

Solid-state Devices

Course Description

We cover the tools and methods necessary for the creative design of useful circuits using active devices. The class stresses insight and intuition, applied to the design of transistor circuits and the estimation of their performance. We concentrate on circuits using the bipolar junction transistor, but the techniques that we study can be equally applied to circuits using JFETs, MOSFETs, MESFETs, Tunnel Devices, IMPATT Diodes, TED, Thyristors and power devices, future exotic devices, or even vacuum tubes.

READINGS BY SESSION

REC #	TOPICS	KEY DATES
1	MOSFETs	
2	JFETs, MESFETs, and MODFETs	
3	Tunnel Devices	
4	IMPATT Diodes	
5	Transferred-Electron Real-Space-Transfer Devices	
6	Thyristors and Power Devices	

Text BOOK

Physics of Semiconductor Devices by Simon M. Sze, Kwok K. Ng ISBN: 978-1-119-42911-1