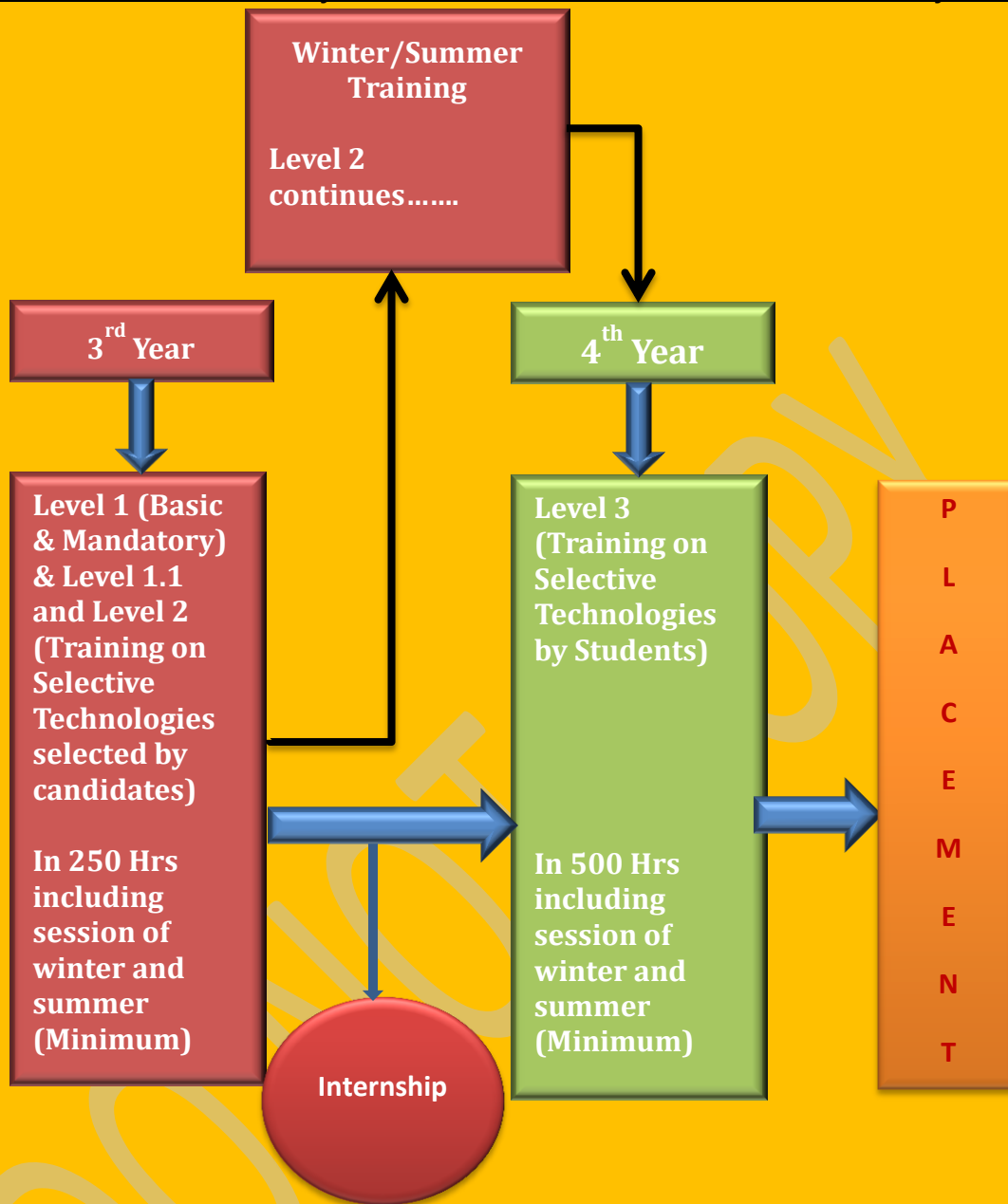


**Method We follow- How to Get Entry Pass in SEMICODUCTOR Industries for 3rd year engineering**



**FIG-3**

# PCB (Board) Design

## Course Structure for 3<sup>rd</sup> year only

BASIC ANALOG- Module -1	BASIC DIGITAL- Module-2	CIRCUIT SIMULATION- Module-3	BASIC OF PCB DESIGN- Module-4
<ul style="list-style-type: none"> <li>➤ Resister.</li> <li>➤ Capacitor.</li> <li>➤ Inductor</li> <li>➤ Diode.</li> <li>➤ Led.</li> <li>➤ Basics of circuit design.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Transformer.</li> <li>➤ 7805.</li> <li>➤ 7812</li> <li>➤ Lm317.</li> <li>➤ All logic gates and their IC.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Circuit simulation on bread board.</li> <li>➤ Circuit simulation on proteus.</li> <li>➤ Introduction of PCB designing.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Introduction of EAGLE (tool for PCB designing.)</li> <li>➤ Introduction of schematic design.</li> <li>➤ Introduction to selecting component from library.</li> <li>➤ Introduction to board design.</li> </ul>
USED IN CIRCUIT DESIGNING-Module-5	SCHEMATIC-Module-6	LAYOUT-Module-7	LAB-Module-8
<p>Types of Resister.</p> <ul style="list-style-type: none"> <li>➤ Fixed.</li> <li>➤ Adjustable/variable</li> <li>➤ Carbon composition</li> <li>➤ Wire wound.</li> <li>➤ Metalized</li> </ul> <p>Types of Capacitor.</p> <ul style="list-style-type: none"> <li>➤ Electrolytic.</li> <li>➤ Ceramic.</li> <li>➤ Axial lead type.</li> <li>➤ Radial lead type.</li> <li>➤ Variable.</li> </ul> <p>Types of Inductor</p> <ul style="list-style-type: none"> <li>➤ Coupled, Multi-layer.</li> <li>➤ Power, RF, Surface mounted.</li> </ul> <p>Types of diode.</p> <ul style="list-style-type: none"> <li>➤ Small/large signal.</li> <li>➤ Zener.</li> <li>➤ Constant current.</li> <li>➤ Schottky.</li> <li>➤ Tunnel, Varactor.</li> </ul> <p>Transistor.</p> <ul style="list-style-type: none"> <li>➤ FET,BJT,L293D</li> <li>➤ MAX232, Atmel IC</li> </ul>	<ul style="list-style-type: none"> <li>➤ Creating schematic file.</li> <li>➤ Placing, editing, and connecting parts and electrical symbols.</li> <li>➤ About library and part.</li> <li>➤ Connection between electrical symbols.</li> <li>➤ Name and value.</li> <li>➤ Adding and editing graphical text.</li> <li>➤ ERC checking</li> </ul>	<ul style="list-style-type: none"> <li>➤ Design mechanical structure.</li> <li>➤ Placing of component.</li> <li>➤ Concept of tracks width calculation.</li> <li>➤ Routing single layer and multilayer.