Maintenance of Assets, ICT Facility & Laboratory and Research Equipment Policy

MSRUAS/REG/MTN POL/2014-15

ज्ञानं विज्ञानं च भक्तिसहितं

Pro Vice Chancellor
M.S. Ramaiah University of Applied Sciences
Bangalore - 560 054.

Registrar
M.S. Ramaiah University of Applied Sciences
Bangalore - 560 054

M. S. Ramaiah University of Applied Sciences
University House, New BEL Road, MSR Nagar, Bangalore – 560 054
www.msruas.ac.in

This Policy entitled "Maintenance of Assets, ICT Facility & Laboratory and Research Equipment"

is applicable to all Faculties of MSRUAS

from the Academic Year 2014-15

(As per the SRAs of the respective Faculty)

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A.1 Preamble

The importance of Infrastructure and facilities within the Higher Education Institutions cannot be overstated. They act as a foundation upon which academic excellence, innovation, student development in academics, co and extracurricular activities, and research are planned and built. The infrastructure facilities and their maintenance represent a milestone in the journey of the institution towards excellence. These facilities are not just physical structures but vibrant spaces that empower the stakeholders in their development and commitment to lifelong learning.

MSRUAS is committed to providing, through its mission, a conducive environment for learning, personal growth and research. The infrastructure and facilities encompassing classrooms, faculty rooms, laboratories, libraries, hostels, buildings, ICT facilities, sports facilities, administrative infrastructure and many more form the physical foundation for supporting the realization of its mission. MSRUAS is dedicated to preserving and enhancing these resources to safeguard the legacy for future generations to utilize them. MSRUAS aspires to create an educational environment where students can realize their full potential, faculty members can conduct cutting-edge research, and staff can provide the highest level of support and service.

MSRUAS acknowledges that the efficient management and utilization of its facilities are essential for achieving the institutional objectives that include the pursuit of academic excellence, fostering innovation and research, and promoting and empowering the holistic development of students and staff. It emphasizes the dedication to upkeep the infrastructure and facilities for their full utilization with minimal or no interruption. This policy is an initiative in this direction to get the involvement of various levels of coordination and management needed to ensure the availability and sustainability of its facilities and infrastructure.

A.2 Scope of this Policy

At MSRUAS, the infrastructure and facilities are categorized as under:

1. Assets – covering Buildings, Fixtures, Gymnasium, Power Generators, Laboratories, Fire Safety Systems, etc.
2. ICT facilities
3. Laboratories and Research Equipment

A.3 Maintenance of Assets

MSRUAS owns and operates an extensive portfolio of buildings and land assets in multiple Campuses, utilized to deliver its teaching and research programs. It is the Policy of the University to maintain all its assets in impeccable working conditions to ensure their intended utility at the lowest risk factor.

A.3.1 Objectives of Asset Management

The objectives developed for the purpose of Asset Management are listed below:

1. To ensure minimum maintenance requirements for land, buildings and the associated assets including equipment and fixtures (collectively referred to as 'Assets')
2. To eliminate associated risks in the usage of assets that are adequately and effectively managed.
3. To sustain the life of the assets for optimum cost-effectiveness.
4. To make appropriate and timely decisions in asset maintenance strategies.
5. To be compliant with statutory requirements for the maintenance of Assets.

A.3.2 Priorities in Asset Management

The Maintenance Function shall be undertaken in accordance with and as specified in the Asset Maintenance Schedule (AMS) contained in section A.3.3, although it will follow the following priority in its execution.

1. Statutory Compliance (Fire fighting Systems, Elevators, Generators, Centralized Air-Conditioning, STP, Waste Management, etc.)
2. Workplace health and safety (Classroom/Laboratory/Office fixtures and fittings etc.)
3. Risk Management (to the extent not falling under 'b' above)
4. Impact on teaching and research programmes
5. Public Appearance
6. Property loss/damage

Notwithstanding what is stated in the AMS any breakdown of any of the Assets needing immediate attention shall be attended to on such priority as it may warrant based on specific requisition from the concerned.

A.3.3 Asset Management Schedule:

1. The Asset Maintenance Schedule herein specifies Assets of the University identified for regular maintenance. **The list is not exhaustive and may beupdated/modified periodically and time to time** at the direction and approval of the competent authority.

