

### MS4603 – Microelectronic Process Integration

<b>Course Code</b>	MS4603				
<b>Course Title</b>	Microelectronic Process Integration				
<b>Pre-requisites</b>	NIL				
<b>Pre-requisite for</b>	NIL				
<b>No of AUs</b>	3				
<b>Contact Hours</b>	LECTURES	26	Tutorial	13	
<b>Course Aims</b>					
<p>The major objective of this subject is to introduce the students to the materials and engineering aspects of Silicon microelectronic device integration. Module technologies will be introduced, following by thin film processes used in device integration and other processing module technologies. Successful completion of this subject should give the students an in-depth understanding of microelectronic device processing and integration, and help them to appreciate the materials design requirements of metal oxide semiconductor devices. In addition, the students will be familiarized with the potential applications of semiconductor devices.</p>					
<b>Intended Learning Outcomes (ILO)</b>					
<p>By the end of this course, you (as a student) would be able to:</p> <ol style="list-style-type: none"> <li>1. Identify and select suitable materials, deposition methods and integration processes based on materials properties and processing techniques.</li> <li>2. Explain the various integration processing modules and their applications for advanced semiconductor technology.</li> <li>3. Apply basic device and integration knowledge to solve processing and manufacturing issues.</li> </ol>					
<b>Reading and References</b>					
<p><b>Primary:</b> C. Y. Chang and S. M. Sze, ULSI Technology, McGraw Hill 2001.</p> <p><b>Secondary:</b> Stanley Wolf, Silicon Processing for the VLSI Era: Vol 2: Process Integration, 5th edition, Lattice Press</p>					

## **Course Policies and Student Responsibilities**

### **(1) General**

Students are expected to complete all assigned pre-class readings and activities, take all scheduled assignments and tests. Students are expected to take responsibility to follow up with course notes, assignments and course related announcements. Students are expected to participate in all tutorial discussions and activities.

### **(2) Absenteeism**

TBL requires you to be in class to contribute to team work. All students must attempt the CAs schedules. Valid reasons include falling sick supported by a medical certificate.

### **(3) Formative Feedback:**

The guideline is for the course in Part B is to provide formative feedback for students through their CA as well as giving general feedback for students' performance as part of the end of course review.

## **Academic Integrity**

Good academic work depends on honesty and ethical behavior. Quality of your work as a student relies on adhering to the principles of academic integrity and to the NTU Honor Code, a set of values shared by the whole university community. Truth, Trust and Justice are at the core of NTU's shared values.

As a student of NTU, it is important that you recognize your responsibilities in understanding and applying the principles of academic integrity in all the work you do at the University. Not knowing what is involved in maintaining academic integrity does not excuse academic dishonesty. You need to actively equip yourself with strategies to avoid all forms of academic dishonesty, including plagiarism, academic fraud, and collusion and cheating. If you are uncertain of the definitions of any of these terms, you should go to the [academic integrity website](#) for more information. Consult your instructor(s) if you need any clarification about the requirements of academic integrity in the course.