

**INTRODUCTION TO RADIATION PROTECTION  
GS02 1133**

**Course Hours:** Tuesday and Thursday (2:00 – 3:30 pm)  
Two lab sessions - May be after hours or dependent on instructor/equipment availability

**Location:** FCT 14.5059

**Instructors:**

Rajat Kudchadker, Ph.D. (Coordinator)  
Julie Pollard, Ph.D.  
Charles Willis, Ph.D.  
Cheenu Kappadath, Ph.D.  
Richard Wendt, Ph.D.

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**Method of Student Evaluation:**

20% Homework  
10% Quizzes & Therapy Shielding Project  
70% Two Exams (Mid-term and Final)

**Required Text Material:**

NCRP Report 151 – Structural shielding design and evaluation for megavoltage x- and gamma ray radiotherapy facilities (<http://www.ncrppublications.org/Reports/151>)

NCRP Report 147 – Structural shielding design for medical x-ray imaging facilities  
(<http://www.ncrppublications.org/Reports/147>)

**If you are an AAPM Member you can download these reports from: <http://www.aapm.org/pubs/NCRP/>**

**Other Reference Material:**

Class notes and handouts

Shielding Techniques for Radiation Oncology Facilities: Patton H. McGinley – Medical Physics Publishing  
If you are a therapy student this is a great reference book and highly recommended.

Exposure of the Pregnant Patient to Diagnostic Radiations: A guide to medical management 2<sup>nd</sup> Ed.: Louis K Wagner – Med Phys Publishing

Radiation Protection – A Guide for Scientists, Regulators and Physicians: Jacob Shapiro (4<sup>th</sup> Edition)

Introduction to Health Physics: Herman Cember (4<sup>th</sup> Edition)

Health Risks from Exposure to Low Levels of Ionizing Radiation Beir VII: National Research Council of the National Academies

Atoms, Radiation and Radiation Protection: James E. Turner

Other Reports - NCRP, ICRP, NRC, AAPM

21-May-18	Monday		
22-May-18	Tuesday	Introduction and Basic Concepts of Radiation Protection / Radiation Accidents	Julie Pollard-Larkin
23-May-18	Wednesday		
24-May-18	Thursday	Interaction Physics as Applied to Radiation Protection	Julie Pollard-Larkin
25-May-18	Friday		
26-May-18			
27-May-18			
28-May-18	Monday	<b>MEMORIAL DAY HOLIDAY</b>	<b>Holiday</b>
29-May-18	Tuesday	Radiation Detection and Survey Instrumentation	Julie Pollard-Larkin
30-May-18	Wednesday		
31-May-18	Thursday	Radiation Protection Organizations/10CFR20/10CFR35/NCRP/NRC/IAEA/ICRP	Julie Pollard-Larkin
1-Jun-18	Friday		
2-Jun-18			
3-Jun-18			
4-Jun-18	Monday		
5-Jun-18	Tuesday	MDACC Radiation Safety Program/Radioactive transportation /Personnel Monitoring	Julie Pollard-Larkin
6-Jun-18	Wednesday		
7-Jun-18	Thursday	Radiological quantities and dose limits	Rajat Kudchadker
8-Jun-18	Friday		
9-Jun-18			
10-Jun-18			
11-Jun-18	Monday		
12-Jun-18	Tuesday	Radiation Therapy shielding - NCRP 151 Part I	Rajat Kudchadker
13-Jun-18	Wednesday		
14-Jun-18	Thursday	Radiation Therapy shielding - NCRP 151 Part II	Rajat Kudchadker
15-Jun-18	Friday		
16-Jun-18			
17-Jun-18			
18-Jun-18	Monday		
19-Jun-18	Tuesday	Radiation Therapy shielding - NCRP 151 Part III	Rajat Kudchadker
20-Jun-18	Wednesday		
21-Jun-18	Thursday	Brachytherapy Radiation Protection concepts and shielding	Rajat Kudchadker
22-Jun-18	Friday		
23-Jun-18			
24-Jun-18			
25-Jun-18	Monday		
26-Jun-18	Tuesday	Shielding - vendor perspective	Rajat Kudchadker
27-Jun-18	Wednesday		
28-Jun-18	Thursday	Fetal and Pacemaker issues in Radiation Therapy	Rajat Kudchadker
29-Jun-18	Friday		
30-Jun-18			
1-Jul-18			
2-Jul-18	Monday		
3-Jul-18	Tuesday	<b>MIDTERM EXAM</b>	Rajat Kudchadker
4-Jul-18	Wednesday	<b>INDEPENDENCE DAY HOLIDAY</b>	<b>Holiday</b>
5-Jul-18	Thursday	Fetal dose calculations for RF	Charles Willis
6-Jul-18	Friday		
7-Jul-18			
8-Jul-18			
9-Jul-18	Monday		
10-Jul-18	Tuesday	NCRP - 147 / RF shielding problem	Charles Willis
11-Jul-18	Wednesday		
12-Jul-18	Thursday	RF shielding problem review and discussion	Charles Willis
13-Jul-18	Friday		
14-Jul-18			
15-Jul-18			
16-Jul-18	Monday		
17-Jul-18	Tuesday	CT-Shielding Design and Fetal Dosimetry	Kappadath Cheenu
18-Jul-18	Wednesday		
19-Jul-18	Thursday	CT dosimetry and Patient Dose	Kappadath Cheenu
20-Jul-18	Friday		
21-Jul-18			
22-Jul-18			
23-Jul-18	Monday		
24-Jul-18	Tuesday	Nuclear Medicine Radiation protection concepts / Patient Release / Fetal dosimetry	Richard Wendt
25-Jul-18	Wednesday		
26-Jul-18	Thursday	<b>NO CLASS/REVIEW</b>	Rajat Kudchadker
27-Jul-18	Friday		
28-Jul-18			
29-Jul-18			
30-Jul-18	Monday	<b>AAPM Meeting</b>	
31-Jul-18	Tuesday	<b>AAPM Meeting</b>	<b>No Class</b>
1-Aug-18	Wednesday	<b>AAPM Meeting</b>	
2-Aug-18	Thursday	<b>AAPM Meeting</b>	<b>No Class</b>
3-Aug-18	Friday		
4-Aug-18			
5-Aug-18			
6-Aug-18	Monday		
7-Aug-18	Tuesday	Nuclear Medicine - PET Shielding	Richard Wendt
8-Aug-18	Wednesday		
9-Aug-18	Thursday	Nuclear Medicine - PET/CT workshop	Richard Wendt
10-Aug-18	Friday		
11-Aug-18			
12-Aug-18			
13-Aug-18	Monday		
14-Aug-18	Tuesday	<b>FINAL EXAMINATION</b>	Rajat Kudchadker