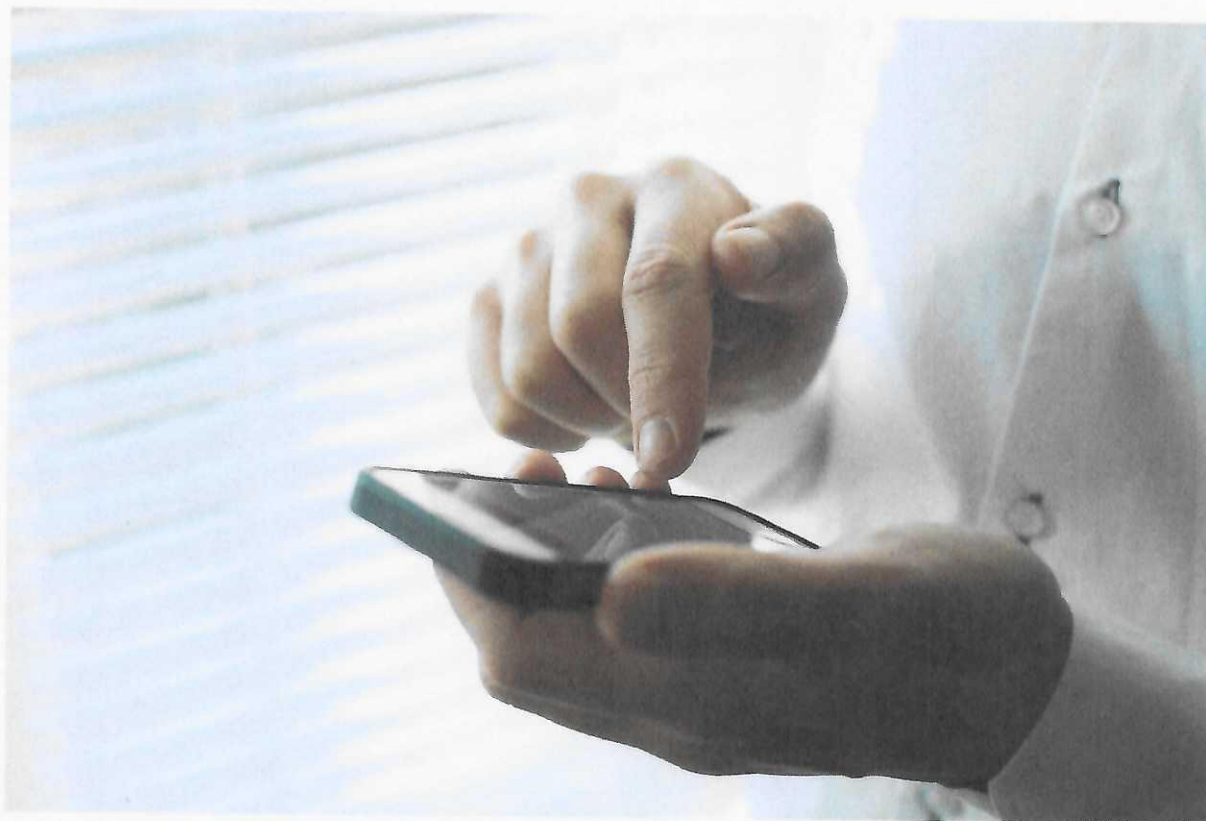


Syllabus for Bachelor of Science Medical Technology Radiotherapy (B Sc MTR) Programme



Guru Gobind Singh Indraprastha University

A State University established by the Govt. of NCT of Delhi

University School of Medicine and Allied Health Sciences

Sl. No. (4)

30/c

COURSE CONTENTS FOR FIRST YEAR ANNUAL EXAMINATION

for the first year of (BMTR) BACHELOR OF MEDICAL TECHNOLOGY (RADIOTHERAPY)
at Rajiv Gandhi Cancer Institute and Research Centre Sector - 5, Rohini, New Delhi, INDIA
AFFILIATED to Guru Gobind Singh Indraprastha University Kashmere Gate, Delhi

BMTR -101 RADIATION ONCOLOGY (PAPER 1)

