Semiconductor Devices

SWAYAM Prabha Course Code: E6

PROFESSOR'S NAME	Prof. Vivek Dixit, Prof. Aniket Singh
DEPARTMENT	Electronics & Electrical Communication Engineering
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COURSE OUTLINE	Understand how crystal structures give rise to semiconductor properties such as bandgap, intrinsic carrier concentration and carrier mobility, Understand properties of semiconductors and derive equations governing their behavior under doping, generation-recombination and external voltage/current etc. Solve for p-n junction and Metal-semiconductor junction properties; derive their I-V characteristics under various conditions, Bipolar junctions transistors and their modern variations, Metal semiconductor Field effect transistor (MOSFET) devices, Think independently to design application specific semiconductor devices and prepare for advanced courses in devices and circuits.

COURSE DETAILS

S. No	Module ID/ Lecture ID	Lecture Title/Topic	Duration
1	**E6-Mod1**	Introduction crystal and semiconductor Materials.	0:54:18
2	**E6-Mod2**	Crystals	0:24:14
3	**E6-Mod3**	Silicon Unit Cell	0:28:34
4	**E6-Mod4**	Semiconductor properties preview	0:56:33
5	**E6-Mod5**	Review of quantum mechanics-1	0:18:34
6	**E6-Mod6**	Review of quantum mechanics-2	0:35:16
7	**E6-Mod7**	Review of quantum mechanics-3	0:30:46
8	**E6-Mod8**	Review of quantum mechanics-4	0:57:27
9			

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References if Any: