



PUBLIC NOTICE

Subject: Inviting comments from the stakeholders on the draft syllabus for the Non-Gazetted posts in the Information Technology Department, UT Ladakh - Inviting comments of the stakeholders thereof.

Information Technology Department, UT of Ladakh has drafted the syllabus for the Non-Gazetted posts in the Information Technology Department, UT Ladakh.

Before finalizing the said syllabus, comments / suggestions / objections, if any are invited from all the stakeholders, within a period of 15 days from the date of publication of the draft syllabus on the official website.

The comments / suggestions / objections, if any may be sent by e-mail at it.department@ladakh.nic.in or by post to the following address: Dr. Sanjat Bhardwaj, Under Secretary, IT Department, UT Secretariat Ladakh, Leh 194101.

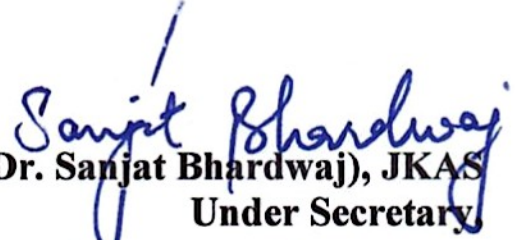
The comments/ suggestions / objections received within the specified period shall only be considered as per rules / instructions.

Sd/-
(Shashanka Ala), IAS
Administrative Secretary,
Information Technology Department

No: SecyIT/UTL/2024-25/675-678
Dated: 23.07.2026

Copy to the:

1. Secretary, General Administration Department, UT of Ladakh.
2. SIO, NIC with the request to upload the draft Recruitment Rules on the official website of the Administration of UT of Ladakh.
3. Joint Director, Department of Information and Public Relation for wide publicity.
4. OSD to Chief Secretary, UT of Ladakh for kind information


(Dr. Sanjat Bhardwaj), JKAS
Under Secretary,
Information Technology Department

1. Computer Fundamentals, Computer Organization & Operating Systems

- i. Computer Fundamentals, Computer Organization and Architecture.
- ii. Number Systems, Data Representation and Boolean Algebra.
- iii. Computer Hardware, Input/Output Devices, Memory and Storage Systems.
- iv. Processor Architecture, Memory Hierarchy and Cache Memory.
- v. Operating System Concepts, Types and Functions.
- vi. Process, Thread, CPU Scheduling and Memory Management.
- vii. File Systems and Storage Management.
- viii. Linux Operating System, Basic Linux Commands and Shell Scripting.
- ix. Windows Operating System, User Management and System Administration.
- x. System Backup, Recovery.

2. Programming, Data Structure & Web Technologies

- i. Algorithms, Flowcharts and Pseudocode.
- ii. Programming Concepts, Data Types, Variables, Operators and Expressions.
- iii. Structured Programming and Object-Oriented Programming Concepts including Classes, Objects, Inheritance, Polymorphism, Abstraction and Encapsulation.
- iv. Programming using Procedural, Object-Oriented and Scripting Languages.
- v. Functions, Parameter Passing, Scope, Exception Handling and File Handling.
- vi. Arrays, Strings and Abstract Data Types.
- vii. Data Structures including Linked Lists, Stacks, Queues, Trees, Binary Search Trees, Graphs and Hashing.
- viii. Searching, Sorting, Recursion and Algorithm Basics.
- ix. Web Technologies (HTML5, CSS3, JavaScript), HTTP/HTTPS, Web Services, REST APIs, JSON and XML.
- x. Authentication, Authorization, Session Management, Responsive Web Design and Web Security Fundamentals.

3. Database Management Systems

- i. Database Concepts, Database Architecture and Database Management Systems.
- ii. Entity Relationship (ER) Model and Relational Database Model.
- iii. Relational Algebra, Database Design, Integrity Constraints and Normalization.
- iv. Structured Query Language (SQL) and PL/SQL.
- v. Database Objects including Tables, Views, Indexes, Constraints, Stored Procedures and Triggers.
- vi. Joins, Subqueries, Functions and Query Optimization.
- vii. Transactions, ACID Properties and Concurrency Control.
- viii. Indexing, File Organization and Database Performance.
- ix. Database Security, User Management, Backup and Recovery.



