Kurukshetra University, Kurukshetra

(Established by the State Legislature Act-XII of 1956)

("A^{++}" Grade, NAAC Accredited)

Scheme of Examination

For

Post Graduate Programme

M.Sc. APPLIED PHYSICS

as per NEP 2020

Curriculum and Credit Framework for Postgraduate Programme

With Multiple Entry-Exit, Internship and CBCS-LOCF

With effect from the session 2024-25 (in phased manner)

FACULTY OF SCIENCE

KURUKSHETRA UNIVERSITY, KURUKSHETRA - 136119

HARYANA, INDIA

Programme Learning Outcomes(PLOs) for PG Programmes as per NEP-2020

PLOs	Master Degree in Applied Physics
	After the completion of Master degree in Applied Physics the student will be able to:
PLO-1: Knowledge and Understanding	Demonstrate the fundamental and advanced knowledge of the subject and understanding of recent developments and issues, including methods and techniques, related to the Applied Physics.
PLO-2: General Skills	Acquire the general skills required for performing and accomplishing the tasks as expected to be done by a skilled professional in the fields of Applied Physics.
PLO-3: Technical/ Professional Skills	Demonstrate the learning of advanced cognitive technical/professional skills required for completing the specialized tasks related to the profession and for conducting and analyzing the relevant research tasks indifferent domains of the Applied Physics.
PLO-4: Communication Skills	Effectively communicate the attained skills of the Applied Physics in well-structured and productive mannerto the society at large.
PLO-5: Application of Knowledge and Skills	Apply the acquired knowledge and skills to the problems in the subject area, and to identify and analyze the issues where the attained knowledge and skills can be applied by carrying out research investigations to formulate evidence-based solutions to complex and unpredictable problems associated with the field of Applied Physics or otherwise.
PLO-6: Critical thinking and Research Aptitude	Attain the capability of critical thinking in intra/inter-disciplinary areas of the Applied Physics enabling to formulate, synthesize, and articulate issues for designing of research proposals, testing hypotheses, and drawing inferences based on the analysis.
PLO-7: Constitutional, Humanistic, Moral Values and Ethics	Know constitutional, humanistic, moral and ethical values, and intellectual property rights to become a scholar/professional with ingrained values in expanding knowledge for the society, and to avoid unethical practices such as fabrication, falsification or misrepresentation of data or committing plagiarism.
PLO-8: Capabilities/qualities and mindset	To exercise personal responsibility for the outputs of own work as well as of group/team and for managing complex and challenging work(s) that requires new/strategic approaches.
PLO-9: Employability and job ready skills	Attain the knowledge and skills required for increasing employment potential, adapting to the future work and responding to the rapidly changing demands of the employers/industry/society with time.

Kurukshetra University, Kurukshetra

Scheme of Examination for Postgraduate Programme (MSc. APPLIED PHYSICS)

as per NEP 2020 Curriculum and Credit Framework for Postgraduate Programmes

(CBCS LOCF) with effect from the session 2024-25 (in phased manner)

Framework-2

Scheme-Q

Semester	Course Type	Course Code	Nomenclature of course	Theory (T)/ Practical (P)	Credits		Contact hours per week L: Lecture P: Practical T: Tutorial				Internal Assessment Marks	End Term Examination Marks	Total Marks	Examination hours
						Total	L	T	P	Total				
1	CC-1	M24- APHY-101	Classical Mechanics	T	4	26	4	0	0	4	30	70	100	3
	CC-2	M24- APHY-102	Applied Mathematics	T	4		4	0	0	4	30	70	100	3
	CC-3	M24- APHY -103	Quantum Mechanics	T	4		4	0	0	4	30	70	100	3
	CC-4	M24- APHY -104	Electromagnetic Theory	T	4		4	0	0	4	30	70	100	3
	CC-5	M24- APHY-105	Electronics-I	T	4		4	0	0	4	30	70	100	3
	PC-1	M24- APHY-106	Applied Physics Lab-I	P	4		0	0	8	8	30	70	100	4
	SEMINAR	M24- APHY-107	Seminar	S	2		0	0	0	2	0	50	50	1
2	CC-6	M24- APHY-201	Atomic and Molecular Spectroscopy	T	4	26	4	0	0	4	30	70	100	3
	CC-7	M24- APHY-202	Laser Physics	T	4		4	0	0	4	30	70	100	3
	CC-8	M24- APHY-203	Nuclear and Particle Physics	T	4		4	0	0	4	30	70	100	3

