

Blueprint for Digitization and Connectivity

Prepared by

**Central Department of General Science
Far Western University
Mahendranagar, Kanchanpur**

**Submitted to
University Grants Comision, Nepal
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Digital Transformation and Equity Initiative

Institution: Central Department of General Science, Far Western University (FWU)

Location: Mahendranagar, Kanchanpur

This Blueprint Plan for Digitization and Connectivity is a strategic proposal prepared by the Central Department of General Science, Mahendranagar, Kanchanpur, Nepal. Submitted to the University Grants Commission (UGC) in 2026, the plan outlines a comprehensive framework for upgrading digital infrastructure, academic services, and technological integration within the department.

1. Introduction

The Central Department of General Science is committed to transforming its academic environment into a fully connected and inclusive campus. At present, students encounter significant challenges stemming from the digital divide, limited physical resources, and geographical isolation. This modernization plan envisions a transition toward advanced teaching and administrative practices that align with global education standards. It emphasizes the urgent need for digitization in higher education to strengthen teaching, learning, research, and administration.

Key objectives of the blueprint include:

- Enhancing institutional efficiency and governance.
- Expanding equitable access to academic resources.
- Ensuring continuity of academic activities through reliable digital systems.

The initiative is strategically aligned with national priorities and adheres to University Grants Commission (UGC) guidelines for digital transformation, positioning the department as a competitive and future-ready academic institution.

2. Vision

Transform the Central Department of General Science into a digitally empowered, inclusive, and globally competitive academic institution.

3. Goals and Objectives

Goal 1: Enhance Digital Services

- Objective 1.1: Provide fast, secure, and reliable internet connectivity for all students and staff.
- Objective 1.2: Develop a user-friendly departmental website offering timely access to journals, theses, and academic announcements.

Goal 2: Streamline Education Management

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- Objective 2.1: Implement an Education Management Information System (EMIS) to safeguard and manage data related to admissions, examinations, and human resources.
- Objective 2.2: Establish a comprehensive online library system with access to international academic databases.

Goal 3: Institutionalize Online Learning

- Objective 3.1: Conduct virtual classes to expand learning opportunities.
- Objective 3.2: Deliver capacity-building training programs for both teaching and non-teaching staff to strengthen digital competencies.

4. Scope and Areas of Scientific Intervention

The operational scope of this initiative is strategically confined to the Central Department of General Science. It focuses on the development of a scalable, high-performance digital framework engineered to integrate seamlessly with broader university-level technological strategies. The following key deliverables constitute the primary areas of intervention:

4.1 Advanced Network Infrastructure and Connectivity

- **Broadband Integration:** The deployment of high-capacity broadband infrastructure to ensure robust department-wide internet access.
- **Corporate Premium Wi-Fi Deployment:** Establishment of a high-throughput corporate Wi-Fi zone supporting data transfer rates up to 500 Mbps.
- **Student Connectivity Support:** Provision of subsidized data packages to mitigate digital access disparities and ensure equitable student participation in the digital ecosystem.

4.2 Education Management Information System (EMIS) Integration

- **System Deployment:** Implementation of the Paathshala EMIS to automate and centralize departmental operations.
- **Administrative Modules:** Integration of specialized modules for accounting, payroll management, and biometric attendance monitoring.
- **Library Digitization:** Modernization of library services through digital cataloging and resource management within the EMIS framework.

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4.3 Financial Digitization via Electronic Fund Transfer (EFT)

- **Transactional Modernization:** Full digitization of departmental financial workflows, transitioning from manual to electronic systems.
- **Integrated Payment Systems:** Execution of salary disbursements and government payments through the Nepal Clearing House Limited (NCHL) corporate payment systems.

4.4 Virtual Pedagogy and Collaborative Learning Environments

- **MS Teams Integration:** Establishing a sophisticated virtual learning environment (VLE) utilizing Microsoft Teams for B. Sc. and Master's degree programs.
- **Capacity Building:** Deployment of training workshops focused on the effective utilization of digital platforms for both faculty and students.
- **International Collaborative Exchange:** Hosting online classes and collaborative guest lectures facilitated by national and international subject matter experts.

