assignments like discussion board posts, essays, presentation slides, and so on. AI is more like your tutor or TA, not a replacement for your independent thinking.

This means that you must:

- Not use AI tools to replace your own thinking or analysis or to avoid engaging with the course content.
- Cite or explain any AI tools you use. Provide the name of the AI tool, the date of access, the URL of the interface, and the specific prompt or query you used to generate the output.
- Be transparent and honest about how you used the AI tool and how it contributed to your assignment. Explain what you learned from the AI tool, how you verified its accuracy and reliability, how you integrated its output with your own work, and how you acknowledged its limitations and biases.

You are accountable for any mistakes or errors made by the AI tool. Always check and edit the output before submitting your work. If you discover any inaccuracies or inconsistencies in the output after

submission, notify the instructor immediately and correct them as soon as possible.

Using AI tools in an unethical or irresponsible manner, such as copying or paraphrasing the output without citation or transparency, using the output as your own work without verification or integration, or using the output to misrepresent your knowledge or skills, is considered a form of academic dishonesty and will result in a zero grade for the assignment and possible disciplinary action. If you have any questions about what constitutes ethical and responsible use of AI tools, please consult with the instructor **before** submitting your work.

All written assignments, projects, and exams must be completed independently.

Student Responsibilities and Instructor Expectations

Instructor's Responsibilities:

Attendance/Class Time:

We will be respectful of your time and begin and end class on time. If class needs to be canceled for any reason, I will notify students as soon as possible by email announcement.

Grading Assignments:

Assignments that are submitted by the due date will be graded and returned/recorded in the Blackboard grade center within 7 days. Assignments that are submitted after the due date *may* take up to 10 days before I am able to grade it.

Answering Emails:

I will do my best to respond to your emails within 24 hours on weekdays and within 72 hours on weekends. Please use your Owens email account to contact me.

Announcements:

I will post any updates and/or reminders on the Blackboard Announcement page, as well as send it out to your Owens email account.

Student Hours:

These posted times (posted outside my office door, LOCATION) are designated for me to be available to meet with and assist you, outside of normal class time, with any concerns/questions you may have regarding this course or program.

Facilitating Successful Completion of the Course:

I welcome questions, concerns, and experiences relevant to the topic, course and/or professional field. We learn from each other. If appropriate, I encourage you to share and ask during class. If not, please see me during student hours or email me. If there is a need, I will reach out to the student or class to address that need. I will make referrals to other campus resources as needed.

Student Responsibilities:

Attendance/Participation:

Class discussions, activities and participation are an integral component of learning and understanding the course material and therefore, attendance is expected in this class. If you are going to be absent, please notify the appropriate instructor prior to missing the class, if possible. Please look at the assignment

calendar to see what was missed (topic, assignments, etc.), review the power points and contact the instructor if you have any questions.

Class will begin on time, so please plan accordingly. It will only become an issue if your lateness becomes habitual: 5 points *could* be deducted from your final grade.

Make Up Tests

A make-up test consisting of fill in the blank questions and answers may be administered if a student misses a regularly scheduled examination. To receive maximum credit, the student must notify the instructor at least 30 minutes prior to the scheduled testing time. If no notification is received, the student will receive a five (5) point reduction from the score of the make-up examination.

Inclement Weather

In the case that the campus closes due to inclement weather, online lecture may take place at the discretion of the instructor. Communication from instructor will be sent out the day of.

Assignment submission:

Students are to be familiar with the assignment calendar and how to submit assignments (on the assignment instructions on the blackboard shell). If you are unable to submit an assignment by the end of the day on the due date (on assignment calendar), you are encouraged to still submit it. Although full credit *may not* be given if the assignment is late, you may be able to earn *at least* partial credit.

Check Email/Blackboard Shell:

Any announcements and updates will be sent to your email and/or posted on the Blackboard shell. Students are encouraged to check their email *at least* once daily and to log into their Blackboard shell several times a week to remind themselves of upcoming assignments, etc.

Tests/Quizzes:

All dates for assignments and tests are listed on the assignment calendar. All tests and quizzes will be administered by your instructor and taken during the designated class time. Please bring your laptop/tablet with you on these days with Respondus software loaded. If you do not have a device, please let us know ahead of time and we will make other arrangements for you.

