

**UNIVERSITY OF ENGINEERING AND TECHNOLOGY, TAXILA**  
**Department of Electronics Engineering**  
**PhD. Revised Curriculum (2023)**

(All courses carry 3-Credit Hours except Research Thesis)

<b>List of Courses</b>	
<b>CORE COURSES-Common for all specializations</b>	
EN-6001	Advanced Engineering Mathematics
EN-6002	Random Processes & Statistics
EN-6003	Advanced Linear System Theory
<b>ELECTIVE COURSES</b>	
<b>Electronics System Design</b>	
EN-6101	Advanced VLSI System Design
EN-6102	Mixed Signal System Design
EN-6103	Advanced System-on-Chip Design
EN-6104	VLSI Testing and Verification
EN-6105	IC Communication Architectures
EN-6106	Advanced FPGA-based System Design
EN-6107	Advanced Integrated Circuit Design
EN-6108	Advanced Digital System Design
EN-6109	Advanced Microprocessor Architectures
EN-6110	Advanced Computer Architecture
EN-6111	Advanced Embedded System Design
EN-6112	Advanced RF IC Design
EN-6113	Advanced Microwave Engineering
EN-6114	Advanced Robotic
EN-6115	Advanced Nonlinear Systems
EN-6116	Advanced Machine Learning
EN-6117	Advanced Power Electronic Systems
EN-6118	Advanced Optimization Theory
EN-6119	Special Topics in Electronics System Design
Research Thesis	
EN-6100	Research Thesis
<b>Microelectronic Materials and Devices</b>	
EN-6201	Physics of Microelectronic Devices
EN-6202	IC Fabrication Process Technology
EN-6203	Compound Microelectronic Devices
EN-6204	Photonic and Optoelectronic Devices
EN-6205	Modelling and Simulation of Microelectronic Devices
EN-6206	Microelectronic Material Characterizations
EN-6207	MEMS System Design and Micro-Machining
EN-6208	Nanoelectronics and Nanotechnology
EN-6209	Nano-Fabrication and Characterizations
EN-6210	Organic Microelectronic Devices
EN-6211	Microelectronic Sensors and Actuators

EN-6212	Advanced Quantum Electronics
EN-6213	Advanced Theory of Solid Materials
EN-6214	Advanced Electromagnetic Field Theory
EN-6215	Computational Methods in Microelectronics
EN-6216	Special Topics in Microelectronic Materials and Devices
Research Thesis	
EN-6200	Research Thesis
<b>Biomedical Electronics</b>	
EN-6301	Biomedical Microsystem Design
EN-6302	Pattern Recognition using Machine Learning
EN-6303	Advanced Biomedical Electronics
EN-6304	Materials and Sensors for Biomedical Applications
EN-6305	Advanced Organic Bioelectronics
EN-6306	Advanced Signal Processing
EN-6307	Biomedical Diagnostic Imaging
EN-6308	Advanced Biomimetic Materials
EN-6309	Robotics for Biomedical Applications
EN-6310	Advanced Biomedical Instrumentation
EN-631	Special Topics in Biomedical Electronics
Research Thesis	
EN-6300	Research Thesis

Note: All PhD students are required to take 3 core courses and 3 elective courses (including 0 to 1 course from other specialization). Course EN-6001 is compulsory.