SYLLABUS
RDT 257: Introduction to Sectional Anatomy and Computed Tomography
(2 Credits)

RDT 257 D01
2017 Spring
Instructor: Karie Solembrino, M.S., R.T. (R)(CT)(ARRT)
Department Head and Professor of Radiologic Technology

Class Times:
Lecture: Mondays, 9:00 am – 11:00 am
Office Hours:
Mondays 2:15 pm – 5:15 pm
Wednesdays 2:45 pm – 4:15 pm
Thursdays 8:45 am – 9:15 am
Additional hours by appointment

Office: AHB 307H
Phone: 410-572-8741
Email: ksolembrino@worwic.edu
Associate: 410-572-8740
Access to course instructor via Blackboard

Textbook

Course Description
This course provides an introduction to the imaging of the head, neck, chest, abdomen and pelvic anatomical structures in the sagittal, transverse and coronal planes. This course uses images from computed tomography (CT) and magnetic resonance imaging (MRI) to develop cognitive ability in order for students to recognize anatomical structures in multiple dimensions. Course content is designed to provide entry-level radiography students with principles related to computed tomography (CT) imaging. Two lecture hours per week. Prerequisite: RDT 255 with a grade of “C” or better or permission of the department head. Course fee: $40. Usually offered in the spring.
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<tr>
<th>Course Objectives</th>
<th>Assessment Goals</th>
<th>Assessment Strategies</th>
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</table>
| 1. Describe the equipment associated with imaging sectional anatomy and the function of each component. (GEO 1, 3) | 1. Describe the automatic power injector in terms of the medication, rate, and dose administered to the patient.  
2. Identify the CT exams when a power injector is employed and the purpose of its utilization.  
3. Identify and describe the main components of the CT unit. | Examinations  
Quizzes  
CT Observation Paper  
CT Labeling Exercises  
Comprehensive Final Exam |
| 2. Explain terminology associated with imaging sectional anatomy, image acquisition, and post-processing methods. (GEO 1, 3) | 1. Explain sectional anatomy terminology associated with image acquisition.  
2. Identify images acquired in the axial plane.  
3. Identify images acquired in the sagittal plane.  
4. Identify images acquired in the coronal plane.  
5. Define directional terms in reference to the anatomical position.  
6. Identify the body cavities and the contents contained within each.  
7. Describe the membranes associated with each body cavity.  
8. Define regional terminology associated with the body.  
9. Describe the post-processing methods used in CT according to the examination performed, and potential identified pathology. | Examinations  
Quizzes  
CT Observation Paper  
CT Labeling Exercises  
Comprehensive Final Exam |
| 3. Explain slice thickness in terms of spatial resolution, evaluation of anatomical structures, parameters affecting slice selection, and patient dose. (GEO 1, 3, 4, 9) | 1. Describe slice thickness relative to the scanned anatomical part size.  
2. Describe slice thickness relative to patient dose.  
3. Describe the relationship of slice thickness and spatial resolution. | Examinations  
Quizzes  
CT Observation Paper  
CT Labeling Exercises  
Comprehensive Final Exam |
| 4. Describe, explain the function of, and locate anatomical structures found within the gastrointestinal system on CT images. (GEO 1, 3, 4) | 1. Identify organs and vasculature associated with the gastrointestinal system on CT images in cross section.  
2. Explain the function of each organ associated with the gastrointestinal system.  
3. Describe the vasculature associated with the gastrointestinal system and the arterial and venous blood supply to vital organs. | Examinations  
Quizzes  
CT Observation Paper  
CT Labeling Exercises  
Comprehensive Final Exam |
| 5. Describe, explain the function of, and locate anatomical structures found within the circulatory system on CT images. (GEO 1, 3, 4) | 1. Describe the venous and arterial blood flow to the body systems.  
2. Identify the components of the heart and describe the circulation through the heart.  
3. Identify arteries and veins on CT after the administration of iodinated contrast media. | Examinations  
Quizzes  
CT Observation Paper  
CT Labeling Exercises  
Comprehensive Final Exam |
| 6. Describe, explain the function of, and locate anatomical structures found within the reproductive system on CT images. (GEO 1, 3, 4) | 1. Identify organs and vasculature associated with the reproductive system on CT images in cross section.  
2. Explain the function of each organ associated with the reproductive system.  
3. Describe the vasculature associated with the reproductive system and the arterial and venous blood supply to vital organs. | Examinations  
Quizzes  
CT Observation Paper  
CT Labeling Exercises  
Comprehensive Final Exam |
### Course Objectives

