COMPETENCY-BASED SYSTEM FOR ICT POSITIONS

Competency-based system

- Prescribes the characteristics (i.e., knowledge, skill and attitude) required for a particular position to perform the job

- Uses:
  - recruitment and promotion
  - formulating learning and development plans
  - performance management, and rewards and recognition

Competency matrix

Level	Basic	Intermediate	Advanced	Superior
Description	Contributing with assistance	Contributing independently	Contributing and provides mentoring to others	Contributing and visioning
	Has work knowledge and applying competency as a Beginner	Experienced and expanding competency	Coaching others in the competency	Expert, and influencing others on the competency

Four types of competencies

- Core or crosscutting
- Organizational
- Technical
- Leadership

Competency required for ICT postion

Core/organizational

- CO1 –Exemplifying Integrity
- CO2 - Delivering Service Excellence
- CO3 - Solving Problems and Making Decision
- CO4 - Demonstrating Personal Effectiveness
  CO5 - Championing and Applying Innovation
  CO6 - Writing Effectively
- CO7 - Speaking Effectively
- CO8 - Preserving and Conserving the Environment

Competency required for ICT postion

Crosscutting

- FC1 - Basic Computer Skills
- FC2 - Database Management

Competency required for ICT position

Leadership

- LC1 - Strategic thinking
- LC2 - Leading change
- LC3 - People development
- LC4 - Performance management
- LC5 - Leadership and Networking

Competency required for ICT postion

Technical
- IS1 - Software development
- IS2 - Systems analysis and design
- IS3 - Web development
- IS4 - Network infrastructure management
- IS5 - Network systems management
- IS6 - ICT resource management
- IS7 - Statistical analysis, data management and production of knowledge products
- IS8 - Spatial analysis, conversion of statistical data to spatial data & conversion to knowledge   products

(IS1) Software development

Competency	(IS1) Software Development			
Definition	The ability to operate and utilize software developing tools.			
Levels	BASIC	INTERMEDIATE	ADVANCED	SUPERIOR
Competency Description	Develops simple software programs	Develops medium-scale software programs	Leads and provides instructions to programmers and reviews results of program development	Validates and approves results of system implementation and maintenance
Competency Indicators	1. Knows the basic principles in operating and utilizing software developing tools such as: .NET Framework, PHP and/or Java. 2. Knows computer fundamentals and integration of application software and operating system such as SQL and Windows Server. 3. Develops in-house software based on end-user's requirements with minimum supervision using software development tools such as .NET Framework, PHP and/or Java. 4. Performs information systems testing.	1. Applies basic principles in operating and utilizing software developing tools such as: .NET Framework, PHP and/or Java. 2. Develops in-house software based on end user's requirements efficiently and effectively. 3. Maintains software library and periodically monitors memory management. 4. Troubleshoots software problems in the work areas and immediately takes corrective action.	1. Demonstrates mastery in operating and utilizing software developing tools. 2. Is responsible for the design, implementation and management of the systems/database including data collection, editing and verification; database security, availability, recoverability and optimum performance. 3. Undertakes database management, backup, and revision control 4. Serves as a resource person in software development.	1. Plans, directs, organizes and coordinate the overall activities on implementation, coordination and management of systems development projects. 2. Is responsible for each phase of the Systems Development Life Cycle namely Analysis & Requirements, Design & Development, Testing, Implementation and Maintenance Cycles including possible reports and deliverables for each.

(IS1) Software development

Basic -develops simple software programs

- Knows the basic principles in operating and utilizing software developing tools such as: .NET Framework, PHP and/or Java.

- Knows computer fundamentals and integration of application software and operating system such as SQL and Windows Server.

- Develops in-house software based on end-user's requirements with minimum supervision using software development tools such as .NET Framework, PHP and/or Java.

- Performs information systems testing.

