

SHRI G S INSTITUTE OF TECHNOLOGY & SCIENCE, INDORE

DEPARTMENT OF APPLIED PHYSICS & OPTOELECTRONICS

P.G. SCHEME as per AICTE model curriculum

M.Tech. (Quantum Computing)

SEMESTER - I

S.No.	Sub. Code	Subject	*Hours per Week			Th. Credit	Pr. Credit	Total Credit	MAXIMUM MARKS				
			L	T	P				TH	CW	SW	Pr.	Total
1	PH66010	Linear, Nonlinear and Quantum Optics	3	0	0	3	0	3	70	30	0	0	100
2	PH66011	Quantum Mechanics for Engineers	3	0	0	3	0	3	70	30	0	0	100
3	PH66012	Quantum Computing - I	3	0	0	3	0	3	70	30	0	0	100
4		Elective - I	3	0	0	3	0	3	70	30	0	0	100
5		Elective - II	3	0	0	3	0	3	70	30	0	0	100
6	PH66453	Laser and Fiber Optics Laboratory	-	-	4	0	2	2	-	-	40	60	100
7	PH66454	Quantum Technology Laboratory -I	-	-	4	0	2	2	-	-	40	60	100
9	PH66499	Comprehensive Viva	-	-		0	0	0	-	-	-	Grade	Grade
Total			15	0	8	15	4	19	350	150	80	120	700

I Semester = 19 Credits

SEMESTER - II

S. No.	Sub. Code	Subject	*Hours per Week			Th. Credit	Pr. Credit	Total Credit	Maximum Marks				
			L	T	P				TH	CW	SW	Pr.	Total
1	PH66512	Optoelectronic Integrated Circuits	3	0	0	3	0	3	70	30	0	0	100
2	PH66513	Classical and Quantum Information Theory	3	0	0	3	0	3	70	30	0	0	100
3	PH66514	Quantum Computing - II	3	0	0	3	0	3	70	30	0	0	100
4		Elective - III	3	0	0	3	0	3	70	30	0	0	100
5		Elective - IV	3	0	0	3	0	3	70	30	0	0	100
6	PH66853	Seminar/Lab.			2	0	1	1	-	-	100	0	100
7	PH66854	Simulation and Quantum Materials Fabrication			4	0	2	2	-	-	40	60	100
8	PH66882	Quantum Technology Laboratory -II			4	0	2	2	-	-	40	60	100
9	PH66899	Comprehensive Viva				0	0	0	-	-		Grade	Grade
Total			15	0	10	15	5	20	350	150	180	120	800

II Semester = 19 Credits

Elective I		Semester I		Elective II		Semester I	
S.No	Sub. Code	Subject		S.No	Sub. Code	Subject	
1	PH66204	Quantum Communication & Information Systems		1	PH66301	Optical Communication Systems	
2	EC66205	Information Theory and Coding		2	IT66302	Artificial Intelligence	
3	EI66206	Microelectronics & VLSI		3	CO66303	Machine Learning	
4	PH66207	Quantum Sensors and Applications		4	CO66304	Information Security	
				5	PH66305	Optical Networks	
Elective III		Semester II		Elective IV		Semester II	
S.No	Sub. Code	Subject		S.No	Sub. Code	Subject	
1	IT66704	Advanced Algorithms		1	PH66754	Quantum Algorithms with Python & Qiskit	
2	CO66705	Cyber Security and Forensics		2	PH66755	Quantum Networks	
3	EC66706	Cryptography and E-security		3	PH66756	Quantum Artificial Intelligence and Machine Learning	
4	PH66707	Nanophotonics and Nanotechnology					
5	PH66708	Optical and Quantum Communication					

SEMESTER - III

S. No.	Sub. Code	Subject	*Hours per Week			Th. Credit	Pr. Credit	Total Credit	Maximum Marks				
			L	T	P				TH	CW	SW	Pr.	Total
1	PH66902	Industrial Training/Seminar/ Term Paper			8		4	4			50	0	50
2	PH66903	Dissertation Phase - I			20		10	10			40	60	100
3	PH66904	Research Methodology*	2			2	0	2	70	30			100
		TOTAL	2	0	28	2	14	16	70	30	90	60	250

course can be studied online with prior permission of HOD, however, end semester examination will be conducted in the I

III Semester = 16 Credits

Semester: IV

S. No.	Sub. Code	Subject	*Hours per Week			Th. Credit	Pr. Credit	Total Credit	Maximum Marks				
			L	T	P				TH	CW	SW	Pr.	Total
1	PH66952	Dissertation Phase - II			32		16	16			80	120	200
		TOTAL	0	0	32	0	16	16	0	0	80	120	200

IV Semester = 16 Credits