

Aligarh Muslim University

IT Policies and Guidelines (12 April, 2019)

Prepared by:

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IT Policy and Guidelines

IT Policy of the University is guiding principle of actions related to the planning, provisioning & use of IT resources to fulfill the mission of the AMU to be a world-class centre for research, teaching, learning and innovation. In addition to that the proposed model includes the core IT systems, tools and services that are required for day to day functioning of AMU. This also includes innovative services and projects to support learning, teaching and research.

It may be noted that university IT Policy applies to technology usage administered by the university centrally or by the individual departments, to information services provided by the university administration, or by the individual departments, or by individuals of the university community, or by authorized resident or non-resident visitors on their own hardware connected to the university network. This IT policy also applies to the resources administered by the central administrative departments such as Library, Computer Centers, Laboratories, Offices of the university recognized Associations/Unions, or hostels and guest houses, or residences wherever the campus network facility has been provided by the university. Computers owned by the individuals, or those owned by research projects of the faculty, when connected to campus network are subjected to the DO's and DON'Ts detailed in the university IT policy. Further, all the faculty, students, staff, departments, units/centres, authorized visitors/visiting faculty and others who may be granted permission to use the University's information technology infrastructure, *must comply* with the Guidelines. Certain violations of IT policy laid down by the university by any university member may even result in disciplinary action against the offender by the university authorities. If the matter involves illegal action, law enforcement agencies may become involved.

This document makes an attempt to propose initial IT policies and guidelines that are envisaged to be relevant in the context of this university. While creating these policies, every effort has been made to have a careful balance between security and the ability to conduct the rightful functions by the users. Further, due to the dynamic nature of the Information Technology, Information security in general and therefore policies that govern information security process are also dynamic in nature. They need to be reviewed on a regular basis and modified to reflect changing technology, changing requirements of the IT user community, and operating procedures. Purpose of IT policy is to set direction and provide information about acceptable actions and prohibited actions or policy violations.

Background of ICT-Growth in AMU

Sensing the paradigm changes in computing models post Y2K (Year 2000), AMU also took the initiative of campus networking projects (*in a phased manner*) for expanding its IT-Services from a centralized location to various buildings of University Campus, through OFC-backbone of Campus Network. Over a period of last 16-years, OFC- backbone has been progressively expanded. The same is now a critical resource for University by providing

backbone connectivity to all LANs (*Local Area Networks*) and W-LANs(*Wireless-LANs*) of various academic complexes, administrative blocks, University Guest Houses, Halls of Residences and other Units/Centers of all buildings within the university campus.

Now, the university has more than more than 350 Switches installed across different buildings of the University campus to provide campus-wide network connectivity. The same is envisaged to grow further with expansions and augmentation/construction of new buildings/departments/Offices.

University Computer Centre being the nodal point, maintaining *backbone of campus wide network*, through which a number ICT-Services (like Internet/E-mail/Videoconferencing etc.) are getting provisioned to campus-wide users of AMU over the respective local-LANs and W-LANs of various faculties/departments/halls/offices.

Undoubtedly, availability of ICT-resources through campus internet / intranet and its efficient use by different categories of authorized users have become one of the most important enablers of excellence in educational institutions & research organizations. While educational institutions are providing access to Internet to their faculty, students, staff and guests, they face certain *common constraints*, like:

- ❖ Limited infrastructure (*like Computers, Software Licenses, Laboratories, etc.*)
- ❖ Limited financial resources within which all users (*faculty, students, staff and guests*) are expected to be provided with reasonable & secure network facilities, for responsible/academic usage.
- ❖ Limited capacity of technical manpower for end-user support, network maintenance & up-keeping.
- ❖ Limited Internet Bandwidth.

On one hand, resources are not easily available for expansion to accommodate the continuous rise in demands of campus internet services, on the other hand *uncontrolled, uninterrupted* and free access to University's IT-Services can give rise to activities that are neither related to Teaching/learning processes nor governance of the university. At the outset, we need to recognize the problems related to uncontrolled surfing by the users:

- ❖ Prolonged or intermittent surfing, affecting quality of work
- ❖ Heavy downloads that lead to choking of available bandwidth
- ❖ Exposure to *legal liability, lapses in security* and cases of sexual harassment due to harmful and embarrassing content.
- ❖ Confidential information being made public.

With the extensive use of the Internet, network performance suffers in multiple ways, like:

- ❖ When compared to the speed of Local Area Network (LAN), Internet traffic over the Wide Area Network (WAN) is a potential bottleneck.
- ❖ When users are given free access to the Internet, non-critical downloads may clog the traffic, resulting in poor Quality of Service (QoS) and affecting critical users and applications.

- ❖ When computer systems are networked, malwares, adwares, viruses etc. that get into the LAN, through Intranet/Internet, spread rapidly to all other computers on the net, exploiting the vulnerabilities of the systems.

Campus Network backbone is based on OFC, while access to remote locations is planned through Wireless technologies. It is relevant to mention some of the important points regarding wireless technology being used at AMU campus.

The primary concern is to progressively adopt *wireless technology* deployment in such a way that it facilitates preserving the integrity of the University's ICT infrastructure and delivers reasonable level of service for the users of that technology; in particular we need to:

- ❖ Establish the rules and support infrastructure required to enable appropriate, secure, reliable and compatible deployments of wireless technology on the University's campus networks.
- ❖ Safeguard the security of the University's information resources
- ❖ Prevent (or arbitrate) interference issues between Wireless deployments and or other uses of the relevant wireless spectrum (2.4GHz and 5GHz)
- ❖ Ensure that authorized providers, systems administrators and users *understand* the *security implications* and *performance limitations of the technology* and the service levels achievable.

Scope

This policy applies to all uses of 802.11x Wireless LAN technologies on the AMU campus network as well. It covers all deployments inside University buildings and in outdoor areas, authorized users of various departments, offices at AMU. Such deployments and use are subject to this and all relevant University Information Technology Policies.

This policy document shall help understand the roles and responsibilities of end-users of WiFi-services at AMU and it's technical team including system integrators also who get involved in solution design, deployment, support and administration of the Campus wireless infrastructure.

Background

Wireless LAN technology has been around for many years providing moderate bandwidth solutions for a variety of network provisioning problems e.g.

Areas that are difficult to provide 'wired' solutions

- ❖ Large open areas
- ❖ Outdoor areas
- ❖ Mobile users requiring network roaming
- ❖ Free space inter building links across busy road ways
- ❖ Disaster recovery situations

Despite significant advancements in wireless technologies, it is important to understand that Wireless LANs still have their limitations and disadvantages, as compared to Wired-LAN solutions.

Performance

Wireless LAN technology is by nature contention based and analogous to Ethernet hubs, where the available bandwidth is shared (not necessarily equally) between all users of the LAN. Useable bandwidth gets impacted/ reduced by following conditions:

- ❖ Environmental conditions
- ❖ Number of users
- ❖ Distance to nearest access point
- ❖ Interference from other radio sources

The level of performance does not compare favourably with the University's Campus wired LAN. Moreover, Wireless LAN deployments require significant planning and paying attention to details for planning to maximize coverage, reduce the effects of interference and optimise the available frequency bands. Wireless deployments need to be planned in detail, implemented & optimized periodically in a systematic & disciplined manner, in a co-ordinated way, else there may be an impact on the service levels achievable.

Security

Out of the box, wireless LAN solutions are inherently insecure. They depend on weak Wired Equivalent Privacy (WEP) payload encryption and service set identifiers (SSIDs) for basic password based association with access points. WEP security has proven inadequacies associated with the WEP key initialisation vector (IV) and keys that remain inordinately static. In addition Wireless LAN sniffing tools are readily available via public domain Wireless LAN analysers; these can easily identify Access points, active SSIDs and potentially user data. Even WPA-2 has *inherent vulnerability* that needs attention and remediation. Consequently, security issues on Wireless-LANs shall continue to be an area of research for betterment. No fool proof security can be assured by anyone. It's a cat and mouse game. Consequently, cyber hygiene shall be an area of strategic focus for all, especially for using wireless technologies.

Costs

The purchase cost of Wireless LAN access points and wireless PC cards continue to fall and now offer apparent price competition to Ethernet switches and NICs. However the real costs associated with wireless LAN deployments are concerned with establishing the administrative, support and security infrastructure to ensure that:

- ❖ Wireless LANS meet University standards and policies
- ❖ Wireless LANs are used for purposes that augment 'wired' solutions rather than replace 'wired' solutions
- ❖ Wireless LAN devices and users are properly authenticated and authorized before access to University information resources is permitted

- ❖ An adequate level of encryption is implemented before any sensitive, private or restricted information is accessed via Wireless LANs

Suitability

Wireless LANs should not be considered as a substitute for University standard 'wired' network connection points. Wireless LANs can be used effectively to augment standard network connection points in the following situations:

Areas where it is difficult or cost prohibitive to provide 'wired' solutions

- ❖ Flexible access areas where staff, students and approved visitors may use their own workstations
- ❖ Mobile users requiring network roaming
- ❖ Free space inter building links across busy road ways
- ❖ Temporary solutions for Network service provision
- ❖ Disaster recovery situations

Interference and interference management

At present there are many devices, which operate in the same 2.4GHz frequency band as 802.11b (g) deployments. These devices include microwave ovens, cordless phones some cameras, and Bluetooth PANs etc. To help avoid interference, the use of such devices in areas suitable for wireless LAN deployments are discouraged. At present the 5GHz unlicensed band is far less cluttered, therefore no corresponding restrictions will apply to 802.11a deployments at this time. If after investigation problems are confirmed to be the result of interference then approved 802.11 wireless LAN deployments will have priority, this dictates that users of other radio devices will be required to cease using them. In cases where devices causing interference are being used for critical applications University Computer Centre shall collaborate with those involved to find an acceptable solution. In circumstances where interference cannot be remedied by workarounds or arbitration the following priorities will be observed:

- ❖ Teaching applications
- ❖ Research requirements
- ❖ Health and safety
- ❖ Flexible access provision

If interference is caused by non-compliant, or unregistered wireless Local Area Networks then these must be removed from operation; It is essential that the University reserves the limited channels available in the 2.4Ghz and 5GHz unlicensed bands for approved deployments.

Registration procedure

All deployments of wireless Local Area Networks should be registered at a central location, (like University Computer Centre). This includes existing deployments as well as new deployments.

All Wireless-LANs deployments in University are expected to maintain following information:

- ❖ Purpose of deployment
- ❖ Wireless equipment and 802.11x standards supported
- ❖ Access Point locations and area covered
- ❖ Frequency bands and channels used
- ❖ IP and MAC address of Access points and IP address range of associated stations
- ❖ Wired network connection point details; port id, switch port number, speed and duplex mode
- ❖ Security provisions
 - Physical
 - Authentication and authorization
 - VLANs in use if any
 - SSID conventions
 - Encryption used
 - Security awareness
 - Monitoring procedures
- ❖ Support services – where appropriate
 - Radius server details
 - BOOTP/DHCP server details
 - VPN server(s) details
- ❖ Administrative, Technical and Maintenance Contacts

Network Administration Team concerned shall maintain records of any local wireless LAN deployments, of the department/office in the prescribed format. These records may be sought by regulatory bodies as part of requirements from govt. audit parties and/or for statutory compliance needs.

Hence, in order to guard the AMUs campus wired/wi-fi internet services against malicious usage by way of exploiting the vulnerabilities in the ICT infrastructure of University, coordinated and persistent efforts at various levels (*central level, local level & individual end-users level*) is indispensable. Centralized actions at University level (*e.g. upgrading/maintaining security appliances like identity management through AAA server, perimeter firewall, UTM etc*) needs to be complemented with adoption of appropriate security control measures at the department (local/departmental LAN-security) / individual end-user level (End-point Security).

Further with the rising occurrences of cyber-attacks and cybercrimes, it has become imperative to address the challenge of cyber security. Cooperation & support of all users of campus internet services (*students, faculty, staff and guests*) is required for ensuring that no individual/office/department connects any unprotected equipment (with unrestricted access/un-protected connectivity) to guard against cybersecurity risks. Cyber-security incidents and cyber-attacks can't be controlled if unprotected/vulnerable/insecure

equipment(s) are connected to University’s Network and/or uncontrolled surfing of campus wired/wi-fi internet services is allowed by University.

However, in the absence of clearly defined IT policies, it is extremely difficult to convince end-users about the steps that are required to be taken at the end-points, mandatorily for campus network’s security for assuring statutory compliances, and guarding against malicious attackers. End-users in AMU may not be aware about cyber-security issues, challenges & statutory compliance mandates. Consequently, they often tend to feel that such restrictions (like identity based access to campus network/campus internet services) are unwarranted, unjustified and infringing on their freedom.

Need for IT-Policy

Over the last several years, not only active users of the network facilities have increased many folds but also the web-based applications have increased. This is a welcome change in the university’s academic environment. Going forward, there is vast potential for automating many more operational workflows related to various administrative governance & academic operations, which in turn would result in increased demand of ICT resources in future. All the educational institutions worldwide have well documented IT policies, that are implemented & institutionalized for provisioning, using and securing ICT infrastructure and Services in the institutions. In other words, Policies also serve as blueprints that help the institution implement its ICT requirements with proper guidelines for its proper use with necessary security measures. Effective policies are a sign of due diligence; often necessary in the event of an IT Audit or Litigation.

Hence, AMU also is proposing to have its own IT Policy that works as guidelines for planning, provisioning and using the university’s computing facilities including computer hardware, software, email, information resources, intranet and Internet access facilities, collectively called “Information Technology (IT)”. Considering all these, Vice-Chancellor has constituted IT Policy Committee to develop, contribute to and implement the policies, governance and strategies required for IT provision across the University.

Major Dimensions of AMU IT Policy

IT policy of AMU is wide-ranging and diverse and it is aligned to the following major dimensions, as given below:

S. No.	Major Dimensions	Sub-Area
1	Research Support	(1.1) ICT-enabled/Scientific Research Tools (1.2) HPC (H igh P erformance C omputing)
2	Teaching & Learning Support through e-Learning Solutions	(2.1) ICT-enabled e-Learning Tools (2.2) Facilitating the use of IT for lectures (2.3) Digital Learning Initiatives like MOOCs, and SWAYAM, etc (2.4) IPR (2.5) Review & Feedback on benefits of Using e-Learning Tools to complement T&L.
3	IT-Support for	(3.1) Identification, acquisition and Implementation

S. No.	Major Dimensions	Sub-Area
	Administrative Works of University	of IT based solutions for various administrative units/centres/departments to keep the university running especially for student records, finance, grant management, human resource, accreditation management, etc. (3.2) e-Governance
4	IT-Services Management and IT- Support	(4.1) IT-Services Management(ITSM) (4.2) IT-Support (ITS) (4.3) Employee Trainings on effective usage of IT-Services of University & IT-Support Process. (4.4) Review & Feedback on ITSM/ITS. (4.5) Web services (4.6) University Website Services (4.7) Website Content Management (4.8) Web servers (4.9) Cloud Infrastructure Services (4.10) IT Disposal/Hazard Management (4.11) Collaboration between Academia & IT-Industries
5	Networking Infrastructure and Communication Services	(5.1) Local Area Network(s) (5.2) Wireless LANs (5.3) IT enabled Surveillance System (5.4) Email and Internet Usage (5.5) Managing and Accessing information on Intranet and Internet (5.6) Communication and Collaboration (5.7) Use of external service providers (5.8) Establishment and maintenance of Data Centres (5.9) Network Security
6	Information Security & Statutory Compliances	AMU is committed to protecting information, in all its forms, from loss of <i>confidentiality</i> , <i>integrity</i> and <i>availability</i> . Current <i>Information Security Policy of AMU version 1.0 dated 02-Sep-2014</i> duly approved by competent authority, may be revised from time to time as per requirements.
7	Trainings & Computing Facilities for trainings	(7.1) Establishment of Centralized state-of-the-art Training Facility for Academics, Students and Staffs (7.2) Identification, Analysis & Consolidation of Training Needs of Academics, Students and Staffs. (7.3) Training on ICT-enabled Research Tools (7.4) Training on Usage of e-Learning Tools (7.5) Employee Trainings on OAT (7.6) Training & Skill-Development for Custom Solution (7.7) Training & Skill-Development for IT Support

S. No.	Major Dimensions	Sub-Area
		Teams (7.8) Planning & Organizing Need-based training courses for target audiences (7.9) Assessment, Outcome Analysis & Feedback Mechanism for progressive improvements
8	IT Consultancy Services	Software Development as per University Requirements related to Academic & Administrative Functions of AMU. Design and implement new IT services and significant enhancements to existing services. Providing consultancies on many aspects of the use and provision of IT.

1. Research Support

AMU is ranked among the world's leading research-intensive universities. Our reputation is built upon our core disciplinary strength and breadth, in which we will continue to invest and build. We have also built a significant reputation for multidisciplinary and applied research. We pride ourselves on our commitment to critical enquiry and research excellence, and to realizing the impact of our research on society. High Performance Computing has become a basic instrument of research in all natural, engineering and technological sciences to solve complex mathematical problems that require swift solution and a large memory to store the data. Enhancing our Advanced Computing infrastructure and continuing to mature our research data and research collaboration tools to fulfill research requirements and Open Science capability (enhancing research data and open access systems) would be one of our prime objectives.

To realize said objectives of research, AMU is committed to provide students, research scholars and teachers the best possible support in terms of access to information resources, IT tools and ICT requirements in planning, delivering and disseminating research.

1.1 ICT-enabled / Scientific Research Tools

1. AMU is committed to encourage & promote use of Open Source Software(s) and Tools available for teaching, learning and research.
2. Each department would identify Open Software and Tools relevant to their field of knowledge and would widely publicize and encourage its use among students, research scholars and teachers. Aggregated information may also be displayed on Intranet Portal as well as University Website.
3. Research support software tools that are proprietary in nature & needed by researchers of multiple department of studies, shall be acquired & deployed centrally with requisite multi-user licenses to allow & promote shared usage across the Campus, through Campus Wide Network of AMU. The requirements of such tools may be communicated to Central Purchase Office as per University Rules.

Technical vetting of Propriety Software tools requirement, endorsed/forwarded by Central Purchase Office shall be undertaken by IT-Policy Committee, prior to final decision.

4. AMU has a very rich digital learning resource at Maulana Azad Central Library (MAL), which is accessible through University Campus network. This includes various Paid/Subscribed Journals (by MAL as well as MHRD), journal database, Digitized thesis, Digital Resource Centre managed by MAL for providing access to freely available e-books, encyclopedia, dictionary, e-Lectures, etc. Additional requirements (if any) for digital information resources shall be officially communicated to MAL, as per the procedure notified & published on the web-page of MAL from time to time.

Technical vetting of requirement of additional digital learning resources, endorsed/forwarded by MAL shall be undertaken by IT-Policy Committee, prior to final decision.

5. AMU is committed to encourage and promote open access to peer-reviewed publications and research data.
6. AMU is committed to encourage and promote periodic awareness/training programmes for anti-plagiarism services/tools available for students, research scholars and teachers.

1.2 HPC (High Performance Computing)

1. To meet the requirements of computing intensive research, AMU is committed to establish & maintain a *High Performance Computing Centre* (HPCC) with necessary infrastructure, equipments and technical support staffs, along-with requisite administrative set-up.
2. Remote access to this HPC system shall be provided to students, research scholars and teachers on request/need basis using a predefined workflow.
3. Composition of the *High Performance Computing Centre*
 - 3.1. HPCC would be headed by a Director, preferably a faculty member having experience in this field. The Director would be assisted by ONE Joint/Deputy Director of HPCC followed a team comprising a minimum of IT professionals (Technical Consultants/Research Scientists/System Programmers: 2 Numbers), Technical Staffs (STAs/TAs: 2 numbers) and office support staffs (3 numbers).
 - 3.2. The Director and/or Joint/Deputy Director of the Centre shall be appointed by the Vice-Chancellor from amongst the faculty member of the University for a period of three years and s/he shall be eligible for reappointment.
 - 3.3. To assist the functioning of HPCC, the following Advisory and Technical Committees are proposed with the following structures:

A. *Advisory Committee for IT Planning and Policy making*

Composition: IT Policy Committee plus Director, HPCC/ 2 Experts/
Registrar/FO/OSD (Dev)/ PVC/VC (Chair)

Experts of the *Advisory Committee* shall be appointed by the Vice-Chancellor for a period of two years and shall be eligible for re-appointment.

Role of Advisory Committee:

- Development of strategies and general plans for High-Performance Computing in the University.
- Development of Competency Frameworks, Performance Evaluation Criteria & Progress Reports – for effective operations & performance monitoring of HPCC.
- Review & add value the proposal(s) submitted by the Director of HPC-Center for the development, enhancements and upgradation of the Center.

B. Technical Implementation and Monitoring Committee:

IT Policy Committee may be empowered to constitute sub-committees of technical experts in consultation with Director as per the requirement. This committee would review progress of the sub-committees constituted from time-to-time (on project requirement basis) and also mentor them for implementation & monitoring as per project needs.

2. Teaching & Learning Support through e-Learning Solutions

The advancement in ICT has made *blended learning* a popular approach to maximize the teaching and learning effectiveness. Blended learning is the use of technology to complement classroom sessions and strengthen the teaching/learning/training process through practice and the application of concepts learned in the classroom. AMU is committed to facilitate faculty members to get the most from ICT for teaching and learning, and to promote innovative use of learning technologies. To achieve this objective, AMU is committed to continue provisioning of emerging technologies & high-quality digital infrastructure, Digital Learning Solutions and learning materials to enhance teachers'/learners' experience of teaching and learning.

2.1. ICT-enabled e-Learning Tools

1. AMU is committed to facilitate faculty members get the most from ICT for effective teaching and learning, and to continue promoting innovative use of learning technologies.
2. AMU is committed to convert all its traditional class-rooms into digital smart-class rooms in a phased manner with adequate ICT infrastructure and e-Learning tools.

2.2. Facilitating the use of ICT for lectures

AMU is committed to facilitate the use of ICT for delivering lectures (in theory and practical sessions), seminars, presentations, etc to enable effective teaching and learning.

The effective and optimal use of ICT for delivering lectures, seminars, presentations, etc. would help develop collections of reusable and open education materials. This would, in turn, help in creating digital teaching resources thereby allowing AMU's world-class academics communicate and broadcast their work.

1. AMU is committed to encourage and support development and maintenance of its own virtual learning environment (VLE), preferably using open source tools & techniques.

The IT Policy Committee recommends to establish, develop and maintain a sustainable VLE at AMU, which would not only serve the purpose of University Students, Teachers and Staffs (within Campus) but also cater the needs of distant learners worldwide.

A complete e-Learning Solution is proposed to be set-up at AMU with an aim to promote the creation of e-contents and courses, manage e-contents, disseminate e-learning resources among learners, monitor and evaluate the learners' performances, manage and cater the various needs of users.

To provide necessary technical support to the establishment and maintenance of VLE, a team with relevant skills, comprising of Technical Consultants/IT-professionals (Consultants/Software Developer(s)/System Programmer(s): 2 numbers), Technical staffs (STAs/TAs: 2 numbers) and office support staffs (1 number) is needed.

2.3. Supporting Digital Learning Initiatives like MOOCs, and SWAYAM, etc

1. AMU is committed to encourage and promote the use of MOOCs available on SWAYAM platform (and/or other platforms) to provide the students a blended learning mode, which would be helpful in inculcating the culture of lifelong learning.
2. AMU is committed to encourage faculty members to use new technology for better outreach and engagement. AMU is committed to arrange services to record and publish lectures, seminars and events.
3. AMU is committed to encourage & facilitate active and massive participation of faculty members to create and launch their MOOC courses on SWAYAM platforms.

2.4. IPR

AMU is committed to facilitate the necessary provisions to protect the intellectual property rights (IPR) of e-resources created by AMU members.

2.5. Periodic Review & Feedback Analysis

As a part of continuous improvement plan, University shall facilitate the necessary provisions for obtaining feedback of stakeholders & periodic reviews on benefits of using e-Learning Tools to complement teaching and learning.

3. IT-Support for Administrative Works of University

AMU stands committed to promote the use of best possible IT based solutions for better governance of the Institution and management of students life-cycle records, admissions & examinations, human resources, budgets/grants, financial accountings, assets/inventories, office-works, etc for operational needs of the University.

AMU has been continually improving on the usage and adoption of IT tools and systems for betterment of the university services, offered to the users, so that the University operates at the level expected of a world-class organization.

The popularization of Information Technology among the stakeholders and widespread availability of internet services within and outside the campus have necessitated the automation of various activities and processes being practiced in the university system. And to meet this growing need, over the period of time many IT services have come-up in different departments/units. But presently these IT-solutions are working in complete isolations. These isolated islands of IT services lack requirement generation, proper sharing of data and services with each other and hence resulted in many problems related to data redundancy & it's associated implications. The solution to this problem is only an integrated solution, in the form of ERP to provide seamless integration of various services & proper data in real-time. Further, a lack of uniform IT Policy has been observed related to selection, prioritization, implementation and maintenance of IT services.

3.1. Identification, acquisition and Implementation of IT based solutions for various administrative units/centres/departments/offices to keep the university running especially for student records, finance, grant management, human resource, accreditation management, etc.

1. AMU is committed to keep striving to make available the best IT based solutions for various administrative units/centres/departments (support centres) especially for student records, finance, grant management, human resource, accreditation management, examinations and admissions, office management, inventory management, etc to keep the university running smoothly.
2. To coordinate and collaborate among various isolated administrative units using IT based solutions and to give boost to administrative IT services, IT Policy Committee proposes to establish a *separate unit* with the following objectives:
 - ❖ Assessing the IT requirements of various administrative units and to recommend the optimal IT based solutions.
 - ❖ Planning and provisioning consultancy for implementation of IT services to various administrative units of the university.

- ❖ Optimization and to have synergy among various existing administrative units running IT Services with an aim to ensure proper utilization of available resources and IT infrastructure.
- ❖ Ensuring that all the administrative units have a consistent and auditable approach to security and access management, for all the central business IT systems. This includes coordinating all security and system administration, and making sure that security, system administration and access management are properly considered when new services are being designed
- ❖ In-house R&D with an aim to support the needs of various administrative units in terms of requirement engineering, development, deployment and testing of IT services.
- ❖ University shall encourage & facilitate involvement of students (with appropriate background and/or technical skills) as interns, for various software development projects to gain valuable “hands-on” experience as well.
- ❖ Over a period of few years, products/solutions progressively created & and deployed across the AMU can be packed into campus management software solutions, be patented and used for generating revenue for University.

3. Composition of this proposed *Administrative IT-Support Center (AITSC)* is as follows:

3.1. The proposed unit would be headed by a Director (preferably a faculty member having relevant experience of End-to-end Software Development Life Cycle) and the IT-Support Center.

Proposed Composition of Admin IT-Support Center (AITSC), is as follows:

• Director	01
• Joint/Deputy Director	02
• System Analyst/Sr. Programmer/Software Developer	06
• Database Administrator (DBA)	01
• Solution Architect	01
• System Administrator	02
• Graphics Designer	01
• Software Testing & QA	02
• Technical Writer	01
• Technical Staff (STA/TA)	04
• Office Support Staffs	04

3.2. The Director and/or Joint/Deputy Director of the Centre shall be appointed by the Vice-Chancellor from amongst the faculty member of the University for a period of three years and s/he shall be eligible for reappointment.

3.3. To assist the functioning of this centre/unit, the following Advisory and Technical Committees are proposed with the following structures:

A. *Advisory Committee for IT Planning and Policy making*

Composition: IT Policy Committee plus Director/ 2 Experts/
Registrar/FO/OSD (Dev)/ PVC/VC (Chair)

Experts of the *Advisory Committee* shall be appointed by the Vice-Chancellor on the recommendation of the Director Admin IT-Support Center for a period of two years and shall be eligible for re-appointment.

Role of Advisory Committee:

- Development and approval of strategies and general plans for the Admin IT Support Center in the university .
- Development & Prescriptive guidance on Competency Frameworks, Performance Evaluation Criteria & Progress Report – for effective design, development, testing & roll-out of Admin IT-Support Services in the University, by the proposed Admin IT-Support Center.
- Study/Review the proposal(s) and progress reports submitted by the Director of Admin IT-Support Center for the development, promotion and upgrade of Admin IT-Support Center.

B. *Technical Implementation and monitoring Committee*

IT Policy Committee may be empowered to recommend sub-committees of technical experts in consultation with Director as per the requirement and nature of individual Project. This committee may review, monitor the progress, add value and do mentoring of the sub-committees constituted from time-to-time on project requirement basis.

3.2. E-Governance

1. E-Governance is the use of ICT in organizations to provide efficient, transparent and timely delivery of services to all the stakeholders, to improve work efficiency and to promote democratic values; as well as a regulatory framework that facilitates information intensive initiatives and fosters the knowledge society. AMU aims to provide all user services through digital mode using a common service centre and through mobile applications as well.
2. The E-Governance of AMU is envisaged to be "evolutionary and dynamic" to cater to the changing requirements of the stakeholders. To begin with, AMU has identified some of the below listed generic functionalities related to E-Governance system:

❖ Information sharing through website displaying static information

- ❖ Providing stakeholders information on demand, like, individual student results and mark sheets, payslips of individual staff members, syllabi of specific courses, forms and formats as per user requirements, specific guidelines and policies, minutes of meetings of academic bodies, etc.
 - ❖ Providing stakeholders mechanisms where user can interact with the system without need to visit any office personally, like, online admissions and application forms, support for user initiated editing and updation of faculty profiles, online fee payments, correction in student profiles, feedbacks, status tracking, etc
 - ❖ Providing the integrated system which is capable of supporting all major activities and operations, like, online file processing and tracking, online NOCs (no objection certificates), integrated reports, e-purchase, e-tendering, e-healthcare management, etc.
 - ❖ An exclusive student portal
 - ❖ Multiple channels to access services from university, etc.
3. Keeping in view the present status of automation of operations of the University, AMU shall adopt a planned approach to move from present state to fully functional e-Governance system.
- A phased implementation (*starting from Information sharing website to Interactive system to Transactional system to Complete Transformation to e-Governance system*) with the following broad objective can be adopted:

- ❖ To facilitate a timely delivery of services and information availability to all the stake holders
- ❖ To provide a platform where involvement of all the stakeholders is ensured for decision making
- ❖ To transform the system into an extremely efficient, secure, transparent and result oriented one
- ❖ To facilitate the requisite technological support required for teaching and learning process
- ❖ To collaborate with Computer Units/Cells/Nominees for technological support planning to all the constituent administrative units of the system

4. IT-Services Management and IT- Support

There is a small team of IT support professionals at Computer Centre whereas the individual colleges, units/centers and departments have their own local IT provision. That adds up to a lot of IT resources. AMU shall undertake appropriate mission project(s), to build, consolidate and support strong IT community to enable all IT Support Staff (ITSS) to work as one large group, supporting one large University.

To achieve this:

- ❖ Computer Centre being a nodal point of coordination for local IT staffs to collaborate with them in their specific requirements and to build their partnership. Proposed Centralized IT-Training Centre, in collaboration with Computer Centre shall arrange for necessary trainings, for all such locally available IT support staffs in areas which are necessary for strategic development and for the day-to-day running of ICT in the

University (e.g. Network & Computer System management, Software Installations, Meetings & Event management, Video Conferencing etc.)

- ❖ To manage IT-Services, university shall frame it's own policies & procedures based on relevant best-practices frameworks (like ITIL v3 etc.), to take care of Continual Service Improvement for life-cycle management of University IT-Services, in following phases:
 - IT-Service Strategy,
 - IT-Service Design,
 - IT-Service Transition, and
 - IT-Service Operations.
- ❖ Further, IT Policy Committee, in consultation of Director, Computer Centre, shall re-assess the qualifications and nomenclature of various IT support staffs positions needed and also help colleges, centre/units and departments in deciding the essential and desirable qualifications for recruiting IT staff/IT support staffs.

4.1. IT-Services Management

IT service management (ITSM) enables IT operations, specifically infrastructure and operations (I&O) managers, to better support the production environment. ITSM facilitate the tasks and workflows associated with the management and delivery of quality IT services.

AMU is committed to adopt best-practices of IT-Services Management, for planning, designing and offering requisite IT-Services (*aimed at further improving cost-effectiveness, operational efficiencies & end-user satisfaction*) to AMU Members.

4.2. IT-Support

AMU is committed to maintain IT-Service Catalogue of all the IT-Services being offered for students, teachers, non-teaching staff & university guests of AMU. For all services notified in service catalogue best-practices of IT-Service Operations shall be adopted for IT-Service Delivery & IT-Service Support, including (but not limited to):

- (i) Service Desk & Incident Management
- (ii) Problem Management
- (iii) Change Management
- (iv) Release Management
- (v) Access Management
- (vi) Configuration Management

Resources needed for IT-Service Management & IT-Support Management, shall be provisioned by the University for adoption & implementation of following:

Service Desk and Incident Management

- ❖ *Service Desk and Incident Management* shall ensure to restore IT Services to their defined Service Levels as quickly as possible, as a part of IT-Support, as and when incidents requiring support are reported/registered.

- ❖ Service Desk shall receive & process Service Requests, for assisting users with requisite IT-Support by coordinating the Incident Resolution with Specialist Support Groups. During the course of incident resolution, users shall be kept informed at regular intervals about their Incidents' status.

Problem Management

- ❖ Problem Management process shall ensure that underlying causes of incidents reported (and resolved by Service Desk) are properly analyzed subsequently, with objective of progressive improvements & identifying actions to be taken that can help minimizing chances of recurrence of such incidents.
- ❖ It helps Incident Management with Temporary Fixes (Workarounds) and Permanent Solutions to Known Errors.

Change Management

- ❖ Change Management helps to streamline all Changes to the IT infrastructure and its components (Configuration Items) through proper authorization and requisite documentation, thereby minimizing services interruptions caused due to changes.
- ❖ The implementation steps are planned and communicated, in order to recognize potential side-effects as early as possible. A specific procedure, dealing with Urgent Changes shall also be defined for taking care of emergencies only.

Release Management

- ❖ Release Management process shall take care of systematic implementation of new versions/releases of software (be it operating system software or application software) into the existing IT Infrastructure, so that new releases are implemented in an effective, secure and verifiable manner.
- ❖ This shall include planning, monitoring and implementation of respective *Rollouts* or *Rollins* in co-ordination with Change Management.

Access Management:

- ❖ University is committed to grant all authorized users the right to use AMU ICT-service(s), while preventing access to non-authorized users. It is also been referred to as rights management or identity management.
- ❖ The purpose of access management is to provide the right for users to be able to use an IT-Service or group of IT-Services. Consequently, it enables the organization to manage the confidentiality, availability and integrity of the organization's data and intellectual property.
- ❖ Access management ensures that users are given the right to use a service, but it does not ensure that this access is available at all agreed times (service availability is provided by availability management).

Configuration Management

- ❖ The information about ICT-Infrastructure and IT-Services necessary for the IT Service Support is made available by Configuration Management.
- ❖ Changes shall be systematically documented and the updated status of the information shall be checked regularly. Consequently, updated and historical information as to the Configuration Items (CIs) shall always be available within the *Configuration Management Database (CMDB)*.

Requisite resources needed for phased implementation of these processes shall be provisioned by the University.

4.3. Employee Trainings on effective usage of IT-Services of University & IT-Support Process

IT-Support shall periodically arrange for requisite awareness campaigns, trainings, workshops for effective usage of IT-Services of University, as a part of IT-Support Process, in collaboration with proposed Centralized IT-Training Center.

4.4. Review & Feedback on ITSM/ITS

ITSM & IT-Support shall follow closed loop process, ensuring periodic review & refinement through feedback collection, collation, analysis & correction, as per University's IT-Policy guidelines.

4.5. Web Services

AMU is committed to provide online web services (intranet portal) to students & staff for facilitating workflow automations (like Student Registrations, Employee Leaves etc.) as per requirements of University.

4.6. University Website Services

- ❖ Design, Development & Maintenance of the official website shall be as per prescriptive guidance/decisions of University Website Committee.
- ❖ Suggestions for changes/modifications/enhancements shall be subjected to relevant due process of vetting by the Website Committee from time to time.
- ❖ Contents shall be placed by the content owners, at their own-end, using the control panel provided to every individual/sections/offices/departments/centers/colleges. Individuals/sections/offices/departments/Centre/colleges are responsible for maintaining/updating contents of their own web-pages.
- ❖ Request for additional requirements of any special content/event from individuals/sections/offices/departments/centers/colleges may be considered by website committee and hyperlinks of the special event's websites/contents of requisitioner's web-page, subject to the condition that hyperlinked website's content does not violate any applicable laws & regulations, does not constitute a copyright or trademark infringement, not used for commercial purposes.

4.7. Website Content Management

- ❖ Contents of all pages shall be standardized as per the standard design pre-approved by the University Website Committee.
- ❖ All Content owners shall follow the pre-approved design while maintaining their respective web pages at the university website.
- ❖ Private, confidential, and sensitive information should not be uploaded by any individual/section /office/department/school/college to the web server. Data found in violation of this policy may be deleted by University, without warning.

4.8. Web Servers

- ❖ AMU is committed to procure, upgrade and maintain web-servers, on-campus, for hosting of University Website & web services of AMU.
- ❖ Placing inappropriate content (or non-supported technology) on University Web Server is forbidden.

4.9. Cloud Infrastructure Services

AMU is committed to acquire, upgrade and maintain on-campus, Cloud Infrastructure Services for provisioning of following options as per requirements of University:

- IaaS(Server Hardware Infrastructure)
- PaaS (Platform as Service)
- SaaS(Software as a Service)

4.10. IT Disposal/Hazard Management

AMU is committed to follow best practices & standards for IT-Disposal/Hazard management. The policy shall be reviewed & revised from time to time. When equipment is no longer fit for purpose or is beyond economic repair the following options may be considered:

- Redeployment within other units/departments of University
- Donation to a charitable or community organisation
- Disposal of IT E-Waste in a secure and environmentally friendly manner

4.11. Collaboration between Academia & IT-Industries

Having collaboration with Academia & IT-Industries would be mutually beneficial in the following ways:

- Facilitation in enrichment of existing curriculum with job-oriented and skill-based ICT-courses
- Employability enhancement of AMU students through job-oriented ICT-Skills development.
- Facilitation of training of Teaching Staff, Lab Instructors & Other relevant staff members for implementation of the enriched curriculum.

AMU is committed to encourage collaboration between Academia & IT- Industries with specific objectives of achieving some/all of the following:

- Establish & Maintain Technology based Centre of Excellence.
- Collaborative ICT Projects (like Software Development & Software Maintenance, Campus wide Network Planning & Designing for Universities/Institutes/Colleges etc.)
- Establish & Maintain Technology Incubation Centres.
- To support Training & Placements cell through industry ready and technically equipped students with Job-oriented ICT skills.
- Modernizations and Upgrade of existing ICT infrastructure available at AMU.
- To facilitate skill enrichment of Team-AMU with latest/emerging Hands-on ICT skills.

5. Networking Infrastructure and Communication Services

AMU, over the period of time, has come up with a state-of-the-art campus wide network infrastructure that forms the basis for providing the core IT services that underpin day-to-day life across the University, from accessing online services to the data centres where IT equipment runs.

AMU has made provisions to provide identity and access management services to the University. Many of the University's IT systems and services require user accounts and passwords for secure access. AMU has developed mechanisms to manage these user accounts, change passwords when required and facilitate interaction between different IT systems inside and outside the University.

This policy defines deployment, administration & support of Wired & emerging Wireless technologies in the University's campus networks.

AMU is committed to provide wide range of services over the Campus Wide Network to help colleges, departments, units/centers and individuals with their server and data needs. These range from a shared University data centre in which IT equipment can run, to virtual machines, to the University's cloud computing facilities. In order to meet these functional needs effectively, following shall be ensured:

5.1. Local Area Networks

1. AMU is committed to provide wired connectivity upto Access Layer of all Academic Blocks, Administrative Units, Halls/Hostels, University Owned Guest houses, Canteens & such other places frequented by Students by extending connectivity of respective LANs to the Campus Network Backbone of AMU.
2. Planning, Designing, deployment, administration & support of University's campus networks shall be governed by the IT-Policies & Procedures maintained by University from time to time (including, but not limited to *IP-Address Management & Cyber Security Compliance Guidelines*).
3. All networking & computing equipment (like *Switches/WAPs/Servers/Desktops/Notebooks* etc.) connecting to University Owned Network shall use only

the allocated IP-Address. IP-Address allocations to each individual equipment shall be made by the Head (or his nominee) of Section/Office/Department/Centre utilizing the range of IP-Pool assigned by University Computer Centre to each of the department/office/building. DHCP services may be implemented in a phased manner wherever required/feasible. University shall implement dot-1x-standard for Wired connectivity in a phased manner.

4. All departments using static-IP shall maintain utilization records of IP-Addresses assigned to the equipment connecting to their LANs, if the departmental LAN is connected to University's Campus Networking Backbone.
5. An IP address allocated for a particular computer system/equipment shall not be used on any other computer/equipment even if the other computer/equipment belongs to the same individual/Section/ Office/Department/Centre.
6. No individual/office/department shall connect any networking equipment (with unrestricted access/un-protected connectivity) to guard against cyber security risks. With the rising occurrences of cyber-attacks and cybercrimes, it has become imperative to address the challenge of cybersecurity. Cybersecurity incidents/breaches, on account of violations caused by such unprotected equipment(s) shall be sole responsibility of the individual/office/department concerned.
7. Allowing physical access of networking equipment to outsider(s)/visitor(s), without due diligence of verification of their identity & validation of their work-permit, is forbidden.
8. All users (end-users) of end-points, connecting to the University's Campus Network shall ensure the following:
 - a. Scheduled backups (of their end-point data)
 - b. Regular Operating System Updates (for bug-fixes & security-assurance)
 - c. Proper Anti-Virus/Anti-Spyware/Anti-Malware Updates
 - d. Genuine Softwares

5.2. Wireless LANs

AMU is committed to provide Wi-Fi in the selected 'hot-spots' in the University Campus consisting of all Academic Blocks, Hostels, Canteens & such other places frequented by Students. The deployment, administration & support of emerging Wireless technologies on the University's campus networks shall be governed by the University IT-Policies & IT-procedures.

1. For uninterrupted services, power backup(s) to all the relevant networking equipment at Access-Layer shall be provided/ maintained by the respective end-user section/office /department /Hall/Hostel etc.
2. Use of any tools/techniques to allow unwanted/unauthorized access and/or to transform individual's PC/Notebook etc. into a WiFi Hotspot is prohibited, as it is a source of channel interference & a cause of performance degradation of limited and shared-resources of AMU.

5.3. IT enabled Surveillance System

AMU is committed to plan, design, deploy, augment, upgrade & maintain appropriate CCTV Surveillance systems at strategic locations across the University campus, as per safety & security purposes. Safety and security purposes include, but are not limited to:

- Protection of individuals, including students, faculty, staff, and visitors.
- Protection of University owned and/or operated property and buildings, including building perimeters, entrances and exits, lobbies and corridors, receiving docks, special storage areas, laboratories, and cashier locations.
- Monitoring of common areas and areas accessible to the public, including transit stops, parking lots, public streets, and pedestrian walks.
- Protection against an act of terrorism or related criminal activity.
- Protection of Critical Infrastructure
- Monitoring of crowd movements during University events.
- Monitoring to render assistance for traffic management.

5.4. Email and Internet Usage

1. AMU is committed to provide Campus Internet Services & Institutional E-mail Services to Students, Teachers, & Staff for supporting the normal activities of the University, in particular for educational, research and administrative purposes.
2. Planning, designing, provisioning, maintaining & supporting Internet & E-mail Services shall be governed by University's IT-Policies & Procedures.
3. Internet & E-Mail facilities should not be used for any illegal or unethical purpose or for significant personal use.
4. Each user is responsible for the content and use of their own account. Passwords should not be shared with others.
5. Users of the facilities must exercise extreme caution to ensure that there is no breach of copyright or of other intellectual property rights.

5.5. Managing and Accessing information on Intranet and Internet

AMU is committed to adhere with relevant guidelines for using Social Media, defining Classification of Confidential Information and assigning corresponding roles and responsibilities, as approved by University from time to time.

5.6. Communication and Collaboration

AMU is committed to provision appropriate ICT-facilities to support communication & collaboration, related to teaching, learning & research works.

5.7. Use of external service providers

AMU is committed to engage external service providers/collaborate with 3rd-party as and when deemed appropriate. However, while using such services, AMU shall use

appropriate & standardized formats for Non-Disclosure Agreements(duly vetted by legal experts) that will be signed with external service providers/3rd parties.

5.8. Establishment and maintenance of Data Centres

AMU is committed to establish & maintain on campus data centre(s), using relevant best practices of planning, designing, implementation, augmentation, maintenance & upgrades from time to time, as per University's IT-Policies and Procedures.

5.9. Network Security

AMU is committed to provision Network's Security, using relevant best practices of planning, designing, implementation, enhancement, maintenance & upgrades from time to time, as per University's IT-Policies and Procedures.

1. Connecting unprotected networking equipment (such as routers and wireless access points, etc.) to the University Owned Campus Network is prohibited.
2. For security reasons, users shall opt for Identity-based access to the campus networks for using Campus Internet/Wi-Fi Services.
3. Attempting to circumvent the authentication systems, hide the identity (impersonating other's identity) for access to University Owned Network is forbidden.

6. Information Security & Statutory Compliances

Information is critical to University operations and failure to protect information increases the risk of financial and reputational losses. It's a collective responsibility of all stakeholders to make sure that the University's IT services are *secure* and *user friendly* . Further, due to dynamic nature of the Information Technology, Information Security in general and therefore policies that govern information security process are also dynamic in nature. These need to be reviewed on regular basis to take care of changing needs of IT-User Community, revisions in operating procedures and changes in technologies, for appropriate amendments. Purpose of IT-Policy is to provide information and set direction about acceptable actions and prohibited actions or policy violations.

With the rising occurrences of cyber-attacks and cybercrimes, it has become imperative to address the challenge of cybersecurity. Coordinated efforts from all individual end-users/offices/departments to ensure that any unprotected equipment (with unrestricted access/un-protected connectivity) does not creep into the University's network is important to guard against cybersecurity risks, else it may be source of cybersecurity incidents/breaches.

Information Security Policy of AMU *version 1.0 dated 02-Sep-2014* duly approved by competent authority may be revised from time to time, on need basis. AMU is committed to protecting information, in all its forms, from loss of **confidentiality**, **integrity** and **availability** and to provide a mechanism in line with NISPG & NITP, to help establish & evolve procedures for protecting against security threats, minimize the impact of security incidents

and make sincere efforts to help achieve compliance with applicable legislation and regulations.

7. Trainings & Computing Facilities for trainings

The success of any digital initiative depends on e-readiness of the organization. Higher the e-readiness indicator in terms of ICT infrastructure and ability of its users to sort through, interpret, and process digital knowledge, greater would be the ability to utilize the positive impacts of ICT for sustainable development of the institution. The modernization of ICT infrastructure and accordingly training its users should go hand-in-hand to harness the maximum benefits of the available resources.

AMU is committed to provide its staffs and students the best IT literacy and training courses so that they can make the most of the ICT tools and resources at their disposal. AMU designs and organizes need-based training courses for target audience, and also provides advice, support and guidance for academics across the University. Whereas AMU keeps on conducting ICT training programs for its staffs, training on specialized software tools and packages is organized for students and research scholars as well.

