THE NORTHCAP UNIVERSITY

Department of Multidisciplinary Engineering
M. Tech in ECE
(with specialization in Semiconductor Technology/IOT & 5G)
2024

M.Tech full time (2 years)

Sem	Subject 1	Subject 2	Subject 3	Subject 4	Subject 5	Subject 6	L	T	P	Weekly Contact Hours	Credits
I	System Design & Modeling 3-0-2(4)	Optimization Theory and Applications 3-0-2(4)	Program Elective-1 3-0-2(4)	Program Elective-2 3-0-2 (4)	ECC509 Seminar 0-0-4(2)	ECS501 Community Service	12	0	12	24	18
II	ECL532: Embedded System Design 3-0-2(4)	ECL513: Machine Learning 2-0-2(3)	Program Elective-3 3-0-2(4)	Program Elective-4 3-0-2(4)	ECD512 Minor Project 0-0-10(5)	ECS502 Community Service (140 hours = 2 credit)*	11	0	18	19	22
III	MAL616 Research Methodology 2-1-0(3)	Open Elective 2-0-2(3)	ECD605 Dissertation -I 0-0-12(6)	Program Elective-5 3-0-2(4)		ECS601 Community Service	7	1	16	12	16
IV	ECD602 Dissertation-II 0-0-24(12)					ECS602 Community Service (140 hours = 2 credit)*	0	0	24	-	14
TOTAL CREDITS OF THE M.TECH DEGREE PROGRAMME = 70											70

*Students can utilize the summer/winter break period to complete the 140 Community Service hours every year

THE NORTHCAP UNIVERSITY

Department of Multidisciplinary Engineering
M. Tech in Electronics and Communication Engineering
(with specialization in Semiconductor Technology/IOT & 5G)
2024
PG Diploma with 1 year exit

Sem	Subject 1	Subject 2	Subject 3	Subject 4	Subject 5	Subject 6	L	T	P	Weekly Contact Hours	Credits
I	System Design & Modeling 3-0-2(4)	Optimization Theory and Applications 3-0-2(4)	Program Elective-1 3-0-2(4)	Program Elective-2 3-0-2 (4)	ECC509 Seminar 0-0-4(2)	ECS501 Community Service	12	0	12	24	18
II	ECL532: Embedded System Design 3-0-2(4)	ECL513: Machine Learning 2-0-2(3)	Program Elective-3 3-0-2(4)	Program Elective-4 3-0-2(4)	ECD512 Minor Project 0-0-10(5)	ECS502 Community Service (140 hours = 2 credit)*	11	0	18	19	22
Summer	ECV502 Skill based course (3)	ECT502 Industrial Internship (7)									10
EXIT OPTION: PG DIPLOMA; CREDITS = 50											50

*Students can utilize the summer/winter break period to complete the 140 Community Service hours in a year

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2024

Program Electives			
	TRACK I: Semiconductor Technology	**TRACK II: IOT & 5G**	
PE-1	Micro & Nano Fabrication	Advanced Wireless & Mobile Communication	
PE-2	Semiconductor Equipment & Technology	Advanced Microcontroller & Sensors	
PE-3	Semiconductor Material Synthesis and Characterization Techniques	IoT: Architecture & Protocols	
PE-4	Semiconductor Packaging and Testing Techniques	Design for IOT	
PE-5	ASIC's & FPGA	5G: Technologies, Architecture and Protocols	
Other Program Electives Available *(For award of specialization in Semiconductor Technology/IOT & 5G, it is mandatory to complete any four PE from the list of courses as mentioned above under respective tracks)*			
ECL528 Analog VLSI Design	ECL527 Digital System Design with Verilog HDL	ECL505 Adv. Digital Communication	Edge And Fog Computing
ECL523 Digital VLSI Design	ECL529 Linux & Scripting	ECL540 Real Time Systems and Software	Network and Security in IoT
ECL633 Mixed Signal Design	VLSI Design Verification & Testing	ECL578 Broadband Communication	Industrial IoT for Smart Cities
ECL524 Low Power VLSI Design	MEMS & NEMS	ECL601 Cloud Computing	IoT Design for Connected Health Care
ECL538 Hardware Software CoDesign	Special Topics in Semiconductor Technologies and Applications	ECL659 Global Navigation Satellite Systems and Applications	Special Topics in IOT & 5G