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| Module Title: | Semiconductor Technology |
| Academic year: | 2009 – 2010 |
| Credit Value: | 3 – Mandatory |
| Pre- requisites: | BEng or equivalent |
| Assessment: | 70% Final Exam, 20% Practical, 10% Continuous Assessment (C.A.) |
| Aims | The aim of semiconductor technology is to introduce the student to the clean room laboratory where they will learn how to work safely and manufacture a simple MOS capacitor. The student will also understand the structure and operation of simple devices such a MOSFET and CMOS inverter and be able to explain how device structure can affect device performance. |
| Module Content | <ul style="list-style-type: none"> • Semiconductor materials • P-N junction • MOSFETs • Semiconductor Device Fabrication • Practical Content |
| Intended Learning Outcomes: | <p>On successful completion of the module the student will be expected to be able to:</p> <ol style="list-style-type: none"> 1. Explain the construction, fabrication and operation of simple semiconductor devices. 2. Calculate simple semiconductor device electrical characteristics given the device structure. 3. Explain the fabrication and C-V measurements of a MOS diode in the laboratory. 4. Gather & analyse experimental data and write laboratory reports. |