College of Engineering Standard Syllabus: BME6591, Fall 2016

BME 6591 Therapeutic Radiological Physics I

1. **Course Description:** Introductory graduate course in therapeutic radiation therapy physics I. (3 Credits)

2. **Pre-requisites:** BME 6535 (RAD PHYS & DOSIMETRY) and BME 6590 (MEDICAL PHYSICS), permission of instructor and Medical Physics Program Coordinator.

3. **Course Objective:** To have the basic understanding and knowledge of the principles of clinical radiation generators, the principles and methods of Ionizing Radiation measurement, conventional dosimetric calculation and treatment planning system.

4. **Instructor**: *Dr. Bo Lu*
   a. Office location: Davis Cancer Center Room:1219
   b. Telephone: 352-265-8217
   c. E-mail address: **mshang@ufl.edu**
   d. Web site: http://www.med.ufl.edu/radonc/
   e. Office hours: appointment requested by email

5. **Class Meeting Times:** UF Class Periods M and W

6. **Meeting Location:** Online classes through CANVAS system

7. **Material and Supply Fees:** Covered by Tuition/Registration

8. **Textbooks and Software Required**
   1a. Title: The Physics of Radiation Therapy
   1b. Author: Faiz M. Khan
   1c. Publisher and edition: Lippicott Williams and Wilkins, 4th ed.
   1d. ISBN number: 0-7817-8856-4

9. **Additional recommended reading**: Handouts or AAPM Task Group Reports to be distributed by instructor. It is recommended that students join American Association of Physicists in Medicine (AAPM) (www.aapm.org) as student members for free access to reports and other services. Also see www.medicalphysicsweb.org for literature and product information.

10. **Attendance and Expectations**: A**ttendance is required**. Penalties for each unexcused absence will be at the discretion of the Professor, up to a 2% deduction in cumulative average per unexcused absence. Please make arrangements for excused absences in advance. Graded homework is due no later than 5:00pm of the due date. After that, homework will not be eligible for grading unless accompanied by a doctor's note. **Students will be regularly assigned mandatory prior reading as part of class preparation.**

11. **Grading**: The distribution for the grades is given below.

ASSIGNMENT	TOTAL
Homework Problem Sets & Project	20 %
Midterm Exam I (10/12)	30 %
Final Exam (cumulative) (12/12)	50 %
	100 %

12. **Grading Scale**: (≥92 A, 91-90 A-, 87-89 B+, 83-86 B, 80-82 B- etc.) Note: grades *may* be curved.

13. **Make-up Exam Policy**: All assigned homework/ project must be completed. Extensions may only be given at the discretion of the instructor for *excused* absences. There are **no** make-up final examine; *excused* absences will permit points from missed graded events to be credited as a percentage of the Final Exam Grade. Unexcused absences will result in a zero on the missed graded event.

14. **Honesty Policy** – All students admitted to the University of Florida have signed a statement of academic honesty committing themselves to be honest in all academic work, and understanding that failure to comply with this commitment will result in disciplinary action. This statement is a reminder to uphold your obligation as a UF student and to be honest in all work submitted and exams taken in this course and all others.

15. **Accommodation for Students with Disabilities** – Students requesting classroom accommodation must first register with the Dean of Students Office. That office will provide the student with documentation that he/she must provide to the course instructor when requesting accommodation.

16. **UF Counseling Services** – Resources are available on-campus for students having personal problems or lacking clear career and academic goals. The resources include:
    - University Counseling Center, 301 Peabody Hall, 392-1575, Personal and Career Counseling.
    - SHCC mental Health, Student Health Care Center, 392-1171, Personal and Counseling.
    - Center for Sexual Assault/Abuse Recovery and Education (CARE), Student Health Care Center, 392-1161, sexual assault counseling.
    - Career Resource Center, Reitz Union, 392-1601, career development assistance/ counseling.

17. **Software Use** – All faculty, staff and student of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Lecture Schedules

Topic	Professor	Date	Assigned Material
Clinical Radiation Generators	Dr. Yan	8/22 8/24 8/29	Lecture 5 Lecture 6 Lab 1, **HW1 DUE**
Measurement of Ionizing Radiation	Dr. Samant	8/31 9/7 9/12 9/14	Lecture 1, Lecture 2 Lecture 3, Lecture 4 Lecture 7, Lecture 8, **HW 2 DUE** Lecture 9, **HW 3 DUE**
Measurement of Absorbed Dose	Dr. Li	9/19 9/21 9/26	Lecture 13, Lecture 14, Read TG-51 Lecture 15, Lecture 16 Lab 2
Orthovoltage Calibration	Dr. Lu	9/28 10/3 10/5	Lecture 10, Lecture 11, Read TG-61 Lecture 12, Lab 3 **HW 4 DUE**
MIDTERM EXAM		10/12	
Dose Distribution and Scatter Analysis	Dr. Liu	10/17 10/19	Lecture 18[§] Lecture 19
A System of Dosimetric Calculations	Dr. Liu	10/24 10/26 10/31	Lecture 20**,** Lecture 21, Lab 4 **HW 5 DUE**, **HW 6 DUE**
Treatment Planning I	Dr. Kahler	11/2 11/7 11/9 11/14	Lecture 22, Lecture 23 Lecture 24 Lecture 25 Lab 5, **HW 7 DUE**
Treatment Planning II	Dr. Kahler	11/16 11/21 11/28	Lecture 26, Lecture 27 Lecture 28 Lab 6, **HW 8 DUE**
Treatment Planning III	Dr. Kahler	11/30 12/5 12/7	Lecture 29, Lecture 30 Lab 7 **HW 9 DUE**
FINAL EXAM		12/12	