(IS1) Software development

Intermediate - Conducts activities covering system planning, analysis, design, implementation and maintenance

- Conducts preliminary analysis on existing systems and procedures
- Defines all jobs, security and control procedures and back-up and recovery plans required within a system
- Analyzes, designs and implements information systems. Documents whole project and modifications
- Prepares test data for individual programs and entire system.
- Performs system testing and conducts periodic system reviews
- Works closely with end users to ensure technical compatibility and user satisfaction
- Prepares request for proposal on outsourced solutions
- Discusses existing business models and the flows of data in the business with those involved

(IS1) Software development

Advanced – system planning, analysis, design, implementation and maintenance

- Draws up specific proposals for modified or replacements systems and testing schedule
- Presents proposals to clients and produces systems analysis reports.
- Translates client requirements into highly specified project briefs.
- Identifies options for potential solutions and assesses them for both technical and business suitability.
- Manages implementation of new Information Systems.

- Prepares training plans for users of a new system.
- Draws up and prepares cost specifications and design of new IT system for others to develop and build
- Assesses proposed projects and reviews requests for additional data processing services and applies cost-benefit analysis methods to current and proposed projects.
- Lead in systems analysis and design.

(IS1) Software development

Superior – Validates and approves results of system implementation and maintenance

- Sets standards, policies and procedures relating to computers and information processing.
- Conducts risk analysis, and information systems planning of organizational information systems.
- Formulates staff development programs and conducts on-the-job training on systems analysis and design.
- Possesses skills in ICT project management.

Competency	(IS2) Systems Analysis and Design			
Definition	The ability to examine a business activity to help decide whether new information technology solutions will improve productivity.			
Levels	BASIC	INTERMEDIATE	ADVANCED	SUPERIOR
Core Description	Provides support to/ assists in system analysis, design, planning, implementation, and maintenance activities	Conducts activities covering system planning, analysis, design, implementation and maintenance	Leads the conduct of and reviews/verifies results of system planning, analysis, design, implementation and maintenance	Validates and approves results of system planning, analysis and design
Competency Indicators	1. Knows the basic concepts of systems analysis and design. 2. Prepares program and input/output specifications with some supervision. 3. Conducts preliminary investigation and requirements analysis. 4. Maintains documentation diligently. 5. Assists in the implementation and maintenance of computer application system.	1. Conducts preliminary/ feasibility study on existing systems and procedures. 2. Defines all jobs, security and control procedures and back-up and recovery plans required within a system. 3. Analyzes, designs and implements information systems. 4. Documents whole project and modifications. 5. Prepares test data for individual programs and entire system. 6. Performs system testing and conducts periodic system reviews. 7. Works closely with developers and a variety of end users to ensure technical compatibility and user satisfaction. 8. Prepares request for proposal on outsourced solutions. 9. Discusses existing business models and the flows of data in the business with those involved.	1. Draws up specific proposals for modified or replacements systems and testing schedule for the complete system. 2. Presents proposals to clients and produces project feasibility reports. 3. Translates client requirements into highly specified project briefs. 4. Identifies options for potential solutions and assesses them for both technical and business suitability. 5. Manages implementation of new Information Systems. 6. Liaises extensively with external or internal clients. 7. Prepares training plans for users of a new system. 8. Draws up and prepares cost specifications for possible improvements and produces outline designs of new IT system for others to develop and build. 9. Assesses proposed projects and reviews requests for additional data processing services and devices and applies cost-benefit analysis methods to current and proposed projects. 10. Instructs others in systems analysis and design.	1. Sets standards, policies and procedures relating to computers and information processing. 2. Conducts risk analysis, and information systems planning of organizational information systems. 3. Formulates staff development programs and conducts on-the-job training on systems analysis and design. 4. Possesses skills in ICT project management.

(IS2) Systems Analysis and Design

Basic - Provides support to/ assists in system analysis, design, planning, implementation, and maintenance activities

- Knows the basic concepts of systems analysis and design
- Prepares program and input/output specifications with some supervision
- Conducts preliminary investigation and requirements analysis
- Maintains documentation diligently
- Assists in the implementation and maintenance of computer application system

(IS2) Systems Analysis and Design

Intermediate – System planning, analysis, design, implementation and maintenance

- Conducts preliminary/ feasibility study on existing systems and procedures.
- Defines all jobs, security and control procedures and back-up and recovery plans required within a system.
- Analyzes, designs and implements information systems.
- Documents whole project and modifications.
- Prepares test data for individual programs and entire system.
- Performs system testing and conducts periodic system reviews.
- Works closely with developers and a variety of end users to ensure technical compatibility and user satisfaction.
- Prepares request for proposal on outsourced solutions.
- Discusses existing business models and the flows of data in the business with those involved.

