



## CAD & Engineering Design

### Course Objectives

This course provides the student with the knowledge and skills associated with CAD and Design, as well as an introduction to the general process of design and the use of different design methods. This course gives the student the opportunity to develop skills in 2-D and 3-D using CAD Software.

### Course Syllabus

- The design process: phases of design, needs analysis, solution generation, analysis and evaluation
- Product design specification: primary elements, factors and boundaries.
- Projects, teamwork and ethics
- Testing and analysis: analytical, experimental and numerical techniques
- Problem solving and decision making: problem-solving process, creativity, brainstorming, decision matrix, morphological analysis
- Geometric tolerancing and dimensioning / limits and fits / surface finish
- Standards (BS / ISO)
- Setting-up drawings
- Creating templates
- Orthographic, auxiliary and Isometric views
- Layers / Colours / Line Type
- Co-ordinate reference systems
- Editing methods / Drawing Display control
- Geometric construction and modification
- Using blocks, Attributes and X-Refs
- Dimensioning, tolerancing and surface finish definition
- View layout
- Working in three dimensional space
- Creating 3-D images, Parametric Solid modelling.