

Hagerstown Community College
OFFICIAL COURSE SYLLABUS DOCUMENT

COURSE: BIO 202 – Radiation Biology 2 Credits
INSTRUCTOR: Donna Carroll
SEMESTER/YEAR: Summer 2015 Friday 8:30AM to 11:30 AM

COURSE DESCRIPTION:

This course focuses on the biological and genetic changes in the human body as the result of medical exposure to ionizing radiation. The therapeutic and diagnostic applications of ionizing radiation are also discussed. This course is required for students in the AAS Radiography Program. 45 hours of lecture. Prerequisites: PHY 106 and RAD 201 or instructor consent. Major topics include Cell Biology, Atomic Structure, Radioactivity, Effects of Radiation on Biological Material, Cellular Response to Radiation, Maximum Permissible Dose, and the concept of Risk Assessment.

REQUIRED TEXTBOOK: Radiation Protection in Medical Radiograph, Sherer, Visconti, and Ritenour, Seventh ed. ISBN10 0323172202

Reference Textbook:

Radiological Science for Student Technologists, tenth edition- Stuart C. Bushong ISBN 10: 0323081351

STUDENT LEARNING OUTCOMES:

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

- Effects of radiation on biological molecules and chromosomes,
- Cellular and tissue response to radiation,
- Effects of radiation on major organs and systems,
- Radiation syndromes, late effects, genetic effects and carcinogenesis,
- Effects of radiation on fetal development,
- Risk assessment and Maximum Permissible Dose,
- Clinical Radiobiology - diagnostic and therapeutic procedures.

Total Hours of Coursework

To earn an academic credit at Hagerstown Community College, students are required to complete a minimum of 37.5 clock hours (45 fifty-minute “academic” hours) of coursework per semester. Those hours of coursework may be completed through a combination of hours within the classroom and hours outside the classroom. Certain courses may require more than the 37.5 minimum hours of course work per credit. For most classes, students should expect to do at least 2 (two) hours of coursework outside the class for each hour of in-class coursework.

ACCOUNTING FOR CREDIT HOUR

Assignment/Assessment	Clock Hours	Explanation
In-class instruction	37.5	Time spent in class
Assigned readings	75	Reading, note-taking, etc.
Exams	18	Study time plus time to complete exams
Total hours	130.5	