

**St. Catharine College  
Radiography Program  
Radiation Protection & Biology  
Spring 2009**

**Course Syllabus:** RAD 240  
**Credits:** 3 Credit Hours  
**Prerequisite:** Admission into Radiography Program  
**Hours:** 9:00 AM – 10:15 AM, Mondays and Wednesdays, Jan. 8 – Mar. 5

**Instructors:** Michael Connor, Ph.D.  
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**Text:** Stewart C. Bushong, *Radiologic Science for Technologists: Physics, Biology, and Protection*, 9<sup>th</sup> ed., The C. V. Mosby Company, St. Louis, 2001.

**References:** Handouts and other materials as needed in class.

**Description:** This course will acquaint the student with the effects of ionizing radiation on biological systems, from the chemical level to systemic responses, including somatic and genetic effects, as well as the principles of radiation protection.

**Objectives:** Upon completion of the course the student should be conversant in the following:

1. Cellular radiation effects
2. Acute radiation syndromes
3. Late effects
4. Fetal effects
5. Sources of radiation exposure
6. Effective dose equivalent
7. Practical protection measures
8. Protection measurements and procedures

**Summary:**

<i>Topic</i>	<i>Chapters</i>
Cell Biology Review	32, 33, 34
Biologic Interactions of Radiation	33, 34
Cell Survival Curves	34
Acute Radiation Effects	35
Late Effects of Radiation	36
Genetic Effects of Radiation	36
Effects of Radiation on the Embryo & Fetus	36
Protection Review	37
Protection Techniques	38, 39, 40

## **Grading and Requirements:**

- I. Lecture
  - A. Regular attendance is expected. It will be the responsibility of the STUDENT to ask for the materials and assignments missed when absent from class. Assignments will be due on the first day of your return to class.
  - B. See Radiography Handbook for Attendance Policy.
  - C. It is each student's responsibility to keep up with assigned readings and assignments covered in class. Quizzes will be given with and without prior notice.
  - D. Tests and quizzes may be made up according to guidelines listed in the Radiography Student Handbook.
  - E. The instructor reserves the right to change the schedule.
- II. Academic Honesty  
Students should refer to S.C.C. Code of Student Conduct in the S.C.C. Handbook.
- III. Code of Student Conduct  
All rules set forth in the Radiography Handbook will be adhered to in this course.

## **IV. Written Examinations:**

Two exams will be given through the semester. Exams are not cumulative. These exams are designed to measure the student's understanding of course material and ability to articulate the answers to various types of questions in the written form. Questions will be multiple choice and will require the student to use reasoning ability and critical thinking to analyze various topics discussed during lecture.

## **GRADING SCALE AND EVALUATION BREAKDOWN**

A = 93 – 100  
B = 86 – 92  
C = 78 – 85  
D = 70 – 77  
F = 0 – 69

## **IMPORTANT DATES**

Jan. 19 Martin Luther King Day  
Jan. 29 Examination 1  
Mar. 5 Examination 2

***SYLLABUS IS SUBJECT TO CHANGE***