



# **MANAKULA VINAYAGAR**

## **INSTITUTE OF TECHNOLOGY**

**(An Autonomous Institution)**

Kalitheerthalkuppam, Puducherry - 605107

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### **Standard Operating Procedure**

**for**

### **MAINTENANCE OF COMPUTERS AND ITS UTILIZATION**

Approved in the Governing body meeting held on August 21, 2024

(Updated in 2024)



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## NOTIFICATION

In pursuance of the approval passed in the Governing Body meeting held on August 21, 2024, it is hereby notified that Manakula Vinayagar Institute of Technology has published the updated Standard Operating Procedure (SOP) for Maintenance of Computers and its Utilization.

The SOP for Maintenance of Computers and its Utilization would serve as a detailed guideline to be observed and followed with immediate effect.



Dr.S. Malarkkan

  
Principal  
**PRINCIPAL**  
MANAKULA VINAYAGAR  
INSTITUTE OF TECHNOLOGY  
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## **PREFACE**

The maintenance cell functioning in the Institute would take care of the maintenance of computers, installation and up-gradation. The technicians / system administrator would attend the defects and malfunctions of both software and hardware of Computer, whenever they have been reported by the concerned department. The reporting should be made in the prescribed format highlighting the nature of defects or malfunctions. The cell would maintain records of servicing, accordingly. This Standard Operating Procedure (SOP) provides guidelines and procedures to be adopted for maintenance of computers and allied resources, in order to ensure its effective utilization.

## **OBJECTIVES**

The objectives of the Computer Maintenance Cell are:

- Maintenance of the servers, computer systems, internet connectivity, back up of data, Multimedia Projectors, printers, Wi-Fi, LAN, renewal of licenses and services.
- To ensure optimal utilization of computing facilities and allied resources.
- To upgrade the systems if and when required.

## **GUIDELINES FOR SETTING UP NEW COMPUTING LABORATORIES AND INSTALLATION:**

- The specifications and the requirements relating to Computer hardware and software would be given by the respective HoDs. A proposal highlighting the above would be submitted to the management, through the Principal. The procurement of the requirements mentioned in the proposal, would be initiated after securing budget approval from the Management.
- After Budget approval, the institute would arrange for inviting quotations and prepare comparative costs / pricing statements with the information received from various (Vendors) enterprises. The quality of the brand/product, service support, costs and pricing would be reviewed for placing Purchase orders.
- The system administrator and Principal would involve in the process of technical specifications and price negotiations.
- The finalized report after appropriate review and negotiations would be submitted to Chairman. The Chairman and Principal would finalize the vendors after personal discussion with them. The orders would be placed only to the approved vendors by the management. In the order, terms and conditions should be clearly mentioned in the purchase order.
- During the delivery of Computers/Hardware/Software/equipment, the following procedures need to be followed. First Gate entry should be made in the invoice, second, it should be entered in the main store stock register, Third, store keeper must transfer the items to the concerned department. In the department, the conditions of the delivered equipments should be checked by the concerned lab in-charge / instructor / faculty in- charge and HOD. Then, the bills would be verified and the details relating to Computers / Hardware / Software / equipment delivered, must be entered in the Lab / Department stock register.

- After verification of bills (Invoice) and the equipment the Department would forward to stores and accounts section. Before forwarding, the department would ascertain the pending issues, if any, with the equipments already supplied by the company. After confirming that there is no pending issues with the company, the department would authenticate the payment of the bill.
- The account section may pass the bills to the Management for payment approval, after checking the bills with purchase order and also verifies the advance amount paid, if any.
- The payment information must be communicated to the HODs by the account section or the HODs must enquire about the status of the bill payment in the office for their information and records.
- For the purchase of consumables such as printer cartridge, stationeries, if required, the lab in-charges and HODs must submit the price list along with the list of items to be purchased for approval. The price list or quotation should be obtained from minimum of two or three shops / suppliers.
- Before the installation of computers and commissioning of the computer laboratory, the necessary arrangement for networking would be carried out.

### **REGULAR MAINTENANCE OF COMPUTERS:**

The following procedures are to be followed for Hardware maintenance and Software maintenance:

#### **Procedure to be followed for Hardware maintenance:**

##### **1. Cleaning the Keyboard:**

Unplug the keyboard from the USB port or power it off if its wireless. Tilt the keyboard upside down and shake any loose debris out first. Spray compressed air at an angle and approximately 1-inch away from the keys. Use a damp microfiber cloth to finish the job, removing any excess dust or grime.

Keyboard should be cleaned at least once a week. Wipe down the keyboard with a damp lint-free cloth, but be sure not to soak it in water.

