EE6610 INTEGRATED CIRCUIT PACKAGING

Academic Unit :	3	
Prerequisite / Co-requisite :	Nil	
Effective :	Academic Year 2005/2006	Semester 1
Last update :	Aug 2004	

OBJECTIVE

This course aims to provide a deep understanding of the fundamental principles underlying the core technology of *integrated circuit (IC) packaging* for graduate students, and build-up their ability in IC packaging design, materials, thermal management, fabrication and characterisation.

DESIRED OUTCOME

After pursuing the course, we expect students to have

(i) A good knowledge on the fundamental theories, design, simulation, and fabrication processes relating to IC packaging for different applications;
(ii) Motivation to apply IC packaging design and innovation to applications of their own interests and relate to their own individual research and development areas.

OTHER RELEVANT INFORMATION

In order to follow this course, students should have a good background in microelectronics, semiconductor materials and processes, basic concepts in applied mechanics and mechanical design.

CONTENT

IC Packaging Overview. Electrical Packaging Design for Advanced Packages. Thermal Management for Advanced Packaging. Single Chip and Multichip Packaging. IC Assembly, Sealing and Encapsulation. Microsystems Packaging and Applications. IC Packaging Reliability and Failure Analysis.

ASSESSMENT SCHEME

Continuous Assessment:	20 %
Final Examination:	80%

TEXTBOOK

1. Rao R. Tummala, “Fundamentals of Microsystems Packaging”, McGraw-Hill, 2001

REFERENCES

1. John H Lau, C P Wong, J L Prince and W Nakayama, “Electronic Packaging: Design, Materials, Process and Reliability” McGraw Hill, 1998
2. William D Brown, “Advanced Electronic Packaging”, John Wiley and Sons, 2001.
3. Charles A Harper, “Electronic Packaging and Interconnection Handbook”, McGraw Hill/Harper Edition, 2000.