Internship On CNC Programming And Modern Manufacturing (6 Weeks)

(Online Session)

COURSE CONTENT

- ⇒ **Module-1: NX Designing**
- • Basic Sketch Creation
- • Geometric and Dimensional Constraints
- • Part Modelling- Basic and Advance
- • Part Modification features
- • Synchronous Modeling
- • Assemblies- Constraints and Methods
- • Understanding Drafting Overview
- • NX CAM – Basics of CAM and selection of tools
- • NX CAM- Facing, Turning and Cavity Milling operations
-
- ⇒ **Module-2: Rapid Prototyping**
- • Introduction to Additive Manufacturing
- • Basic concepts of 3D Printing
- • Technologies in 3D Printing –SLA, FDM, SLS, POLYJET, SLM & EBM
- • Data and Process flow of 3D Printing
- • Strategy making for 3D printing using Machine interface software
- • Demo of 3D printers with live printing of part
- • Application of 3D printers
- • Future aspects of 3D printing technologies

- • Introduction Digital Fabrication Techniques
- • Laser Cutting Operation
- • Hands-on on software for strategizing laser cutting
-
- = **Module-3: CNC Programming**
- • Introduction to the program, History of CNC Machining ,
- • Basic tools, Types of milling tools
- • Basic of hard keys and soft keys, Basic of using software
- • Milling machine Axis system Practice, Basic codes of Milling
- • Milling Program Format, Face milling operation
- • End milling use, Name writing on the plate
- • Tool compensation use, Contouring, Pocketing
- • Drilling Operation, Tapping operation, Polar modes
- • Introduction to turning process, Types of tools and inserts
- • Lathe machine Axis system and practice, Codes of turning
- • Turning Program format, Facing Operation, Rough turning
- • Grooving operation, drilling cycle, Tapping cycle
- • Internal threading, External threading, Boring operation
- • Project & Simulation
- Types of hev in indian market and their responses
- Type HEV powertrain
- Introduction to fulecell EV
- Type of fulecell EV
- Circuit diagram of electric vehicle

BASIC COMPONENTS & VEHICLE DYNAMICS:-

- Breaking system
- Differential and its working
- Transmission system
- Vehicle dynamic
- Vehicle geometry
- Calculation for chassis stiffness
- Steering assembly and joints and working
- Suspension system
- Vehicle packing
- Simulation and analysis of full vehicle

MANUFACTURING OF GOLF CART

- Metal cutting of chassis of golfcart
- Welding of chassis of golf cart
- Polishing of chassis, powder coating
- Painting of chassis
- Moulding of glass fiber of EV body parts
- Polishing painting of fiber parts
- Cutting of Sheetmetal
- Welding of Sheetmetal to the chassis frame
- Cutting and welding of body frame
- Cutting of roof Sheetmetal, punching bending of sheet metal
- Polishing and painting of roof top
- Assembling of rear differential
- Assembling of motor, leaf spring

- Assembling of front axial
- Assembling of wheel
- Assembling of breaking system
- Welding of sit frame, battery housing
- Assembling of moulded fiber body part
- Rooftop mounting and body mounting
- Steering mounting with the front axial
- Wiring harness ,connection of motor ,battery and controller
- Light key indicator and other electronic connection
- Testing and modification and mating stickering final polishing
- Complete testing of golfcart and running .
- Type of battery management system
- Functions of battery management system
- EV charger
- EV charging stations and indian market
- Introduction to hev (history, type, major component)
- Types of hev in indian market and their responses
- Type HEV powertrain
- Introduction to fulecell EV
- Type of fulecell EV
- Circuit diagram of electric vehicle