

Chhattisgarh Institute of Technology, Jashpur

District- jashpur (Chhattisgarh) – 496338

Website-www.gpjashpur.ac.in, E-mail: govtpolyjashpur@gmail.com

LESSON PLAN

SESSION - 2025-2026

SUBJECT: CAMM

SEMESTER: 6th

BRANCH: - MECHANICAL ENGINEERING

UNIT NUMBER	NAME OF THE TOPIC	NO OF CLASS REQUIRE D	REMARK
Unit 01: Essentials of CAD/CAM	1.1 CAD definition, concept and need.CAD process and Functional areas of CAD. CAD Workstation types, functions and configuration.CAD Software: types, features, strengths and limitations	03	
	1.2 CAM - concept and definition. NC (Numerical Control), CNC (Computerized Numerical Control) and DNC (Direct Numerical Control) - concept, features and differences.	03	
	1.3 CNC machines: Advantages, limitations and selection criteria.	02	
Unit 02: Computer aided Solid Modeling and Assembly	2.1 Working in 3D environment - Creating 3D Solid Models of simple and complex machine parts using Extrude, Revolve, Sweep, variable section sweep, Draft, loft, Blend or Similar 3D commands.	02	
	2.2 Part Editing tool: Trim, Extend, Erase, Mirror, Chamfer, Round, Copy, Move, Draft, Boolean operations, patterns, etc.	03	
	2.3 Parametric and non parametric modeling concept, differences and illustration.	02	
	2.4 Preparation of assemblies using assembly commands. Introduction to Top down and Bottom up approach of assembly Exploded view: Explode the assembly.	02	
Unit 03: Computer aided Drafting and Plotting	3.1 Generate orthographic projections. All types of views – front view, top view, side view, sectional views, isometric views, auxiliary views.	03	
	3.2 Dimensioning Commands – Apply dimensions, dimensional and geometrical tolerances. Preparation of Assembly drawing using assembly features.	02	
	3.3 Exploded view – Explode the assembly. Working in Drafting Mode.	01	
	3.4 Bill of material – Prepare part list table and name plate. Page set up, Plot Command.	02	
Unit 04: CNC Turning	4.1 CNC machines: Types, classification, working and constructional Features. Elements of CNC machines - Types, sketch, working and importance of: Slide ways; Recirculation ball screw; Feedback devices (transducers, encoders); Automatic tool changer (ATC); Automatic pallet changer (APC); CNC axes and motion nomenclature.	02	
	4.2 CNC tooling: Tool presetting-concept and importance; Qualified tools-definition need and advantages; Tool holders- types and applications.	02	

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	4.3 CNC Turning centers: Types; Features; Axes nomenclature; Specification; Work holding devices -types, working and applications; Tool holding and changing devices - types, working and applications, CNC part programming: Programming format and structure of part programme.	02	
	4.4 ISO G and M codes for turning -meaning and applications of important codes. Simple part programming for turning using ISO ISO G and M codes for turning -meaning and applications of important codes.	02	
Unit 04: CNC Milling	5.1 CNC milling centres: Types; Features; Axes nomenclature; Specification; Work holding devices -types, working and applications; Tool holding and changing devices - types, working and applications;	2	
	5.2 CNC part programming: programming format and structure of part programme. ISO G and M codes for milling -meaning and applications of important codes.	2	
	5.3 Simple part programming for milling using ISO format. Importance, types, applications and format for: Canned cycles; Macro; Do loops; Subroutine;	2	
	5.4 CNC milling part programming using canned cycles, Do loops and Subroutine. Need and importance of various compensations: Tool length compensation; Pitch error compensation; Tool radius compensation; Tool offset. Simple part programming using various compensations	3	
	Total Class Required	42	

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