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<tr>
<td>7. Describe, explain the function of, and locate anatomical structures found within the skeletal system on CT images. (GEO 1, 3, 4)</td>
<td>1. Identify parts of the bony thorax and respiratory system on CT. 2. Identify the components of the pelvic girdle on CT. 3. Identify the components of the shoulder girdle on CT. 4. Identify the components of the skull and facial bones on CT. 5. Identify the components of the vertebral column on CT.</td>
<td>Examinations Quizzes CT Observation Paper CT Labeling Exercises Comprehensive Final Exam</td>
</tr>
<tr>
<td>8. Describe, explain the function of, and locate anatomical structures found within the nervous system on CT images. (GEO 1, 3, 4)</td>
<td>1. Identify organs and vasculature associated with the nervous system on CT images in cross section. 2. Explain the function of each organ associated with the nervous system. 3. Describe the vasculature associated with the nervous system and the arterial and venous blood supply to vital organs.</td>
<td>Examinations Quizzes CT Observation Paper CT Labeling Exercises Comprehensive Final Exam</td>
</tr>
<tr>
<td>9. Explain the patient screening procedure, monitoring the patient throughout the CT exam, indications, and contraindications for the completion of a CT procedure. (GEO 1, 3, 4)</td>
<td>1. Explain the contents contained within the consent form for the administration of iodinated contrast media. 2. Identify the lab tests required for the administration of iodinated contrast media, the baseline values, and specific situations when the labs should be obtained before the CT procedure. 3. Identify the lab tests required for the completion of a CT guided biopsy or drainage. 4. Explain the informed consent procedure completed by the Radiologist. 5. Describe methods for determining the patency of an IV and how to recognize an extravasation of contrast. 6. Explain the side effects, mild, moderate, and severe reactions associated with the injection of iodinated contrast media. 7. Explain indications for the completion of a CT procedure. 8. Explain contraindications for the completion of a CT procedure.</td>
<td>Examinations Quizzes CT Observation Paper CT Labeling Exercises Comprehensive Final Exam</td>
</tr>
<tr>
<td>10. Identify and describe pathology evident on CT associated with each body system according to additive or destructive properties. (GEO 1, 3, 4)</td>
<td>1. Identify and describe pathology evident in the skeletal, reproductive, respiratory, nervous, urinary, and gastrointestinal system. 2. Differentiate between additive and destructive pathologies present on CT and the beam attenuation characteristics associated with the disease process.</td>
<td>Examinations Quizzes CT Observation Paper CT Labeling Exercises Comprehensive Final Exam</td>
</tr>
</tbody>
</table>

### Course Content

1. Patient screening process for CT.  
2. Obtaining patient history and allergies.  
3. Indications and contraindications for the completion of CT exams.  
4. Laboratory tests applicable to the performance of CT exams.  
5. CT equipment.  
6. Use of the power injector and parameter selection.  
7. Reactions and side effects to iodinated contrast media.  
10. Adjusting slice thickness according to anatomical structure size.
11. Relationship of slice thickness and spatial resolution.
12. Relationship of slice thickness and patient dose.
13. Identification and function of anatomical structures of the gastrointestinal system.
15. Identification and function of anatomical structures of the urinary system.
16. Identification and function of anatomical structures of the reproductive system.
17. Identification and function of anatomical structures of the skeletal system.
18. Pathology evident on CT associated with all body systems.

The RDT course content reflects the American Society of Radiologic Technologists (ASRT) radiography curriculum, the American Registry of Radiologic Technologists (ARRT) licensure examination requirements, and the master plan of education enforced by the Joint Review Committee on Education in Radiologic Sciences (JRCERT).