4. Computer Networks & Network Administration

- i. Data Communication Fundamentals, Network Topologies, Transmission Media and Communication Modes.
- ii. Network Fundamentals, LAN, MAN, WAN, OSI Reference Model, TCP/IP Protocol Suite and Common Network Protocols (TCP, UDP, ICMP, ARP).
- iii. IPv4 and IPv6 Addressing, Subnetting, Routing Concepts and Routing Protocols.
- iv. Switching, Routing, VLAN, Network Segmentation and Network Address Translation (NAT)
- v. DNS, DHCP, FTP, SMTP, POP3, VPN and Proxy Services.
- vi. Wired and Wireless Communication Technologies (Ethernet, Wi-Fi and Optical Fibre).
- vii. Network Devices including Hubs, Routers, Switches, Firewalls, Gateways, Access Points, Repeaters and Modems.
- viii. Network Security, Firewalls, Intrusion Detection/Prevention Systems (IDS/IPS), Secure Communication and Virtual Private Networks (VPN).
- ix. Network Monitoring, Performance Analysis, Network Troubleshooting and Basic Network Management.
- x. Network Management, High Availability, Network Infrastructure and Software Defined Networking (SDN) Concepts.

5. Cyber Security & Information Security

- i. Information Security Concepts
- ii. Identity and Access Management, Authentication and Authorization.
- iii. Operating System Security, Network Security and Endpoint Security.
- iv. Cryptography, Public Key Infrastructure (PKI), Digital Signatures and Certificates.
- v. Secure Software Development, Secure Coding Practices and OWASP Top 10.
- vi. Vulnerability Assessment, Penetration Testing (VAPT) and Security Testing Concepts.
- vii. Malware, Cyber Threats, Cyber Attacks and Security Countermeasures.
- viii. Firewalls, Intrusion Detection and Prevention Systems (IDS/IPS), Virtual Private Networks (VPN) and Email Security.
- ix. Security Monitoring, Security Operations Centre (SOC), Security Information and Event Management (SIEM) and Incident Response.
- x. Governance, Risk and Compliance (GRC), Information Security Management System (ISMS) and ISO/IEC 27001.
- xi. Cloud Security, Data Protection, Privacy Principles and Digital Personal Data Protection Act, 2023.

6. Cloud Computing & Virtualization

- i. Cloud Computing Concepts, Characteristics and Benefits.
- ii. Cloud Service Models (IaaS, PaaS and SaaS).
- iii. Cloud Deployment Models (Public, Private, Hybrid and Community Cloud).
- iv. Virtualization Concepts, Hypervisors and Virtual Machine Management.
- v. State Data Centre (SDC), Enterprise Data Centre Infrastructure and Data Centre Components.
- vi. Server, Storage (SAN/NAS) and Network Infrastructure.
- vii. Application Hosting, Deployment and Migration.
- viii. High Availability, Load Balancing and Business Continuity.
- ix. Disaster Recovery Centre (DRC), Backup and Recovery.
- x. Cloud Security and Data Centre Operations.



7. Software Engineering

- i. Software Engineering Concepts and Principles.
- ii. Software Development Life Cycle (SDLC).
- iii. Software Development Models (Waterfall, Incremental, Spiral, Prototype, Agile).
- iv. Requirement Engineering, Software Requirement Specification (SRS) and Business Requirement Document (BRD).
- v. Feasibility Study, Software Project Planning and Estimation.
- vi. Software Verification, Validation and Testing (Unit, Integration, System, Acceptance and Regression Testing).
- vii. Software Quality Assurance (SQA).
- viii. Software Configuration Management, Version Control and Release Management.
- ix. Software Maintenance, Re-engineering and Reverse Engineering.

8. IT Project, Procurement, Asset & Service Management

- i. IT Project Management Concepts.
- ii. Requirement Analysis, Feasibility Study and Solution Design.
- iii. Project Planning, Scheduling and Monitoring.
- iv. Project Cost Estimation, Budgeting and Cost-Benefit Analysis.
- v. Preparation of DPRs, RFPs and Technical Specifications.
- vi. Proof of Concept (PoC), Factory Acceptance Test (FAT), Site Acceptance Test (SAT) and User Acceptance Test (UAT).
- vii. Project Implementation, Quality Assurance and Project Documentation.
- viii. Project Risk Assessment, Risk Mitigation and Change Management.
- ix. Software Asset Management and Software Licensing.
- x. Vendor Management.
- xi. Service Level Agreements (SLAs) and Maintenance Contracts.
- xii. Contract Management, Performance Monitoring and Project Closure.
- xiii. Disposal of Obsolete IT Assets and e-Waste Management.

