

LABETTE COMMUNITY COLLEGE BRIEF SYLLABUS

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.