Academic Honesty Policy

Students found exhibiting any of the following types of behavior during or in the preparation/performance of any quiz, project, report, test, or final exam will receive a zero "0" for the assignment, and the student conduct violation will be referred to the Student-Faculty Disciplinary Committee. Cheating will not be tolerated in the Radiologic Technology program. Students found cheating will be DISMISSED from the Radiologic Technology program.

A. Cheating is defined as the act of obtaining information or data improperly or by dishonest or deceitful means; and

B. Plagiarism is defined as the copying or imitating the language, ideas, or thoughts of another author and presenting them as one's original work, the copying of a theme or section from a book or magazine without giving credit in a footnote or copying from the manuscript of another student.

Sharing information present on a quiz or test are examples of academic dishonesty and will result in a grade of “F” for the course and immediate dismissal from the Radiologic Technology program.

Class Guidelines/Expectations

1. Be punctual and arrive to class before the scheduled meeting prepared to learn.
2. Attend all class sessions in their entirety.
3. Submit only completed work. Partially completed assignments will earn a grade of 0. No late assignments will be accepted.
4. Read assigned chapters in the textbook(s) before class meetings.
5. Ask questions to the instructor and attend scheduled tutoring sessions for clarification on course content areas.
**Emergency Information Statement**

In the event of severe inclement weather or other emergency, information about the closing of the college will be communicated via e2Campus and the College's website. Faculty will communicate with students about their courses and course requirements, such as assignments, quiz and exam dates, and class and grading policies, via Blackboard. Students will be responsible for completing all assignments in accordance with class policies.

**RDT students are responsible for all assignments and due dates outlined in the course syllabus regardless if the college has been closed due to an emergency.**

**Services for Students with Disabilities**

Wor-Wic provides reasonable accommodations for students with disabilities, in compliance with the Americans with Disabilities Act of 1990 and Section 504 of the Rehabilitation Act of 1973. If you are in need of accommodations, please contact the counseling office at (410) 334-2899. For more information, see Wor-Wic's Services for Students with Disabilities web page.

**Sexual Violence Disclosures**

Wor-Wic Community College seeks a campus free of sexual violence which includes sexual harassment, domestic violence, dating violence, stalking, and/or any form of sex or gender discrimination. Please be aware that if a student discloses a personal experience verbally or in writing as a Wor-Wic student to a faculty or staff member, the employee cannot maintain confidentiality and has the mandatory responsibility to notify one of the college’s Title IX coordinators. However, if you’d like to make a confidential disclosure of any such violence, you can contact Wor-Wic’s director of counseling (X-2900) or you can contact the Life Crisis Center at 410-749-HELP or 2-1-1.

Information on rights of victims of sexual violence and related resources is available in the college catalog and at the public safety page of Wor-Wic’s website: http://www.worwic.edu/Administration/PublicSafety.aspx.

**Attendance**

Students are expected to attend all class sessions. If a student misses a class session, it is the student’s responsibility to acquire the information reviewed and ask questions to the course instructor during tutoring. **Students absent from class will not be permitted to make-up missed quizzes or graded assessments administered during the scheduled class session.**

**Class Communication**

Blackboard is used in all RDT courses as a source of communication between instructors and students. Weekly announcements and emails will be posted in Blackboard. Students are required to use Blackboard to submit assignments and for class communication. It is the student’s responsibility to enter Blackboard daily in all RDT courses to view messages, announcements, retrieve class notes, and review materials.
Blackboard
Blackboard is used as a supplementary site for all RDT courses. To access course content in Blackboard you need to have access to a computer with an Internet connection, (other requirements may apply). Computers that meet these requirements are available on campus in BH 217, HH 100, GH 204, FOH 305, and AHB 108.

Please follow these directions to access course syllabi and any other materials posted for this course:

**Login Information:**
1. From Wor-Wic home page, point to “Blackboard” at the bottom left of the page and click.
2. Enter your Wor-Wic user ID and password. Don’t know your user ID or password? Contact Student Services

**Blackboard Components**
The following are tools the course instructor will be using in Blackboard:

**Syllabus**
The posted course syllabus documents the didactic schedule, assignments, due dates, and information pertinent to the course.