(IS2) Systems Analysis and Design

Advanced – Leads the conduct of and reviews/verifies results of system planning, analysis, design, implementation and maintenance

- Draws up specific proposals for modified or replacements systems and testing schedule for the complete system.

- Presents proposals to clients and produces project feasibility reports.

- Translates client requirements into highly specified project briefs.

- Identifies options for potential solutions and assesses them for both technical and business suitability.

- Manages implementation of new Information Systems.

- Liaises extensively with external or internal clients.

- Prepares training plans for users of a new system.

- Draws up and prepares cost specifications for possible improvements and produces outline designs of new IT system for others to develop and build.

- Assesses proposed projects and reviews requests for additional data processing services and devices and applies cost-benefit analysis methods to current and proposed projects.

- Instructs others in systems analysis and design.

(IS2) Systems Analysis and Design

Superior – Validates and approves results of system planning, analysis and design

- Sets standards, policies and procedures relating to computers and information processing.
- Conducts risk analysis, and information systems planning of organizational information systems.
- Formulates staff development programs and conducts on-the-job training on systems analysis and design.
- Possesses skills in ICT project management.

Competency	(IS3) Web Development			
Definition	The ability to undertake web development, design, installation and maintenance.			
Levels	BASIC	INTERMEDIATE	ADVANCED	SUPERIOR
Core Description	Provides support to/ assists in web development, design, installation and maintenance activities	Conducts activities in web development, design, installation and maintenance	Leads the conduct of web development, design, installation and maintenance activities	Validates and approves results of web development, design, installation and maintenance activities
Competency Indicators	1. Is familiar in basic concepts of web development, troubleshooting and maintenance. 2. Knows the complete life cycle methodology for web development: planning, analysis, design, implementation, promotion, and innovation. 3. Knows computer graphic designs. 4. Monitors and updates DENR websites with supervision.	1. Applies the complete life cycle methodology for web development: planning, analysis, design, implementation, promotion, and innovation. 2. Monitors effectively and efficiently DENR websites. 3. Conceptualizes, designs and produces art and copy layouts for materials to be presented by visual communication media through web.	1. Performs web design and development, professional web applications and e-commerce solutions development for the organization. 2. Handles web project of any complexity and duration. 3. Enhances corporate website by designing templates for website features and prepare sketches or images, drawing samples or creates screen layout using Dreamweaver, PDF Adobe Reader, Swish, Flash (Advance), HTML (code) and Adobe Photoshop through web according to project needs. 4. Prepares codes for web page without digging through the source, debugs problems in web pages quickly, and experiment with Dream weaver without editing the actual page. 5. Conceptualizes and builds the DENR's intranet through drafts, design revision, template-making; and by coordinating with point persons for corrections and updates to ensure a corporate-looking, informative and user-friendly interface. 6. Acts as a resource person on web design, development and maintenance. 7. Trains others in web development.	1. Develops/innovates policies and procedures regarding performance and maintenance of DENR website.

(IS3) Web Development

Basic – Provides support to/ assists in web development, design, installation and maintenance activities

- Knows the basic concepts of web development, troubleshooting and maintenance

- Knows the complete life cycle methodology for web development: planning, analysis, design, implementation, promotion, and innovation

- Knows computer graphic designs

- Monitors and updates DENR websites with supervision

(IS3) Web Development

Intermediate – Conducts activities in web development, design, installation and maintenance

- Applies the complete life cycle methodology for web development: planning, analysis, design, implementation, promotion, and innovation.

- Monitors effectively and efficiently DENR websites.

- Conceptualizes, designs and produces art and copy layouts for materials to be presented by visual communication media through web.

(IS3) Web Development

Advanced – Leads the conduct of web development, design, installation and maintenance activities

- Performs web design and development, professional web applications and e-commerce solutions development for the organization

- Handles web project of any complexity and duration

- Enhances corporate website by designing templates for website features and prepare sketches or images, drawing samples or creates screen layout using Dreamweaver, PDF Adobe Reader, Swish, Flash (Advance), HTML (code) and Adobe Photoshop through web according to project needs

- Prepares codes for web page without digging through the source, debugs problems in web pages quickly, and experiment with Dream weaver without editing the actual page

- Conceptualizes and builds the DENR's intranet through drafts, design revision, template-making; and by coordinating with point persons for corrections and updates to ensure a corporate-looking, informative and user-friendly interface

- Acts as a resource person on web design, development and maintenance

- Trains others in web development

(IS3) Web Development

SUPERIOR - Validates and approves results of web development, design, installation and maintenance activities

- Develops/innovates policies and procedures regarding performance and maintenance of DENR website.