2. Maintenance as specified in AMS shall be carried out at the scheduled frequency and repairs/replacement shall be undertaken as may be necessary. After completing periodical maintenance tasks there shall be a 'Monthly Consolidated Report of Maintenance' submitted to the office of the Registrar, in the prescribed format (Annexure E). The Report should include confirmation of satisfactory resolution by the complainant in the case of breakdown maintenance.

A.3.4 Maintenance Strategy:

1. All maintenance of specialized/branded equipment/systems such as, Electrical Mechanical Plumbing, Elevators, Generators, UPS Systems, etc., shall beentrusted to respective authorized maintenance agencies by signing Annual Maintenance Contracts (AMC)

1. There shall be close follow-up and monitoring of AMC by the maintenance department to ensure timely maintenance /repair of the Assets of specified group and all service reports are recorded.

2. SOP and checklists are developed as per the technical requirement for the maintenance and servicing of equipment.

3. All requirements contained in the statutory guidelines with reference to safety and protection of occupants of the University, while using the Assets (Statutory Maintenance) shall be followed with utmost priority. (Ref: UGC Guidelines on Safety of Students on and off Campuses of Higher Educational Institutions; Karnataka Lifts Act 1974; Karnataka Pollution Control Acts , Electrical inspectorate inspections).

Table 1:Asset Management Schedule

Sl	Asset Group	Assets	Significant Areas	Checks	Maintenance	Frequency	Responsibility
1	Building Infrastructure andLand appurtenant	Class Rooms Faculty Rooms Offices Libraries Canteens Rest Rooms Auditoriums Seminar Halls Hostels Guest Houses	Roof Condition Floor Condition Wall Condition Plastering & Seepages Windows and Doors Plumbing Painting Polishing Cleanliness Furnishing	Peelings Cracks Breakages Hollow Spots Latches, Stoppers Closures Alignment Tap Leakages Plumbing effectiveness Drainage system	Scheduled (Regular)	Yearly	Civil Works Facility Team
		Water sources	Water availability, Piping & Electrical systems Pumping Systems	As may be applicable	Preventive	Quarterly	Civil Works Facility Maintenance team
		Sewage Treatment Plant	Tank capacity utilisation Pumping system Functioning of Electrical System Water treatment Pollution control	As per Karnataka STP Guide (Karnataka Pollution Control Board)	Preventive	Quarterly	AMC Provider with supervision by Facility Maintenance team
		Waste Management Systems	Waste Segregation Solid and Water wastes	As per Karnataka Pollution Control Board Guidelines	Preventive	Quarterly	AMC Provider with supervision by Facility Maintenance Team
		Elevators	Functional System Base Condition Rope Condition Electrical Connections Electronic in-built	Performance Loosened base bolts Rope Quality Loose Connections Computer Programs	Preventive	Quarterly	AMC Provider with supervision by Facility Maintenance team
		Earthings	Functioning of earthing system	Earth Pit resistance test	Preventive	Half Yearly	Facility maintenance Team

Sl	Asset Group	Assets	Significant Areas	Checks	Maintenance	Frequency	Responsibility
2	Building Fixtures	Electrical & Mech	Switch Boards Wiring quality/Load, Lighting – Tubes & Bulbs Ceiling/Wall Fans Central Air-conditioningAir conditioners - units	Loose Switch Boards Burned out switches/plugs Fused Tubes/Bulbs Fan bearings /Hold Loose Wires AC Gas/AC Controls	Preventive	Monthly	Electrical MaintenanceTeam in coordination with AMCProvider as applicable
		Writing Boards Notice Boards Partitions Cubicles	Wooden/Glass OutfitsFixed Table Top and Drawers	Breakages Hinges/ Latches Drawer Channels Painting/ Polishing	Break down	Need based	Carpentry Team
3	Gymnasium	Equipment	Functionality & Alignment Equipment Safety Fitness	Installation Nuts & Bolts condition Lubrication	Preventive	Monthly	Mechanical Maintenance Team
4	Power Generators	Generators UPS System	Fuel Tank Battery Condition Automatic Controls	Leakages Acid/water levels Connectivity/software	Preventive	Monthly	Mechanical Maintenance Team
5	Laboratories	Mechanical Equipment Gadgets Heating System Microwaves Dispensers Electronic Devices Storage Racks	Equipment fitness Equipment alignment – safety perspective	Working readiness Gas/water lines leaksElectrical connections General safety areas	Preventive	Monthly	Respective Dedpartment inchage In coordination with AMC Provider as applicable
6	Fire Safety Systems	Fire equipment Lightning ArresterWater Tanks Public Address System	Fire Alarms Smoke Detectors Fire Extinguishers Hose Reel Assembly Sprinkler Systems Fire Water Pump	Working readiness Water availability Hose Quality Fire Safety effectiveness Software updates for automatic sub-systems.	Preventive	Monthly	Mechanical/ Electrical Maintenance Team In coordination with AMC Provider as applicable