Cell cycle/structure/function
Tissue structure/types/ features and functions/ Tissue importance in Radiation Therapy
Organs and systems(Structure/function) – Skin/ Central Nervous System/ Autonomic Nervous System / Peripheral Nervous System /Lymphatic System/ Endocrine System/ Urinary/ Respiratory System/ Digestive System/ Cardiovascular System
Bone and Muscle
Surface Anatomy/ Cross-sectional Anatomy – Brain & Cranial NS
Surface Anatomy – Head & Neck/ Lower Limb (Pelvis)/ Chest/ Abdomen and Limbs
Organs and Systems – Skin/ Central Nervous System/ Autonomic Nervous System / Peripheral Nervous System /Lymphatic System/ Endocrine System (Diseases encountered in the region)
Multidisciplinary approach to cancer diagnosis and management and how the patient arrives in R.T.
Treatment Intent – Curative
Procedure in Radiotherapy department – Treatment Review
Treatment Intent – Palliative
Procedure in Radiotherapy department – Importance of Follow-up – Instructions to Patients

BMTR -102 MEDICAL PHYSICS (PAPER 2)

Atomic structure/ Importance in Radiation Therapy
Radioactivity
General information treatment planning system
Professional Aspects – Principles of Professional Practice/ Appearance and Hygiene/ Universal Precautions/- History and role of radiotherapy in cancer
Interaction of Radiation and Matter (Photoelectric/Pair production/ Compton), Importance of interaction of Radiation in matter in R.T
Information Technology Computer Skills
Measurements and units
Resourcing Information
Physical characteristic – Optical Systems/ Couches Systems/ Laser Systems
Beam characteristic – Photons/ Electrons/ Heavy particles
Radiation Production
Radiation Protection
Treatment modalities – Teletherapy – Superficial/ Orthovoltage/ Cobalt – Advantage and Disadvantage/ Principles and Functions/ Common Cancers treated
Nature and Production of Ionising Radiation

BMTR -103 TECHNICAL ASPECTS (PAPER 3)

Introduction and orientation to the RT Deptt.
Patient Positioning
General consideration of RTT
General information - Radiation Therapy Equipments
Human body with typical technical terminology
Immobilization procedures
General Care of the patient
Setup reproducibility
Basic Nursing Procedures for patient care and emergency situations
Mould room activities
Errors – Immobilization / Positioning Procedures
Positioning Aids – Benefits / Limitations Mould Room Activities
Care of Patient – Lifting and Moving Techniques for patient and staff safety
First Aid to include Cardio Pulmonary Resuscitation
Benefits / Limitations of Thermoplastic Mask
Hip and pelvis positioning and immobilization
Breast and Thorax Positioning
Limitations of Breast and Thorax Positioning
Procedure in Radiotherapy department – First Visit to include Room Preparation, Equipment and Documentation and assistance with procedures / examinations
Professional development skills
Treatment preparation
Treatment equipment
Treatment set-up and delivery
Patient care
Care of the Cancer Patient – Nutrition

List of recommended Books:

1. Anatomy and Physiology (Ross and Wilson)
2. The physics of Radiation Therapy (Faiz M. Khan)
3. Linear Accelerators for Radiation Therapy (Peter C. Williams)
4. Radiotherapy: Principles to Practice (Griffith)/Basics of Radiotherapy, Technical Aspects of techniques

Guru Gobind Singh Indraprastha University, Delhi

Annual scheme of 2nd Year Examination
for
BACHELOR OF MEDICAL TECHNOLOGY (RADIOTHERAPY)
AT
Rajiv Gandhi Cancer Institute and Research Centre
Sector - 5, Rohini, New Delhi, INDIA

SECOND YEAR

Course Code	Subject/Course Name	L	T	P	Total	Yearly Credits*
BMTR-201	Radiation Oncology	5				10
BMTR-202	Medical Physics	5				10
BMTR-203	Technical Aspects	5				10
	Practicals/ Viva-voice					
BMTR-251	Radiation Oncology					8
BMTR-252	Medical Physics					8
BMTR-253	Technical Aspects					8
	Total					54

*Yearly Credits have been calculated by multiplying the semester-wise credits by two.

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Annual scheme of 3rd Year Examination
for
BACHELOR OF MEDICAL TECHNOLOGY (RADIOTHERAPY)
AT
Rajiv Gandhi Cancer Institute and Research Centre
Sector - 5, Rohini, New Delhi, INDIA

THIRD YEAR

Course Code	Subject/Course Name	L	T	P	Total	Yearly Credits*
BMTR-301	Radiation Oncology	5				10
BMTR-302	Medical Physics	5				10
BMTR-303	Technical Aspects	5				10
	Practicals/ Viva-voice					
BMTR-351	Radiation Oncology					8
BMTR-352	Medical Physics					8
BMTR-353	Technical Aspects					8
	Total					54

*Yearly Credits have been calculated by multiplying the semester-wise credits by two.