RCETMECHAC04 - Renewable Energy Resources

Course outcomes:

- Understand of renewable and non-renewable sources of energy
- Gain knowledge about working principle of various solar energy systems
- Understand the application of wind energy and wind energy conversion system

Syllabus:

UNIT – I

Introduction Modeling - Introduction about CNC Machines - CAD/CAM/CAE, Job opportunity in CAM - Introduction on NC Manufacturing - Expert Machinist CMM - Sheet metal - Cad, Cavity - Mold Cavity - Process Plan - Additive Manufacturing.

UNIT – II

WC Model Creation - Using, Sketching – Constrain – Dimensions - Shapes, Extrude - Revolve - Engineering tools - Hole, Round, Chamfer, Datum Coordinate System.

UNIT – III

Reference Finished Part Model - Work Piece - Automatic Work Piece - Coordinate Creations - Machine Tool Setup - Work Center - Mill, Parameters Setting- Add Tools, Cutting Tool Setup - Mill Operation, CSYS Selection - Clearance Type, Reference Surface - Mill – Face, Cut – Feed, Slep – Depth. Step over, Spindle – Speed

UNIT IV

Display Tool path - Tool Preview, Milling – Play path, Material Removal Simulation Display NC Tool Path - G-Codes used in CNC Programming Colmmon M-Codes - Reading Manufacturing Drawings - Work Steeing and Offsets, work Cordinates Milling Tool types, Face Mill, Slot Mill, Hole Making tools.

UNIT V

Work Center Lathe - Lathe Tool Setting Lathe Coordinate Setting - Clearance Setting, Turning Profile Settings - Turning Tool Path, Turning Material Removal Simulation Turning NC Tool Path

Reference Text Books

1. CNC Programming using fanus Custom Macro B, Sinha S.K. CNC Machining Hand book, Alan Overby.

2. CNC setting and Operation Workbook, Tom Renshaw.

3. CNC Programming Student work book, Mill & Lathe.

4. Machining Fundamentals, John R. Walker BOB Dixon.