ME 608 CAD-CAM (2-0-2-6)

Introduction and components of Computer aided design (CAD)/Computer aided manufacturing (CAM)/Computer aided engineering (CAE) systems; Basic concepts of graphics programming; Transformation matrix; Rendering; Graphical user interface; Computer aided drafting systems; Geometric modeling systems – wireframe, surface and solid modeling systems; Nonmanifold systems; Assembly and web-based modeling systems; Representation and manipulation of conic sections; Hermite, Bezier, and B-spline curves and surfaces; Introduction to optimization; CAD/CAM integration; Numerical control – Concepts for manual and computer assisted part programming; Virtual engineering – components and applications; Extensive laboratory work on CAD (Solid modeling software), CAM (manufacturing software), and CAE (Finite element analysis software)

Textsbooks:

[1] Kunwoo Lee, *Principles of CAD/CAM/CAE systems*, Addison Wesley, 1999.

References:

[1] Mark E. Coticchia, George W. Crawford, and Edward J. Preston, *CAD/CAM/CAE systems: justification, implementation and productivity measurement*, 2nd edition, New York, Marcel Dekker, 1993.
[2] Chris Macmahon and Jimmie Browne *CADCAM: principles, practice and manufacturing management*, 2nd edition, Addison Wesley, 1998.
[3] Mikell P. Groover and Emory W. Zimmers ,*CAD/CAM: Computer aided design manufacturing*, Prentice Hall, 1996.
[4] P. Radhakrishnan, S. Subramanyan, and V. Raju, *CAD/CAM/CIM* , 2nd edition, New Age, 2000.