PHY5041 Basic Electronics for Scientists

Course Code	PHY5041	Semester	
Course Title	*Basic Electronics for Scientists*		
Credits	3	Type	Elective

Course Structure

Contents: Electrical current and Kirchhoff laws. Resistor, capacitors and inductors. Network analysis. Circuit analysis involving L,C, and R elements. Basic semiconductor physics, pn junction diodes. Diode circuits. Transistors and amplifiers. FETs, Operational amplifiers. Simple applications. Electronic systems. Feedback, oscillators. Transducers, signal conditioning and analysis.

Laboratory work will be associated with lectures which involves construction and building of circuits as well as simulation of circuits using software.

Suggested Books

1. Horowitz and Hill, Art of Electronics, Cambridge (2008)
2. Niel Storey, Electronics, Systems Approach, Prentice Hall (2009)
3. D. L. Eggleston, Basic Electronics for Scientists and Engineering, Cambridge (2011)