For harder to reach areas such as in between the keyboard keys, use a compressed air canister.

## 2. Cleaning the Monitor:

Fingerprints and other stains can appear regularly on the monitor. In order to keep the screen view fresh and clean, wipe down the monitor once a week using a dry lint-free cloth. Gently wipe in long motions as pressing too hard can damage the device.

## 3. Cleaning the Mouse:

Like the keyboard, the mouse needs to be dusted regularly to work properly. To do this, unplug the mouse and turn it upside down and clean the bottom of the mouse.

## 4. Clean the system thoroughly:

Every four months, thorough cleaning of the entire hardware system has to be done. We have to save and close any active files before unplug the device to begin cleaning.

From there, we may open the CPU by removing the screws. We can use the compressed air canister to remove all the dust especially in the cooling fan, RAM slots, etc.

## **Procedure to be followed for Software maintenance:**

### Update the operating system

- Operating system needs to be kept up to date. Regardless of the type of OS, updating the Operating System of the Computer is very important.
- Windows 10 and subsequent versions are known for keeping users in-tune with once-a-day update checks. This automated scan occurs in the background and always notifies you if there are any important software or operating system patches that need to be made. The end goal is to optimize Computer performance, so when Windows suggests to Update, we have to do it. Some updates take longer than others. Set aside time during a daytime break to let Windows do its thing without interrupting the workflow.

### Purge the Computers of junk files and programs

Computers tend to show their age best in the number of unused files living on their hard drives. Useless programs and old junk files likely take up more space than you realize. These programs and files can quickly turn into [performance hogs](#) if they continue to accumulate.

Before the computer gets to a point where it's begging for more storage space, we need to do the following:

- Uninstall trialware
- Run [disk cleanup](#) software
- Empty the recycle bin

- Delete temporary files
- Remove cache of offline web pages

#### Run regular antivirus scans

Malware infections can compromise the performance of the computer and expose the confidential information to third-party cybercriminals. Depending on the [type of malware](#) installed on the system, a virus could also:

- Slow web browser speeds
- Disrupt network connections
- Freeze or crash your system
- Alter computer settings
- Allow unauthorized access to system resources

Malware attacks can sneak up on at any given moment, and in the event one does, having a savvy antivirus installed in the Computer will protect against the damage viruses bring. Weekly antivirus scans ensure the computer is always clear of malicious software infections. A basic scan will examine the computer for any glaring dangers or outstanding activity.

We have to run the virus scan twice a week.

#### Install major computer updates:

To keep the applications running safely and efficiently, we should check for major computer updates at least once a month. These updates can be critical for long-term health because they patch up critical security holes and remove unnecessary features. We may also be able to adjust the setting so that updates happen automatically.

- Update antivirus software
- Check for firmware updates
- Clear out the Recycle Bin
- Remove the temporary Internet files

#### Update antivirus software

Whenever an antivirus software update is available, you should run it that day to [remove malware](#). These updates introduce new software features or make improvements on current ones. Generally we need to set the system up for automatic updates, but in case we ever receive a notification from the current antivirus software, we have to complete the update as soon as possible.

### Check for firmware updates

Firmware is a tiny piece of software in the computer that keeps the hardware functioning properly. Sometimes these updates are included in major computer updates, but we can check for firmware updates manually on many devices, as well.

### Clear out the Recycling Bin

When we delete a file, it goes to the Recycling Bin. This gives us a last chance to salvage a file we have removed, but it can also clog up space on the hard drive if we don't clear it out regularly. Once a month we should check the Recycling Bin for any files that may have accidentally been deleted and clear out the rest.

### Remove temporary internet files

Speed up the system by removing temporary internet files and clearing the Cache. Every browser has a different method for clearing out these cookies.

### How to conserve the hard drive:

The following activities are to be carried out periodically:

- Defragment the hard drive
- Backup data
- Configure the startup
- Run disk cleanup

### Defragment the hard drive:

Defragging the hard drive once a month is so important. Defragging is the process of reorganizing the data on the hard drive to speed up file access. While every computer is different, we can usually find Defragment functions under the System and Security tab in the Control Panel.

### Backup data

At least once a week we need to backup the drive. If we are working on an important project, we have to do this daily to ensure the files are securely stored. Backing up the data saves important files in the event of a hard drive failure or system crash.

### Configure the startup

We need to should periodically check in on the applications that automatically run at start-up. These applications can slow down the computer. From the Settings tab, we have to navigate to the Startup to control which applications run.

Run disk cleanup



We can free up disk space on the hard drive by running a disk cleanup. This will clean out temporary files.

