DEPARTMENT OF TECHNICAL EDUCATION (DTE), KARNATAKA — C-20 SCHEME

6TH-SEMESTER MANDATORY INDUSTRIAL INTERNSHIP & PROJECT WORK (DIPLOMA IN MECHANICAL ENGINEERING — 20ME61P)

OFFICIAL 16-WEEK DAILY DIARY, WEEKLY LOGBOOK & CIE / SEE EVALUATION RUBRICS

Student Instructions: This 16-week logbook is a mandatory statutory academic document for DTE C-20 final-year Mechanical Engineering students (400 Marks / 16 Credits). Students must record weekly engineering tasks, operations performed, machinery/software handled (CNC Turning Center (Fanuc 0i-TF Control)), and learning outcomes. The logbook must be verified and signed weekly by the Industry Supervisor (with company stamp) and evaluated during the 4 Continuous Internal Evaluation (CIE) review phases by the Polytechnic Internal Guide.

1. STUDENT, POLYTECHNIC & HOST INDUSTRY CREDENTIALS (20ME)

Student Full Name & BTE Reg. No.	Name: _____ Reg No: 101ME24_____
Diploma Programme & Course Code	Branch: DIPLOMA IN MECHANICAL ENGINEERING Code: 20ME61P (6th Sem C-20)
Polytechnic Name & City	College: _____
Host Organization & Specialization	Company: _____ Domain: CNC Machining & Precision Manufacturing
Industry Supervisor Name & Contact	Supervisor: _____ Phone: _____
Capstone Project Title & Duration	Project: OPTIMIZATION OF CNC TURNING PARAMETERS AND JIG-FIXTU... (16 Weeks)

2. 16-WEEK PROGRESS LOGBOOK — MECHANICAL ENGINEERING (WEEKS 1 TO 16)

Week No. & Dates	Department / Bay / Module	Key 20ME Engineering Tasks & Operations Executed	Machinery / Software / Standards Used	Supervisor Rating & Sign
Week 1 [DD/MM to DD/MM]	**HR & Safety Induction**	Plant layout study, machine shop safety rules, PPE enforcement (safety shoes, eye goggles, hair nets), emergency stop drills.	CNC Turning Center (Fanuc 0i-TF Control)	Rating: [/10] Sign: _____
Week 2 [DD/MM to DD/MM]	**Raw Material Store & Cutting**	Incoming raw material inspection (EN8, EN24, SS304 bars), ultrasonic testing verification, bandsaw cutting operation.	3-Axis VMC	Rating: [/10] Sign: _____
Week 3 [DD/MM to DD/MM]	**Conventional Lathe & Milling**	Facing, turning, step turning, grooving, parting, and keyway milling on conventional machines; tolerance checks with Vernier.	Surface Grinder	Rating: [/10] Sign: _____
Week 4 [DD/MM to DD/MM]	**Tool Room & Cutter Grinding**	Grinding HSS single-point cutting tools, inspecting tool geometry (rake angles, clearance angles) on toolmaker's microscope.	Coordinate Measuring Machine (CMM)	Rating: [/10] Sign: _____
Week 5 [DD/MM to DD/MM]	**CNC Machine Center Induction**	Fanuc controller navigation, MDI mode, coordinate systems (G54 work offset, G43 tool length offset), emergency procedures.	Surface Roughness Tester (Profilometer)	Rating: [/10] Sign: _____
Week 6 [DD/MM to DD/MM]	**CNC Turning Operation & Offsets**	Setting tool geometry offsets using touch probe, dry run execution, running initial batch of mild steel turned pins.	Vernier Height Gauge	Rating: [/10] Sign: _____
Week 7 [DD/MM to DD/MM]	**Problem Identification for Project**	Consultation with machine shop supervisor; selecting capstone project on sleeve bushing dimensional variance.	SolidWorks	Rating: [/10] Sign: _____
Week 8 [DD/MM to DD/MM]	**CAD Modeling & Fixture Design**	Drafting 3D model of pneumatic collet fixture in SolidWorks, calculating clamping force requirements and factor of safety.	AutoCAD.	Rating: [/10] Sign: _____
Week 9 [DD/MM to DD/MM]	**Fixture Fabrication & Assembly**	Machining fixture base plate on VMC, assembling pneumatic cylinder, 5/2 solenoid	CNC Turning Center (Fanuc 0i-TF Control)	Rating: [/10] Sign: _____

