Vocational School of Health Services / Radiotherapy

2024 - 2025 Academic Year

RADIOTHERAPHY APPLICATIONS

Syllabus

Course Description					
Name	**Code**	**Semester**	**T+A Hour**	**Credit**	**ECTS**
RADIOTHERAPHY APPLICATIONS	RAD2226840	Spring Semester	2+10	7	14

Prerequisites Courses	
Recommended Elective Courses	MEDICAL IMAGING DEVICES
Language of Instruction	Turkish
Course Level	Short Cycle (Associate's Degree)
Course Type	Required
Course Coordinator	Lect. Mehmet Sıddık CEBE
Name of Lecturer(s)	Lect. Mehmet Sıddık CEBE
Assistant(s)	
Aim	By transferring the steps from the preparation phase to the treatment phase for a radiotherapy application,It aims to increase the ability to produce solutions in difficulties encountered during the process. Also,The use of techniques and methods is an experience for treatment.
Course Content	This course contains; Radiotherapy preparation process, patient preparation and information,Radiotherapy directed imaging: Computerized tomography,Radiotherapy directed imaging: 4-D Computerized Tomography (with breath control systems),Radiotherapy directed imaging: PET applications,Radiotherapy directed imaging: MRI applications,Contouring,Linac-based treatment applications: 3BKRT,Linac based treatment applications: YART,Link based treatment applications: VMAT,Linac based treatment applications: SRS and SBRT,Robotic radiosurgery applications,Radiosurgery applications,Brachytherapy applications,Plan quality assurance test applications.

Course Learning Outcomes	**Teaching Methods**	**Assessment Methods**
Conducts the preparation process for a radiotherapy application.	10, 16, 9	A, G
Performs patient preparation and patient information stages.	10, 16, 9	A, G
Conducts imaging applications for a radiotherapy application.	10, 16, 9	A, G
Performs radiotherapy applications with different devices.	10, 16, 9	A, G
Performs radiotherapy with different treatment techniques.	10, 16, 9	A, G
Performs radiosurgery applications.	10, 16, 9	A, G
Works in brachytherapy applications.	10, 16, 9	A, G
Performs mechanical quality control tests in radiotherapy.	10, 16, 9	A, G

Teaching Methods	10: Discussion Method, 16: Question - Answer Technique, 9: Lecture Method
Assessment Methods	A: Traditional Written Exam, G: Quiz

Lecture Schedule

Sequence	**Topics**	**Preliminary Preparation**
1	Radiotherapy preparation process, patient preparation and information	Mebis Lectures
2	Radiotherapy directed imaging: Computerized tomography	Mebis Lectures
3	Radiotherapy directed imaging: 4-D Computerized Tomography (with breath control systems)	Mebis Lectures
4	Radiotherapy directed imaging: PET applications	Mebis Lectures
5	Radiotherapy directed imaging: MRI applications	Mebis Lectures
6	Contouring	Mebis Lectures
7	Linac-based treatment applications: 3BKRT	Mebis Lectures
8	Linac based treatment applications: YART	Mebis Lectures
9	Link based treatment applications: VMAT	Mebis Lectures
10	Linac based treatment applications: SRS and SBRT	Mebis Lectures
11	Robotic radiosurgery applications	Mebis Lectures
12	Radiosurgery applications	Mebis Lectures
13	Brachytherapy applications	Mebis Lectures
14	Plan quality assurance test applications	Mebis Lectures

Evaluation Methods	**Weight(%)**
Midterm Exam	40
General Exam	60

Resources

- The Physcis of Radiation Therapy Fifth Edition, Faiz M. Khan, John P. Gibbons.
- Radiation Oncology Physics: A Handbook for Teachers and Students, E.B. PodgorsakLecture notes