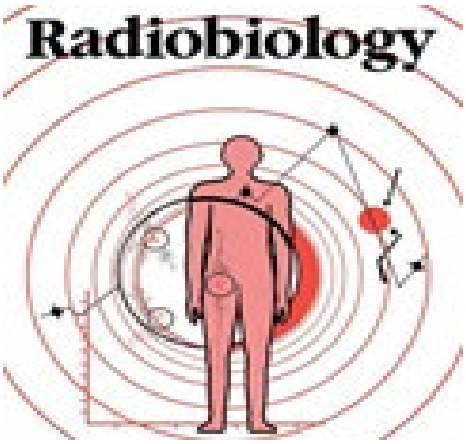
SALT LAKE COMMUNITY COLLEGE
Radiologic Technology Program

Course Syllabus



Course and Credit Hours: RADS 2060, 2 credits

Name of Course: Radiobiology

Semester and Term:

Class Location and Time:

Instructor and Phone:

Office Location:

Mailbox Location:

Email Address:

Consultation Hours:

Textbook: Essentials of Radiation Biology and Protection by Steve Forshier 2nd edition

Required Equipment: Internet access

Link or Instructions for Accessing Online Course Materials:
All material for the course will be posted on Canvas

Library Link: For a list of resources that support the program go to: http://libguides.slcc.edu/content.php?pid=16754

Prerequisite: Completion of prior semester courses per established curriculum plan.

Course Description: Interactions of radiation with living systems. Radiation effects on molecules and organisms. Factors affecting biological response. Initial and long-term effects of radiation exposure.

SLCC Student Learning Outcomes:
SLCC is committed to fostering and assessing the following student learning outcomes in it programs and courses.

1. Acquire substantive knowledge
2. Communicate effectively
3. Develop quantitative literacies
4. Think critically & creatively

5. Become a community engaged learner
6. Work in professional & constructive manner
7. Develop computer & information literacy

Course Student Learning Outcomes:
Outcome will be measured by test and worksheet scores. Upon completion of this course, the student will be able to:

1. Explain Radiobiology History (SLO 1)
   - Identify pioneers in the field of radiobiology and their contributions to research.
   - Define terms related to radiation measurement.
   - Identify regulations involved with radiobiology.

2. Describe Cellular Anatomy and Physiology (SLO 1,2,4)
   - Indicate the parts of the cell.
   - Identify organic compounds and their functions.
   - Identify inorganic compounds and their functions.
   - Explain mitosis
   - Explain meiosis.

3. Expound on Cellular Effects of Radiation (SLO 1,2,4)
   - Examine the physical and biologic factors affecting cell radiosensitivity.
   - Inspect the direct and indirect effects of radiation.
   - Evaluate the radiolysis of water.
   - Explain the irradiation of macromolecules.
   - Analyze the types of dose-response relationships.
   - Discuss the target theory.
   - Explain cell survival curves.

4. Discern the Effects of Initial Exposure to Radiation (SLO 1,2,4)
   - Discuss the hematologic, gastrointestinal, and central nervous system syndromes.
   - Describe local tissue damage to the skin, eyes, and gonads.
   - Explain hematologic and cytogenetic effects.

5. Differentiate the Effects of Long-term Radiation (SLO 1,2,4)
   - Discuss epidemiology.
   - Explain risk estimation models.
   - Examine radiation-induced malignancies.
   - Identify life-span shortening.
   - Discuss genetic damage.
   - Explain irradiation of the fetus.
   - Analyze stochastic and nonstochastic effects.
   - Describe and analyze radiation disasters videos:
     - "Chernobyl Heart"
     - "The Fukushima Nuclear Accident"
     - "Back to Chernobly"
     - "White Light, Black Rain"

Course Requirements:

Tests and Quizzes. As per the Student Handbook, **tests and quizzes must be taken on the day assigned at the designated time. In the event the student will miss a test or quiz, they must call or e-mail the instructor** PRIOR **to the designated test start time. Phone messages are acceptable.** IF THE STUDENT DOES NOT CALL OR E-MAIL PRIOR TO THE TEST OR QUIZ START TIME, the student must take the test or quiz with an automatic 50% deduction.

All tests and quizzes are to be made up by or on the 1st class day the student returns. It is the student's responsibility to initiate making up tests and quizzes. If they fail to do so, they forfeit the opportunity to take the test or quiz.

Attendance. As per the Student Handbook, **attendance in class is** extremely **important. You are forming work habits and a reputation that will follow you into the professional environment. You are expected to be present for all courses and participate in planned activities. It is the responsibility of the student to obtain notes, handouts or assignments given on any missed day.** *Students who have absences in excess of 20% of total attendance time in each course will be terminated from the program*

Student Responsibilities. Students are expected to complete reading assignments prior to scheduled class/lab times. Students should have completed worksheets, etc. and be prepared to discuss the material knowledgeably. If the student is having difficult in the course, it is the student's responsibility to make arrangements to take with the Instructor. Students are expected to be self-directed and motivated in identifying their learning needs associated with the course content.

Assignments. Each assignment has a specific due date as noted on the course schedule. No late assignments will be accepted.

Incomplete. Students must complete all requirements and receive a C grade or higher in each course to remain in the program.

Extra Credit. No extra credit work will be given.

