

M Sc DEGREE PROGRAMME IN MEDICAL PHYSICS (CBCS)

COURSE PATTERN AND SCHEME OF EXAMINATION

I SEMESTER

Course Code	Description of the Papers	Teaching hrs/week	Credit	Marks		Max Marks
				Exam	IA	
MPH 401	Fundamentals of Physics	4	4	70	30	100
MPH 402	Nuclear and Radiation Physics	4	4	70	30	100
MPH 403	Radiological Mathematics	4	4	70	30	100
MPS 404	Human Anatomy and Physiology	4	4	70	30	100
MPS 405	Basic Electronics and Biomedical Instrumentation	4	4	70	30	100
MPS 406	Biophysics	4	4	70	30	100
MPP 407	Medical Physics Practical – I	4	2	70	30	100
MPP 408	Medical Physics Practical – II	4	2	70	30	100
Note: Any TWO of the soft core theory courses to be opted/offered. Total Credit : 24. Total marks:700						

II SEMESTER

Course Code	Description of the Papers	Teaching hrs/week	Credit	Marks		Max Marks
				Exam	IA	
MPH 451	Radiation Sources, Detection and Measurement	4	4	70	30	100
MPH 452	Radiation Dosimetry and Standardization	4	4	70	30	100
MPS 453	Fundamentals of Cancer Biology	4	4	70	30	100
MPS 454	Biostatistics, Biomathematics and Computers	4	4	70	30	100
MPE 455	Industrial Application of Radiation and Radioisotopes	3	3	70	30	100
MPP 456	Medical Physics Practical – III	4	2	70	30	100
MPP 457	Medical Physics Practical – IV	4	2	70	30	100
MPP 458	Medical Physics Practical – V	4	2	70	30	100
MPP 459	Medical Physics Practical – VI	4	2	70	30	100
Note : Any ONE of the soft core theory courses to be opted/offered. One open elective will be offered. Total credit : 23 Total marks : 800						

III SEMESTER

Course Code	Description of the Papers	Teaching hrs/week	Credit	Marks		Max Marks
				Exam	IA	
MPH 501	Clinical Radiobiology	4	4	70	30	100
MPH 502	Physics of Medical Imaging	4	4	70	30	100
MPS 503	Physics of Nuclear Medicine	4	4	70	30	100
MPS 504	Clinical Aspects of Radiation Therapy	4	4	70	30	100
MPS 505	IPR, Biosafety and Bioethics	4	4	70	30	100
MPE 506	Applications of Radiation and Radioisotopes in Health and Agriculture	3	3	70	30	100
MPP 507	Medical Physics Practical – VII	4	2	70	30	100
MPP 508	Medical Physics Practical –VIII	4	2	70	30	100
Note : Any TWO of the soft core theory courses to be opted/offered. One open elective will be offered. Total credit : 23 Total marks : 700						

IV SEMESTER

Course Code	Description of the Papers	Teaching hrs/week	Credit	Marks		Max Marks
				Exam	IA	
MPH 551	Physics of Classical Radiotherapy	4	4	70	30	100
MPH 552	Physics of Advanced Radiotherapy	4	4	70	30	100
MPH 553	Radiation Protection Standards and Safety	4	4	70	30	100
MPS 554	Nuclear Reactors, Particle Accelerators, Industrial Applications of Radiation and Environmental Radioactivity	4	4	70	30	100
MPS 555	Research Methodology and Communication	4	4	70	30	100
MPP 556	Project	10	5	70	30	100
Total			21			500
Note : Any ONE of the soft core courses to be opted/offered. Total credit : 21; Total marks : 500						

OVERVIEW OF THE SCHEME OF EXAMINATION, CREDITS AND MARKS

Semester	Theory/practical	Exam. hours	Marks (Theory + Internal Assessment)	Credits	Total
I Semester	5 Theory courses (3 hard core + 2 soft core)	3 hrs each	70 + 30 each	5 x 4 = 20	500
	2 Practicals (soft core)	4 hrs each	70 + 30 each	2 x 2 = 4	200
II Semester	3 Theory courses (2 hard core + 1 soft core)	3 hrs each	70 + 30 each	3 x 4 = 12	300
	1 Theory course (open elective)	3 hrs	70 + 30 each	1 x 3 = 3	100
	4 practical (3 hard core + 1 soft core)	4 hrs each	70 + 30 each	4 x 2 = 8	400
III Semester	4 Theory courses (2 hard core + 2 soft core)	3 hrs each	70 + 30 each	4 x 4 = 16	400
	1 Theory course (open elective)	3 hrs	70 + 30 each	1 x 3 = 3	100
	2 practical (hard core)	4 hrs each	70 + 30 each	2 x 2 = 4	200
IV Semester	4 Theory courses (3 hard core + 1 soft core)	3 hrs each	70 + 30 each	4 x 4 = 16	400
	Project (hard core)		70 + 30 (Viva-voce)	1 x 5 = 5	100
Grand Total				91	2700

Note : MPH - Hard core papers MPS - Soft core papers,
 MPE – Open Elective MPP – Practical papers

Details of Courses and Credits for Four Semesters

Credits				Total Credits
Hard Core	Soft Core	Total	Open Elective	
55 (65%)	30 (35%)	85	6	91

SEMESTER VISE SYLLABUS FOR THEORY AND PRATICAL PAPERS

SEMESTER – I

Course Code	Description of the Papers
MPH 401	Fundamentals of Physics
MPH 402	Nuclear and Radiation Physics
MPH 403	Radiological Mathematics
MPS 404	Human Anatomy and Physiology
MPS 405	Basic Electronics and Biomedical Instrumentation
MPS 406	Biophysics
MPP 407	Medical Physics Practical – I (soft core)
MPP 408	Medical Physics Practical – II (soft core)