**Messages**
- Email from the course instructor will be located under the messages section of Blackboard.
- Students may email the instructor and other students in the class through messages.
- Email is the primary method of communication between students and the course instructor outside of the classroom.
- Students should visit the messages section daily in the course for new information sent by the instructor.

**Course Content**
The following items will be located within the course content of Blackboard:
1. PowerPoint Presentations,
2. Study Guides and Reviews, and
3. Assignment information. Content folders will be labeled by subject to organize course material.

**Grades**
Students can view grades in Blackboard. All graded assessments will be recorded into Blackboard.

**Blackboard Integrity**
All students logging into Blackboard affirm that they understand and agree to follow Wor-Wic Community College policies regarding academic integrity and the use of College resources as described in the college catalog. Wor-Wic Community College considers the following as violations of the computer usage policy:
1. Using the campus computing network and facilities to violate the privacy of other individuals.

2. Sharing of account passwords with friends, family members or any unauthorized individuals.

Violators are subject to college disciplinary procedures.

**ASSIGNMENTS (15% of course weighted grade)**

**ARRT Review Assignments**  
(GEO 1, 3, 4) (CO 1-10)

In the last academic semester of the RDT program, assignments are focused upon preparation for the ARRT examination. Students will complete ARRT Review Assignments. These assignments will include a review of positioning, nursing procedures, and pathology concepts. An assignment schedule will be posted in Blackboard by the beginning of the spring 2016 semester.

**CT Labeling**  
(GEO 4) (CO 4, 5, 6, 7, 8, 10)

Students will identify anatomical structures on CT images to assist in the comprehension of the location of anatomy in cross sectional planes. The CT Labeling exercises will be completed in class as time permits. Students are encouraged to complete these exercises as a resource for Quiz and Test preparation.

**Electronic/Information Literacy Writing Assignment**  
(GEO 1, 3, 5) (CO 1-10)

Students will rotate through the CT modality and observe/participate in the performance of CT exams. The student will write an observation paper answering the following questions from their experience during the CT rotation. Additionally, the student will refer to the ASRT and ARRT websites to describe the educational requirements for becoming a CT technologist.

1. Describe **three** different CT exams observed during the clinical rotation. **At least two of these CT exams must be completed with an intravenous contrast media injection.** For each of these CT exams observed, summarize the following information pertaining to the CT exam:
   a) Patient history/reason for the CT exam.
   b) Contrast Media used (when applicable), amount administered, and the reason for administering contrast media as explained CT technologist. Include a description of oral and IV administration of contrast as applicable to the exam. For the use of intravenous contrast, describe the method chosen for the contrast media injection (hand or via automatic injector). If contrast is delivered via the automatic injector, describe the rate of injection, and any special considerations the technologist may have exercised to ensure an accurate bolus injection for the anatomical structures visualized.
c) Exam parameters: slice thickness, pitch (when applicable), SFOV, DFOV, kVp, mAs, and start/end location of the scan.

2. Explain three specific lessons learned from the CT observation experience.

3. Visit the ASRT and ARRT website. Summarize the CT technologist’s responsibilities, education, and certification requirements as described on these professional websites.

The student will research the ASRT and ARRT websites as the electronic resources for this writing assignment. Students will document the ASRT and ARRT websites as electronic resources in APA format. Besides researching the ASRT and ARRT websites, the student will select a minimum of one additional electronic resource for this paper. Students are to write a CT observation paper that is between 500 to 1000 words in length. The paper should be double-spaced, include a title page, and a reference page that are not included in the word count minimum. Students should refer to the grading rubric located at the conclusion of the course syllabus for writing assignment guidelines.

The Electronic/Information Literacy writing assignment is Due Sunday April 16, 2017 by 11:00 pm EST as an attachment in messages of Blackboard. NO LATE PAPERS WILL BE ACCEPTED. FAILURE TO SUBMIT THE PAPER BY Sunday, April 16, 2017, 11:00 pm EST WILL EARN A 0.

The Electronic/Information Literacy assignment is a college requirement. Students who fail to submit the paper or do not submit the paper by the due date will receive a 0 for the assignment.

