

MANAV RACHNA INTERNATIONAL INSTITUTE OF RESEARCH AND STUDIES

(FORMERLY MANAV RACHNA INTERNATIONAL UNIVERSITY)
(Deemed to be University under section 3 of the UGC Act 1956)

M. Tech. (Electronics & Communication Engineering) Specialization: Communications/VLSI & Embedded Systems (2018-2020)
Semester I

Sr. No.	Category	Course Code	Course Title	Total Number of Contact Hours/Week			Credits	Marks			Duration of Exam
				Lecture(L)	Tutorial(T)	Practical(P)		Int	Ext	Total	
1	Program Core 1	PC-EC-M-101	Advanced Communication Networks	3	0	0	3	50	100	150	3 Hrs
2	Program Core 2	PC-EC-M-102	Wireless and Mobile Communication	3	0	0	3	50	100	150	3 Hrs
3	Prog. Specific Elective (Elective I)	PE-EC-M-121	*Wireless Sensor Networks	3	0	0	3	50	100	150	3 Hrs
		PE-EC-M-122	*Optical Networks								
		PE-EC-M-123	**RTL Simulation and Synthesis with PLDs								
		PE-EC-M-124	**Programming Languages for Embedded Softwares								
4	Prog. Specific Elective (Elective II)	PE-EC-M-125	*Cognitive Radio	3	0	0	3	50	100	150	3 Hrs
		PE-EC-M-126	*DSP Architecture								
		PE-EC-M-127	**CAD of Digital System								
		PE-EC-M-128	**Microcontrollers and Programmable Digital Signal Processors								
5	Program Core Lab1	LC-EC-M-111	*Advanced Communication Networks Lab	0	0	4	2	50	50	100	3 Hrs
		LC-EC-M-112	**RTL Simulation and Synthesis with PLDs Lab								
6	Program Core Lab2	LC-EC-M-113	*Wireless and Mobile Communication Lab	0	0	4	2	50	50	100	3 Hrs
		LC-EC-M-114	**Microcontrollers and Programmable Digital Signal Processors Lab								
7	Internship/Seminar	COM-100	Research Methodology and IPR	2	0	0	2	50	50	100	3 Hrs
8	Audit Course 1	AC-M-107	Stress Management by Yoga	2	0	0	0	-	-	-	-
Total Credits				18							

Semester II

Sr. No.	Category	Course Code	Course Title	Total Number of Contact Hours/Week			Credits	Marks			Duration of Exam
				Lecture(L)	Tutorial(T)	Practical(P)		Int	Ext	Total	
1	Program Core 3	PC-EC-M-201	Antennas and Radiating Systems	3	0	0	3	50	100	150	3 Hrs
2	Program Core 4	PC-EC-M-202	Advanced Digital Signal Processing	3	0	0	3	50	100	150	3 Hrs
3	Prog. Specific Elective (Elective III)	PE-EC-M-221	*Satellite Communication	3	0	0	3	50	100	150	3 Hrs
		PE-EC-M-222	*Internet of Things								
		PE-EC-M-223	** Analog and Digital CMOS VLSI Design								
		PE-EC-M-224	**Nano materials and Nanotechnology								
4	Prog. Specific Elective (Elective IV)	PE-EC-M-225	*Markov Chain and Queuing System	3	0	0	3	50	100	150	3 Hrs
		PE-EC-M-226	*MIMO System								
		PE-EC-M-227	**VLSI Design Verification and Testing								
		PE-EC-M-228	**Network Security and Cryptography								
5	Program Core Lab 3	LC-EC-M-211	*Antennas and Radiating Systems lab	0	0	4	2	50	50	100	3 Hrs
		LC-EC-M-212	** Analog and Digital CMOS VLSI Design Lab								
6	Program Core Lab 4	LC-EC-M-213	*Advanced Digital Signal Processing Lab	0	0	4	2	50	50	100	3 Hrs
		LC-EC-M-214	**VLSI Design Verification and Testing Lab								
7	Project	EC-M-200	Mini Project	0	0	4	2	100	50	150	3Hrs
8	Audit Course 2	AC-M-101	English for Research Paper Writing	2	0	0	0	-	-	-	-
Total Credits				18							

Note: * Communications Domain
**VLSI & Embedded Systems Domain

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Semester III

Sr. No.	Category	Course Code	Course Title	Total Number of Contact Hours/Week			Credits	Marks			Duration of Exam
				Lecture(L)	Tutorial(T)	Practical(P)		Int	Ext	Total	
1	Prog. Specific Elective (Elective V)	PE-EC-M-321	*Pattern Recognition and Machine learning	3	0	0	3	50	100	150	3 Hrs
		PE-EC-M-322	*Remote Sensing								
		PE-EC-M-323	**Low power VLSI Design								
		PE-EC-M-324	**Selected Topics in Mathematics								
2	Open Elective	OE-M-101	Business Analytics	3	0	0	3	50	100	150	3 Hrs
		OE-M-102	Industrial Safety								
		OE-M-103	Operations Research								
		OE-M-104	Cost Management of Engineering Projects								
		OE-M-105	Composite Materials								
		OE-M-106	Waste to Energy								
3	Dissertation	EC-M-300	Dissertation Phase - I	0	0	20	10	200	100	300	3 Hrs
Total Credits				16							

Semester IV

Sr. No.	Category	Course Code	Course Title	Total Number of Contact Hours/Week			Credits	Marks			Duration of Exam
				Lecture(L)	Tutorial(T)	Practical(P)		Int	Ext	Total	
1	Dissertation	EC-M-400	Dissertation Phase - II	-	-	32	16	400	200	600	3 Hrs
Total Credits				16							

Note: *Communications Domain
** VLSI & Embedded Systems Domain

List of Audit Courses

Course Code	Course Title
AC-M-01	English for Research Paper Writing
AC-M-02	Disaster Management
AC-M-03	Sanskrit for Technical Knowledge
AC-M-04	Value Education
AC-M-05	Constitution of India
AC-M-06	Pedagogy Studies
AC-M-07	Stress Management by Yoga
AC-M-08	Personality Development through Life Enlightenment Skills.

SEMESTER	CREDITS
I	18
II	18
III	16
IV	16
TOTAL	68