

PHYSICS 539 COURSE OUTLINE: JAN-APR 2022

EVALUATION: **Assignments 30%, Labs 20%, Midterm 20%, Final 30%**

LOCATIONS:

- Classes are offered online through Canvas
- Labs are conducted on-site at BC Cancer in Vancouver, Victoria and Kelowna

SCHEDULE:

- Lecture times are Mondays 14:30 - 16:00 and Fridays 10:30 - 12:00
- Lab dates and times may vary – see local organizer for details
- UBC/UVic/UBCO Spring break Feb 21-25

Date		Material Covered	Instructor
Mon 10 Jan	1	Intro to Course and Review	TP/CD
Fri 14 Jan	2	Fundamental Dosimetry Concepts	TP
Mon 17 Jan	3	Monte Carlo Simulations in Radiation Therapy (I) Monte Carlo code assignment – due April 8th	TP
Fri 21 Jan	4	Monte Carlo Simulations in Radiation Therapy (II)	TP
Mon 24 Jan	5	Cavity Theory	TP
Fri 28 Jan	6	Cavity Ionization Chambers	TP
Mon 31 Jan	7	TG-51 Protocol for Clinical Reference Dosimetry	TP
Fri 4 Feb	8	TG-51 part II	TP
Mon 7 (to be confirme d)	9	Intro to Absolute and Relative Dosimetry Techniques, free-in –air chamber, Calorimetry, Chemical Dosimetry, Radiation safety primer prior to first lab ; Intro to lab Privacy in the clinical environment, linac review	CD/PP
Week of Feb 7th		LAB 1: TG-51	CD
Mon 14 Feb	10	Relative Dosimetry Techniques: Thermoluminescent/ Optically Simulated Luminescence Dosimetry, Scintillation Dosimeters	CD
Fri 18 Feb	11	Relative Dosimetry Techniques :Diodes, MOSFETs, and EPIDs ; Review	CD
Mon 21 –Fri 25 Feb		Mid Term Break	TP/CD

Mon 28 Feb		Midterm exam	
Fri Mar 4th	12	Post Mid-Term Review	TP/CD
Mon 7 March	13	Special Problems in Radiation Dosimetry: Surface Dose: Plane Parallel Ionization chambers and Film Dosimetry 2D dose maps (the Gamma index)	CD
Week of March 7th		LAB 2: Film Dosimetry	CD
Mon 14 Mar	14	Special Problems in Radiation Dosimetry: Very Small Fields	EG
Week of Mar 14th		LAB 3 OSLD/TLD Dosimetry	CD
Mon 21 Mar	15	Proton Therapy Dosimetry	EG
Fri March 25 th	16	Proton and High LET Dosimetry	EG
Mon March 28th	17	Ortho-voltage X-ray Dosimetry, Source Calibration and Dosimetry of Brachytherapy	SL
Week of Mar 28th		LAB 4:Well Chamber	SL
Fri Apr 1	18	Radiation Protection Dosimetry	PP
Mon Apr 4 th		Course Review	all
Fir Apr 8 th		All assignments and labs report due	
TBD		Final Exam	TP/CD

TP = Dr. Tony Popescu, BC Cancer, Vancouver
CD = Dr. Cheryl Duzenli, BC Cancer, Vancouver
EG = Dr. Ermias Gete, BC Cancer, Vancouver
PP = Dr. Peter Petric, BC Cancer, Vancouver
SL = Dr. Samantha Lloyd, BC Cancer, Vancouver