

**Course Outcomes Assessment
Spring 2017**

Course Title: PHY 106 Radiological Physics Theory

Instructor: Donna Carroll

STUDENT LEARNING OUTCOMES:

After completing this course, the student will be able to define and apply the following Physics concepts to radiography practice:

- Use of metric units, logarithms and scientific notation,
- Physics of work, inertia, energy, momentum and power,
- Structure of matter, atoms, and elements,
- Electrostatics, electrodynamics, magnetism, and electromagnetism,
- DC and AC generators, motors and transformers,
- Calculation step-up and step-down voltages and currents for transformer ratios,
- Production of high voltage, rectification, thermionic emission, and solid state diodes,
- Production and properties of x-rays, electromagnetic radiations and the interactions with matter,
- Half-value layer filtration and saturation current,
- X-ray tubes, fluoroscopic tubes, x-ray technique charts, tube cooling curves, and beam limiting devices,
- X-ray circuits, single phase, three phase and high-frequency generators and fluoroscopy equipment.

Assessment: Exams, quizzes, homework assignments, comprehensive final exam

Validation: Students will pass the course with a 75% or better
85% of students will correctly answer designated questions on final exam

			FY 15 26	FY 16 28	FY 17 25
Outcome #2 Comp perform routine procedures.	mood Test	Question number from Final Exam	%	%	
	5	#Incoming line	n/a	86	88
	2	Brems interaction	n/a	97	96
	4	Char interaction		80	88
	1	X-ray Circuit	92	93	88
	3	Operational Guidelines	89	94	100

Outcome # 3 Utilize appro.prot standard precautions		Final Exam #	%	%	
	8	AEC unit	85	75	88
	7	Terminate Exposure	85	93	96
	9	overload	65	93	100
	6	Timer 3 phase unit	69	72	92

Results: all came up since last year with the exception of one %
Still need to emphasize: incoming line being 3 phase
Energy of the characteristic photon being the DIFFERENCE instead of sum
Low voltage components and back up AEC timer set at 150% of technique