

2. PROGRAM EDUCATION OBJECTIVES (PEOs)

The overall objective of the learning outcome-based curriculum framework (LOCF) for M.Sc. Medical Radiation Physics are as follows:

PEO No.	Education Objective
PEO 1	Students will be able to use their fundamental knowledge and clinical competence in various scientific aspects of radiation physics
PEO 2	Students will demonstrate strong and well defined clinical / practical skills in radiation physics and radiation safety
PEO 3	Students will be able to practice the profession with highly professional and ethical attitude, strong communication skills, and to work in an inter-disciplinary team so as to medical physicist.
PEO 4	Students will be able to use interpersonal and collaborative skills to identify, assess and formulate problems and execute the solution to assess physics in radiation and safety
PEO 5	Students will be able to imbibe the culture of research, innovation, entrepreneurship and incubation through evidence-based medical physics practice
PEO 6	Students will be able to participate in lifelong learning process for a highly productive career and will be able to relate the concepts of trends and issues in the discipline of medical physics.



5. PROGRAM OUTCOMES (POs):

After successful completion of Masters in Medical Radiation Physics program students will be able to:

PO No.	Attribute	Competency
PO 1	Domain knowledge	Possess and acquire scientific knowledge to work as a health care professional
PO 2	Clinical/ Hands-on skills	Demonstrate and possess clinical and hands-on skills to provide quality health care services
PO 3	Team work	Demonstrate team work skills to support shared goals with the interdisciplinary health care team to improve societal health
PO 4	Ethical value & professionalism	Possess and demonstrate ethical values and professionalism within the legal framework of the society
PO 5	Communication	Communicate effectively and appropriately with the interdisciplinary health care team and the society
PO 6	Evidence based practice	Demonstrate high quality evidence based practice that leads to excellence in professional practice
PO 7	Life-long learning	Enhance knowledge and skills with the use of advancing technology for the continual improvement of professional practice
PO 8	Entrepreneurship , leadership and mentorship	Display entrepreneurship, leadership and mentorship skills to practice independently as well as in collaboration with the interdisciplinary health care team





MANIPAL COLLEGE OF HEALTH PROFESSIONS

MANIPAL

(A constituent unit of MAHE, Manipal)

The subject code equivalence for subjects mentioned in syllabus copy of course **M.Sc. Medical Radiation Physics** from the academic year **2021-22** batch. These changes have been discussed in BOS meeting held on 13.12.2021 and subsequently approved in the 70th Academic Council meeting held on 14.01.2022.

SEMESTER - I

Course Title	Old Course Code	Revised Course Code
Anatomy	ANA6101	ANA5101
Physiology	PHY6101	PHY5101
Advanced Biostatistics and Research Methodology	ABS6101	ABS5101
Mathematical Methods in Physics	MRP6101	MRP5101
Electronics	MRP6102	MRP5102
Modern Physics	MRP6121	MRP5121
Fundamentals of Computers and Programming	MRP6122	MRP5122

SEMESTER - II

Course Title	Old Course Code	Revised Course Code
Ethics & Pedagogy	EPG6201	EPG5201
Radiation Physics, Radiation Quantities and Units	MRP6201	MRP5201
Radiation Sources and Radiation Generating Equipment's	MRP6202	MRP5202
Radiation Detection, Measurement and Instrumentation	MRP6203	MRP5203
Radiobiology and Radiobiological Basis of Radiotherapy	MRP6204	MRP5204
Practical - Radiotherapy Quality assurance	MRP6211	MRP5211

SEMESTER - III

Course Title	Old Course Code	Revised Course Code
Physics of Medical Imaging	MRP7101	MRP6101
Physics of Radiotherapy	MRP7102	MRP6102
Physics in Nuclear Medicine	MRP7103	MRP6103
Radiation Safety and Regulations	MRP7104	MRP6104
Practical - Basics of treatment planning	MRP7111	MRP6111
Research Project-I	MRP7151	MRP6151

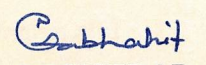
SEMESTER - IV

Course Title	Old Course Code	Revised Course Code
Recent Advances in Radiotherapy	MRP7201	MRP6201
Clinical Radiation Dosimetry and Radiation Standardisation	MRP7202	MRP6202
Field Study	MRP7231	MRP6231
Practical - Treatment planning	MRP7211	MRP6211
Research Project-II	MRP7251	MRP6251


