Course Name: 微影、蝕刻、鍍膜、清洗、製程設備與控制
(Litho Process & Control, Scanner, Track, Metrology, Deposition, Etching, Cleaning)

授課教授：陳俊光教授、Peter Loewenhardt 教授

1. **課程簡述 Brief Course Description**

   Tokyo Electron Technology Introduction

   We would like to give an introduction to semiconductor fabrication technologies and what role Tokyo Electron takes in this Industry.   In particular, we will explain some basics of Tokyo Electron's equipment processing technology including oxidation (reviewing various thermal processes), deposition (Chemical Vapor Deposition, Atomic Layer Deposition and Physical Vapor Deposition), dry removal (Plasma etching and Gas Etching), wet cleaning and removal (batch and single wafer, and advanced drying technologies), coater-developer and advanced packaging related technologies. Additionally, we will discuss TEL's approach to leveraging strengths, aggressive R&D investment, TEL's focus on the environment and people.

2. **此科目對應之系所課程規畫所欲培養之核心能力**(Core capability to be cultivated by this course)：

   - Basic understanding of several key technologies used in producing semiconductor devices

   - Basic physics and chemistry of oxidation, deposition, removal, wet clean, coating & developing

3. **課程內容關鍵字(Key Words)**：

   Oxidation, Deposition, Etching, Cleaning, Coating, Developing, Physics, Chemistry

4. **課程大綱 Detailed Course Syllabus**
   - 課程說明(Course Description):
     – Semiconductor Industry: a short introduction
     – Example: transistor process flow
     – Equipment and process details:
         – Oxidation
         – Deposition
         – Dry removal
         – Wet cleaning & removal
         – Lithography: Coater & Developer
         – Advanced Packaging
     – How TEL fits into the semiconductor industry

- 指定用書(Text Books):

  Non required, course materials will be sent to the students
- 參考書籍(References):

  Included in the class materials'powerpoint slides
- 教學方式(Teaching Method):

  Lecture and possible Training Center visit
- 教學進度(Syllabus):

  Starting with an introduction to the semiconductor industry, the basic flow of how a semiconductor device is made will be described (as a reference), after which several key technologies will be described in more detail that are directly involved in the semiconductor manufacturing.

- 成績考核(Evaluation):

  End of class exam or project/presentation