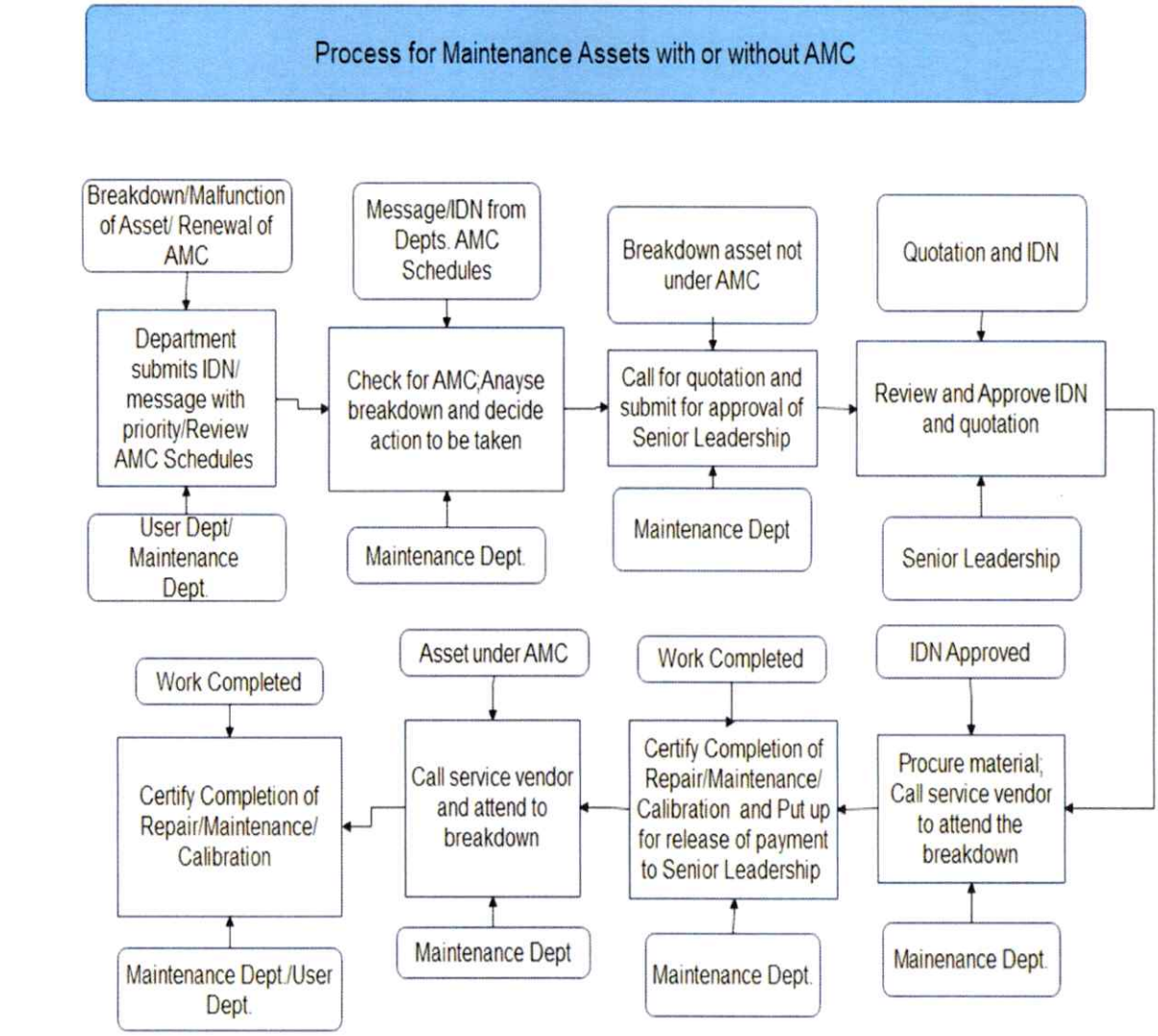

Figure 1:Maintenance of Assets – with or Without AMC

A.4 Maintenance of ICT Infrastructure

A.4.1 Preamble:

Maintenance of ICT infrastructure plays a key role in achieving the department's goals and ability to attain the organization's demand to help the teacher's and student's collaborative work in enquiring, searching, discovering and turn information into knowledge and use that knowledge to further enhance their skills or understanding. The purpose of this policy is to exhibit maintenance as an integrated system with objectives, strategies, and processes that need to be planned, designed, engineered, and controlled using statistical and optimization techniques. The theme of the policy is a strategic universal system approach for maintenance. This policy enables maintenance decision makers to view maintenance as a provider of a competitive edge. The policy covers systems in planned, preventive and incidental maintenance, material control, planning and scheduling, quality, training, reliability-centered maintenance (RCM), and continuous improvement.