#### **GUIDELINES FOR SERVICING:**

- Whenever problems occur with computer hardware or software the respective Lab-in Charge / faculty member has to submit the ‘computer service call form’ to the System administrator, through their respective HODs with authorization by Principal.
- The System administrator would attend the problem and rectifies the same, if it could be set right with the regular / minimal service. If, there would be any failure of Hardware resulting in replacement of spares, the purchase request through the respective Hods would be submitted by system administrator.
- Quotations would be collected from varied vendors / suppliers and should be submitted along with purchase / service request to the Principal for approval.
- Once approved, the parts would be purchased and after ensuring normal functioning for the Hardware the accomplishment of service request would be confirmed and hence closed.
- After service column in the computer service call form would be closed, once the problem has been solved.
- A log book for recording the daily activities in respect of servicing / maintenance would be maintained.
- The Computers that cannot be serviced would be classified as Unserviceable. Details of such Unserviceable computers would be entered in the “Register of Unserviceable Computers” and parts /components reuseable from such unserviceable computers would also be entered in the above Register. The usable parts / component / module / board in the condemned systems would be re-used in other systems, if it requires specific replacement.

#### **GUIDELINES FOR UPGRADATION:**

- Requirements for up gradation such as RAM, Motherboard, Hard Disk, etc., would be given by the lab in-charge through their respective HoDs and authorized by Principal
- On approval of the management, the system administrator ensures the upgrading of Computers, after purchasing the necessary components by following the appropriate purchase procedures.

### UTILIZATION OF COMPUTERS:

- For utilization of computers, the users have to make an entry in the log register, kept in each computer lab.
- The user should not plug in their external drives without prior permission.
- The respective user would be held responsible for any damage or malfunction of the computer, if it happen during his / her course of usage.
- The user should not claim any loss of data saved in the desktop.
- The user should not install /uninstall/delete any data or software in the Computer assigned, during the lab Sessions.¶
- For using the computers after the working hours, the students should get permission from their respective HODs.

### MAINTENANCE OF STOCK (COMPUTERS):

- Stock registers have to be maintained for each computer laboratory separately.
- Following Registers are to be maintained, updated and submitted to the Principal every month without fail:

Sl. No.	Name of the Register to be maintained	To be maintained by	Annexure
1	Consolidated Stock Register of Computers – [Showing details of Working and unserviceable computers]	Sys. Admin	Annexure 1
2	History Register of Computers – To be maintained <b>for each</b> Computer in each Lab - Details of Maintenance of Computers	Lab in-charge/ Sys. Admin/ HOD	Annexure 2
3	Consolidated Monthly Report on Maintenance of Computers for each month	Sys. Admin	Annexure 3
4	Monthly Report on Maintenance of Printers for each Month	Sys. Admin	Annexure 4
5	Consolidated Register of unserviceable Computers / Printers/ Items	Sys. Admin	Annexure 5
6	Register of Unserviceable Computers [Details <u>of each</u> unserviceable Computer to	Sys. Admin	Annexure 6

	be entered in one page and details of re-useable and reused items to be entered therein]		
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- Each entry should be signed by the staff in charge of the laboratory and the HOD concerned.
- Whenever a new staff member takes in-charge of a laboratory, he/she should take it, from his/her predecessor after physical verification as per the entries in the stock register. If there is any discrepancy, the fact should be reported immediately, to the Principal, through the HOD.
- If a staff member-in charge of a particular lab has availed long leave, HOD should make alternate arrangement immediately to entrust the stock to another staff member. The newly entrusted staff member should take possession of all the stocks immediately and the HOD has to report the fact to the Principal.
- Any breakage or damage of an item during its use should be immediately recorded, against the item mentioned in the stock register. This should include the reason for the damage and any breakage fees to be collected from the staff member / student whom so ever is responsible for the damage. In case of expensive items, the matter should be reported to the Principal immediately for its recovery through breakage fees (levied upon students). For inexpensive items, the breakage fee should be collected after the completion of all practical classes during the respective semester.
- Similarly, loss (theft) of any item should be recorded in the register and reported to the Principal for recovery of the cost from person responsible for the loss.
- After the recovery of the costs to be incurred for replacing or procuring the item lost / damaged, the specified the item has to be removed from the stock register in concurrence with orders of the Principal.
- If any old item has failed beyond repair and could not be set right for use, the same can be condemned after obtaining approval from the Principal. This has to be entered in the stock register.
- No transfer of computer/equipment/accessories from one lab to another lab (even within the same Department) should take place without prior permission of the Principal. As and when such a transfer has been made, a note against the item mentioning the date of issue, date of receipt and other relevant particulars, should

be made in the respective stock register of the laboratory.

