What you will learn

ELEC3223

Knowledge and Understanding
Having successfully completed this module, you will be able to demonstrate knowledge and understanding of:
- Biomolecules and biomolecular interactions
- The relationship between molecular dynamics, nanoscale physics and macroscopic system behaviour

Subject Specific Intellectual
Having successfully completed this module, you will be able to:
- Explain biophysical mechanisms in the context of bionanotechnology application areas
- Analyse and discuss the engineering requirements of multidisciplinary technology based on biology
- Evaluate the experimental techniques used to characterise bio-nano systems

Transferable and Generic
Having successfully completed this module, you will be able to:
- Investigate and analyse research and development material from a variety of sources including newspapers, journal articles, patents and corporate documentation
- Write critical reports addressing engineering problems, including assessment of the impact of new technologies
- Critically analyse experimental procedures and results
- Write concise and informative engineering laboratory reports.

Subject Specific Practical
Having successfully completed this module, you will be able to:
- Perform engineering design calculations of molecular and biological effects
- Explain the challenges of commercialising new technologies
- Perform some basic wet laboratory procedures, including soft lithography procedures involving biomolecules

ELEC6205

Reference material

Books:
- Bioelectronics: from theory to applications (Edt I. Willner and E. Katz) Wiley-VCH, 2005
- Soft Machines - Nanotechnology and Life (Jones, Oxford)

Library:
- Biochemistry (Berg, Tymoczko, Stryer) WH Freeman, 2002, 2006
- Biochemistry (Stryer) Freeman, 1981