</li> <li>➤ Vias and there types.</li> <li>➤ Silks screen.</li> <li>➤ Copper pour.</li> <li>➤ DRC checking.</li> <li>➤ Adding text.</li> <li>➤ Gerber file generation.</li> </ul>	<ul style="list-style-type: none"> <li>➤ Taking print from Gerber on photo paper.</li> <li>➤ Print circuit on FR4.</li> <li>➤ Etching.</li> <li>➤ Drilling.</li> <li>➤ Checking connectivity.</li> <li>➤ Component mounting.</li> <li>➤ Soldering / de soldering.</li> <li>➤ Testing.</li> </ul>

# PCB (Board) Design

## Course Structure for 4<sup>th</sup> year only

INTERFACES-Module-9	THEORY-Module-10	TYPE OF BOARD DESIGN-Module-11	PRACTICAL-Module12
<ul style="list-style-type: none"> <li>➤ RELAY</li> <li>➤ KEYPAD</li> <li>➤ LCD</li> <li>➤ 7 SEGMENT</li> <li>➤ SWITCHES</li> <li>➤ LED MATRIX.</li> <li>➤ ADC/DAC.</li> <li>➤ SENCER.</li> <li>➤ ETHHERNET.</li> <li>➤ USB.</li> <li>➤ MEMORYCARD.</li> </ul>	<p><b>High Speed Board Design.</b></p> <ul style="list-style-type: none"> <li>➤ Selection of stack-up for High Speed Board Design.</li> <li>➤ Component Placement.</li> <li>➤ Impedance Controlled Design of Traces.</li> <li>➤ Estimating trace dimensions.</li> <li>➤ Routing of High Speed Serial Signals.</li> <li>➤ Correct Termination of Transmission Lines.</li> <li>➤ Correct Termination of Transmission Lines.</li> <li>➤ Board Level Filtering and Decoupling.</li> </ul> <p><b>On-Board Noise Source.</b></p> <ul style="list-style-type: none"> <li>➤ Crosstalk.</li> <li>➤ Signal Integrity.</li> <li>➤ Power Noise Filtering.</li> <li>➤ Power Distribution.</li> <li>➤ Ground Bounce.</li> <li>➤ Termination Schemes.</li> </ul>	<ul style="list-style-type: none"> <li>➤ ANALOG SIGNAL BOARD DESIGN.</li> <li>➤ DIGITAL SIGNAL BOARD DESIGN.</li> <li>➤ MIXED SIGNAL BOARD DESIGN.</li> <li>➤ RF SIGNAL BOARD DESIGN.</li> <li>➤ CRITICAL SHAPE BOARD DESIGN.</li> <li>➤ HIGH DENCITY BOARD DESIGN.</li> <li>➤ INTRODUCTION TO DAUGHTER BOARD DESIGN.</li> <li>➤ INTRODUCTION TO MOTHER BOARD DESIGN.</li> <li>➤ INTRODUCTION TO FPGA BOARD DESIGN.</li> </ul>	<ul style="list-style-type: none"> <li>• BOARD LAYER.</li> <li>• SINGLE LAYER.</li> <li>• DOUBLE LAYER.</li> <li>• MULTI LAYER.</li> <li>• FINAL PROJECT WITH THESE MICROCONTROLLER.</li> <li>• ATMEL.</li> <li>• MICROCHIP.</li> <li>• INTEL.</li> <li>• TEXAS.</li> <li>• TOOL USED</li> <li>• EAGLE.</li> <li>• KICAD.</li> <li>• ALTIUM.</li> <li>• ORCAD.</li> <li>• LAB.</li> <li>• MAKING SMPS ON HARDWARE.</li> <li>• MAKING DEVELOPMENT BOARD ON HARDWARE.</li> <li>• PROJECT ON THE REQUIREMENT OF STUDENT.</li> </ul>