Phones:

We have found phones to be a distraction in class. Please silence your phone and keep it out of sight. However, there may be circumstances you may need your phone available for personal reasons. If this is necessary, please be discreet and leave the classroom.

Contacting the Instructor:

Email is the best way to reach me, outside of student hours. Please include your course number and section in the subject line.

Asking for Help/Clarification:

I expect questions and that is ok. **Unless I am told otherwise, we will assume that every student understands everything said in class, on the Blackboard shell and through emails.** Sometimes the best thing you can say is “I am not following this concept” or “I have no idea where to begin with this assignment.” All classes, and courses in this program, will build on and further develop the information we discuss. Please reach out as soon as you have questions or need clarification.

Instructor Discrepancies:

If at any time throughout the semester you have a problem with the course and/or instructor, contact the instructor. If the issue cannot be resolved after discussion with the instructor, see the Department Chair: NAME, TELEPHONE NUMBER, LOCATION, EMAIL.

Respectful Class Communication:

Our classrooms are a safe space. Faculty and students show respect for each other in class and all communication. There is also a short power point on the Blackboard info tab regarding polite, professional email communication.

Social Media Use:

The use of YouTube, Facebook, Instagram, Twitter, Discord, SMARTkapp or any other internet share site to distribute any course, campus lab, or clinical photos, audio recordings, or video recordings is prohibited unless written permission is received from all people involved. Using these sites to display comments about faculty, peers, staff, and/or patients is in conflict with our policies. Such comments may result in disciplinary action. Written permission involves completion of "OWENS COMMUNITY COLLEGE CONSENT FORM".

How Grades are determined and major assignments.**Weighted Grade Scheme:**

Breakdown of Course Grades

The grading will be subdivided as follows:

Quiz Folder 1	64 questions worth 2 pts each	128
Quiz Folder 2	60 questions worth 2 pts each	120
Quiz Folder 3	80 questions worth 2 pts each	160
Quiz Folder 4	105 questions worth 2 pts each	210
Quiz Folder 5	80 questions worth 2 pts each	160
Quiz Folder 6	80 questions worth 2 pts each	160
Quiz Folder 7	60 questions worth 2 pts each	120
Quiz Folder 8	31 questions worth 2 pts each	62

Total 1120 points

The grading scale for this course will be:

1036-1120	A	(93-100%)
947- 1035	B	(85-92%)
846– 946	C	(76-84%)
667 – 845	D	(60-75%)
666 or below	F	(59% and below)

Specific Course Rules

The course will adhere to the rules and procedures of the department as stipulated in the Radiologic Technology Department Procedure Manual.

No eating is permitted in the laboratory classrooms. A closed water bottle will be permitted.

LECTURE SCHEDULE: Modules

While most of the course can be completed at a student's own pace, there are modules set up each week to help with time management for the course. By following the recommended assignment calendar found at the end of this syllabus, students will be able to better manage their time for course work completion. The module assignments are listed on the assignment calendar, which can be found at the end of this syllabus. The Blackboard shell is created to follow these modules.

There is a quiz and worksheet that must be completed each week by the end of the course. The worksheets are designed to help you in getting a better understanding of the course material for the quiz.

For each module, complete the following:

- Read Syllabus Follow directions make sure to read thoroughly for comprehension
- Start with Announcements every day. This is where most of communication will be done through
- Click on Folder 1
- Read the Power points for each lecture which are posted on Blackboard. These power points supplement information found in the book. Note that each week may contain different amount of power points based on information being reviewed. It has been organized best to help break up the material into related parts.
- When reviewing power points, you should be filling out the worksheet for that week as best you can. Repetition is your friend.
- Take the Test Your Knowledge quiz by DATE at TIME each week. Each quiz must be completed in one sitting. You will not be able to save the quiz and come back to it. The questions will come from a pool of questions so the questions you receive may not be the same as a classmate. Also, questions are randomized so they will not be in any order. If a question comes up that needs addressed by the instructor, you must e-mail me the general content of the question so it can be located on your quiz. Question number 3 means nothing. Please note if something happens that prevents you from finishing you quiz (ex. Power outage) you must text me right away to let me know so that I can reset it for you. I will not except excuses after the due dates for the quiz as you had a week to do them and a phone number that reaches me quickly.
- Your grades are your responsibility. The instructor will not reach out to you to inform you of where you stand after a quiz. Be diligent and keep an eye on your

grades. Take advantage of the extra credit fun as it may be the difference between letter grades.