A.4.2 Scope of the Policy Maintenance of ICT Infrastructure:

This policy applies to:

- All academic and non-academic offices of the university campuses, including specifically the ICT group.
- All ICT systems including computers, software applications, networking devices, communication devices, mobile devices, DC / DR, cloud, etc., are managed by the university that contributes to storage of data, processing of data, and transmission of data.

A.4.3 Flow Diagram for ICT Maintenance

The flow diagram for maintenance of IT infrastructure is shown in the Figure ..

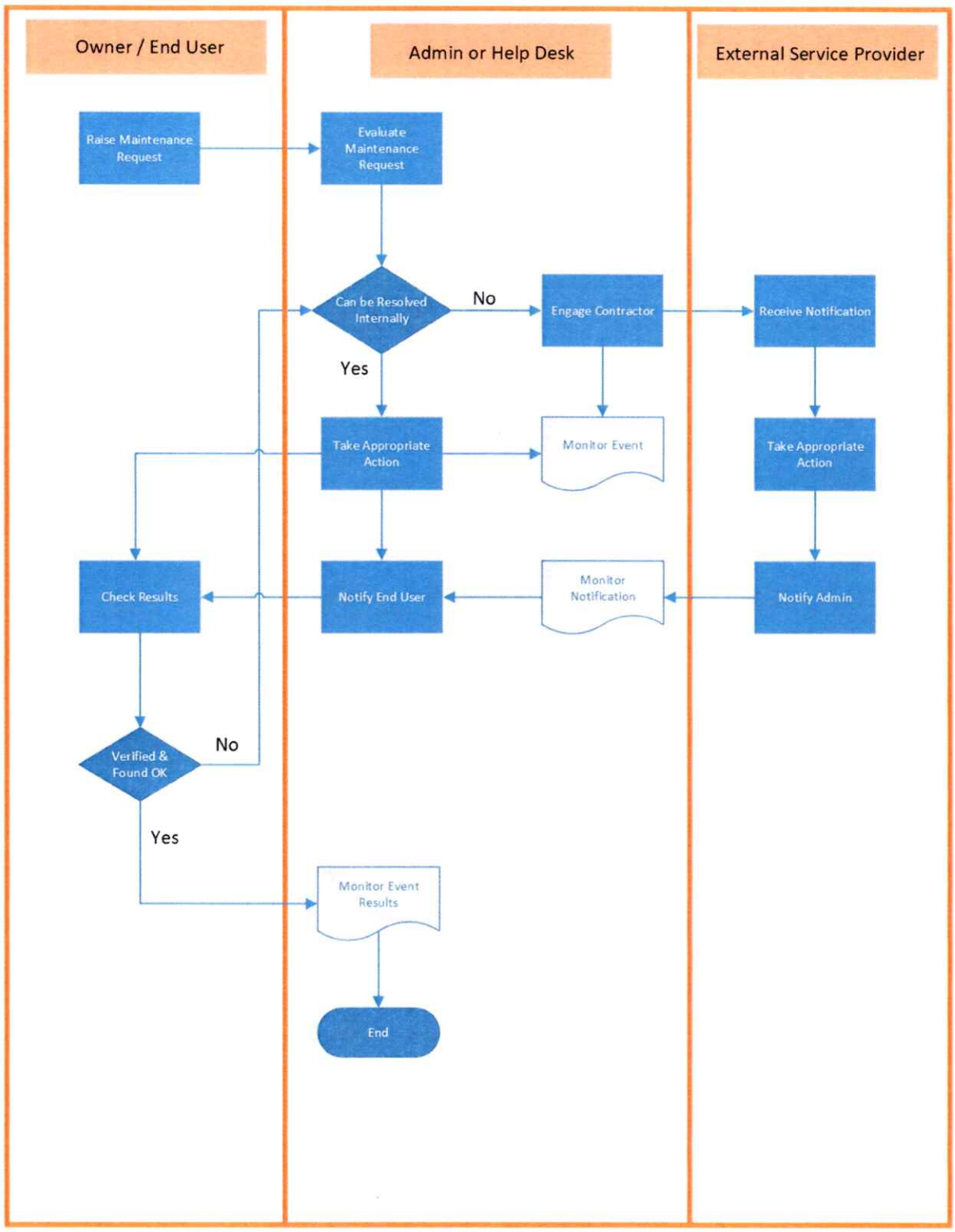

Figure 2:Flow Process for Maintenance of IT infrastructure

A.4.4 Users and Usage:

The ICT resources of the University are provided to authorised users for the purpose of supporting their learning, teaching, research and administrative activities and the end users will use the resources in a responsible, ethical and lawful manner. All the users will maintain confidentiality and should not misuse the resources in any way.

A.4.4.1 Precondition

A dedicated team of qualified / experienced resource personnel and good ICT resources are required to support ICT systems in the university and ensure effective utilization / operations and troubleshooting when necessary. These include:

- Appropriate system capacity (processing capacity, access to high-speed network and bandwidth, good data storage, etc.)
- Professional approach to answer service request calls from end users, attend to ICT related issues, unexpected situations, as per internal SLA.
- In comparison to having internal ICT service personnels, University may decide to enter contract with third party ICT service providing organizations. This may be economically viable, compared to having permanent service personnels. This setup can prove to be more effective in addressing the university's needs.
- University will plan and execute maintenance contracts with OEM's / authorized partners for a set of identified ICT resources which includes hardware and software.
- Procedures for proactive monitoring of ICT issues.
- To address the above, an appropriate ticketing tool shall be implemented to carry out all maintenance services across the university functions.

A.4.4.2 Systems in Maintenance

The University has a well-established system for maintenance of ICT Infrastructure.

- The need for maintenance can be triggered by a failure or performance de-gradation. Once identified, the end user reports the problem to the ICT department. This is normally done through a work request by e-mail, telephonic call and managed ticketing tool.

