COURSE CONTENT

Course Code	DR2005
Course Title	Computer Aided Design I
Pre-requisites	NIL
No of AUs	3
Contact Hours	39 hours lab contact

Course Aims

This course will introduce you to principles, concepts, and techniques related to computer-aided design for concept development, presentation and technical documentation, which you will then apply to design projects. This learning forms the foundation for further studies in computer aided design.

Intended Learning Outcomes (ILO)

By the end of the course, you should be able to:

1. Identify and discuss two and three-dimensional modeling, rendering and presentation principles and concepts.

2. Use techniques in 2D illustration, 3D modeling, rendering and technical documentation in order to develop skills and projects.

3. Apply a workflow from sketch to final output for product design projects.

4. Clearly present and discuss computer aided design work in class, presentations and assignments.

5. Contribute to class discussions and peer problem solving of computer aided design challenges in a constructive way.

Course Content

Computer Aided Design
New and developing digital visualization and design technologies are not only changing the way that products are designed but also, by virtue of the new visual languages that they enable, leaving their mark on the form of the design itself. This course is a practical exploration of the introductory principles and techniques for the design, visualization and presentation of product designs such as consumer products, environments and furniture. You will be taught using commercially available design software packages, with emphasis on imparting principles, concepts and techniques which are portable across other software packages used by the profession.

Two and Three Dimensional Modelling
Introduction to two and three-dimensional modeling principles and techniques.

Rendering
Introduction to three-dimensional computer rendering techniques with camera, shader, and lighting effects using rendering engines.

Technical Documentation
Introduction to technical documentation through the creation of two-dimensional drawings of three-dimensional computer models and output to print media.

Workflow
Workflows for various modeling and visualization tasks will also be covered, such as working from sketches, orthographic views, development of primary curves and surfaces, and part detailing.

Class assignments
You will produce a series of increasingly complex assignments and develop a foundation of computer-aided design principles and techniques. Developed through lectures, tutorials, class exercises and peer/instructor feedback sessions.