



**Integrate Clinical Principles**

- Engage in Reflective Practice
- Apply Evidence Based Practice
- Advocate for Patients
- Apply Critical Thinking
- Apply Best Practices
- Collaborate in Interprofessional Environment
- Adapt to Current Advances in Techniques

**Imaging in Radiation Therapy**

- MRI
- PET
- US
- CT Simulation
  - 4DCT Images

**Treatment Planning (Physics :))**

- Radiation Biology
- Radiation Physics
- Patient Care
- Anatomy (i.e. Physiological, Relational)
- Oncology

**Calculations (i.e. Monitor Units)**

- Identify situations where monitor units needs to be adjusted (i.e. Weight loss)
- Calculate for non-standard conditions based on standard conditions

**Completing Optimized EBRT Treatment Plans for a Variety of Oncologic Sites**

- 3D Conformal Treatment Planning
- VMAT
- IMRT
- Brachytherapy
  - Characterize sources (i.e. half life, specific activity, energy)
  - Differentiate between different techniques (i.e. interstitial, intraoperative, remote afterloading)
- HDR vs LDR

**Determine beam parameters (i.e. energy, angles, POIs)**

- ICRU Recommendations, Clinical Protocols for the Individualized Patient
- Employ shielding methodologies to minimize OAR Dose (i.e. Collimators, MLCs)

**Interpret Treatment Plans**

- Isodose Distributions
- Target, OARs and Volumes at Risk
  - For OARs, serial vs parallel
  - Prescription Dose for Target
- Completing multiple plans and evaluating multiple
- Tolerance Doses

**2D Treatment Planning**

**Working with Treatment Planning Systems (i.e. Eclipse, External Beam Planning, Raystation)**

- Employ treatment planning tools to evaluate your plan

**Image Registration (i.e. importing and matching to MRI, PET, US etc.)**

**Superficial and Orthovoltage Treatments**

**Electron Treatments**