- If any computers/equipment has been found to be not functioning within the guaranteed period, the respective company should be informed and called upon for initiating the process of rectification at the earliest.
- Periodic service and maintenance of computers/equipments would be mandatory. The necessary action should be taken by the lab in-charge/system administrator with the approval of HOD and Principal.

#### **STOCK VERIFICATION:**

- Unscheduled / Uninformed checks on stocks (Computers) would be carried out by the HOD in his/her Department at least once in a year. Principal or any member of the Management may conduct similar checks.
- Apart from surprise checks, annual verification has to be carried out by the staff members deputed by the Principal from other Departments before the end of the academic year.
- The stock verification for computers would be done in a single day at a stretch.
- Discrepancy noticed, if any, during stock verification should be reported to the Principal immediately for further action.

We need to carry out the routine maintenance as per the Schedule given below:

<b>Maintenance Tasks</b>	<b>Daily</b>	<b>Weekly</b>	<b>Monthly</b>	<b>Every 3 to 6 months</b>
Dust the Computer	✓	✓		
Wipe down the Monitor		✓		
Clean the mouse		✓		
Reboot the Computer	✓			
Clean the Hardware system				✓
Defrag the Hard drive			✓	
Back up data	✓			
Configure the startup			✓	
Refresh archive backups			✓	
Run major computer updates			✓	
Update Anti-virus software	✓			
Change the password				✓

Check for firmware update			✓	
Run Anti-virus Signature updates		✓		
Run disk clean up			✓	
Move similar files into folders		✓		
Delete unused programs			✓	
Clear the trash		✓		
Remove Internet files		✓		
Transfer the files to the Cloud	✓			

In view of the above, Manakula Vinayagar Institute of Technology, Puducherry aims at:

- Timely up-gradation, repairing and replacement of the resources (computers) and services.
- Setting standardized maintenance and utilization procedures for Computers (resources).
- Reducing the occurrence of accidents at workplace thereby ensuring safety.
- Ensuring effective utilization of computing resources for academics, training and administrative purposes.

**Sd/-**  
**Dr.S.Malarkkan**  
**Principal**

### **ANNEXURE – 1 Consolidated Stock Register of Computers**

[illegible]

## ANNEXURE – 2

**History Register of Computers – To be Maintained for each Computer in each Lab.**

Location:				Name of Computer Lab								
Name of Supplier					Warranty upto:							
Date of Receipt	TableNo. AND System No.	Invoice No. & Date	Brand Name of System	System Configuration / Spec		Dt of Installation	Details of Software Installed	Lab Asst	Lab In-charge	System Admn	Dy. Registrar	Principal
				CPU Sl.No.								
				Processor: Intel Core i3								
				RAM: 8 GB								
				HDD: 1 TB								
				Monitor: 21.5": Sl.No.								
				Key Board								
				Mouse								
				Cost of System:								

[illegible]

**ANNEXURE 3** - MVIT - Consolidated Monthly Report on Maintenance of Computers- For the Month of \_\_\_\_\_

MVIT - Consolidated Monthly Report on Maintenance of Computers - Jan 2024 - To be submitted to Principal on 5 <sup>th</sup> of Next Month														
Date of service	Name of service provider/ vendor	Name of Lab	Table No.	Computer No.	Nature of complaint	Module & Sl.No. attended	Particulars of work done	Cost of Spares	Service cost	Total exp	Voucher No. & Dt	Reference Page No of History Register of Computers	Sys Admin	Lab In Charge

System Admin

A.O

D.R

PRINCIPAL



**ANNEXURE 4**

**MVIT- Monthly Report on Maintenance of PRINTERS for the Month of \_\_\_\_\_**

<b>Date of service</b>	<b>Printer Model No.</b>	<b>Name &amp; Designation of the User</b>	<b>Attached to Computer No.</b>	<b>Replaced with original Cartridge or Refilled</b>	<b>Reading at the time of previous refilling</b>	<b>Reading at the time of Replacement</b>	<b>No. of copies printed</b>	<b>Cost of cartridge</b>	<b>Voucher No. and Date</b>

System Administrator

Deputy Registrar

PRINCIPAL

## ANNEXURE 5

Consolidated Register of unserviceable Computers/ Printers/ Items:  
[Details to be entered as and when the Computer becomes unserviceable]:

[illegible]

## ANNEXURE 6

Register of Unserviceable Computers – [Details of each unserviceable Computer in one page]

[illegible]



MIT-Manakula Vinayagar  
Institute of Technology

