**COURSE SYLLABUS**

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| **Course Title**：Plasma and thin film technologies II | | | | |
| **Credits / Hours** | 3/3 | **Course Number** |  | **■Required □Elective** |
| **Course Description**  This course is the second part of an introduction to the field of plasma and thin film technologies, with a focus on the plasma and its application in thin films. Topics covered various types of plasmas, such as PVD, CVD and atmospheric pressure plasmas, for thin film preparation. The course will also cover applications of plasma and thin film technologies in nanotechnology and different industries  **Course Goals and Objectives:**   1. To introduce students to the properties and characteristics of plasma 2. To provide an understanding of the processing methods used in the manufacture of thin films 3. To explore the use of plasma and thin film technologies in nanotechnology and different industries   Textbook:  Prepared by professors and other references (papers) | | | | |
| **Course Topics** | | | | |
| **Topic** | | **Content** | | |
| Topic 1 Evaporation | | Plasmas for thin film preparation - PVD | | |
| Topic 2 Sputtering | | Types of plasmas for thin film preparation - PVD | | |
| Topic 3 Thermal CVD | | Types of plasmas for thin film preparation - CVD | | |
| Topic 4 Atmospheric pressure | | Atmospheric-pressure plasmas | | |
| Topic 5 LPCVD | | Low-pressure CVD | | |
| Topic 6 PECVD | | Plasma-enhanced CVD and photo CVD | | |
| Topic 7 MOCVD | | Metalorganic CVD | | |
| Topic 8 Applications I | | Conventional industry | | |
| Topic 9 Applications II | | Electro-optical industry and sensors | | |
| Topic 10 Applications III | | Biosensor and biomedical | | |
| Topic 11 Future R&D | | Introduction | | |