

WRVA = Conference Room, Nuclear Medicine Dr. Drum david.drum@va.gov
 BWH = Hollenberg Conference Room, Thorn-3 BWH pager 11161
 Mon-Wed-Fri 8-9 am

Bring calculators for natural logs & exponentials

Expectations for Satisfactory Completion of this course:

- A) Expectations: attend lectures and labs; read handouts; write out solutions to problems; be on time.
- B) Criteria for success: be on time; attend 80% of classes; do homework; turn in exam with 60% correct or well done answers.
- C) Failure of mastery: send written notice early in course; retake course or an alternate next year

Date		Topic	Location
Apr	18 F	Statutes and Regulatory Guides: 10 CFR 20	BWH
	21 M	Patriots' Day	
	23 W	External Protection & Shielding	BWH
	25 F	Medical Uses: 10 CFR 35	BWH
	28 M	Shielding Problems	WRVA
	30 W	Doses around patients; Release Criteria	BWH
May	2 F	Pregnancy Note: 9 AM	WRVA
	5 M	Survey Meter Calibration: Note: 9AM At Rad Safety lab, basement 221 Longwood	
	7 W	Managing the labs; survey meters	WRVA
	9 F	MIRD 1	BWH
	12 M	CSI 2008 no class	
	14 W	CNM 2008	
	16 F	CNM 2008	
	19 M	MIRD II RADAR	WRVA
	21 W	ICRP 26 Effective Dose	BWH
	23 F	Radiation Biology	BWH
	26 M	MEMORIAL DAY Holiday	
	28 W	Radiological Terrorism	BWH
	30 F	Radiation Accidents	WRVA

June	2	M	CT/PET Dosimetry	BWH
	4	W	Human Subjects; IRB	BWH
	6	F	Radon	9 AM at BIDMC
	9	M	Microdosimetry; particle dosimetry	BWH
	11	W	Radioactive Waste	WRVA
	13	F	Review	BWH
16 & 18	M&W		Review for those not at SNM	BWH
	20	F	Open Book Exam	BWH

REFERENCES FOR HEALTH PHYSICS/DOSIMETRY

Cember H: Introduction to Health Physics (3rd), McGraw Hill, 1996

The premier text. Too tough for us.
Favorite of grad students in HP

Shapiro J: Radiation Protection (4th) Harvard Univ Press 2002

Local favorite; lots of easy math

Knoll GF: Radiation Detection and Measurement (3rd) Wiley, 2000

Health Physics: The journal of the field

Operational Health Physics: Journal of practical Health Physics

Health Physics Newsletter – easy read, to all members.

You should be facile with:

www.nrc.gov

and

www.mass.gov/dph/rcp

I will give handouts: I don't recommend you buy a text.

QUESTIONS TO PRACTICE WITH

1. How many rads (Gray) are there in 1 MeV ?
2. A patient is given 100 mCi of I-131 for remnant ablation s/p Thyroidectomy for cancer.
What is the exposure rate in mR/hr at one meter.
Is this safe for the staff nurses caring for him ?
Can he be sent home within the regulations ?
3. What is the unshielded exposure rate at 1 meter from 120 mCi Cs-137?
How much lead will reduce the exposure rate by 75%? By 90 %
4. How precise does the survey meter calibration seem
At 2 mR/hr (a regulatory benchmark)
At 0.02 mR/hr (twice background, for survey purposes ?
5. The absorbed dose to the early (< 3 mo) fetus from I-131 iodide is $7E-02$ mGy/MBq. What is the absorbed dose in mrad to this fetus from 5 mCi I-131 given to the mother ?
6. The absorbed dose to the early (<3 mo) fetus from Tc99m MDP is $6E-03$ mGy/MBq. What is the absorbed dose in mrad to this fetus from 25 mCi Tc99mMDP given to the mother ?