



**AVIT**  
AARUPADAI VEEDU INSTITUTE OF TECHNOLOGY



VINAYAKA MISSION'S  
RESEARCH FOUNDATION  
(Deemed to be University under section 3 of the UGC Act 1956)



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**DEPARTMENT OF MECHANICAL ENGINEERING**  
**COMPUTER INTEGRATED MANUFACTURING LAB**  
**STANDARD OPERATING PROCEDURE**

Name of the Lab./facility	Computer Aided Manufacturing – CNC MILLING
Purpose	The purpose of the subject is to provide basic knowledge in working of CNC machines
Scope	To gain knowledge about CNC programming To get the hands on training in CNC trainer machine To simulate various CNC machine and generate codes using CAM software
Responsibility	Faculty i/c of the facility, HOD/MECH

**STANDARD OPERATING PROCEDURE FOR CNC MILLING MACHINE**

**PRE-OPERATION:**

- Ensure you are familiar with CNC ‘nesting’ and ‘tool-pathing’ software functionality.
- Locate & ensure you are familiar with the operation of the ON/OFF and emergency stop controls.
- Ensure that front guard door and safety devices are in position and secured.
- Only machine materials that are suitable for this turning process.
- Ensure that the mill cutter bit size and profile conforms to specifications. This machine must be isolated while any adjustments are made to the milling head or tool cradle.
- Ensure all cutters are sharp and free of resin build up or wear.
- Adjust the waste collector shroud (where fitted) correctly for maximum efficiency.

*Rathna L*

- Be aware of any other personnel in the immediate vicinity and ensure the area is clear before using this equipment.
- Familiarize yourself with all electrical and mechanical operations and controls, including any handheld keypad interface remote control.
- Never attempt to program this CNC machine without proper training.

#### OPERATION:

- Never attempt to program this CNC machine without proper training.
- Never pre-program any CNC mill to perform operations beyond the capacity of the machine.
- Confirm all CNC programming instructions for the mill.
- Ensure that the material work piece is secured before milling.
- Ensure that the coolant system is operational before milling.
- Ensure all interchangeable tool head cradle movements remain unobstructed for all operations.
- Never leave the CNC mill in operational mode while unattended.

#### POST-OPERATION

- On completion, isolate the switches. Leave the machine in a tidy, clean and safe manner.

#### RECORD TO BE MAINTAINED

- Laboratory Manual containing the experiments that can be performed with the equipment
- Maintenance Record



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## DEPARTMENT OF MECHANICAL ENGINEERING

### 17MECC88- COMPUTER INTEGRATED MANUFACTURING LAB

#### STANDARD OPERATING PROCEDURE

Name of the Lab./facility	Computer Aided Manufacturing – CNC TURNING
Purpose	The purpose of the subject is to provide basic knowledge in working of CNC machines
Scope	To gain knowledge about CNC programming To get the hands on training in CNC trainer machine To simulate various CNC machine and generate codes using CAM software
Responsibility	Faculty i/c of the facility, HOD/MECH

#### **STANDARD OPERATING PROCEDURE FOR CNC LATHE**

##### PRE-OPERATIONAL SAFETY CHECKS

- Ensure you are familiar with CNC ‘nesting’ and ‘tool-pathing’ software functionality.
- Locate and ensure you are familiar with the operation of the ON/OFF and emergency stop.
- Ensure that front guard door and safety devices are in position and secured.
- Only machine materials that are suitable for this turning process.
- Ensure lathe cutting bit size and shape conforms to specifications. The machine must be isolated while any adjustments are made to the cutter head.
- Ensure all cutters are sharp and free of resin build-up or wear.
- Adjust the dust collector shroud (where fitted) correctly for maximum efficiency.
- Be aware of any other personnel in the immediate vicinity and ensure the area is clear before using this equipment.

- Familiarize yourself with all electrical and mechanical operation and controls, including any handheld keypad interface remote control

#### OPERATION:

- Never attempt to program this CNC machine without proper training.
- Never pre-program any CNC lathe to perform operations beyond the capacity of the machine.
- Confirm all CNC programming instructions for the lathe.
- Ensure that the material work piece is secured before turning.
- Ensure that the coolant system is operational before turning.
- Ensure all robotic tool array movements remain unobstructed during the turning operation.
- Never leave the CNC lathe in operational mode while unattended.

#### POST-OPERATION

- On completion, isolate the switches. Leave the machine in a tidy, clean and safe manner.

#### RECORD TO BE MAINTAINED

- Laboratory Manual containing the experiments that can be performed with the equipment
- Maintenance Record

*W. Rother*