

**JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD**  
**M.TECH IN EMBEDDED SYSTEMS**  
**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	System Design with Embedded Linux	3	0	0	3
Professional Elective - I	1. CMOS VLSI Design 2. Pattern Recognition and Machine Learning 3. Wireless Sensor Networks	3	0	0	3
Professional Elective - II	1. Communications Buses & Interfaces 2. Advanced Computer Architecture 3. CMOS Analog IC Design	3	0	0	3
Lab - I	Digital system Design with FPGAs Lab	0	0	4	2
Lab - II	System Design with Embedded Linux 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	ARM Microcontrollers	3	0	0	3
Professional Core - IV	Digital Control Systems	3	0	0	3
Professional Elective - III	1. IoT Architectures and System Design 2. Design for Testability 3. SoC Design	3	0	0	3
Professional Elective - IV	1. Hardware and Software Co-Design 2. Secure Networks 3. Physical Design Automation	3	0	0	3
Lab - III	ARM Microcontrollers Lab	0	0	4	2
Lab - IV	Digital Control Systems Lab	0	0	4	2
	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. CMOS Mixed Signal Design 3. Human -Machine Interface	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