

**Course Outline & Syllabus for Master of Science (M.Sc.) in Instrumentation Technology
under CBCS & CGPA**

Semester	Code	Title of the Course	Semester Exam	IA	Total	L	T	P	Credits	
First	Hard Core									
	HCT 1.1	Fundamentals of Instrumentation	80	20	100	4	0	0	4	
	HCT 1.2	Analog and Digital Circuits	80	20	100	4	0	0	4	
	HCT 1.3	Control Systems and Automation	80	20	100	4	0	0	4	
	Soft Core (Any One)									
	SCT 1.1	Introduction to 8086 Microprocessor and 'C' Programming	80	20	100	4	0	0	4	
	SCT 1.2	Digital Electronics	80	20	100	4	0	0	4	
	Practical									
	HCP 1.1	Transducers and Signal Conditioners Lab	40	10	50	0	0	2	2	
	HCP 1.2	Analog and Digital Circuits Lab	40	10	50	0	0	2	2	
	HCP 1.3	Analysis of Control Systems using MATLAB	40	10	50	0	0	2	2	
	Soft Core (Any One)									
	SCP 1.1	8086 & and 'C' Programming and Interfacing Lab	40	10	50	0	0	2	2	
	SCP 1.2	Digital Electronics Lab	40	10	50	0	0	2	2	
Total for First Semester			480	120	600				24	
Second	Hard Core									
	HCT 2.1	Electrical and Electronic Instrumentation	80	20	100	4	0	0	4	
	HCT 2.2	Microcontrollers and Applications	80	20	100	4	0	0	4	
	Soft Core (Any One)									
	SCT 2.1	Personal Computer for Measurement and Control	80	20	100	4	0	0	4	
	SCT 2.2	Introduction to VLSI Design	80	20	100	4	0	0	4	
	Open Elective (Any One)									
	OET 2.1	Introduction to Instrumentation	80	20	100	4	0	0	4	
	OET 2.2	Microprocessors & Interfacing	80	20	100	4	0	0	4	
	Practical									
	HCP 2.1	Electrical & Electronic Instrumentation Lab	40	10	50	0	0	2	2	
	HCP 2.2	Microcontroller Programming and Interfacing Lab	40	10	50	0	0	2	2	
	Soft Core (Any One)									
	SCP 2.1	PC Based Instrumentation using 'C' and MATLAB	40	10	50	0	0	2	2	
	SCP 2.2	VLSI Design Lab	40	10	50	0	0	2	2	
	Open Elective (Any One)									
	OEP 2.1	Electronic Instruments Lab	40	10	50	0	0	2	2	
	OEP 2.2	8086 Programming and Interfacing Lab	40	10	50	0	0	2	2	
Total for Second Semester			480	120	600				24	

Semester	Code	Title of the Course	Semester Exam	IA	Total	L	T	P	Credits
Third	Hard Core								
	HCT 3.1	Single Chip Instrumentation	80	20	100	4	0	0	4
	HCT 3.2	Process Instrumentation	80	20	100	4	0	0	4
	Soft Core (Any One)								
	SCT 3.1	Digital Signal Processors and Applications	80	20	100	4	0	0	4
	SCT 3.2	PLC and its Applications	80	20	100	4	0	0	4
	Open Elective (Any One)								
	OET 3.1	Introduction to Microprocessors and Microcomputer	80	20	100	4	0	0	4
	OET 3.2	MATLAB and its Applications	80	20	100	4	0	0	4
	Practical								
	HCP 3.1	Cygnal/ARM Microcontrollers Programming and Interfacing	40	10	50	0	0	2	2
	HCP 3.2	Process Instrumentation Lab	40	10	50	0	0	2	2
	Soft Core (Any One)								
	SCP 3.1	DSP Programming and Interfacing Lab	40	10	50	0	0	2	2
	SCP 3.2	PLC Programming Lab	40	10	50	0	0	2	2
	Open Elective (Any One)								
	OEP 3.1	Interfacing with IBM PC	40	10	50	0	0	2	2
OEP 3.2	MATLAB Programming Lab	40	10	50	0	0	2	2	
Total for Third Semester			480	120	600				24
Fourth	Hard Core								
	HCT 4.1	Industrial Components and Systems	80	20	100	4	0	0	4
	HCT 4.2	Scientific/Analytical Instrumentation	80	20	100	4	0	0	4
	Soft Core (Any One)								
	SCT 4.1	Biomedical Instrumentation	80	20	100	4	0	0	4
	SCT 4.2	Instrumentation in Process Industries	80	20	100	4	0	0	4
	Practical								
	HCP 4.1	Advanced Controllers Lab	40	10	50	0	0	2	2
	HCP 4.2	Analytical Instrumentation Lab	40	10	50	0	0	2	2
	Soft Core (Any One)								
	SCP 4.1	Biomedical Instrumentation Lab	40	10	50	0	0	2	2
	SCP 4.2	Process Industry Lab	40	10	50	0	0	2	2
	HCMP 4.3	Major Project (72 for Project Evaluation +48 for Viva-voce + 30 for IA = 150 Marks)	120	30	150	0	0	6	6
	Total for Fourth Semester			480	120	600			

L= Lecture, T= Tutorials, P= Practicals
4 Credits of Theory = 4 Hrs of Teaching per week
2 Credits of Practicals = 4 Hrs per week