- The ICT department head will ensure that there are sufficient clear procedures in place to allow staff to implement this maintenance process. Plan on what exactly needs to be done and define the sequence of activities and skills required. Ensure that all the resources, material, labor, contract services, specialist equipment, tools and information are available. There may even be a need for outside contractors, items to be purchased or work permits to be obtained, all of which will be arranged in advance or at the point of need.

- The University has adopted a priority system, which represent its idea of delivering maintenance services. This priority system ensures that the most important maintenance work is done at a time it can be performed most cost-effectively. The priority of maintenance works is in the order of emergencies, urgent, on-demand requests, and scheduled maintenance services.

- The maintenance work is scheduled depending on the priority level of the task, estimated time consumption and availability of both the resources and equipment on which the work needs to be carried out.

- The work will be allocated to the maintenance personnel ensuring the person has skills to perform the task. The allocating authority will be very clear about the type of work that will be allocated to outside contractors.

- The responsibility of the ICT service personnel will be to confirm that the maintenance / repair work meets the required quality standards, through selected planned job observations. The respective ICT service personnel will close the complaint in consultation or approval of the end user or the complainer.

- The team will analyze the root cause of major failures and take corrective action to prevent recurrence. Corrective action includes training the ICT service personnel, change of procedure in the preventive maintenance programme, redesign or replace the equipment / item, etc. The need for replacement may arise because of normal use, obsolescence, early service failure, destruction, etc.

- For IT systems / Communication systems / Networking systems / Software that will no longer be supported by a vendor (including operating systems and application versions) / they reach end of life / becomes non-repairable, the university shall upgrade or replace the system with latest configuration.

- Preventive maintenance can be the key to keeping ICT resources such as computing facilities, software applications, networking equipment, communication equipment, etc. from experiencing serious problems, such as data loss, hardware failures, system crash, network issues, etc. and it also helps ICT resources have a longer life span.

- Following a good preventive maintenance plan shall be in place to keep ICT resources healthy.

    - Wherever possible, the university will take preventative measures to prevent problems from occurring and minimize the impact of incidents that do occur by addressing identified problems as quickly as possible.

    - Examples of preventative measures include the implementation of high availability and redundant systems and back-up solutions.