7.1 Establishment of state-of-the-art Centralized Training Facility for Academics, Students and Staffs

1. AMU shall establish a state-of-the-art Centralized Training Facility for Academics, Students and Staffs to synergize the isolated efforts being made at various levels, with requisite administrative set-up. This set-up, should include the following committees:
 - A. Advisory Committee for IT Planning and Policy making
 - B. Technical Implementation and monitoring Committee
 - C. Digital Learning Monitoring Cell

Composition of the Centralized Training Centre

1.1 The proposed "Centralized Training Centre" would be headed by a Director (preferably a faculty member having relevant experiences). To begin with, the Director would be assisted by ONE Joint/Deputy Director followed by a team comprising a minimum of skilled manpower (like Technical Consultants/System Analysts /Programmers/ Software Developers, 3 numbers), technical support team (STAs/TAs, 2 numbers) and office support staffs (3 numbers).

1.2 The Director and/or Joint/Deputy Director of the Centre shall be appointed by the Vice-Chancellor from amongst the faculty member of the University for a period of three years and s/he shall be eligible for reappointment.

1.3 To assist the functioning of this Centre, the following Advisory and Technical Committees are proposed with the following structures:

A. Advisory Committee for IT Planning and Policy making

Composition: IT Policy Committee plus Director/ 2 Experts/
Registrar/FO/OSD (Dev)/ PVC/VC (Chair)

Experts of the *Advisory Committee* shall be appointed by the Vice-Chancellor for a period of two years and shall be eligible for re-appointment.

Role of Advisory Committee:

- Develop and approve strategies and general plans for the Centralized Training Centre regarding training programmes in the university .
- Development of Competency Frameworks, Performance Evaluation Criteria & Progress Reports Template – for effective training & skill development in the University & resources needed for the same.
- Monitor the performance of the proposed Centralized Training Center and the development of performance evaluation criteria.
- Study the proposals submitted by the director of the proposed training center for the development, promotion and upgradation of the center.

B. *Technical Implementation and monitoring Committee*

IT Policy Committee would be empowered to constitute sub-committees of technical experts in consultation with Director as per the requirement and nature of requirement. This committee would review and monitor the progress of the sub-committees constituted from time-to-time on training requirement basis.

C. *Digital Learning Monitoring Cell*

Digital Learning Monitoring Cell (DLMC), in coordination with Centralized Training Centre would evolve proper assessment and evaluation mechanism, analyze the outcomes of training, and recommend progressive improvements as a measure to implement continuous quality improvement.

DLMC would be supposed to conduct research into the student digital learning experience. DLMC would work in coordination with Centralized Training Centre to assess students' digital learning level and usage of ICT, to evolve feedback mechanism, to analyze the outcome and recommend progressive improvements to help & optimize use of available digital resources.

2. AMU, through this Centralized Training Centre, would Identify, Analyze, Consolidate Training Needs of Academics, Students and Staffs.

3. Once the Training Needs are identified, AMU, through its Centralized Training Centre, would design, plan, notify and conduct tailored training programmes on regular basis to cater the needs of Academics, Students and Staffs.
4. AMU, through its Centralized Training Centre, would conduct training programmes on modern e-Learning Tools, LMS and other digital initiatives to empower its Academic and teaching staffs to effectively perform teaching related activities and create, deliver and publish their lectures and educational materials.
5. AMU, through its Centralized Training Centre, would conduct training programmes on ICT-enabled Research Tools, Creative Thinking and use of ICT in Research for research scholars to equip them for innovative research, effective presentation and publication of their research findings.
6. AMU, through its Centralized Training Centre, would conduct ICT skill development programmes on various custom solutions and programming tools to enhance the productivity of students.
7. AMU, through its Centralized Training Centre, would conduct custom-designed training programmes staffs to ensure the optimal use of ICT resources and effective participation in e-governance of the institution.
8. AMU has established a Digital Learning Monitoring Cell (DLMC) with an objective to conduct research into the student digital learning experience. DLMC would work in coordination with Centralized Training Centre to assess students' digital learning level and usage of ICT, to evolve feedback mechanism, to analyze the outcome and recommend progressive improvements to ensure the best possible use of available digital resources.

7.2 Identification, Analysis & Consolidation of Training Needs of Academics, Students and Staffs

Training Centre shall adopt appropriate methodology of systematic identification, consolidation & analysis of training needs of Academics, Students and Staffs for annual planning and execution of suitable training programmes for students & staffs.

7.3 Training on ICT-enabled Research Tools

Training Centre shall periodically organize recurring training programs on ICT-enabled research tools for teachers/research supervisors/research scholars, as per annual training plan for teachers/researchers.

7.4 Training of Usage of e-Learning Tools

Training Centre shall periodically organize recurring trainings on effective usage of e-Learning Tools for University Students & Teachers.

7.5 Employee Trainings on OAT

Training Centre shall periodically organize recurring trainings on ICT-enabled research tools for University Staff on Office Automation Tools.

7.6 Training & Skill-Development for Custom Solution

Training Centre shall periodically organize requisite trainings on Custom Solutions designed/deployed by USDU for various requirements of University.

7.7 Training & Skill-Development for IT-Support Teams

Training Centre shall periodically organize requisite trainings skill-development & capacity buildings of IT-Support Teams (e.g. Technical Assistants, Lab Assistants, Telephone Technicians, Network Technicians etc.) for enhancing efficiencies & their technical work's outcomes.

7.8 Planning & Organizing Need-based training courses for target audiences

Training Centre shall periodically organize requisite need based trainings, like (including but not limited to):

- Information Security Awareness Training
- Information Security Audits & Compliances

7.9 Assessment, Outcome Analysis & Feedback Mechanism for progressive improvements

Training Centre shall use appropriate methodologies for management of “Training Feedbacks” Collection, Analysis & Improvements for future.

8. IT Consultancy Services

Subsequently, the respective units/centres created after being fully operational and acquiring maturity to a level, AMU may offer professional IT services and consultancy, including expert advice on all aspects of the use and provision of IT.

The proposed consultancy services may include the following, but not limited to:

- a. AMU may provide consultancy in planning, designing & deployment IT solutions, to set up excellent software and hardware supplier agreements, including software site-licenses, discounts and acquisition frameworks which benefit departments, colleges, and individuals.
- b. AMU may provide consultancy services related to Campus Network Planning, Design, Operations, Management, Compliances, etc.
- c. AMU may offer consultancy services related to planning of IT projects, systematic monitoring & tracking progress of works, directing & managing execution of works during project, providing expert services for maintaining/sustaining outcome, after completion of IT-Projects.

- d. AMU may offer service to help with all aspects of the design and development of websites, and web and mobile apps.
- e. AMU may offer consultancy to Software Development Projects in all aspects of SDLC like, requirement engineering, system design, development, testing and implementation.
- f. AMU may offer consultancy services related to planning, designing, acquisition, installation & operationalization of sophisticated CCTV surveillance systems.
- g. AMU may develop state-of-the-art digital video and audio service centre(s) to cater the needs of digital video production, digital editing and video-conferencing.