5. Scope and Areas of Intervention

The scope is limited to the Central Department of General Science and focuses on creating a scalable system aligned with broader university strategies. Key deliverables include:

- **Internet Connectivity:** Installation of broadband and a corporate premium Wi-Fi zone supporting up to 500 Mbps, including subsidized data packages for students.
- **EMIS Implementation:** Deployment of the **Paathshala EMIS** for accounting, payroll, biometric attendance, and library services.
- **Electronic Fund Transfer (EFT):** Full digitization of financial transactions, including salaries and government payments via NCHL.
- **Online Learning:** Establishing a virtual environment using **MS Teams** for B.Sc. and master's programs, alongside collaborative guest lectures with international experts.

6. Implementation and Timeline

The implementation follows a phased approach (Short, Mid, and Long Term):

- **Short Term:** Focuses on broadband installation, Wi-Fi setup, and the initial setup of EMIS and virtual learning environments.

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- **Mid Term:** Includes student data package subscriptions, e-library development, and the digitization of academic resources.
- **Long Term:** Focuses on the sustained operation and regular updates of the EMIS, website, and virtual classrooms.

7. Budget and Funding Sources

The financial framework for the digitization and connectivity initiative has been strategically scaled to NPR 2,500,000 (25 Lakhs) to ensure high-performance infrastructure and extended student support. This budget facilitates the transition of the **Central Department of General Science** into a technologically advanced, inclusive academic hub.

7.1 Comprehensive Expenditure Breakdown

Area of Investment	Estimated Cost (NPR)	Scientific/Operational Justification
Advanced Network Infrastructure	600,000	Deployment of high-speed fiber backbone and enterprise-grade Wi-Fi 6 mesh nodes supporting 500+ Mbps throughput.
EMIS & Institutional Automation	500,000	Full-scale integration of Paathshala EMIS for biometric attendance, payroll, accounting, and automated student lifecycle management.
Digital Library & Resource Acquisition	550,000	Procurement of institutional subscriptions to international academic databases (e.g., JSTOR, ScienceDirect) and digitization of rare physical archives.
LMS & Virtual Learning Environment	600,000	Establishing a robust VLE via MS Teams , including specialized hardware for smart classrooms and high-definition lecture recording.
Website & Digital ID Systems	250,000	Development of a secure departmental portal and role-based digital student IDs linked to library and examination services.
Total Estimated Project Cost	2,500,000	Total capital and operational investment for a fully digitized ecosystem.

Funding Sources: The department plans to secure funds through **UGC equity and digitalization grants**, the university's regular infrastructure budget, and internal departmental funds.

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8. Stakeholder Roles and Monitoring

The Central Department of General Science bears primary responsibility for the initiative. A dedicated Equity Grant Program Team will conduct needs assessments, select technology, and oversee project implementation under the leadership of the Head of Department. A robust Monitoring and Evaluation (M&E) framework will be established to track system performance, service reliability, and user satisfaction. The M&E team will use periodic data collection and stakeholder feedback to identify gaps and support continuous innovation.

9. Comprehensive Internet Connectivity Plan

9.1 Network Coverage Areas

The high-speed internet infrastructure will be extended to the following units:

- Departmental Office and Administration Section
- Accounts Section
- Department Library
- Seminar Hall
- GIS Laboratory
- CCTV Surveillance System Control Room
- Secondary Router for internet speed maintenance

Each unit will receive wired fiber backbone connectivity supported by enterprise-grade Wi-Fi 6 access points to ensure uninterrupted access.

9.2 Free Internet Access Plan for Students

The department will implement a structured free internet access policy to ensure digital equity among students.

- Free Wi-Fi access within campus premises for all enrolled students.
- Minimum guaranteed speed of 20 Mbps per active user during peak hours.
- Bandwidth management system to prioritize academic platforms and research databases.
- Dedicated student access points in Library, Seminar Hall, and GIS Lab.

