

Course Name: Nanoelectronics: Devices and Materials

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Introduction to Nanoelectronics , CMOS Technology scaling issues, Design Techniques for Nanoscale Transistors, MOS Electrical Characterization, Non Classical MOSFETs, Overview and Carrier Transport in in Nano MOSFETs, Silicon On Insulator (SOI) MOSFET, Metal-Semiconductor Contacts and Metal-Source /Drain Junction MOSFETs, Germanium and Compound Semiconductor Nano MOSFETs, Introduction to Nanomaterials, Quantum Mechanics and Quantum Statistics for considering Nanomaterials, Synthesis/Fabrication of Nanomaterials/Structures, Chemical vapour deposition (CVD) and atomic layer deposition (ALD), Characterisation of Nanomaterials and Nanostructures