Competency	(IS4) Network Infrastructure Management			
Definition	The ability to manage network infrastructure and security.			
Levels	BASIC	INTERMEDIATE	ADVANCED	SUPERIOR
Core Description	Undertakes basic network infrastructure troubleshooting and maintenance	Undertakes more complex network infrastructure troubleshooting and maintenance	Leads the conduct of computer hardware/ networking installation, troubleshooting and maintenance works	Plans, organizes and reviews the conduct of network architecture management, troubleshooting and maintenance works
Competency Indicators	1. Knows the basic concepts of computer hardware and configuration, network management and maintenance. 2. Assists in the maintenance and administration of both a computer network and connected desktop/laptop computers. 3. Conducts basic training to users in computer operations and responds to routine user questions. 4. Closes out trouble tickets assigned and follows up to ensure user satisfaction. 5. Assists in monitoring, troubleshooting and maintenance of servers, computers and peripherals and network installation.	1. Applies knowledge of the different concepts of computer hardware and configuration, network management and maintenance. 2. Monitors, troubleshoots and maintains the condition of server, computers and peripherals and network installation in work areas. 3. Monitors efficiently network performance and usage in every user's station. 4. Evaluates and tests vendor-supplied hardware/software packages to determine suitability to organization's needs and requirements. 5. Assists in the design, development and maintenance of network system.	1. Designs, develops and maintains network (voice/data/video) system and recommends implementation based on existing hardware requirements of each account. 2. Installs and monitors the performance of the network system. 3. Secures the network infrastructure from external/internal risks. 4. Instructs others in hardware installation, maintenance and networking. 5. Assists in the design of comprehensive and integrated network architecture.	1. Designs and directs comprehensive, integrated network architectures, and creates policies and procedures in conjunction with ICT groups, vendors and emerging technologies.

(IS4) Network Infrastructure Management

Basic- Undertakes basic network infrastructure troubleshooting and maintenance

- Knows the basic concepts of computer hardware and configuration, network management and maintenance.
- Assists in the maintenance and administration of both a computer network and connected desktop/laptop computers.
- Conducts basic training to users in computer operations and responds to routine user questions.
- Closes out trouble tickets assigned and follows up to ensure user satisfaction.
- Assists in monitoring, troubleshooting and maintenance of servers, computers and peripherals and network installation.

(IS4) Network Infrastructure Management

Intermediate- Undertakes more complex network infrastructure troubleshooting and maintenance

- Applies knowledge of the different concepts of computer hardware and configuration, network management and maintenance.
- Monitors, troubleshoots and maintains the condition of server, computers and peripherals and network installation in work areas.
- Monitors efficiently network performance and usage in every user's station.
- Evaluates and tests vendor-supplied hardware/software packages to determine suitability to organization's needs and requirements.
- Assists in the design, development and maintenance of network system.

(IS4) Network Infrastructure Management

Advanced - Leads the conduct of computer hardware/ networking installation, troubleshooting and maintenance works

- Designs, develops and maintains network (voice/data/video) system and recommends implementation based on existing hardware requirements of each account.
- Installs and monitors the performance of the network system.
- Secures the network infrastructure from external/internal risks.
- Instructs others in hardware installation, maintenance and networking.
- Assists in the design of comprehensive and integrated network architecture.

(IS4) Network Infrastructure Management

Superior - plans, organizes and reviews the conduct of network architecture management, troubleshooting and maintenance works

- Designs and directs comprehensive, integrated network architectures, and creates policies and procedures in conjunction with ICT groups, vendors and emerging technologies.

