

Fall 2020

## Therapeutic Radiological Physics II

BME 6592; Section 1F22; 3 Credits

### CLASS MEETING INFO

Class Meeting Time: Online video review schedule: UF Class Periods M8-9 and W7, Reflective lectures will be held on Monday or Wednesday after 3PM

Location: online lecture through ZOOM meeting

### INSTRUCTORS

*Dr. Bo Lu (Coordinator), Dr. Jian Wu, Dr. Guanghua Yan, Dr. Sanjiv Samant, Dr. Jonathan Li, Dr. Maria Mamalui-Hunter and Dr. Soon Huh*

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Office Phone Number: 352-265-8217

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### TEACHING ASSISTANTS

Tseng, Wen-Chih

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### DESCRIPTION

Introductory graduate course in modern therapeutic radiation physics (3 Credits)

### PRE-REQUISITES/CO-REQUISITES

BME 6591 (Therapeutic Radiological Physics I), permission of Dr. Bo Lu.

### OBJECTIVES

To have the basic understanding and knowledge of some special topics in modern radiation therapy physics

### MATERIALS AND SUPPLY FEES

Covered by Tuition/Registration

### REQUIRED TEXTBOOKS & SOFTWARE

- Title: [The Physics of Radiation Therapy](#)
- Author: Faiz M. Khan
- Publisher and edition: Lippicott Williams and Wilkins, 5th ed.
- ISBN number: 0-7817-8856-4

### RECOMMENDED MATERIALS

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](http://www.aapm.org)) as student members for free access to reports and other services. Also see [www.medicalphysicsweb.org](http://www.medicalphysicsweb.org) for literature and product information.

## COURSE SCHEDULE

### PART III: Special Treatment and Procedures

1. Electron Therapy..... 6VL+ 2RL (Lu) (Video review: Week 8/24- 8/28, Week 8/31 – 9/4) (**RL 9/2 and RL 9/9**)
2. Total Body Irradiation and Total Skin Electron Therapy... 2VL+1RL (Lu) ( Video review: Week 9/7- 9/11 ) (**RL 9/16**)
3. Brachytherapy..... 8VL +3RL(Wu) (Video review: Week 9/14 – 9/18, Week 9/21-9/25, Week 9/28- 10/2) (**RL 9/23, RL 9/30 and RL10/7**)
4. Quality Assurance..... 4VL+ 1RL (Yan) (Video review: Week 10/5 – 10/9, Week 10/12- 10/16) (**RL 10/14**)

Exam I: Topic 1-4 (10/21)

### PART IV: Modern Radiation Therapy

5. Model based photon dose calculation algorithm ..... 2VL+1RL (Yan) (Video review: Week10/19 -10/23) (**RL 10/28**)
6. Intensity-Modulated Radiation therapy ..... 4VL+ 1RL (Li) (Video review: Week 10/26 - 10/30, Week 11/2 – 11/6) (**RL 11/9**)
7. Image-Guided Radiation therapy ... 3VL+ 1RL (Samant) (Video review: Week 11/9- 11/13) (RL 11/16)

Exam II: Topic 5-7 (11/18)

8. Proton Therapy ..... 5VL+2RL (Mamalui-Hunter) (Week 11/16 – 11/20, Week 11/23– 11/27, Week 11/30-12/4) (**RL 11/30 and RL 12/2**)
9. Stereotactic Radiosurgery .... 3VL+1RL (Huh) (Week 11/30 - 12/4, Week 12/7 – 12/11) (**RL 12/9**)

Exam III: Topic 8-9 (12/12)

Notes: “VL” represent video lectures. “RL” represents Reflective Lectures”

### ATTENDANCE POLICY; CLASS EXPECTATIONS; MAKE-UP POLICY

**Attendance 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.** : 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.

Excused absences must be consistent with university policies in the Graduate Catalog and require appropriate documentation:

<http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#attendance>

### EVALUATION OF GRADES

| Assignment               | Total Points | Percentage of Final Grade |
|--------------------------|--------------|---------------------------|
| Homework and lab reports | 100 each     | 10%                       |
| Quizzes                  | 100 each     | 5%                        |
| Exam I                   | 100          | 40%                       |
| Exam II                  | 100          | 20%                       |
| Exam III                 | 100          | 25%                       |
|                          |              | <b>Total: 100%</b>        |

### GRADING POLICY

| Percent  | Grade |
|----------|-------|
| 93-100   | A     |
| 90-92    | A-    |
| 87-89    | B+    |
| 83-86    | B     |
| 80-82    | B-    |
| 77-79    | C+    |
| 73-76    | C     |
| 70-72    | C-    |
| 67-69    | D+    |
| 63-66    | D     |
| 60-62    | D-    |
| 59 below | E     |

Note: grades *may* be curved based on the overall class performance

More information on UF grading policy may be found at: <http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#grades>

### STUDENTS REQUIRING ACCOMMODATIONS

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565; <https://www.dso.ufl.edu/drc>) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

### EVALUATIONS

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu/evals>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

### UNIVERSITY HONESTY POLICY

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

### SOFTWARE USE

All faculty, staff, and students 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.

### STUDENT PRIVACY

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: <http://registrar.ufl.edu/catalog0910/policies/regulationferpa.html>

### CAMPUS RESOURCES

#### Health and Wellness

#### U Matter, We Care

Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to

reach out for help if a member of our community is in need. If you or a friend is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu) so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

**Counseling and Wellness Center**

352-392-1575; <http://www.counseling.ufl.edu/cwc>

**Sexual Assault Recovery Services (SARS)**

352-392-1161; Student Health Care Center

**University Police Department**

352-392-1111 (or 911 for emergencies); <http://www.police.ufl.edu/>

**Academic Resources**

**E-learning Technical Support**

352-392-4357 (select option 2); [learning-support@ufl.edu](mailto:learning-support@ufl.edu); <https://lss.at.ufl.edu/help.shtml>

**Career Resource Center**

Career assistance and counseling.

352-392-1601; Reitz Union; <https://www.crc.ufl.edu/>

**Library Support**

Various ways to receive assistance with respect to using the libraries or finding resources.

<http://cms.uflib.ufl.edu/ask>

**Teaching Center**

General study skills and tutoring.

352-392-2010 or 352-392-6420; Broward Hall; <https://teachingcenter.ufl.edu/>

**Writing Studio**

Help brainstorming, formatting, and writing papers.

352-846-1138; 302 Tigert Hall; <https://writing.ufl.edu/writing-studio/>

**Student Complaints Campus**

[https://www.dso.ufl.edu/documents/UF\\_Complaints\\_policy.pdf](https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf)

**On-Line Students Complaints**

<http://www.distance.ufl.edu/student-complaint-process>