COURSE DEFINITION:

RAD 520-3 The Physics of Medical Dosimetry I- This course covers the following topics: Radiologic Physics, production of x-rays, radiation treatment and simulation machines, interactions of ionizing radiation, radiation measurements, dose calculations, computerized treatment planning, dose calculation algorithms, electron beam characteristics, and brachytherapy physics and procedures. This course is twenty weeks in length. Prerequisite: Admission to the Medical Dosimetry Program.

COURSE OBJECTIVES:

1. Demonstrate an understanding of radiation physics for photons and electrons.
2. Demonstrate an understanding of the different types of radiation production.
3. Demonstrate an understanding of radiation dose calculations and algorithms.
4. Understand brachytherapy procedures and calculate radiation attenuation and decay.
5. Demonstrate an understanding of the different types of radiation detectors.
6. Demonstrate an understanding of general treatment planning.

COURSE OUTLINE:

Topics
1. Radiation physics
2. Radiation generators
3. External beam calculations
4. Brachytherapy calculations
5. Treatment planning
6. Electron beam physics

COURSE REQUIREMENTS:

Purchase all texts, attend all lectures, and complete required examinations, quizzes, and homeworks. Purchase a T130XA scientific calculator.

PREREQUISITES: Admittance to the Medical Dosimetry Program.

TEXTBOOKS:

Required:


Optional: (Students typically use clinical sites’ copy)

GRADING SCALE:

<table>
<thead>
<tr>
<th>Score Range</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90-100</td>
<td>A</td>
</tr>
<tr>
<td>80-89</td>
<td>B</td>
</tr>
<tr>
<td>70-79</td>
<td>C</td>
</tr>
<tr>
<td>&lt;70</td>
<td>Failing</td>
</tr>
</tbody>
</table>

Grades will be determined by:

- Test Performance 65%
- Quizzes/Homework 35%

Note: An overall GPA of 3.0 or greater in all graduate coursework is required to successfully complete the Medical Dosimetry Program. This is a SIUC Graduate School Policy.

COURSE CLASSROOM and TIME:

Room- Live Video Conferencing

Monday and Wednesday- Noon to 1:30 pm

BEING PREPARED FOR CLASS

Students must be prepared for class by having all required textbooks available, reading required chapters, and having all assignments complete when entering the classroom.

ATTENDANCE POLICY:

The instructor must be notified prior to class if you are going to be absent. One percent of total grade will be deducted for every class missed. Ten minutes late to a class counts as an absence.

SIU POLICY ON “INCOMPLETE” AS A COURSE GRADE

An INC assigned when, for reasons beyond their control, students engaged in passing work are unable to complete all class assignments. An INC must be changed to a complete grade within a time period designated by the instructor but not to exceed one year from the close of the term in which the course was taken, or graduation whichever occurs first. Should the student fail to
complete the course within the time period designated, not to exceed one year, or graduation, whichever comes first, the incomplete will be converted to a grade of F and the grade will be computed in the students grade point average. Students should not register for courses in which an INC has been assigned with the intent of changing the INC grade. Re-registration will not prevent the INC from being changed to an F.

CLASSROOM BEHAVIOR:

The classroom is a “safe” environment for students. The focus will be on learning. Causing disruptions, harassment of other students, foul language, disrespect for others, or entertaining at someone else’s expense will not be tolerated. For a detailed explanation of Student Code, consult “Student Conduct Code” found in Important information for siuc students, faculty, and staff, pp. 22-32. All other rules of the code must be followed. The Student Conduct Code is available at: http://www.siuc.edu/~policies/policies/conduct.html

MOBILE TECHNOLOGY POLICY

No mobile devices are allowed during class unless first Okayed by the instructor.

STATEMENT ON INCLUSIVE EXCELLENCE

SIU contains people from all walks of life, from many different cultures and sub-cultures, and representing all strata of society, nationalities, ethnicities, lifestyles, and affiliations. Learning from and working with people who differ from you is an important part of your education in this class, as well an essential preparation for your career.

STATEMENT ON ACADEMIC HONESTY/PLAGIARISM

As defined by the SIUC Student Conduct Code, acts of academic dishonesty include, but are not limited to:

1. Plagiarizing or representing the work of another as one’s own work;
2. Preparing work for another that is to be used as that person’s own work;
3. Cheating by any method or means;
4. Knowingly or willfully falsifying or manufacturing scientific or educational data and representing the same to be the result of scientific or scholarly experiment or research;
5. Knowingly furnishing false information to a university official relative to academic matters;
6. Soliciting, aiding, abetting, concealing, or attempting acts of academic dishonesty.
RESOURCES FOR ADDITIONAL ACADEMIC HELP

Supplementary Assistance: With cooperation of SIU’s Disability Support Services (DSS), each student who qualifies for reasonable supplementary assistance has the right to receive it. Students requesting supplementary assistance must first register with DSS in Woody Hall B-150, (453-5738) or http://disabilityservices.siu.edu/

Notice: If you have any type of special need(s) or disability for which require accommodations to promote learning in this class, please contact me as soon as possible. The Office of Disability Support Services (DDS) offers various support services and can help you with your special accommodations. You may wish to contact DDS at 453-5738 or go to Room 150 at Woody Hall to verify your eligibility and options for accommodations related to your special need(s) or disability.

EMERGENCY PROCEDURE STATEMENT

Southern Illinois University Carbondale is committed to providing a safe and healthy environment for study and work. Because some health and safety circumstances are beyond our control, we ask that you become familiar with the SIUC Emergency Response Plan and Building Emergency Response Team (BERT) program. Emergency response information is available on posters in buildings on campus, available on BERT’s website at www.Bert.siu.edu, Department of Safety's website www.dps.siu.edu (disaster drop down) and in Emergency Response Guideline pamphlet. Know how to respond to each type of emergency.

Instructors will provide guidance and direction to students in the classroom in the event of an emergency affecting your location. It is important that you follow these instructions and stay with your instructor during an evacuation or sheltering emergency. The building Emergency Response Team will provide assistance to your instructor in evacuating the building or sheltering within the facility

OFFICE HOURS:

Scott Collins
Office- Room 211B      Tuesday     9:00 a.m.-11:00 a.m.
Building- CASA         Wednesday    9:00 a.m.-11:00 a.m.
Phone- 453-8800        Thursday    9:00 a.m.-11:00 a.m.
Email- kscollin@siu.edu

SIU EMAIL POLICY

Official SIU student Email Policy: http://policies.siu.edu/policies/email.htm

SALUKI CARES

The purpose of Saluki Cares is to develop, facilitate and coordinate a university-wide program of care and support for students in any type of distress—physical, emotional, financial, or personal. By working closely with faculty, staff, students and their families, SIU will continue to display a culture of care and demonstrate to our students and their families that they are an important part of the community. To make a referral to Saluki Cares click, call or send: http://salukicares.siu.edu/index.html; (618) 453-5714. Or siucares@siu.edu