

## Lecture Plan

**Name of Subject: IC Fabrication Technology**

**Class: M.Tech. (VLSI)**

**Semester: Second**

<b>Unit/ Section No.</b>	<b>Name of Topic</b>	<b>Number of Lectures Required</b>
1	Clean room and safety requirements	1
1	Wafer Cleaning processes and wet chemical etching techniques	2
2	Solid State diffusion modeling and technology	2
2	Ion implantation Modeling	2
2	Technology and damage annealing	1
2	Characterization of Impurity profiles	2
3	Kinetics of Silicon dioxide growth both for thick, thin and ultrathin films	3
3	Oxidation technologies in VLSI and ULSI	2
3	Characterization of oxide films	2
3	High K and low k dielectrics for ULSI	2
4	Photolithography, E-beam lithography	3
4	Newer lithography techniques for VLSI/ULSI	2
4	Mask generation	1
5	CVD techniques for deposition of poly silicon, Silicon dioxide, Silicon nitride metal films	3
5	Epitaxial growth of Silicon, modeling and technology	3
6	Evaporation and Sputtering Techniques	2
6	Failure mechanisms in metal interconnects	2
6	Multi level metallization schemes	1
7	PECVD	1
7	Plasma etching and RIE techniques	2
7	RTP techniques for annealing, growth and deposition of various films for use in ULSI	3
8	Process integration for NMOS, CMOS and Bipolar circuits	3
8	Advanced MOS technology	2