



SEMICONDUCTOR DEVICE MODELING AND SIMULATION

PROF. VIVEK DIXIT

Department of Electronics and Electrical Communication Engineering
IIT Kharagpur

INTENDED AUDIENCE : BTech/MSc/MTech in EE/ECE

INDUSTRY SUPPORT : Semiconductor related companies such as Intel, nVIDIA, AMD, Samsung, ST Microelectronics, Texas Instruments, Analog Devices, NXP Semiconductors etc

COURSE OUTLINE :

This course is a foundation level course on semiconductor devices. Course consist of three broad topics (1) Semiconductors properties, (2) Devices and (3) governing equations along with their boundary conditions. Course objective is to develop a sound physical and intuitive understanding of semiconductor devices and achieve ability to make some key decisions while designing applications specific semiconductor devices.

ABOUT INSTRUCTOR :

Prof. Vivek Dixit is assistant Professor in the Department of Electronics and Electrical Communication Engineering, IIT Kharagpur. He received the B.Tech. degree in electrical engineering from IIT Delhi, New Delhi, India, in 2004 and the Ph.D. degree from the Department of Electrical and Computer Engineering, National University of Singapore, Singapore in 2010. He has worked on III-V semiconductors for optoelectronics application; silicon photonics based optical modulators where he invented a simulation technique for EYE diagram for an optical modulator. His interest includes semiconductor devices, metamaterials and optical modulators. He has worked in various reputed organizations including nVIDIA graphics Ltd, Institute of High-Performance Computing, Singapore, IIT Jodhpur and currently serving IIT Kharagpur.

COURSE PLAN :