# Department of Clinical Laboratory & Medical Imaging Sciences
# Radiologist Assistant Program, BSMIS RIM & RIM Certificate
# MSRA 5200 Advanced Patient Care & Pharmacology

## Course Description

This course is designed to enhance radiographers and radiologist assistant knowledge of drugs, contrast materials, general medications, EKG interpretations, as they related to the practice setting. Some of the categories include muscarinic, anesthetics, pain management antidysrhythmic and others. Special attention will be placed on pediatrics and geriatric considerations, intent of the drugs and its effect on disease, condition, and physiology. The chemical makeup and physical properties of contrast agents, selection of contrasts for exams, associated risk factors, pre-medication strategies, indicators/symptoms of a patient contrast media reaction and recommendations for care and treatment of patients experiencing an adverse reaction to a given contrast agent. The laws and policies related to pharmaceuticals, contrast agents and procedures in radiology practice setting. This course is a required course based on the curriculum set forth by the American Society of Radiologic Technologist and the standards set by the American Registry of Radiologic Technologist in order to sit for advanced standing examination (Web-based 240-300 hours directed study).

## Credits/Modes of Instruction

4.0 Web Based

## Prerequisites

The admission to the RA program, Learning Management System Orientation, MSRA 5100 and 5400 serve as the prerequisites to this course. The expectation is that students are proficient in both oral and written communication and are able to function autonomously in a demanding academic environment.

## Course Goals and Objectives:

### Goals

To provide each student with an understanding and knowledge of pharmacology, drugs, contrast media and EKG interpretations as it relates to the practice setting of a radiographer.

### Objectives

The student should be able to:

- Define the following four basic terms: *drug, pharmacology, clinical pharmacology,* and *therapeutics.*
- List the three most important properties of an ideal drug as well as several other important properties.
- Discuss the four main processes that make up pharmacokinetics (absorption, distribution, metabolism, and excretion), and appropriately apply these processes to clinical usefulness.
- Perform basic math computations as it relates to dosage calculations.
- Identify the contrast media used for cardiovascular, vascular and nonvascular interventional studies.
- List the indications and contraindications for contrast media.
- Discuss factors directly related to drug distribution in the neonates and infants (eg,

protein binding and blood-brain barrier).

- State the main side effects of a muscarinic agonist (eg: bethanechol) and related precautions or contraindications to its use
- List the characteristics, chemical and physical, that make a given contrast agent most useful in a given procedure.
- Describe the placement of standards leads and their significance.
- Identify arterial and ventricular cardiac arrhythmias.
- Identify patterns of cardiac arrhythmias as appearing on EKG strips.