A.4.4.3 Maintenance of IT Hardware / Software and Teaching Learning Resources:

- University shall have standard IT assets such as high end servers, computing facilities, network switches, routers, firewalls, surveillance, Wi Fi, cloud infrastructure, ILL, MPLS, ERP, medical software.

- University will endeavour to implement a standardized desktop environment for use by Students and Staff to ensure uniform look and feel, access, quick and efficient problem resolution by IT personnel.

- The complete management of the computer hardware & software shall be the responsibility of the university ICT department personnel.

- The classroom resources like Projectors, Computers, Sound systems, Interactive Smart boards, Lecture Capturing Systems, Video Conferencing etc. shall be made available in all classrooms and frequently upgraded and maintained by custodians, supported by the ICT

personnel.

- Planning and procurement of Academic and Administrative software tools shall be done on a need basis with subscription for regular updates, upgrades, and patches.
- To avoid misuse of the software asset, the university shall have a centralized ICT team who shall maintain the software packages & licenses and installation of these tools and licenses should be done by authorized personnel only.

A.4.4.4 Information and Network Security Maintenance:

- To minimize risk associated with Internet and email services, threats of unauthorized access, theft of information and malicious disruption of services, Periphery network security shall be implemented by using Network Firewalls and high-end network switches.
- These devices shall be capable of handling, intrusion detection, intrusion prevention, content filtering, application filtering, spam filtering, virus, and malware detection.
- All end point devices shall be installed with Zero Trust Security Models including Antivirus software and EDR for a total end point protection.

A.4.4.5 Data Security and Risk Management:

- The university shall follow a system to store and protect Faculty, Students and Staff records in high availability configured servers.
- DR site shall be implemented in alternate location for DC.
- All staff and students shall be given a good amount of secured cloud storage space to store their data as a secondary backup.
- In addition to the above, all the critical infrastructure components shall be provided with dual power backup source.
- For protection from fire incidents, alarm systems shall be installed.

A.4.4.6 Communication and Web services:

- University has a standard policy of issuing mail ids to staff and students in the secured cloud platform along with access to many other cloud-based applications.
- All students and staff members are given access to subscribed e-Journals, publications, e-contents, etc., with authorized logins.
- The University's official website will be dynamically updated with latest information.

A.4.4.7 e-Governance for maintenance:

- University shall implement an e-Governance system such as integrated ERP system which automates the complete process of the University operations starting from Admissions to Alumni status.
- ERP also helps in encouraging the Green Initiative by reducing the use of papers.

A.4.4.8 Vulnerability and Patch Management

The following activities shall be carried out on a periodical basis at the university to identify vulnerabilities to systems and applications:

- Scanning of web applications that are publicly and non-publicly accessible.
- Network vulnerability scanning.
- Penetration testing (VAPT), including a detailed review of the system security configuration.
- Identified vulnerabilities shall be addressed in a timely manner. Specifically, all critical and high vulnerabilities shall be addressed in full within a specific period possible.
- Systems security updates and patches shall be applied in a timely manner after they have been published by respective OEMs.
- Critical security patches shall be applied on priority after they have been made available.

A.4.4.9 Training

- To allow the staff members to perform to the best of their abilities, the university recognizes the importance of providing the staff with opportunities to refine their technical skills and learn new procedures.

- Each ICT service personnel can participate in training programs to upgrade themselves technically, gain knowledge on newly acquired equipment, personality development and communication skills, etc.

A.4.4.10 Maintenance of ICT Assets:

- Stock registers shall be maintained digitally, for all ICT resources separately.

- Laboratory resources like computers shall be recorded in stock registers signed by the respective lab custodian / in-charge and the head of the department. The same is transferable after physical verification whenever there is a change in the custodian / HoD.

- Any loss, breakage or damage caused to the university ICT resource, purposefully / due to negligence or mishandling either by the students or staff member, shall be reported to the ICT representative which will be documented and brought to the notice of the upper management for further decision and action.

- Mobile ICT resources like Laptop / Tab / Mobile instrument / any other shall be issued to the designated members of the university with proper documentation and the respective individual shall return the equipment after using or during the time of exit from the university. The individual shall be responsible for any damage caused to the equipment during use, and he / she shall replace the lost / damaged equipment at his / her own cost.

- Theft of any resource belonging to the university shall be reported to the Security officer immediately after the incident for further action. The same shall be documented with supporting documents.

- ICT resources like computers, printers, projectors, etc., shall not be moved from the installed location / lab to any other location without the notice and support of the ICT department. The same shall be performed by the help of the ICT team with proper documentation.

