

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**  
**M.TECH. IN DIGITAL SYSTEMS & COMPUTER ELECTRONICS**  
**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 Systems Design with FPGAs	3	0	0	3
Professional Core - II	ARM Microcontrollers	3	0	0	3
Professional Elective - I	1. Pattern Recognition and Machine Learning 2. VLSI Technology and Design 3. TCP/IP and ATM Networks	3	0	0	3
Professional Elective - II	1. Embedded Real Time Operating Systems 2. CMOS Analog Integrated Circuit Design 3. Communication Buses & Interface	3	0	0	3
Lab - I	Digital Systems Design with FPGAs Lab	0	0	4	2
Lab - II	ARM Microcontrollers Lab	0	0	4	2
	Research Methodology & IPR	2	0	0	2
Audit - I	Audit Course – I	2	0	0	0
	<b>Total</b>	<b>16</b>	<b>0</b>	<b>8</b>	<b>18</b>

**I YEAR II – SEMESTER**

Course Code	Course Title	L	T	P	Credits
Professional Core - III	Advanced Computer Architecture	3	0	0	3
Professional Core - IV	Embedded System Design	3	0	0	3
Professional Elective - III	1. IoT Architecture and system Design 2. Design of Fault Tolerant Systems 3. VLSI Signal Processing	3	0	0	3
Professional Elective - IV	1. SoC Design 2. Hardware and Software co-design 3. Ad-hoc and Wireless Sensor Networks	3	0	0	3
Lab - III	Embedded Systems Lab	0	0	4	2
Lab - IV	Simulation Lab	0	0	4	2
	Mini Project with Seminar	0	0	4	2
Audit - II	Audit Course – II	2	0	0	0
	<b>Total</b>	<b>14</b>	<b>0</b>	<b>12</b>	<b>18</b>

**II YEAR I – SEMESTER**

Course Code	Course Title	L	T	P	Credits
Professional Elective - V	1. Embedded Networks 2. Soft Computing Techniques 4. 5G and Beyond Communications	3	0	0	3
Open Elective	Open Elective	3	0	0	3
Dissertation	Dissertation Work Review – II	0	0	12	6
	<b>Total Credits</b>	<b>6</b>	<b>0</b>	<b>12</b>	<b>12</b>

**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
	<b>Total</b>	<b>0</b>	<b>0</b>	<b>40</b>	<b>20</b>

**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