Middlesex Community College
SYALLBUS

I. Course Title: CAT *206 Image Display, Post Processing and Quality Assurance II

II. Credits: 3

III. Prerequisites: Admission to the Computed Tomography Program, ARRT Registered Radiographer, CAT201, CAT202, CAT203, CAT204 with a "C" or better for all. Must be a registered Radiographer (ARRT)

IV: Semester: Sppring 2016

V: Instructor: Jason Bohn, B.S., RT (R)(CT)
Office Hours: By appointment
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Email: jason.bohn@midhosp.org

VI: Course Description: This course will advance the students to advanced imaging parameters. The formation of computed tomography image is discussed as well as essential quality control and assurance testing..

VII: Course Text: **Recommended Not Required: Computed Tomography,** Seeram, 2009, Elsevier.
Required: Computed Tomography Review, DeMaio, 20011, Elsevier

VIII: Course Objectives: At the end of this course, the student will be able to:

1. Explain Radiation Physics as it applies to Computed Tomography
2. Identify between CT system Principles
3. Describe Image Processing
4. Explain Image Quality Testing

IX: Course Goals:

1. Provide students with the opportunity to explain radiation physics as it relates to CT.
2. Provide students the opportunity to identify and operate CT systems.
3. Provide students the opportunity to describe image processing.
4. Provide student the opportunity to demonstrate and explain Image quality testing.

X: General Unit Outline:

I. Physical Principles of CT
II. CT Systems
   a. Instrumentation
   b. Equipment components
   c. Slip ring technology
III. Data acquisition and Image Reconstruction

IV. Basic Instrumentation
   a. Pitch
   b. Volume coverage
   c. Collimation, table speed
   d. Scan time
   e. Reconstruction increments
V. Image post processing
VI. Image quality
   a. Spatial and contrast resolution
   b. Slice sensitivity
   c. Accuracy and uniformity
   d. Image artifact
VII. Radiation Dose
   a. Radiation quantities and units
   b. Radiation bio-effects
   c. Factors affecting dose
   d. Modulation and optimization

XI: Course Presentation: This course consists of the following components:

Assignments	150 points
Final Exam	50 points
Total Points	200 points

XII: Grade Scale:

94 = A	83 = B -
92 = A -	80 = C +
89 = B +	77 = C
86 = B	76 = F

ADDITIONAL COLLGE INFORMATION:

IMPORTANT COLLEGE POLICIES!! PLEASE READ CAREFULLY!

For information about the college's policies and procedures regarding academic honesty, accessibility/disability services, attendance, audio-recording in the classroom, grade appeals, plagiarism, religious accommodations, weather and emergency closings, and more, please go to the following website:
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Primary Title IX Coordinator
Dr. Adrienne Maslin
Dean of Students/Title IX and Section 504/ADA Coordinator
amaslin@mxcc.edu; 860-343-5759; Founders Hall Room 123

Secondary Title IX Coordinator
Ms. Mary Lou Phillips
Director of Human Resources, Middlesex Community College
mphillips@mxcc.edu; 860-343-5751; Founders Hall Room 115

Secondary Title IX Coordinator
Ms. Queen Fordham
Coordinator of the Meriden Center Welcome Desk
qfordham@mxcc.edu; 203-608-3011

CELL PHONE POLICY: *Whether in clinical or class, personal cell phones should be placed on silent mode and put away so that professional activities are not disrupted. Students are not permitted to "text" during class or clinic.

CAT*206 – CT Image Display, Post Processing and Quality Assurance II
Course Topics and Schedule

Week	Study Topic(s)	Assignment(s)
1	CT system principles	Module 1 Assignment 1
2	CT system principles cont.	
3	Inage processing	Module 2 Assignment 1
4	Image processing	
5	Image processing	Module3 Assignment 1
6	Image Quality Tests	
7	Image Quality Tests cont.	Module 4 Assignment 1
8	Image Quality Tests cont.	
9	Lab on spatial and contrast resolution	Module 5 Assignment 1
10	Lab on temporal resolution and linearity	
11	Lab on noise and uniformity	Module 6 Assignment 1
12	Exam review	
13	Exam review	
14	Final Exam	Accumulative

SUBJECT TO CHANGE WITH NOTIFICATION