

Washtenaw Community College Comprehensive Report

RAD 266 Advanced Computed Tomography (CT) Imaging Effective Term: Fall 2013

Course Cover

Division: Math, Science and Health

Department: Allied Health

Discipline: Radiography

Course Number: 266

Org Number: 15600

Full Course Title: Advanced Computed Tomography (CT) Imaging

Transcript Title: Advanced CT Imaging

Is Consultation with other department(s) required: No

Publish in the Following: College Catalog , Time Schedule , Web Page

Reason for Submission: Course Change

Change Information:

Consultation with all departments affected by this course is required.

Course description

Credit hours

Total Contact Hours

Pre-requisite, co-requisite, or enrollment restrictions

Outcomes/Assessment

Objectives/Evaluation

Rationale: More time is needed to cover the course content.

Proposed Start Semester: Fall 2013

Course Description: This is a course for certified technologists, ARRT (R), ARRT (N), ARRT (T), and (CNMT), who are admitted to the computed tomography (CT) program. Advanced computed tomography (CT) techniques, including the principles and application of 3D imaging will be discussed.

Course Credit Hours

Variable hours: No

Credits: 3

Lecture Hours: Instructor: 45 Student: 45

Lab: Instructor: 0 Student: 0

Clinical: Instructor: 0 Student: 0

Total Contact Hours: Instructor: 45 Student: 45

Repeatable for Credit: NO

Grading Methods: Letter Grades

Audit

Are lectures, labs, or clinicals offered as separate sections?: NO (same sections)

College-Level Reading and Writing

College-level Reading & Writing

College-Level Math

Requisites

Prerequisite

RAD 265 minimum grade "C"

General Education

Request Course Transfer

Proposed For:

Student Learning Outcomes

1. Identify the special procedures used in computed tomography (CT) to diagnose and treat disease.

Assessment 1

Assessment Tool: Embedded questions on the multiple choice final exam.

Assessment Date: Winter 2016

Assessment Cycle: Every Three Years

Course section(s)/other population: All sections

Number students to be assessed: All students (maximum admission to Computed Tomography (CT) Program is 12 students)

How the assessment will be scored: Blind-scored with an answer key.

Standard of success to be used for this assessment: 90% of students will score 75% or higher on the outcome related questions.

Who will score and analyze the data: Faculty

2. Integrate knowledge of human anatomy and computed tomography (CT) scanning protocols to construct three-dimensional (3D) images.

Assessment 1

Assessment Tool: Embedded questions on the multiple choice final exam.

Assessment Date: Winter 2016

Assessment Cycle: Every Three Years

Course section(s)/other population: All sections

Number students to be assessed: All students (maximum admission to Computed Tomography (CT) Program is 12 students)

How the assessment will be scored: Blind-scored with an answer key

Standard of success to be used for this assessment: 90% of students will score 75% or higher on the outcome related questions.

Who will score and analyze the data: Faculty

Course Objectives

1. Identify the events that resulted in the evolution of 3D reconstruction and advanced post-processing techniques.

Matched Outcomes

2. Compare and contrast reconstruction, reformatting and advanced post-processing techniques used in computed tomography (CT) imaging.

Matched Outcomes

3. Identify the limitations to the use of three-dimensional (3D) imaging and other post-processing tools.

Matched Outcomes

4. Define surface rendering and volumetric rendering.

Matched Outcomes

5. Describe clinical applications of three-dimensional (3D) imaging.

Matched Outcomes

6. Explain the concept of reconstruction algorithms.

Matched Outcomes

7. Evaluate three-dimensional (3D) computed tomography (CT) images for diagnostic value.

Matched Outcomes

8. Relate knowledge of computed tomography (CT) protocols to the practice of three-dimensional (3D) imaging.

Matched Outcomes

9. Determine the proper technical equipment parameters to construct optimum three-dimensional (3D) images from computed tomography (CT) scans.

Matched Outcomes

10. Develop problem-solving skills in utilizing three-dimensional (3D) imaging hardware and software.

Matched Outcomes

11. Distinguish between raw data versus image data.

Matched Outcomes

12. Explain the functions of the data acquisition system (DAS).

Matched Outcomes

13. Describe the steps required for computed tomography (CT) reconstruction.

Matched Outcomes

14. List the postprocessing techniques needed for image enhancement.

Matched Outcomes

New Resources for Course

No new resources are need for this course.

Course Textbooks/Resources

Textbooks

Romans, Lois. *Computed Tomography for Technologists A Comprehensive Text*, 1st ed. Wolters Kluwer Health/Lippincott Williams & Wilkins, 2011, ISBN: 0781777518.

Manuals

Periodicals

Software

Equipment/Facilities

Level III classroom

Testing Center

Other: OE 121 Radiography Laboratory

<u>Reviewer</u>	<u>Action</u>	<u>Date</u>
Faculty Preparer: <i>Connie Foster</i>	<i>Faculty Preparer</i>	<i>Feb 28, 2013</i>
Department Chair/Area Director: <i>Connie Foster</i>	<i>Recommend Approval</i>	<i>Mar 01, 2013</i>
Dean: <i>Martha Showalter</i>	<i>Recommend Approval</i>	<i>Mar 05, 2013</i>
Vice President for Instruction: <i>Bill Abernethy</i>	<i>Approve</i>	<i>Apr 10, 2013</i>