		valve, and hardened collet sleeve.		
Week 10 [DD/MM to DD/MM]	**CNC G-Code Optimization**	Writing optimized G71 rough turning and G70 finish turning canned cycles; testing carbide insert grades (TNMG, CNMG).	3-Axis VMC	Rating: [/10] Sign: _____
Week 11 [DD/MM to DD/MM]	**Fixture Rig Trial & Machining**	Mounting pneumatic fixture on CNC lathe spindle; measuring clamping repeatability and part runout using dial indicator.	Surface Grinder	Rating: [/10] Sign: _____
Week 12 [DD/MM to DD/MM]	**CMM & Surface Roughness Testing**	Running 50-part production batch; measuring dimensional tolerances on CMM and surface roughness (Ra) on Mitutoyo Surftest.	Coordinate Measuring Machine (CMM)	Rating: [/10] Sign: _____
Week 13 [DD/MM to DD/MM]	**Troubleshooting & Defect Rectification**	Investigating flank wear on cutting edge; fine-tuning coolant nozzle orientation and reducing cutting speed from 180 to 150 m/min.	Surface Roughness Tester (Profilometer)	Rating: [/10] Sign: _____
Week 14 [DD/MM to DD/MM]	**Statistical Quality Control & 5S**	Plotting X-bar and R control charts for bushing diameter; executing 5S sorting and shadow board installation at CNC bay.	Vernier Height Gauge	Rating: [/10] Sign: _____
Week 15 [DD/MM to DD/MM]	**Report Drafting & Technical Documentation**	Compiling 16-week daily diary, drafting Chapters 1 to 5, generating Bill of Materials (BOM) and cost-benefit analysis.	SolidWorks	Rating: [/10] Sign: _____
Week 16 [DD/MM to DD/MM]	**Company Sign-off & Viva Preparation**	Presenting results to Plant Head, securing signed completion certificate, and rehearsing 15-slide viva presentation.	AutoCAD.	Rating: [/10] Sign: _____

3. OFFICIAL DTE C-20 EVALUATION SCHEME & RUBRICS BREAKDOWN (20ME61P — 400 MARKS)

As per DTE Karnataka C-20 regulations for DIPLOMA IN MECHANICAL ENGINEERING, the 16-Week Industrial Internship & Capstone Project carries a total of 400 Marks (16 Credits), structured into Continuous Internal Evaluation (CIE - 300 Marks) and Semester End Examination (SEE / External Viva - 100 Marks).

Evaluation Component	Assessment Criteria & Rubric Details (20ME)	Max Marks
CIE Phase 1 (Week 1 to 4 Review)	Industry induction, attendance, PPE safety adherence, basic tool familiarization (CNC Turning Center (Fanuc 0i-TF Control)), weekly diary sign-off.	**50 Marks**
CIE Phase 2 (Week 5 to 8 Review)	Departmental workflow execution, problem identification for 'OPTIMIZATION OF CNC TURNING PARAMETERS AND JIG-FIXTURE DESIGN FOR AEROSPACE SLEEVE BUSHINGS', initial design/schematics.	**50 Marks**
CIE Phase 3 (Week 9 to 12 Review)	Project implementation, fabrication/coding/testing using CNC Turning Center (Fanuc 0i-TF Control), 3-Axis VMC, Surfac..., observation logs.	**50 Marks**
CIE Phase 4 (Week 13 to 16 Review)	Troubleshooting validation per IS 919 (Limits, 5S audit, draft report submission, C-20 PO mapping.	**50 Marks**
Internal Guide & Industry Mentor Assessment	Polytechnic Internal Guide continuous evaluation (50 Marks) + Industry Supervisor confidential performance appraisal (50 Marks).	**100 Marks**
SEE External Viva-Voce Examination	Joint evaluation by Internal & External Examiners: 60-Page Report Quality (30) + 15-Slide Presentation (30) + Technical Viva-Voce (40).	**100 Marks**

_____ Student Signature (20ME) Date: _____	_____ Internal Guide (Dept. of Mechanical Engineering) Signature & Date	_____ Industry Mentor / Supervisor Official Seal & Signature