	CC-9	M24- APHY-204	Solid State Physics	T	4		4	0	0	4	30	70	100	3
	CC-10	M24- APHY-205	Electronics-II	T	4		4	0	0	4	30	70	100	3
	PC-2	M24- APHY-206	Applied Physics Lab-II	P	4		0	0	8	8	30	70	100	4
	CHM	M24- CHM-201	Constitutional, Human and Moral Values, and IPR	T	2		2	0	0	2	15	35	50	3
	Internship	M24-INT 200	An internship course of 4 Credits of 4-6 weeks duration during summer vacation after 2nd semester is to be completed by every student. Internship can be either for enhancing the employability or for developing the research aptitude.								50	50	100	
3	CC-11	M24- APHY-301	Microwave Devices	T	4	26	4	0	0	4	30	70	100	3
	CC-12	M24- APHY-302	Radiation Physics	T	4		4	0	0	4	30	70	100	3
	DEC-1 (Opt Anyone)	M24- APHY-303	Material Science-I	T	4		4	0	0	4	30	70	100	3
		M24- APHY-304	Non-destructive Testing	T	4		4	0	0	4	30	70	100	3
	DEC-2 (Opt Anyone)	M24- APHY-305	Thin Films and vacuum Techniques	T	4		4	0	0	4	30	70	100	3
		M24- APHY-306	Microprocessors	T	4		4	0	0	4	30	70	100	3
	DEC-3 (Opt Anyone)	M24- APHY-307	Surface Modification and Characterization Techniques	T	4		4	0	0	4	30	70	100	3
		M24- APHY-308	Material Characterization Techniques	T	4		4	0	0	4	30	70	100	3
	PC-3	M24- APHY-309	Applied Physics Lab-III	P	4		0	0	8	8	30	70	100	4

	OEC	M24-OEC-339	Elements of Nano Science and Nanotechnology	T	2		2	0	0	2	15	35	50	3
4	CC-13	M24-APHY-401	Computational Physics	T	4	26	4	0	0	4	30	70	100	3
	CC-14	M24-APHY-402	Fibre Optics	T	4		4	0	0	4	30	70	100	3
	DEC-4 (Opt Anyone)	M24-APHY-403	Material Science-II	T	4		4	0	0	4	30	70	100	3
		M24-APHY-404	Sensors and Transducers	T	4		4	0	0	4	30	70	100	3
	DEC-5 (Opt Anyone)	M24-APHY-405	Communication Systems	T	4		4	0	0	4	30	70	100	3
		M24-APHY-406	Digital Signals and Image Processing	T	4		4	0	0	4	30	70	100	3
	DEC-6 (Opt Anyone)	M24-APHY-407	Nuclear Techniques	T	4		4	0	0	4	30	70	100	3
		M24-APHY-408	Instrumentation	T	4		4	0	0	4	30	70	100	3
	PC-4	M24-APHY-409	Applied Physics Lab-IV	P	4		0	0	8	8	30	70	100	4
	EEC	M24-APHY-410	Space Science and Sensors	T	2		2	0	0	2	15	35	50	3
	OR													
	DEC-4 (Opt Anyone)	M24-APHY-403	Material Science-II	T	4	26	4	0	0	4	30	70	100	3
		M24-APHY-404	Sensors and Transducers	T	4		4	0	0	4	30	70	100	3

	DEC-5 (Opt Anyone)	M24- APHY-405	Communication Systems	T	4		4	0	0	4	30	70	100	3
		M24- APHY-406	Digital Signals and Image Processing	T	4		4	0	0	4	30	70	100	3
	DEC-6 (Opt Anyone)	M24- APHY-407	Nuclear Techniques	T	4		4	0	0	4	30	70	100	3
		M24- APHY-408	Instrumentation	T	4		4	0	0	4	30	70	100	3
	EEC	M24- APHY-410	Space Science and Sensors	T	2		1	0	2	3	15	35	50	3
	Dissertation/Project work	M24- APHY-411	Dissertation	D	12		0	0	0	12	0	300	300	

A student will study one elective paper per DEC in semesters 3rd and 4th.