Reading and Writing Center (MTC204): You may seek writing assistance from a qualified instructor in the Reading/Writing Center. These “drop in” conferences are available on a “first-come, first-served” basis during the regular hours of the Reading and writing Center, so do not wait until the last minute to seek writing assistance. Come prepared with your original assignment and a printed copy of your written work. Center hours are: M&Th. 8:30-6:30; T&W: 8:30-8:00; F: 10:00-1:30; Sat 10:00-1:00. Do not wait until the day before an assignment is due to seek assistance.

Students are required to submit the electronic information literacy assignment in a digital format through blackboard. The paper must be submitted in a Microsoft Word compatible document. Papers will not be accepted in hard copy form.
Quizzes (15% of weighted course grade)
(GEO 1, 4) (CO 1-10)

Quizzes will be administered throughout the semester to measure the student’s comprehensive knowledge of course concepts. Students will complete quizzes during scheduled class sessions and possibly online through Blackboard. Quizzes in this course will focus upon pathology demonstrated on CT/Diagnostic Imaging, nursing procedures, and on radiographic positioning concepts. NO MAKE-UP QUIZZES WILL BE ADMINISTERED. A GRADE OF 0 IS EARNED FOR STUDENTS ABSENT DURING A QUIZ.

Tests (35% of weighted course grade)
(GEO 1, 3, 4, 9) (CO 1-10)

Three tests will be administered in RDT 257. Study guides will be provided for all chapter tests. NO MAKE-UP TESTS WILL BE ADMINISTERED. A GRADE OF 0 WILL BE EARNED IF A TEST IS MISSED DUE TO ABSENCE.

Comprehensive Final Examination (35% of weighted course grade)
(GEO 1, 3, 4, 9) (CO 1-10)

The comprehensive final examination will cover all information from RDT 257. A study guide will be provided for the comprehensive final examination. NO MAKE-UP FINAL WILL BE ADMINISTERED.

Course Evaluation

<table>
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<tr>
<th>Course Evaluation</th>
<th>Grading Scale</th>
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<td>Assignments</td>
<td>A 93 – 100</td>
</tr>
<tr>
<td>Quizzes</td>
<td>B 84 – 92</td>
</tr>
<tr>
<td>Tests</td>
<td>C 75 – 83</td>
</tr>
<tr>
<td>Comprehensive Final Exam</td>
<td>D 66 – 74</td>
</tr>
<tr>
<td></td>
<td>F 0 – 65</td>
</tr>
</tbody>
</table>

Grading Scale

A final grade below a 75.0% results in course failure and dismissal from the radiologic technology program. Grades are not rounded. A final grade of 74.9% will result in course failure and dismissal from the radiologic technology program.

Students are required to use a computer and the internet for this course. Any student who does not have this access at home will need to make arrangements to complete all coursework on campus. All students are required to complete all coursework according to the due dates documented in the course syllabus.

