**COURSE SYLLABUS**

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| **Course Title：**Semiconductor Package | | | | |
| **Credits / Hours** | 3/3 | **Course Number** | 157421 | **□Required ■Elective** |
| **Course Description :**  This course will introduce the package concept, package technology, package material/process, and relationship of semiconductor industry chain. The selection of package solutions and the trend of package technology are included. Students who take this course are required to learn (1) the purpose and fundamental theory of Semiconductor Package, (2) processes and materials of Semiconductor Package, (3) technology of lead frame package, (4) technology of BGA package, (5) Technology of BGA package, (6) Technology of flip-chip package, and (7) technology of multi-chip package. | | | | |
| **Course Topics** | | | | |
| **Topic** | | **Content** | | |
| Purpose and theory of Semiconductor Package | | This chapter will introduce the purpose and fundamental theory of Semiconductor Package. Then, it will give a brief review for the evolutions of package type and package technology. | | |
| Processes and materials of Semiconductor Package | | This chapter will give the concept of package processes and reveal the typical package materials. | | |
| Technology of lead frame package | | This chapter will bring in the fabrication of lead frame. It will review the most well-known lead frame packages, including  1. SIJ/SIP and DIP  2. QFP and QFN | | |
| Technology of BGA package | | This chapter will launch the idea and technology of BGA. The fabrication of BGA substrate will be discussed. | | |
| Technology of flip-chip package | | The technology of flip-chip package evolutes from BGA, which can be called as flip-chip BGA (FCBGA). This chapter will talk about the fabrication of FCBGA and the build-up substrate. | | |
| Technology of multi-chip package | | This chapter will confer the technology that the multi chips packaged in single unit. It includes   1. MCM technology 2. SIP technology 3. 3D package technology | | |