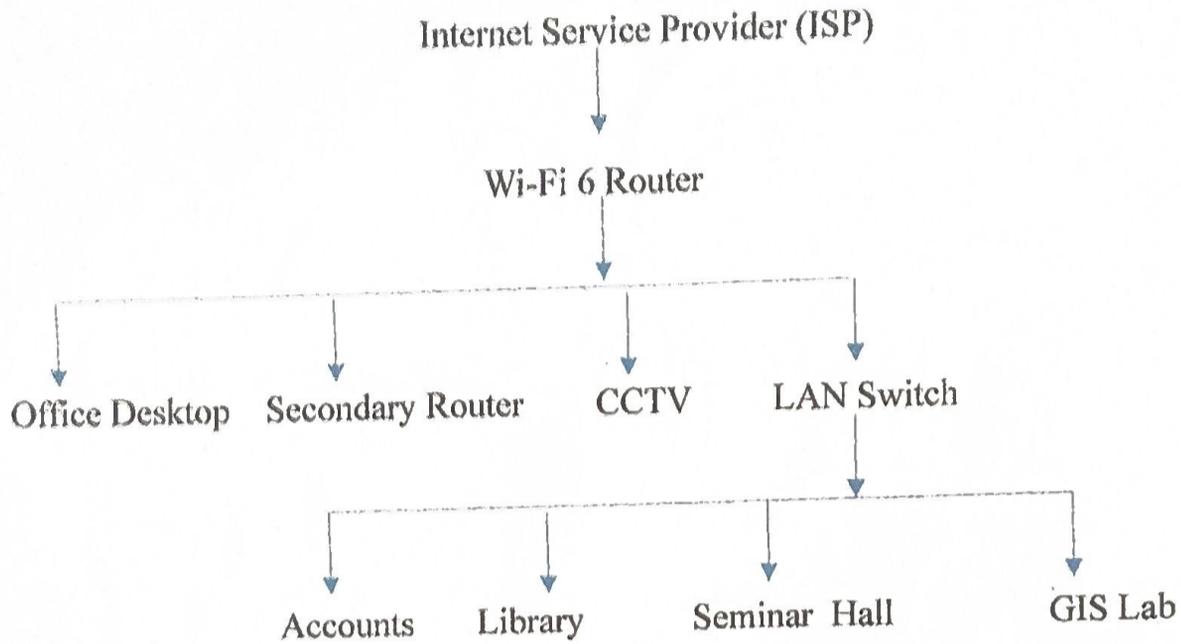
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9.3 Internet Connectivity Architecture Map

The logical layout of the proposed internet connectivity framework is illustrated below:



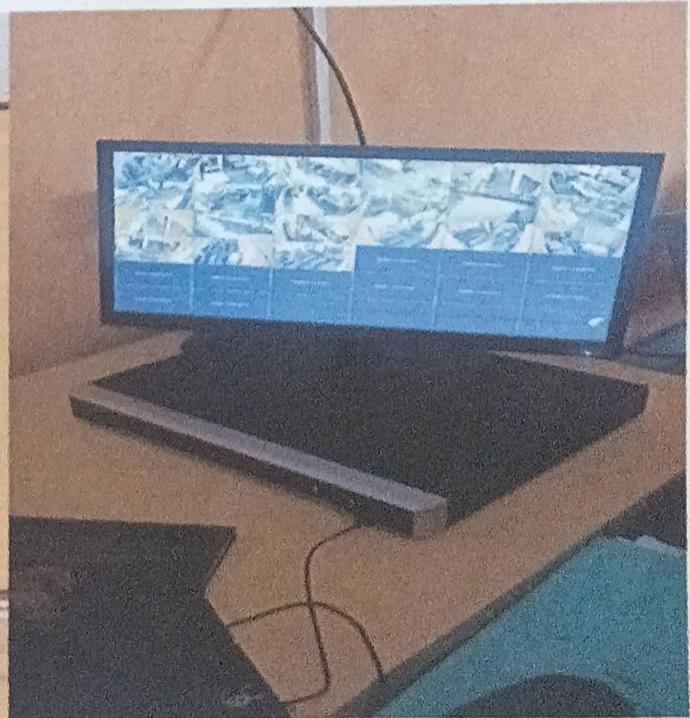
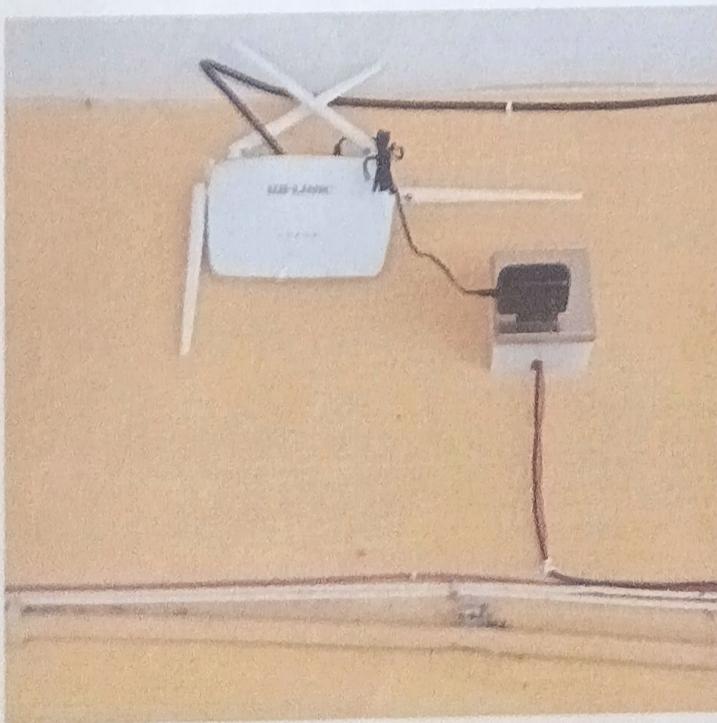
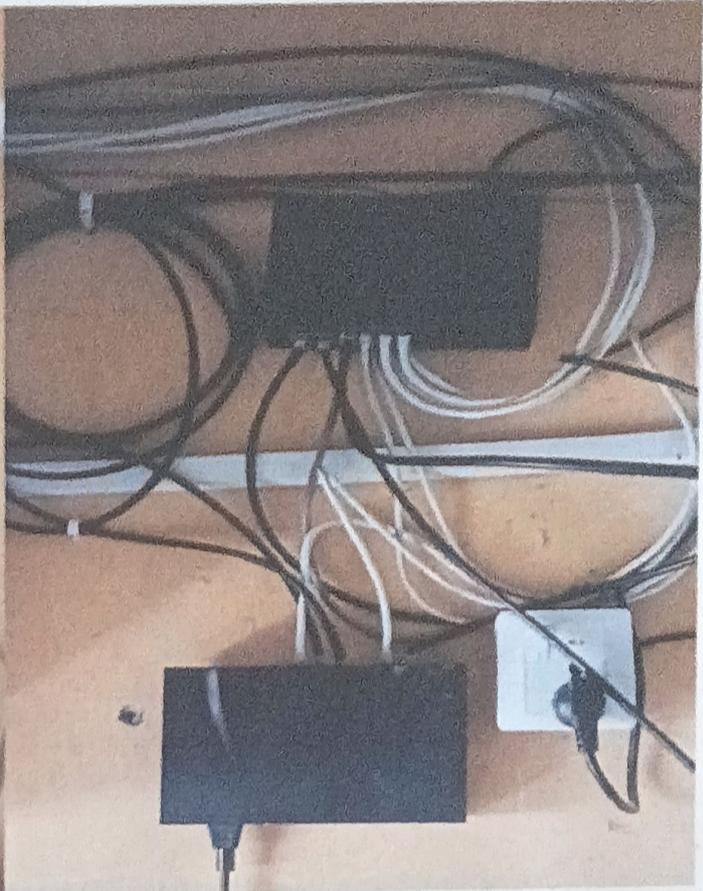
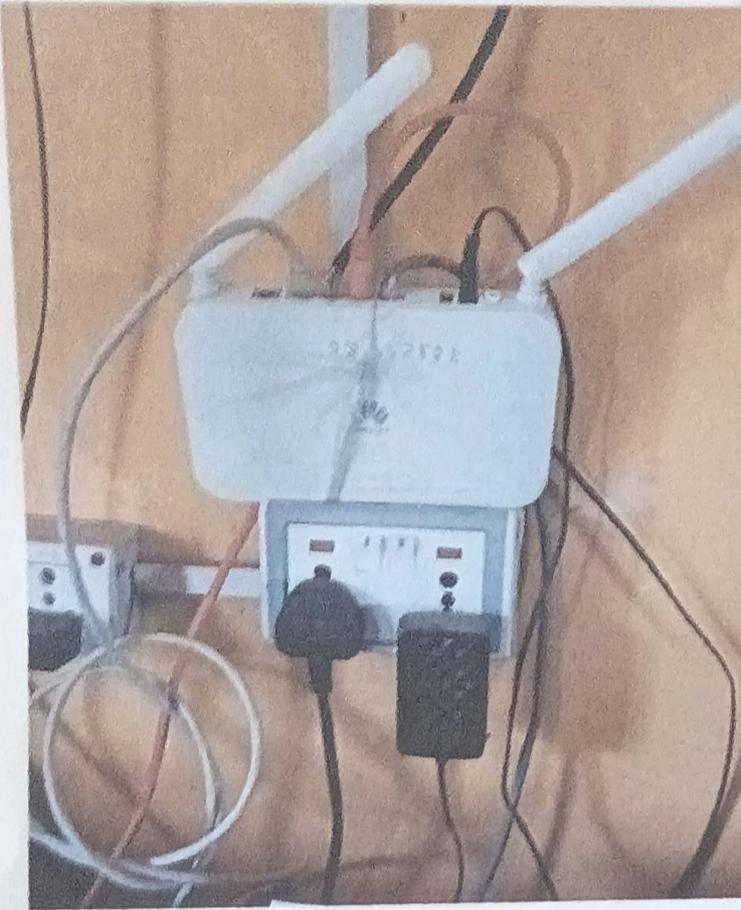
All access points will connect to the core switch through structured cabling. The CCTV system will operate on a segregated VLAN to enhance security and surveillance integrity.

