SPECIAL NOTE:
This brief syllabus is not intended to be a legal contract. A full syllabus will be distributed to students at the first class session.

TEXT AND SUPPLEMENTARY MATERIALS USED IN THE COURSE (if any):
Please check with the LCC bookstore http://www.labette.edu/bookstore for the required texts for this class.

COURSE NUMBER: RADI 107
COURSE TITLE: RADIOGRAPHIC IMAGING I
CREDIT HOURS: 1
DEPARTMENT: Radiography
DIVISION: Health Science
PREREQUISITE: Acceptance into Radiography Program
REVISION DATE: 3/2013

COURSE DESCRIPTION:
Introduction to clinical radiography including radiographic equipment design and use, radiation protection, image acquisition, and image processing.

COURSE OUTCOMES AND COMPETENCIES:
Students who successfully complete this course will be able to without references and with 86% accuracy:

1. Understand the clinical education component and its management.
   - Explain the purpose of the clinical education component.
   - Define terms that relate to the clinical education component of the radiography curriculum.
   - Describe the physical and human resources necessary for effective clinical education.
   - Explain the importance of adhering to major clinical education policies.
   - Discuss the methods used in effectively teaching clinical course content.
   - Describe methods of assessment that can be used to measure cognitive, psychomotor, and affective aspects of clinical education.
   - Provide an overview of the administration of a hospital radiology department and the structure of hospital organization.
   - Describe how the radiology department fits into and complements the hospital environment.
   - Understand the role of the radiology administrator.
• Describe the functions of management, including planning, organizing and facilitating, staffing, directing, controlling, coordinating, and project management.
• Discuss the transition from traditional functions of management to the requirements of managing radiology in the current health care environment.
• Describe regulating agencies that affect radiology.
• Discuss the characteristics of desirable applicants for employment in radiology.

2. Understand radiographic imaging procedures.
• Discuss primary, scatter, and remnant radiation.
• Describe the fundamentals of image production.
• Describe the three major categories of image receptor systems used today in radiography.
• Compare and contrast the latent image formation process for film-screen radiography, photostimulable phosphor systems, and indirect and direct capture digital radiography.
• Discuss image quality in terms of image receptor exposure/density, contrast, recorded detail, and distortion.
• Describe fluoroscopic imaging.

3. Understand radiographic and fluoroscopic equipment operation.
• Discuss the role of the radiographer in maximizing diagnostic yield.
• Identify the typical features of a radiographic system.
• Explain radiographic equipment manipulation.
• Explain the purpose of the collimation assembly and its importance in radiation protection.
• Distinguish among the various types of radiographic tables and their functionality.
• Explain the major controls on the radiographic system control console.
• Differentiate between the types of tube support systems.
• Briefly explain the operation of photostimulable phosphor (PSP) technology.
• Explain the purpose of the upright image receptor and its functionality.
• Discuss the concept of alignment of the various radiographic system components.
• Briefly discuss the two classes of digital imaging detectors and future technologies resulting from digital detectors.
• Summarize the significant R/F equipment design changes that have resulted in modern-day equipment design and functionality.
• Discuss mobile radiographic systems and their applications.
4. Understand radiation protection procedures for the technologist and for the patient.

- Identify the sources of ionizing radiation.
- Describe the units used to measure radiation exposure.
- Describe the nature of ionizing radiation.
- Explain the ways in which ionizing radiation interacts with matter.
- List the permissible limits of exposure for occupational and nonoccupational workers.
- Explain the reason for the varying sensitivity of body cells to ionizing radiation.
- Describe the ways in which the entire body responds to varying amounts of radiation.
- Discuss the various methods used to protect the patient from excessive radiation.
- Discuss the various methods used to protect an occupational worker from excessive radiation.
- Describe several devices used to detect and measure exposure to ionizing radiation.