

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
M.TECH. IN VLSI /VLSI DESIGN/ VLSI SYSTEM DESIGN
EFFECTIVE FROM ACADEMIC YEAR 2022-23 ADMITTED BATCH

R22 COURSE STRUCTURE AND SYLLABUS

I YEAR I – SEMESTER

Course Code	Course Title	L	T	P	Credits
Professional Core - I	Digital System Design with FPGAs	3	0	0	3
Professional Core - II	CMOS Analog IC Design	3	0	0	3
Professional Elective - I	1. Pattern Recognition and Machine Learning 2. CMOS Mixed Signal Design 3. Memory Technologies	3	0	0	3
Professional Elective - II	1. Communication Buses & Interface 2. ARM Microcontrollers 3. Embedded Real Time Operating System	3	0	0	3
Lab - I	Digital System Design with FPGAs Lab	0	0	4	2
Lab - II	CMOS Analog IC Design Lab	0	0	4	2
	Research Methodology & IPR	2	0	0	2
Audit - I	Audit Course – I	2	0	0	0
	Total Credits	16	0	8	18

I YEAR II – SEMESTER

Course Code	Course Title	L	T	P	Credits
Professional Core - III	VLSI Advanced Physical Design	3	0	0	3
Professional Core - IV	System Verilog Test Benches using UVM	3	0	0	3
Professional Elective - III	1. IoT Architectures and System Design 2. SoC Design 3. Design for Testability	3	0	0	3
Professional Elective - IV	1. Device Modeling 2. RF IC Design 3. Hardware and Software Co-Design	3	0	0	3
Lab - III	VLSI Advanced Physical Design Lab	0	0	4	2
Lab - IV	System Verilog Test Benches using UVM Lab	0	0	4	2
	Mini Project with Seminar	0	0	4	2
Audit - II	Audit Course- II	2	0	0	0
	Total Credits	14	0	12	18

II YEAR I – SEMESTER

Course Code	Course Title	L	T	P	Credits
Professional Elective - V	1. Advanced Computer Architecture 2. Nanomaterials & Nanotechnology 3. Hardware Security	3	0	0	3
Open Elective	Open Elective	3	0	0	3
Dissertation	Dissertation Work Review – II	0	0	12	6
	Total Credits	6	0	12	12

II YEAR II - SEMESTER

Course Code	Course Title	L	T	P	Credits
Dissertation	Dissertation Work Review - III	0	0	12	06
Dissertation	Dissertation Viva-Voce	0	0	28	14
	Total	0	0	40	20

Open Electives:

1. Business Analytics
2. Industrial Safety
3. Operations Research
4. Cost Management of Engineering Projects
5. Composite Materials

Audit Course I & II:

1. English for Research Paper Writing
2. Disaster Management
3. Sanskrit for Technical Knowledge
4. Value Education
5. Constitution of India
6. Pedagogy Studies
7. Stress Management by Yoga
8. Personality Development Through Life Enlightenment Skills