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Photos



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Internet Agreement

Internet Service Agreement

This agreement, made on 2082-11-11, is entered into between Dish Home Mahendranagar and the Central Department of General Science, Far Western University, Mahendranagar, with the following terms and conditions:

1. Purpose of the Agreement:

This agreement ensures that Dish Home, Mahendranagar, provides continuous internet to the Department.

2. Scope of Service:

This agreement specifies that Dish Home will provide reliable broadband internet services, including a 100 Mbps SME package, to the Central Department of General Science, Mahendranagar, ensuring clarity and confidence in the service arrangement

- Internet Speed: 100 Mbps SME package
- Service Type: Broadband
- Service Area: Central Department of General Science, Mahendranagar
- Service Availability: 24/7, working hours

3. Service Stability and Renewal:

- Dish Home will guarantee uninterrupted service during office hours.
- In the event of any unexpected interruptions (such as natural disasters or technical issues), Dish Home, Mahendranagar will immediately work to resolve the issue.

4. Responsibilities:

- Dish Home is responsible for supporting internet service stability and handling technical issues and network-related matters.
- The Central Department of General Science is responsible for coordinating payments and equipment, and for guaranteeing proper use of the services provided.

5. Payment and Charges:

The Central Department of General Science will pay for Dish Home, Mahendranagar, and the following service charges:

- Service Charge: NPR 26124.00
- Payment Method: Annually

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- Payment of NPR 26,124.00 must be made annually on or before the agreement's anniversary date. Late payments will result in service interruption.

6. Agreement Term and Renewal:

This agreement is valid for one year and can be renewed through mutual written consent before expiry, encouraging ongoing cooperation and partnership.

7. Breach of Agreement:

If any party breaches this agreement, the other party may terminate it by giving written notice.

8. Dispute Resolution:

Any dispute arising from this agreement will be resolved through mutual agreement.

Party A (Dish Home, Mahendranagar):

Signature: Birendra Chand
Name: Birendra Chand
Date: 2082/11/14

Party B (Central Department of General Science, Far Western University)

Signature: Yoshi
Name: Yagya Raj Joshi, HOD
Date: 2082/11/14



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