9. e-Governance, Digital Governance & Emerging Technologies

- i. Digital India Programme and National e-Governance Plan (NeGP).
- ii. Digital Governance Framework, e-Governance Models and Digital Service Delivery.
- iii. State Wide Area Network (SWAN), State Data Centre (SDC) and MeghRaj Government Cloud.
- iv. Aadhaar, DigiLocker, UMANG, e-Office and Digital Public Infrastructure (DPI).
- v. Electronic Service Delivery, Government Process Re-engineering (GPR) and Citizen-Centric Services.
- vi. Artificial Intelligence (AI), Machine Learning (ML) and Generative AI.
- vii. Internet of Things (IoT), Blockchain and Big Data Analytics.
- viii. Green Data Centres, Sustainable Computing and Digital Inclusion.
- ix. Satellite Communication Technologies, VSAT, Low Earth Orbit (LEO) Satellite Communication and Next Generation Communication Networks.
- x. National Cyber Security Initiatives, Digital Personal Data Protection Act, 2023 and Emerging Trends in Information Technology.



1. Computer Fundamentals, Computer Organization & Operating Systems

- i. Computer Fundamentals, Computer Organization and Architecture.
- ii. Number Systems, Data Representation and Boolean Algebra.
- iii. Computer Hardware, Input/Output Devices, Memory and Storage Systems.
- iv. Operating System Concepts, Process, Thread, Memory Management and File Systems.
- v. Linux Operating System, Basic Linux Commands and Shell Scripting.
- vi. Windows Operating System and Basic System Administration.
- vii. User Management, Backup, Recovery and Performance Monitoring.
- viii. Basic System Troubleshooting and Maintenance.

2. Programming, Data Structure & Web Technologies

- i. Algorithms, Flowcharts and Pseudocode.
- ii. Programming Concepts, Data Types, Variables, Operators and Expressions.
- iii. Structured Programming and Object-Oriented Programming Concepts.
- iv. Programming using Procedural, Object-Oriented and Scripting Languages.
- v. Functions, Exception Handling and File Handling.
- vi. Arrays, Strings and Basic Data Structures.
- vii. Basic Searching and Sorting.
- viii. Python and Shell Scripting.
- ix. Basic Web Technologies (HTML5, CSS3 and JavaScript).
- x. Programming Best Practices and Automation Concepts.

3. Database Management Systems

- i. Database Concepts, Database Architecture and Database Management Systems (DBMS).
- ii. Entity Relationship (ER) Model and Relational Database Model.
- iii. Database Design, Tables, Keys and Relationships.
- iv. Structured Query Language (SQL).
- v. Views, Joins and Constraints.
- vi. Database Objects including Tables, Views and Indexes.
- vii. Database Backup, Recovery and Security.
- viii. Database Administration and User Management.
- ix. Database Performance, Maintenance and Monitoring (Basic Concepts).
- x. Applications of Database Management Systems.

4. Computer Networks & Network Administration

- i. Data Communication Fundamentals, Network Topologies, Transmission Media and Communication Modes.
- ii. LAN, MAN, WAN, OSI Reference Model, TCP/IP and Common Network Protocols.
- iii. IPv4, IPv6, Subnetting and Routing Concepts.
- iv. Switching, VLAN, NAT and Network Segmentation.
- v. DNS, DHCP, VPN and Proxy Services.
- vi. Wired and Wireless Communication Technologies (Ethernet, Wi-Fi and Optical Fibre).



- vii. Network Devices including Routers, Switches, Firewalls, Gateways, Access Points, Repeaters and Modems.
- viii. Network Security, IDS/IPS, VPN and Secure Communication.
- ix. Network Monitoring, Performance Analysis and Troubleshooting.
- x. Enterprise Network Administration, High Availability, SDN Concepts and Network Virtualization.

5. Cyber Security & Information Security

- i. Information Security Concepts and Security Controls.
- ii. Authentication, Authorization and Identity Management.
- iii. Operating System Security and Network Security.
- iv. Cryptography, PKI and Digital Signatures.
- v. Malware, Phishing and Cyber Threats.
- vi. Firewalls, IDS/IPS and VPN.
- vii. Security Monitoring and Incident Response.
- viii. Backup and Recovery.
- ix. CERT-In Guidelines, DPDP Act, 2023 and Cyber Hygiene.
- x. Cloud Security Fundamentals.

