

**UNIVERSITY OF ENGINEERING AND TECHNOLOGY, TAXILA**  
**Department of Electronics Engineering**  
**PhD. Curriculum (2025)**

<b>List of Courses</b>		
<b>CORE COURSES-Common for all specializations</b>		<b>CHr.</b>
EN-6001	Advanced Engineering Mathematics	3
EN-6002	Random Processes & Statistics	3
EN-6003	Research Methodology	3
EN-6004	Understanding of Holy Quran-I	1
EN-6005	Understanding of Holy Quran-II	1
<b>ELECTIVE COURSES</b>		
<b>Electronics System Design</b>		
EN-6101	Advanced VLSI System Design	3
EN-6102	Mixed Signal System Design	3
EN-6103	Advanced System-on-Chip Design	3
EN-6104	VLSI Testing and Verification	3
EN-6105	IC Communication Architectures	3
EN-6106	Advanced FPGA-based System Design	3
EN-6107	Advanced Integrated Circuit Design	3
EN-6108	Advanced Digital System Design	3
EN-6109	Advanced Microprocessor Architectures	3
EN-6110	Advanced Computer Architecture	3
EN-6111	Advanced Embedded System Design	3
EN-6112	Advanced RF IC Design	3
EN-6113	Advanced Microwave Engineering	3
EN-6114	Advanced Robotic	3
EN-6115	Advanced Nonlinear Systems	3
EN-6116	Advanced Machine Learning	3
EN-6117	Advanced Power Electronic Systems	3
EN-6118	Advanced Optimization Theory	3
EN-6119	Advanced Linear System Theory	3
EN-6120	Special Topics in Electronics System Design	3
EN-6100	Research Thesis	6
<b>Microelectronic Materials and Devices</b>		
EN-6201	Physics of Microelectronic Devices	3
EN-6202	IC Fabrication Process Technology	3
EN-6203	Compound Microelectronic Devices	3
EN-6204	Photonic and Optoelectronic Devices	3
EN-6205	Modelling and Simulation of Microelectronic Devices	3
EN-6206	Microelectronic Material Characterizations	3
EN-6207	MEMS System Design and Micro-Machining	3
EN-6208	Nanoelectronics and Nanotechnology	3

EN-6209	Nano-Fabrication and Characterizations	3
EN-6210	Organic Microelectronic Devices	3
EN-6211	Microelectronic Sensors and Actuators	3
EN-6212	Advanced Quantum Electronics	3
EN-6213	Advanced Theory of Solid Materials	3
EN-6214	Advanced Electromagnetic Field Theory	3
EN-6215	Computational Methods in Microelectronics	3
EN-6216	Special Topics in Microelectronic Materials and Devices	3
EN-6200	Research Thesis	6
<b>Biomedical Electronics</b>		
EN-6301	Biomedical Microsystem Design	3
EN-6302	Pattern Recognition using Machine Learning	3
EN-6303	Advanced Biomedical Electronics	3
EN-6304	Materials and Sensors for Biomedical Applications	3
EN-6305	Advanced Organic Bioelectronics	3
EN-6306	Advanced Signal Processing	3
EN-6307	Biomedical Diagnostic Imaging	3
EN-6308	Advanced Biomimetic Materials	3
EN-6309	Robotics for Biomedical Applications	3
EN-6310	Advanced Biomedical Instrumentation	3
EN-6311	Special Topics in Biomedical Electronics	3
EN-6300	Research Thesis	6
Student is required to take minimum 2 elective courses from area of specialization and maximum 1 elective courses from other specializations.		