Quizzes/test

All lecture material and quizzes are available online at the beginning of the course (unless a special issue is present then the instructor will communicate this through announcement or e-mail such as being updated) The test for each week is located in each folder under the folder number and test. Test will be made up of multiple choice, true/false, fill in the blank, ordering, etc. Questions for tests will be random and come from a pool of questions. This means that questions will be different for everyone and each time you take the test. Review and thoroughly read all power points prior to taking test. Tests are timed and must be taken in one sitting so plan accordingly. Do not confer with other students or technologists to complete the test. Also, do not copy any of the tests, print them off, or take pictures with phone. For test security, test questions are posted one at a time. All tests must be completed each week by the DATE at TIME. **Also note the last week the quiz is due on DATE at TIME. This is the last day of the semester.**

Tests

Only form of testing is the tests to test your knowledge. I do hold the right to use comprehensive questions each week or at the end of the semester. **All quizzes must be done by DATE at TIME of that week. No late quizzes will be accepted and if an issue occurs, I must be contacted by telephone right away. If a quiz is not completed by deadline a score of 0 will be given.**

FUN Activities

These are provided at my discretion as a way to help you have fun with the course. They are totally voluntary but will be applied toward extra credit points if you deem to complete them.

WORKSHEETS

These are provided to you as a means to study for the tests. All of the questions are taken straighten from the power points. It is optional if you would like to complete these as a means of studying. They are NOT mandatory.

Viewing Course Grades

Grades for assignments will be posted in the Blackboard course site. There will be a link for viewing monitoring your grade in the course. A student will only be able to see his/her own grades.

Content	Power Point Reading Assignments	Reading assignment
Folder 1 DATE	Oral & IV contrast Advantages & Disadvantages What is a Protocol	Romans Pgs. 249-250 Section I
Folder 2 DATE	CTA vs. CT Technical Parameters Language in CT Patient Preparation & Screening	Romans Section II
Folder 3 DATE	Brain Pathologies & other Brain Perfusion Scanning Brain CT Trauma & Stroke	Romans Ch. 15, 19
Folder 4 DATE	Cervical Thoracic Lumbar General Facial Musculoskeletal Skeletal Pathologies Spine pathologies, anatomies, fractures	Romans pgs. 198 – 205 209 – 211 pg 29 – 31 pg. 145 & 250 Ch. 18, 22
Folder 5 DATE	Chest High Resolution CT (HRCT) Routine Chest CT Soft Tissue of the Neck Area	Romans Ch. 16 pgs 206 - 208 pgs 273 – 275 pg. 249
Folder 6 DATE	Abdomen & Pelvis GI Track Liver, Pancreas, Gallbladder Reproductive Organs Spleen & Adrenal Glands Urinary System	Romans Ch. 17, 21 pgs. 142 - 144
Folder 7 DATE	CTA Abdomen CTA Brain & Neck CTA Chest CTA Extremities	Romans pgs. 260 - 272 pgs. 249 - 250 pgs. 275 - 279
Folder 8 DATE *Shorter week end of course	CCTA Explanation & Preparation Exam Begins Other Applications that Utilizes CT Post Processing	Romans Ch. 23, 24 pgs. 279 - 293
DATE	End of course at TIME.	

As a member of the Department of Radiologic Technologies you represent not only the college, but also the affiliating hospital in your contacts with the patients, visitors and members of the community. The impression you leave with each person is very important to the hospital and all the people involved in the health care team as well as your fellow students. The clinical affiliation reserves the right to refuse admission to any Medical Imaging Technologies student who is involved in any activity not considered professional or conducive to proper patient care.

All course assessments including quizzes and tests must be completed by DATE at TIME. No assignments will be accepted after this date and time.

Disclaimer: The instructor reserves the right to amend this syllabus as deemed necessary and will communicate such amendment to the students in the course. Please note that while unlikely, there is a possibility courses might need to change the delivery method due to external issues like public health concerns, weather issues, etc. If this happens, the college will communicate any changes via email and/or other communication methods.