6. Cloud Computing & Virtualization

- i. Cloud Computing Concepts, Characteristics and Benefits.
- ii. Cloud Service Models (IaaS, PaaS and SaaS).
- iii. Cloud Deployment Models (Public, Private, Hybrid and Community Cloud).
- iv. Virtualization Concepts, Hypervisors and Virtual Machine Management.
- v. State Data Centre (SDC), Enterprise Data Centre Infrastructure and Data Centre Components.
- vi. Server, Storage (SAN/NAS) and Network Infrastructure.
- vii. Application Hosting, Deployment and Migration.
- viii. High Availability, Load Balancing and Business Continuity.
- ix. Disaster Recovery Centre (DRC), Backup and Recovery.
- x. Cloud Security, Infrastructure Monitoring and Data Centre Operations.

7. Software Engineering

- i. Software Engineering Concepts and Principles.
- ii. Software Development Life Cycle (SDLC).
- iii. Software Development Models (Waterfall, Agile and Prototype Models).
- iv. Software Requirement Specification (SRS), Business Requirement Document (BRD) and Requirement Analysis (Basic Concepts).
- v. Software Design Concepts and Documentation.
- vi. Software Testing Concepts (Unit, Integration, System and User Acceptance Testing).
- vii. Software Quality Assurance (SQA) and Software Quality Concepts.
- viii. Software Configuration Management, Version Control and Change Management (Basic Concepts).
- ix. Software Deployment, Maintenance and Software Updates.
- x. Software Project Documentation and Release Management.

8. IT Project, Procurement, Asset & Service Management

- i. IT Project Management Concepts, Project Planning, Implementation and Documentation.
- ii. Detailed Project Report (DPR), Request for Proposal (RFP), Technical Specifications and Government Procurement Procedures (Basic Concepts).
- iii. Proof of Concept (PoC), Factory Acceptance Test (FAT), Site Acceptance Test (SAT) and User Acceptance Test (UAT).
- iv. IT Asset Management, Inventory Management, Vendor Management and Software Licensing.
- v. Service Level Agreements (SLAs), Annual Maintenance Contracts (AMC), Comprehensive Maintenance Contracts (CMC), Preventive Maintenance, ITIL Fundamentals and e-Waste Management.

9. e-Governance, Digital Governance & Emerging Technologies

- i. Digital India Programme and National e-Governance Plan (NeGP).
- ii. Digital Governance, e-Governance Models and Digital Service Delivery.
- iii. SWAN, SDC and MeghRaj Government Cloud.
- iv. Aadhaar, DigiLocker, UMANG, e-Office and Digital Public Infrastructure.
- v. Electronic Service Delivery and Government Process Re-engineering.
- vi. Artificial Intelligence, Machine Learning and Generative AI.
- vii. Internet of Things, Blockchain and Big Data Analytics.
- viii. Green Data Centres and Digital Inclusion.
- ix. Satellite Communication Technologies, VSAT, LEO Satellite Communication and Next Generation Communication Networks.
- x. National Cyber Security Initiatives, DPDP Act, 2023 and Emerging Technologies.



1. Computer Fundamentals & Office Applications

- i. Fundamentals of Computers and Computer Applications.
- ii. Computer Hardware, Software, Peripheral Devices and Open-Source Software.
- iii. Input, Output, Storage Devices, Computer Memory and Number Systems.
- iv. Office Productivity Tools (Word Processing, Spreadsheet and Presentation Software)
- v. Internet, Web Browsers, Search Techniques, Electronic Mail and Digital Communication.
- vi. AI Productivity Tools, Prompt Engineering (Basic Concepts) and AI-assisted Office Applications.
- vii. File Management, Digital Document Management, Printing, Scanning and PDF Management Tools.
- viii. Computer Maintenance, Backup, Restore and Basic Troubleshooting.
- ix. Computer Ethics, Cyber Ethics, Digital Literacy and IT in Society.

2. Operating Systems & Computer Management

- i. Operating System Concepts and Functions.
- ii. Windows Operating System.
- iii. Linux Operating System (Basic Concepts).
- iv. File and Folder Management.
- v. Software Installation and Configuration.
- vi. User Accounts and Access Management.
- vii. System Utilities and Device Management.
- viii. Backup and restore.
- ix. System Performance and Basic Troubleshooting.
- x. Computer Security Settings and System Updates.

