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(Declared as Deemed to be University Under Section 3 of UGC Act 1956)
(Accredited with "B" Grade by NAAC)
ENATHUR, KANCHIPURAM- 631 561. Tamilnadu, India.

DEPARTMENT OF MECHANICAL ENGINEERING

"MECHANICAL LAB - II"

(For Part Time B.E. Mechanical Students)

Name : _____

Register No. : _____

Year : _____ Semester : _____

PART A - COMPUTER INTERGRATED MANUFACTURING

LIST OF EXPERIMENTS

CNC TURNING:

1. Facing and Turning Operation (Using Step by Step method)
2. Facing and Turning Operation (Using Cycle method)
3. **Step Turning Operation**
4. Left Hand Taper Turning Operation
5. Right Hand Taper Turning Operation
6. **Taper Turning Operation using Subprogram**
7. **Multiple Turning Cycle**
8. **Pattern Repeating Cycle**
9. **Combination of Cycles**

CNC Milling

1. Face Milling Operation
2. **Linear and Circular Interpolation**
3. Contouring Operation
4. **Contouring Operation using Subprogram**
5. **Rectangular and Circular pocketing**
6. **Text Milling**
7. **Mirroring Operation**

Edge Cam

Practicing all the above programs in Edge Cam Software

PART B - HEAT TRANSFER LABORATORY
LIST OF EXPERIMENTS

1. COMPOSITE WALL APPARATUS
2. HEAT TRANSFER BY NATURAL CONVECTION
3. HEAT TRANSFER BY FORCED CONVECTION
4. HEAT TRANSFER THROUGH A PIN FIN
5. HEAT FLOW THROUGH LAGGED PIPE
6. SHELL AND TUBE HEAT EXCHANGER

PART A - COMPUTER INTERGRATED MANUFACTURING

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Instructor Signature

In-charge Signature

INTRODUCTION TO NUMERICAL CONTROL

Numerical control can be defined as an operation of machine by means of specifically coded instruction to the machine co system.

The "Specifically coded instructions" are combined of the lette alphabets, digits, and selected symbol includes G and M Code decimal point, a semicolon, a colon etc. the collection of ALL instructions necessary to the machine a single part or operatic called CNC Program or Part Program. such a program can be store future use and used repeatedly to achieve the identical machi results at any time.

What are the main advantages of a CNC Machine

1. Setup time reduction
2. Lead time reduction
3. accuracy and Repeatability
4. Contouring and Repeatability
5. Simplified tooling and work holding fixtures
6. consistent machining time
7. productivity improvements.

Machines using CNC

Early machine tools were designed so that the operator standing in front the machine while operating the controls. this des is no longer necessary, since in CNC the operator no longer cont the machine tool movements. on conventional machine tools, o