

# UNIVERSITY OF ENGINEERING AND TECHNOLOGY, TAXILA



## Department of Electronics Engineering MSc. Curriculum (2023)

(All courses carry 3-Credit Hours and Research Thesis carries 6-Credit Hours)

<b>List of Courses</b>	
<b>CORE COURSES- Common for all specializations</b>	
EN-5001	Mathematical Methods for Engineers & Scientists
EN-5002	Random Variables and Stochastic Processes
EN-5003	Linear System Theory
<b>ELECTIVE COURSES</b>	
<b>Electronics System Design</b>	
EN-5101	Advanced VLSI Design
EN-5102	Mixed Signal Design
EN-5103	System-on-Chip Design
EN-5104	System-on-Chip Testing and Verification
EN-5105	Network-on-Chip Design
EN-5106	FPGA-based System Design
EN-5107	Integrated Circuit Design
EN-5108	Digital System Design
EN-5109	Microprocessor-based System Design
EN-5110	Computer Architecture
EN-5111	Embedded System Design
EN-5112	RF IC Design
EN-5113	Microwave Engineering
EN-114	Foundation of Robotics
EN-5115	Nonlinear Systems
EN-5116	Machine Learning
EN-5117	Power Electronic Systems
EN-5118	Optimization Theory
EN-5119	Special Topics in Electronics System Design
Research Thesis	
EN-5100	Research Thesis
<b>Microelectronic Materials and Devices</b>	
EN-5201	Solid-State Electronic Devices
EN-5202	Microelectronic Process Technology
EN-5203	Compound Electronic Devices
EN-5204	Optoelectronic Devices
EN-5205	Modelling and Simulation of Semiconductor Devices
EN-5206	Semiconductor Material Characterizations
EN-5207	MEMS Designing and Micro-Machining
EN-5208	Nanotechnology

EN-5209	Nano-Fabrication and Characterizations
EN-5210	Organic Electronic Devices
EN-5211	Electronic Sensors & Actuators
EN-5212	Quantum Electronics
EN-5213	Theory of Solid Materials
EN-5214	Electromagnetics Field Theory
EN-5215	Computational Methods in Electronics
EN-5216	Special Topics in Microelectronic Materials and Devices
Research Thesis	
EN-5200	Research Thesis
<b>Biomedical Electronics</b>	
EN-5301	Biomedical Microsystems
EN-5302	Pattern Matching and Recognition
EN-5303	Biomedical Electronics
EN-5304	Biomedical Materials and Sensors
EN-5305	Organic Bioelectronics
EN-5306	Bio-Signal Processing
EN-5307	Biomedical Image Processing
EN-5308	Biomimetic Materials
EN-5309	Robotics for Medical Applications
EN-5310	Biomedical Instrumentation
EN-5311	Special Topics in Biomedical Electronics
Research Thesis	
EN-5300	Research Thesis

### **Degree Requirements**

1. Students are required to take 3 core courses and 3 to 5 area of specialization courses and 0 to 2 courses from other specializations to fulfill the course work requirement. Course EN-5001 is compulsory.
  2. Students are required to take 06 credit hours of research thesis to fulfill degree requirement.
  3. The minimum duration for MSc Degree would be 2 years.
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