Class Procedure or Format:
This course will utilize Power Point presentations and lecture, tests, and video worksheets.

Grading:
Course Grading:

Chernobyl Heart Video Worksheet	5%
Back to Chernobyl	5%
Fukushima Nuclear Accident Documentaries	5%
White Light, Rain	5%
5 Chapter Tests at 16% each	80%

Grading:

95-100	**A**	75-77	**C**
90-94	**A-**	71-74	**C-**
87-89	**B+**	67-70	**D+**
83-86	**B**	64-66	**D**

80-82	**B-**	Below 64	**E**
78-79	**C+**		

Wireless Devices in the Classroom:
The advent of technology use in the classroom as an instructional tool has caused both opportunities and distractions. Wireless devices cause individual inattentiveness and can make it difficult for others to stay focused. The following policies are in effect during class:

1. Cell phones, iPods/Pads, pagers, High-Resolution DVR Spy pens with webcam, microphones, recorders or any other wireless devices (excluding ADA authorized devices) that may distract from the class are to be silenced and/or set to vibrate mode before entering the classroom and may not be on the desk during class. This allows students to receive SLCC emergency notifications through email or text messaging alerts.

2. Wireless devices can be checked during class breaks outside the classroom.

3. You are expected to engage in discussion for the class. If you are discovered engaging in reading/texting messages, surfing the web and engaging in other computer activities not directly related to class, you will be asked to leave the class and will be counted as absent for that class session.

5. You may not record or publish information from the class without written authorization from the instructor. If used without written authorization, you will have violated "Privacy/Intellectual Property Rights".

Student Handbook:
Students must adhere to all policies and procedures of the Radiologic Technology Program as documented in the Student Handbook. It is the student's responsibility to be aware of, and follow, all requirements as listed in the Handbook.

ACADEMIC GRIEVANCE POLICY

In accordance with the Salt Lake Community College Student Code of Conduct, http://www.slcc.edu/policies/docs/Student_Code_of_Conduct.pdf, the grievance policy for students with reference to academics can be found in Section III. Students are encouraged to seek resolution with the instructor(s) whenever possible.

It is the goal of the School of Health Sciences to be forthright and consistent with specific academic policies throughout divisions and programs. This policy singularly addresses academic issues and the general principles for disciplinary actions as noted in the Student Code of Conduct Section III. It should be noted it is up to the faculty's discretion to provide warning (verbal or written), suspension, or dismissal based upon program policy and severity of the issue at hand. It is realized in some health sciences programs a failing grade, as stated in the syllabus and/or policy manual, may result in program dismissal.

STEP ONE: A student has the right, as per college policy, to grieve a grade, warning (verbal or written), suspension, or dismissal received within a program of study. A student, as per policy, must make an appointment to meet with the instructor of the class. A meeting, for anything other than a final grade, should be made within ten (10) days of the incident. Final grade disputes require a meeting within 30 days of the student receiving the grade. Every effort should be made to find resolution and provide evidence from both parties with respect to the grade issued.

STEP TWO: If a resolution cannot be made, the student must request in writing five (5) business days from the date of meeting with the faculty, a committee review of the grievance to the Associate Dean of the specific division. The grievance will be reviewed by a committee consisting of three (3) to five (5) faculty outside the program in which the student is enrolled. This will include the following members, the Associate Dean and two to four faculty members outside the discipline. The Associate Dean will serve as committee chair. One faculty and the program coordinator of the program involved in the grievance can attend the procedure, as can the student with one representative. Each of these parties will only be allowed to present evidence to the committee and not vote on the issue in question. Legal representation is allowed by either party. The proceedings will be recorded for accuracy. Upon completion of the proceedings, the committee ONLY will vote on the issue(s) noted in the student's grievance. A formal letter will be provided by the committee chair within ten (10) business days of the end of the proceeding with the committee's decision regarding the issue.

STEP THREE: If the student is not satisfied with the outcome, they may appeal to the Academic Dean of the School of Health Sciences. This must be done in writing within five

(5) days of receiving the formal letter from the grievance committee chair. The Dean will review the appeal, all evidence, and render a decision to the student within ten (10) days of receiving the formal letter from the student. The decision of the Dean of the School of Health Sciences is final and cannot be appealed.

Emergency Evacuation Procedures: http://i.slcc.edu/emergency-prepare/emergency-procedures.aspx
In case of an emergency situation, elevators should not be used as emergency exits. All class members should exit through the nearest doors on the west side of the building, then proceed toward the round-about on the northeast side of the building. We will then verify that all students are accounted for and unharmed. Please inform your instructor if you require assistance or accommodation during an evacuation. The instructor will identify several students in the class that are willing to provide assistance. If you have a disability, please notify your instructor and fill out an Evacuation Information Form

The SLCC Department of Public Safety is using an app called the Crisis Manager to inform students and staff about Emergency Procedures. The app allows SLCC to instantly update these procedures. To download this app go to the App Store or Google Play Store, type **SchoolDude CrisisManager** in the search box and click "Get" or "Install. For questions regarding the Emergency Procedures or downloading the app to your device, please contact [redacted]

SLCC Institutional Resources:
For information on SLCC Institutional Resources, please refer to the link on Canvas under Institutional Syllabus