

## Synopsis

This course aims to provide the non-engineer professionals working in the semiconductor industry a basic understanding of the nature of business they are in. The well-structured guideline presented can be used as a highly practical reference by them in their work.

This training is targeted towards people working in the vital supporting roles in the semiconductor industry – Human Resources, Finance, Purchase & Procurement, Information Technology, Communications and the like. While these roles by themselves require a skill-set different from that of the engineers designing or manufacturing chips/wafers/semiconductor products, know-how of the basic concepts and technical jargon used in the industry facilitates people in these roles to work more productively and efficiently.

By providing the participants with a basic foundation for understanding the language of the IC/semiconductor industry, the chip development cycle and the type of business they are in, the ultimate goal of this workshop is to equip them with a vital information stepping stone towards a more productive career.

In this course, technical concepts actually become demystified - that is to say, the "tech-talk" and jargon that otherwise may sound mysterious get revealed in their essential simplicity. The chip fabrication and design cycle are explained to enable participants to understand the development process and cycle of their company's products. The key entities involved in the semiconductor eco-system along with functions within a chip design group help the participant understand the synergy shared across various involved entities as well as an understanding of the various job profiles in a chip design group. The special nature of semiconductor industry along with the target applications, markets gives them an insight into the industry dynamics. The trends shared help them in envisioning various potential future scenarios of their industry.

The interactive nature in which this course is conducted facilitates in making this an interesting and engaging learning experience. Participants will be exposed to terms, processes and insights cited from real industry experience.

This course will be delivered by a senior VLSI consultant with extensive industry experience spanning across various functions on a global scale and across various geographies.

## What You Will Learn

- The business we are in
- Chip making/Fabrication process
- Demystifying some key terminology
- Generic chip design cycle
- Key entities involved in the semiconductor eco-system
- Generic target applications and markets for semiconductor chips
- Industry dynamics and trends

These in turn will enable you in

- Effectively communicating with your customers and suppliers
- Effectively supporting your customers

## Who Should Attend

Professionals in

- Human Resources
- Finance
- Purchase & Procurement
- IT/MIS support
- Communications and PR
- Technical Writing
- Other supporting roles

## Prerequisite

General know-how. 1-2 years' experience in the semiconductor industry is preferable.

## Course Methodology

This course is conducted in a seminar room. The course will include a brief interactive workshop like session to encourage participation and facilitate learning. Each participant will receive a set of course material. The training program is customizable.

## Course Duration

Half a day

## Course Structure

*The course is organized into brief modules to facilitate learning and covering the important topics.*

### A. The business WE are in

- i. Brief on the business
- ii. Key differentiators in our business

### B. Chip making – the process

- i. Making of silicon wafer
- ii. What is a mask
- iii. Developing the wafer to fabricate a chip
- iv. Assembly and Testing
- v. Enabling tools

### C. Demystifying some key terminology

- i. Key terms like Moore's law, Yield, Wafer lots, Frontend, Backend, Mask, Channel, Netlist, Layout, Digital/Analog/RF design, Foundry, IDM, ASIC, FPGA, MPW, etc. are explained.
- ii. Brief explanation along with context and role of Intellectual Property (IPs) is also shared. A comparison with procuring of physical parts is included.

### D. Generic Chip Design Cycle

- i. What is VLSI design Flow?
- ii. Main levels of abstraction
- iii. Major design steps
- iv. Factors affecting a chip turnaround time

### E. Key entities involved in the semiconductor eco-system

- i. Semiconductor eco-system
- ii. Generic Design work groups/who does what

### F. Generic Target applications and markets for semiconductor chips

- i. Main product categories
- ii. Major target markets
- iii. Application examples

### G. Industry Dynamics and Trends

- i. Cyclic nature of semiconductor industry
- ii. Technology trends
- iii. What's next?

## Course Instructor

### Meenu Sarin

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**Ms. Meenu Sarin** is a microelectronics professional with over 21 years' experience in the microelectronics industry across various facets of operations & across geographies like Europe, India, Singapore, Greater China and Australia and with special focus in the semi-custom ASIC environment. She has registered her company, VLSI Consultancy, in Singapore from where she consults offering techno-commercial services to the semiconductor industry. She has conducted in-house training courses and public workshops in various countries including Singapore, Malaysia, Hong Kong and India besides

delivering talks in universities. She is also a founding member and an Executive Board Member of the Singapore Semiconductor Industry Association ([www.ssia.org.sg](http://www.ssia.org.sg))

From 1997-2002, Meenu was a Technical Marketing Manager in STMicroelectronics (STM)/Singapore with focus on Telecom segment. In this role, she was responsible for Business Development and Program Management for STM's semicustom ASIC projects in Asia Pacific. Meenu also worked as a Program Manager in charge of managing various semi-custom projects with customers in the Asia-Pacific Region. Before her move to STM Singapore, Meenu worked at STM India from 1991 to 1997. As a Design Manager for Library Design Group, she was responsible for growing and managing a 30 member strong team involved in design and development of semi-custom digital libraries in various technologies across different platforms as per the market requirements and to support designers in STM's worldwide locations. Prior to this, Meenu had been a Design Engineer for digital library design and development at STM Italy for several years after she received her engineering degree (Computer Engineering) from Delhi Institute of Technology, India in 1988.