**An assignment schedule will be posted in blackboard by the first day of class**
<table>
<thead>
<tr>
<th>Criteria</th>
<th>Non-performance</th>
<th>Needs Improvement</th>
<th>Approaches Expectations</th>
<th>Meets Expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Points</strong></td>
<td><strong>0 Points</strong></td>
<td><strong>2 Points</strong></td>
<td><strong>4 Points</strong></td>
<td><strong>5 Points</strong></td>
</tr>
<tr>
<td>Spelling</td>
<td>More than four spelling errors are present throughout the paper.</td>
<td>Three to four spelling errors are present in the discussion post.</td>
<td>One to two spelling errors are present in discussion post.</td>
<td>Paper is free of spelling errors.</td>
</tr>
<tr>
<td>Grammar Sentence Structure</td>
<td>Does not demonstrate coherent sentence structure or knowledge of grammatical rules as expressed in the English Language.</td>
<td>Three to four grammatical or sentence structure errors are identified in the paper.</td>
<td>One to two grammatical or sentence structure errors are identified in the paper.</td>
<td>Paper is free of grammatical and sentence structure errors. Language is concise and easily understood by the reader.</td>
</tr>
<tr>
<td>Length Requirement</td>
<td>Paper has less than 450 words.</td>
<td>Paper has 450 to 474 words in the content section.</td>
<td>Paper has 475 to 499 words in the content section.</td>
<td>Paper has a minimum of 500 words. The word count DOES NOT include the title or reference page. This is CONTENT only.</td>
</tr>
<tr>
<td>Content Part I Explains Patient History and Reason for CT Exam</td>
<td>Does not describe the patient history and reason for the CT exam.</td>
<td>Describes either the patient history or reason for the CT exam.</td>
<td>Describe the patient history and reason for the CT exam with moderate detail.</td>
<td>Explains the patient history and reason for CT exam with sufficient detail.</td>
</tr>
<tr>
<td>Content Part II Contrast Media</td>
<td>Does not sufficiently describe the contrast media and the purpose for its administration for the CT exam.</td>
<td>Describes three of the five content areas about contrast media with sufficient detail.</td>
<td>Describes four of the five content areas about contrast media with sufficient detail.</td>
<td>Identifies the type, amount, and rate of injection for contrast administration. The student describes the method of the injection and special considerations to ensure the safety of the patient.</td>
</tr>
<tr>
<td>Content Part III Exam Parameters</td>
<td>Does not describe the exam parameters selected for the CT exam.</td>
<td>Describes the exam parameters but does not include all of selected factors used for the CT exam.</td>
<td>Describes the exam parameters selected for the CT exam with moderate detail.</td>
<td>Describes the exam parameters selected for the CT exam including: slice thickness, pitch, SFOV, DFOV, kVp, mAs, and start/end location of the scan.</td>
</tr>
<tr>
<td>Content Part IV CT Technologist Responsibilities</td>
<td>Does not adequately explain the CT technologist’s responsibilities, education, and certification requirements.</td>
<td>Partially explains the CT technologist’s responsibilities as outlined by the ARRT and ASRT.</td>
<td>Describes the CT technologist’s responsibilities, education, and certification requirements with moderate detail.</td>
<td>Explains the CT technologist’s responsibilities, education, and certification requirements as outlined by the ARRT and ASRT websites.</td>
</tr>
<tr>
<td>Explains Lessons Learned</td>
<td>Does not explain lessons through the conduction of research.</td>
<td>Explains one lesson learned through researching the selected topic.</td>
<td>Explains two lessons learned through researching the selected topic.</td>
<td>Explains a minimum of three lessons learned through researching the selected topic.</td>
</tr>
<tr>
<td>References in APA Format</td>
<td>Does not provide references in APA format and/or the required minimum number of resources.</td>
<td>One electronic resource is documented in APA format with no more than two errors present.</td>
<td>Two electronic resources are documented in APA format with no more than two errors present.</td>
<td>A minimum of two educational electronic resources are provided in APA format.</td>
</tr>
<tr>
<td>APA Paper Format</td>
<td>More than two errors in APA format are identified within the paper.</td>
<td>Two errors in APA format are exhibited</td>
<td>One error in APA format is exhibited in the paper.</td>
<td>Paper demonstrates APA format with 12 point Times New Roman font, a running head on the title page, page numbers, headings, double-spaced, etc. as required.</td>
</tr>
<tr>
<td>Paper Components</td>
<td>Paper does not include a title page, 500 words of content, and reference page.</td>
<td></td>
<td>The title page or reference page is missing from the writing assignment.</td>
<td>Paper includes a title page, a minimum of 500 words of content, an introduction, a conclusion, and a reference page.</td>
</tr>
</tbody>
</table>
RDT 257 TENTATIVE LECTURE SCHEDULE

January
23  Introduction to Sectional Anatomy
30  Fundamentals of CT/Patient Screening Process/Thorax

February
6   Thorax
13  Thorax
20  TEST ONE
27  Abdomen/Pelvis

March
6   SPRING BREAK
13  Abdomen/Pelvis
20  Abdomen/Pelvis
27  TEST TWO

April
3   Brain
10  Brain
17  Brain
24  TEST THREE
25  RDT 257 COMPREHENSIVE FINAL