

## PHYSICS 539 COURSE OUTLINE: 2014

**EVALUATION:**  
**SCHEDULE:**

**Assignments - 25%, Lab Reports - 35%**

**Final - 40%**

- Lecture times are Mondays 14:30 -16:00 and Fridays 9:00 - 10:30
- Labs (see 4 dates below) will be from 15:30 - 18:00

<b>Date</b>	<b>Material Covered</b>	<b>Instructor</b>	<b>VCC Location</b>
6 Jan	Review: fundamentals of radiation dosimetry	EG/PP	Rad Onc Seminar Room
10 Jan	Photon and electron interactions	EG	686 West Broadway – 8 <sup>th</sup> Floor Conference Room
13 Jan	Introduction to Monte Carlo simulation	EG	Rad Onc Seminar Room
17 Jan	Simulation of photon and electron interactions	EG	Rad Onc Seminar Room
20 Jan	Linac head simulation with BeamNRC	EG	Rad Onc Seminar Room
24 Jan	Stopping power ratios, Spencer-Attix Cavity theory	EG	Rad Onc Seminar Room
27 Jan	Cavity Ionization Chambers, Chamber correction factors	EG	TBA
31 Jan	TG-51 protocol, photon and electron beam calibration	EG	Rad Onc Seminar Room
3 Feb	LAB 1: TG-51	PP	TBA
7 Feb	Relative dosimetry techniques 1: Thermoluminescent dosimetry	PP	Fairmont Boardroom
10-21 Feb	Mid-Term Break		
24 Feb	LAB 2: OSLDs / TLDs	PP	TBA
28 Feb	Relative dosimetry techniques 2: Film dosimetry	PP	Rad Onc Seminar Room
3 Mar	LAB 3: Film dosimetry	PP	TBA
7 Mar	Relative dosimetry techniques 3: Diodes, MOSFETs and EPIDs	PP	Rad Onc Seminar Room
10 Mar	LAB 4: Detector arrays	PP	TBA
14 Mar	Electronic Equilibrium and MC applications in modeling	EG	686 West Broadway – 8 <sup>th</sup> Floor Conference Room
17 Mar	Low energy photon dosimetry and brachytherapy source calibration, TG 43 protocol	EG	Rad Onc Seminar Room
21 Mar	Dosimetry for CT and planar kV x-ray imaging techniques	EG	Rad Onc Seminar Room
24 Mar	Proton beam dosimetry	EG	Rad Onc Seminar Room
28 Mar	Absolute dosimetry techniques: Calorimetry and chemical dosimetry	PP	Rad Onc Seminar Room
31 Mar	Radiation protection dosimetry	PP	4 <sup>th</sup> Floor Board Room
4 April	Course review	PP/EG	Rad Onc Seminar Room

## **DIRECTIONS TO VCC LECTURE LOCATIONS:**

### Rad Onc Seminar Room

BC Cancer Agency, 600 West 10<sup>th</sup> Avenue (Between Heather St. and Ash St.)

- Take main elevators to 4<sup>th</sup> floor
- Turn left on exiting elevator and left again around the corner
- Turn right through door following sign to "South Wing" and "Physicians' Offices"
- Walk all the way to end of hall and turn left
- Rad Onc Seminar Room is room #4480 on the left-hand side

### 686 West Broadway

686 West Broadway Avenue (Between Heather St. and Ash St.)

- Take elevators to 8<sup>th</sup> floor
- Follow signs to conference room

### Fairmont Boardroom

750 West Broadway Avenue (Between Heather St. and Willow St.)

- Take main elevators to 6<sup>th</sup> floor
- Follow signs to boardroom

### 4<sup>th</sup> Floor Boardroom

BC Cancer Agency, 600 West 10<sup>th</sup> Avenue (Between Heather St. and Ash St.)

- Take main elevators to 4<sup>th</sup> floor
- Turn right on exiting elevator and right again following sign to "Boardroom"
- Walk halfway down hall
- Boardroom is room #4218 on the right-hand side and is marked with a large sign overhead