A.4.4.11 ICT Asset verification:

- Scheduled / Unscheduled checks on stocks shall be carried out by a designated team of the university which shall be documented.
- Any discrepancy noticed during stock verification shall be brought to the notice of the respective Head of the Department and upper management for further decision and action on the discrepancy noted.

A.5 Maintenance of Laboratory and Research Equipment:

This section covers the maintenance of laboratory and research equipment that can be grouped as follows:

1. Equipment covered under AMC, which needs to be attended to as per schedules.
2. Equipment and instruments that can be categorized as:
    a. Equipment and instruments needing zero setting before use.
    b. Equipment and instruments that can be calibrated inhouse.
    c. Equipment and instruments that need to be calibrated from external sources.
    d. Equipment and instruments needing immediate maintenance due to breakdown.

The Process for attending to breakdowns/malfunction of facilities and assets is given below:

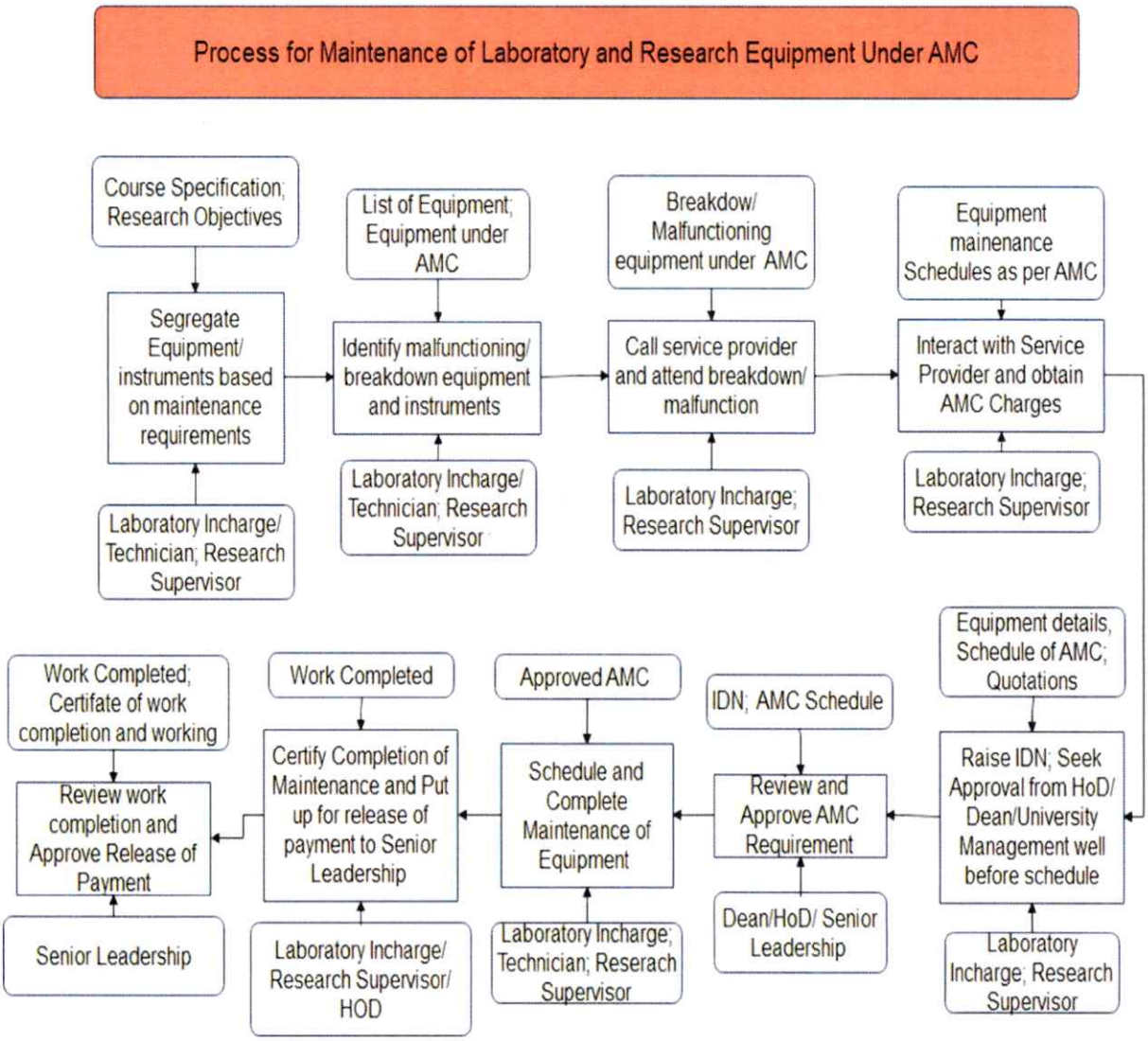

Figure 3: Maintenance of Laboratory and Research Equipment Under AMC

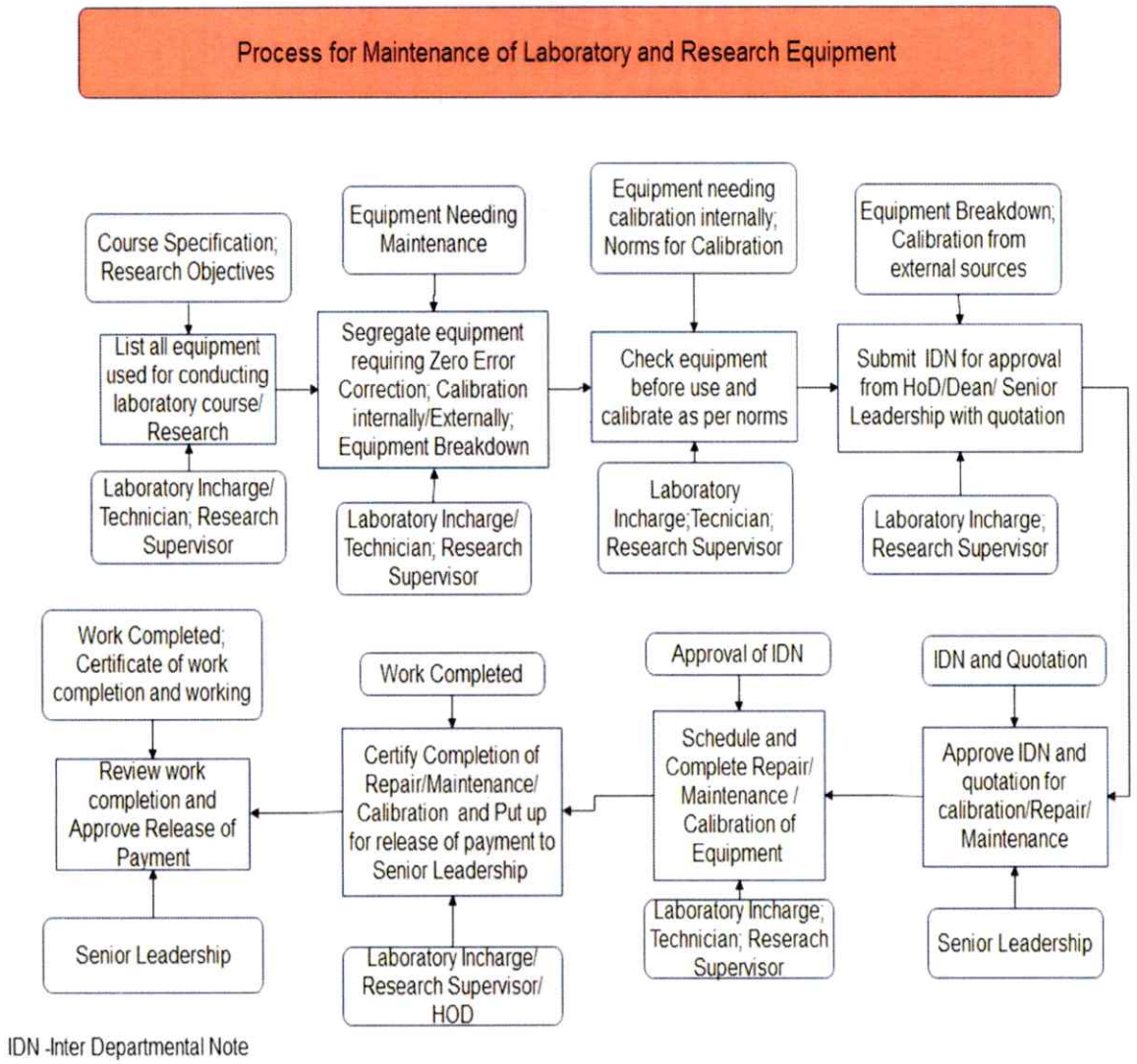

Figure 4: Maintenance of Laboratory & Research Equipment Needing Calibration or Maintenance