

**Course Code : ME 757**

**Course Title : CAD/CAM**

**Credit Hours : 3**

### **Course Description**

Introduction to CAD/CAM, Advanced Editing Solid Modelling, Advanced Displaying Solid Models, Advanced Modifying Solid Models, Advanced Boolean Operations and Mass Properties, Advanced Boolean Operations and Mass Properties, Advanced 2-D Graphing Systems, Advanced 3-D Surface Mapping Systems, Advanced Kinematics Analysis of Mechanism, Advanced Kinematics Analysis of Mechanism, Advanced Design of Simple Machine Elements, Advanced Finite Difference Applications, Advanced Finite Element Technique, Advanced Simulation and Mathematical Modeling, and Advanced Optimization in Machine Element Design.

### **Course Objectives**

Know how to design, analyze and present various problems encountered in the field of mechanical engineering with enough accuracy and speed by the aid of the computer.

### **Course Topics**

- Week no. 1: Introduction to CAD/CAM
- Week no. 2: Advanced Editing Solid Modelling
- Week no. 3: Advanced Displaying Solid Models
- Week no. 4: Advanced Modifying Solid Models
- Week no. 5: Advanced Boolean Operations and Mass Properties
- Week no. 6: Advanced 2-D Graphing Systems
- Week no. 7: Advanced 2-D Graphing Systems / 7<sup>th</sup> week evaluation.
- Week no. 8: Advanced 3-D Surface Mapping Systems
- Week no. 9: Advanced Kinematics Analysis of Mechanism
- Week no. 10: Advanced Design of Simple Machine Elements
- Week no. 11: Advanced Finite Difference Applications
- Week no. 12: Advanced Finite Element Technique / 12<sup>th</sup> week evaluation
- Week no. 13: Advanced Simulation and Mathematical Modeling
- Week no. 14: Advanced Optimization in Machine Element Design
- Week no. 15: Advanced Optimization in Machine Element Design

Week no. 16: Final Examination

### **References**

Sham Tickoo. "Solid edge V20 for designers", 2008, Cadcim Technologies.

Chandrakant S. Desai & Tribikram Kundu, "Introductory finite element method", 2001, CRC Pub., 1st edition.

- I. Zeid ,“CAD/ CAM Theory and practice “, McGraw Hill, 1994, 4th edition.