

UNIVERSITY OF ENGINEERING AND TECHNOLOGY, TAXILA



Department of Electronics Engineering PhD. Curriculum (2020)

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

List of Courses	
CORE COURSES-Common for all specializations	
EN-7001	Advanced Engineering Mathematics
EN-7002	Random Processes & Statistics
EN-7003	Advanced Linear System Theory
EN-7004	Physics of Microelectronic Devices
ELECTIVE COURSES	
Electronics System Design	
EN-7101	Advanced VLSI System Design
EN-7102	Mixed Signal System Design
EN-7103	Advanced System-on-Chip Design
EN-7104	VLSI Testing and Verification
EN-7105	IC Communication Architectures
EN-7106	Advanced FPGA-based System Design
EN-7107	Advanced Integrated Circuit Design
EN-7108	Advanced Digital System Design
EN-7109	Advanced Microprocessor Architectures
EN-7110	Advanced Computer Architecture
EN-7111	Advanced Embedded System Design
EN-7112	High-Frequency System Design
EN-7113	Advanced Power Electronic Systems
EN-7114	IC Low-Power and Thermal Methodologies
EN-7115	Advanced Optimization Theory
EN-7116	Special Topics in Electronics System Design
Research Thesis	
EN-7100	Research Thesis
Microelectronic Materials and Devices	
EN-7201	IC Fabrication Process Technology
EN-7202	Compound Microelectronic Devices
EN-7203	Photonic and Optoelectronic Devices
EN-7204	Modelling and Simulation of Microelectronic Devices
EN-7205	Microelectronic Material Characterizations
EN-7206	MEMS System Design and Micro-Machining
EN-7207	Nanoelectronics and Nanotechnology

EN-7208	Nano-Fabrication and Characterizations
EN-7209	Organic Microelectronic Devices
EN-7210	Microelectronic Sensors and Actuators
EN-7211	Advanced Quantum Electronics
EN-7212	Advanced Theory of Solid Materials
EN-7213	Advanced Electromagnetic Field Theory
EN-7214	Computational Methods in Microelectronics
EN-7215	Special Topics in Microelectronic Materials and Devices
Research Thesis	
EN-7200	Research Thesis
Biomedical Electronics	
EN-7301	Biomedical Microsystem Design
EN-7302	Pattern Recognition using Machine Learning
EN-7303	Advanced Biomedical Electronics
EN-7304	Materials and Sensors for Biomedical Applications
EN-7305	Advanced Organic Bioelectronics
EN-7306	Advanced Signal Processing
EN-7307	Biomedical Diagnostic Imaging
EN-7308	Advanced Biomimetic Materials
EN-7309	Robotics for Biomedical Applications
EN-7310	Advanced Biomedical Instrumentation
EN-7311	Special Topics in Biomedical Electronics
Research Thesis	
EN-7300	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-7001 is compulsory.
