Advanced Radiation Physics Inc.

2888 NW 30th Street, Boca Raton, FL 33434, Phone: 561-789-6642

Medical Dosimetry Prep Course Outline

Course fee:

- $1,200
- A non-refundable fee of $500 is required
- Remaining balance due two weeks before the class starts
    - Use PayPal or send check to:
      Advanced Radiation Physics Inc.
      2888 NW 30th Street
      Boca Raton, FL 33434
- Send registration form email to registration@thearpi.com

Course fee will include:

- Two days course review : 8:30 AM to 6:00 PM
- Binder, CD, or electronic file with the course material
- Continental breakfast, and lunch, on both days

Course location:

- Florida Atlantic University
  College of Science
  Building 43 (behind the Fitness building)
  Department of Physics
  First Floor Room 101
  777 Glades Road
  Boca Raton, FL 33431

Day 1

1. General Physics
    a. Radioactivity
    b. Production of x-rays
    c. Radiation units
2. Radiation in matter
    a. Absorption
    b. Dose and depth dose
    c. Output factors
3. Radiation measurements
    a. Absorbed dose and kerma

b. Direct and relative measurements
d. Measurement instruments

5. Dose calculation methods
   a. Basic beam calculation
   b. Irregular fields
   c. Tissue inhomogeneities
   d. Electrons
7. Treatment planning
   a. Treatment planning systems
      i. Algorithms
      ii. Inhomogeneity corrections
      iii. Beam modeling
   b. Site specific techniques
   c. Radiobiological planning
   d. Photons
      i. SSD/SAD planning/treating
      ii. Isodose curves
      iii. Total body irradiation
      iv. SRS, SRT, SBRT
   e. Electrons
      i. Energies and depth doses
      ii. Isodose curves
      iii. Prescription techniques
      iv. Field matching
      v. Inhomogeneities and dose absorption

<u>Day 2</u>

9. Imaging
   a. Acquisition of patient data
   b. CT simulators and simulators
   c. OBI, tumor localization
10. Brachytherapy
    a. Isotopes
    b. HDR and LDR procedures
    c. Dose calculations
    d. Sources localization
11. Radiobiological effects
12. Radiation safety

a. Beams quality
b. DOH regulations
c. Radiation monitoring

13. Quality assurance
    a. Equipment verifications
    b. Treatment planning system QA
14. **Mock dosimetry test**

Silvia Pella, PhD, DABR
President & CEO of Advanced Radiation Physics Inc.
Affiliate Research Professor, Florida Atlantic University