3. Programming & Database Fundamentals

- i. Algorithms, Flowcharts and Pseudocode.
- ii. Programming Concepts, Variables, Data Types and Operators.
- iii. Operators, Expressions, Decision Making and Control Statements.
- iv. Functions, Arrays and Strings.
- v. Object-Oriented Programming (Basic Concepts).
- vi. HTML5, CSS3 and JavaScript (Basic Concepts).
- vii. Database Concepts and Database Management Systems.
- viii. Relational Databases and Structured Query Language (SQL).
- ix. Tables, Queries, Forms and Reports.
- x. Database Backup, Recovery and Security.

4. Computer Networks & Internet

- i. Data Communication Fundamentals.
- ii. LAN, MAN, WAN and Internet.
- iii. OSI Reference Model and TCP/IP (Basic Concepts).
- iv. IP Addressing, DNS and DHCP.
- v. Routers, Switches, Modems and Access Points.
- vi. Wired and Wireless Communication Technologies.



- vii. Internet Services and Common Network Protocols.
- viii. VPN, Firewalls and Network Security (Basic Concepts).
- ix. VSAT, Satellite Communication, Low Earth Orbit (LEO) Satellite Communication and Next Generation Communication Networks (Basic Concepts).
- x. Network Sharing, Basic Network Troubleshooting and Internet Safety.

5. Cyber Security & Digital Safety

- i. Information Security Fundamentals.
- ii. Password Security and User Authentication.
- iii. Malware, Viruses and Ransomware.
- iv. Phishing, Online Fraud and Social Engineering.
- v. Safe Internet Practices, Antivirus and Firewalls.
- vi. Digital Signatures and Digital Certificates (Basic Concepts).
- vii. Cyber Hygiene and Safe Digital Practices.
- viii. Data Backup and Recovery.
- ix. Data Privacy, Digital Personal Data Protection Act, 2023 and CERT-In (Basic Concepts).
- x. Cyber Threats and Online Safety.

6. Cloud Computing & Government Digital Infrastructure

- i. Cloud Computing Fundamentals.
- ii. Cloud Services and Cloud Storage.
- iii. Cloud-based Applications and File Sharing.
- iv. State Data Centre (SDC).
- v. MeghRaj Government Cloud.
- vi. Government Digital Infrastructure.
- vii. Digital Services and Online Service Delivery.
- viii. Data Backup and Recovery.
- ix. Cloud Security (Basic Concepts).
- x. Benefits and Applications of Cloud Computing.

7. e-Governance & Digital Government Services

- i. Digital India Programme.
- ii. National e-Governance Plan (NeGP).
- iii. State Wide Area Network (SWAN), State Data Centre (SDC) and MeghRaj Government Cloud.
- iv. Aadhaar, DigiLocker, UMANG and e-Office.
- v. Digital Public Infrastructure (DPI).
- vi. Government Digital Services and Citizen-Centric Services.
- vii. Online Government Portals and Digital Service Delivery.
- viii. e-Governance Applications in Government.
- ix. Digital Inclusion and Good Governance through ICT.
- x. National Cyber Security Initiatives and Digital Personal Data Protection Act, 2023 (Basic Concepts).



8. IT Support & Asset Management

- i. IT Helpdesk and User Support.
- ii. Installation and Configuration of Hardware and Software.
- iii. Software Installation, Updates and Licensing (Basic Concepts).
- iv. IT Asset Management and Inventory.
- v. Computer Maintenance and Preventive Maintenance.
- vi. Basic Troubleshooting of Hardware and Software.
- vii. IT Documentation and Record Management.
- viii. Data Backup and Recovery (Basic Concepts).
- ix. e-Waste Management and Green Computing.
- x. Safe Handling and Maintenance of IT Equipment.

9. Emerging Technologies (Basic Concepts)

- i. Artificial Intelligence (AI) and Generative AI.
- ii. Machine Learning (ML) (Basic Concepts).
- iii. Internet of Things (IoT).
- iv. Blockchain Technology (Basic Concepts).
- v. Big Data (Basic Concepts).
- vi. Smart Devices and Smart Technologies.
- vii. VSAT, Satellite Communication and Low Earth Orbit (LEO) Satellite Communication (Basic Concepts).
- viii. Emerging Trends in Information Technology.