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Dean


DEPUTY-REGISTRAR
ACADEMICS


REGISTRAR

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6. COURSE STRUCTURE, COURSE WISE LEARNING OBJECTIVE, AND COURSE OUTCOMES (COs)

SEMESTER - I

Course Code	Course Title	Credit Distribution (hours/week)					Marks Distribution		
		L	T	P	CL	CR	IAC	ESE	Total
ANA6101	Anatomy	3	-	-	-	3	30	70	100
PHY6101	Physiology	2	-	-	-	2	30	70	100
ABS6101	Advanced Biostatistics and Research Methodology	3	1	-	-	4	30	70	100
MRP6101	Mathematical Methods in Physics	3	-	-	-	3	50	50	100
MRP6102	Electronics	4	-	-	-	4	50	50	100
MRP6121	Modern Physics	3	-	1	-	4	50	50	100
MRP6122	Fundamentals of Computers and Programming	4	-	1	-	5	50	50	100
Total		22	1	2	-	25	290	410	700

Note:
 ESE for MRP6101 and MRP6102 will be conducted for 100 marks and normalised to 50 marks for grading purpose.
 ESE for MRP6121 and MRP6122 will be conducted for theory out of 100 marks. Practical is evaluated and reflected in IAC.
 ESE for ABS6101 will be conducted for 50 marks and normalised to 70 marks for grading purpose.
 ESE for ANA6101 and PHY6101 will be conducted for 50 marks and normalized to 70 marks for grading purpose

SEMESTER - II

Course Code	Course Title	Credit Distribution (hours/week)					Marks Distribution		
		L	T	P	CL	CR	IAC	ESE	Total
EPG6201	Ethics & Pedagogy	1	1	-	-	2	100	-	100
MRP6201	Radiation Physics , Radiation Quantities and Units	3	-	-	-	3	50	50	100
MRP6202	Radiation Sources and Radiation Generating Equipment's	3	-	-	-	3	50	50	100
MRP6203	Radiation Detection, Measurement and Instrumentation	3	-	-	-	3	50	50	100
MRP6204	Radiobiology and Radiobiological Basis of Radiotherapy	3	-	-	-	3	50	50	100
MRP6211	Practical - Radiotherapy Quality assurance	-	-	4	-	2	-	100	100
Total		13	1	4	-	16	300	300	600

Note:
 ESE for MRP6201, MRP6202, MRP6203 and MRP6204 will be conducted for 100 marks and normalised to 50 marks for grading purpose
 ESE for MRP6211 will be conducted for 100 marks (with practical = 50 marks and viva voce = 50marks)

SEMESTER - III

Course Code	Course Title	Credit Distribution (hours/week)					Marks Distribution		
		L	T	P/PW	CL	CR	IAC	ESE	Total
MRP7101	Physics of Medical Imaging	2	1	-	-	3	50	50	100
MRP7102	Physics of Radiotherapy	3	-	-	-	3	50	50	100
MRP7103	Physics in Nuclear Medicine	2	1	-	-	3	50	50	100
MRP7104	Radiation Safety and Regulations	4	-	-	-	4	50	50	100
MRP7111	Practical – Basics of treatment planning	-	-	4	-	2	100	-	100
MRP7151	Research Project-I	-	-	12	-	4	100	-	100
Total		11	2	16	-	19	400	200	600

Note:

ESE for MRP7101, MRP7102, MRP7103 and MRP7104 will be conducted for 100 marks and normalised to 50 marks for grading purpose

SEMESTER - IV

Course Code	Course Title	Credit Distribution (hours/week)					Marks Distribution		
		L	T	P/PW	CL	CR	IAC	ESE	Total
MRP7201	Recent Advances in Radiotherapy	2	1	-	-	3	50	50	100
MRP7202	Clinical Radiation Dosimetry and Radiation Standardisation	2	1	-	-	3	50	50	100
MRP7231	Field Study	-	-	-	9	3	-	100	100
MRP7211	Practical – Treatment planning	-	-	4	-	2	-	100	100
MRP7251	Research Project-II	-	-	30	-	10	-	100	100
Total		4	2	34	9	21	100	400	500

Note:

ESE for MRP7201, MRP7202 will be conducted for 100 marks and normalised to 50 marks for grading purpose

ESE for MRP7211 will be conducted for 100 marks (with practical = 50 marks and viva voce = 50 marks)

ESE for MRP7251 will be conducted for 100 marks

ESE for MRP7231 will be conducted for 50 marks and normalized to 100 marks for grading purpose.