Competency	(IS5) Network Systems Management			
Definition	The ability to install, maintain, and modify operating systems, database management systems, utilities, and related software. It includes ensuring the availability, integrity and reliability of assigned systems; primarily responsible for large-scale operating systems and database management systems that typically serve the entire organization.			
Levels	BASIC	INTERMEDIATE	ADVANCED	SUPERIOR
Core Description	Provides support to/ assists in installing, maintaining, and modifying operating systems, database management systems, utilities, and related software	Conducts activities in installing, maintaining, and modifying operating systems, database management systems, utilities, and related software	Leads the conduct of and reviews/ verifies results of systems management activities	Validates and approves results of systems management activities
Competency Indicators	1. Knows the basic concepts of server and storage hardware configuration, management and maintenance. 2. Assists in the maintenance and administration servers and storage. 3. Conducts basic training to users in server and storage operations and responds to routine user questions. 4. Closes out trouble tickets assigned and follows up to ensure user satisfaction.	1. Institutes, implements and monitors compliance with ICT network security guidelines and procedures. 2. Administers, secures and maintains application systems including its software and web-based electronic services. 3. Sets-up and maintains system access privileges and security. 4. Maintains the DENR's intranet. 5. Undertakes systems management, troubleshooting and maintenance. 6. Monitors and evaluates network infrastructure hardware and software compatibility and interoperability.	1. Is responsible for the management, planning and operations of servers/ storage. 2. Is responsible for the setup, maintenance, and administration of connectivity and ensures they meet Service Level Agreement (SLA) performance and uptime standards. 3. Assists in planning for future growth, expansion and development of systems infrastructure. 4. Performs periodic disaster recovery testing and planning.	1. Develops/innovates policies and procedures regarding performance and usage of the Information System Infrastructure of the organization.

(IS5) Network Systems Management

Basic - provides support to/ assists in installing, maintaining, and modifying operating systems, database management systems, utilities, and related software

- Knows the basic concepts of server and storage hardware configuration, management and maintenance.

- Assists in the maintenance and administration servers and storage.

- Conducts basic training to users in server and storage operations and responds to routine user questions.

- Closes out trouble tickets assigned and follows up to ensure user satisfaction.

(IS5) Network Systems Management

Intermediate - Conducts activities in installing, maintaining, and modifying operating systems, database management systems, utilities, and related software

- Institutes, implements and monitors compliance with ICT network security guidelines and procedures.

- Administers, secures and maintains application systems including its software and web-based electronic services.

- Sets-up and maintains system access privileges and security.

- Maintains the DENR's intranet.

- Undertakes systems management, troubleshooting and maintenance.

- Monitors and evaluates network infrastructure hardware and software compatibility and interoperability.

(IS5) Network Systems Management

Advanced - Validates and approves results of systems management activities

- Responsible for the management, planning and operations of servers/ storage.

- Is responsible for the setup, maintenance, and administration of connectivity and ensures they meet Service Level Agreement (SLA) performance and uptime standards.

- Assists in planning for future growth, expansion and development of systems infrastructure.

- Performs periodic disaster recovery testing and planning.

(IS5) Network Systems Management

Superior - Leads the conduct of and reviews/ verifies results of systems management activities

- Develops/innovates policies and procedures regarding performance and usage of the Information System Infrastructure of the organization.

Competency	(IS6) ICT Resource Management			
Definition	The ability to formulate, recommend and monitor the implementation of ICT and Information Management (IM) policies, strategies and standards			
Levels	BASIC	INTERMEDIATE	ADVANCED	SUPERIOR
Competency Description	Performs basic computer HW, SW and NW configuration and maintenance	Monitors and maintains the condition of HW, SW, NW and peripherals	Leads in planning, design, installation and maintenance of ICT resources; and leads support to ICT research and development	Plans, organizes and reviews ICT resources, projects and activities
Competency Indicators	1. Knows the basic IT policies, standards and strategies for improved ICT management. 2. Reviews and evaluates proposals on ICT-related projects and programs of bureaus/regional offices.	1. Conducts relevant research studies to improve the information and technology management of the Department. 2. Rationalizes the procurement and distribution of ICT resources. 3. Conducts computer literacy and ICT retooling programs. 4. Conducts ICT information campaign, promotion and advocacy.	1. Reviews and evaluates proposals on ICT-related projects and programs of bureaus and regional offices. 2. Coordinates the formulation, implementation, monitoring and evaluation of the Department-wide ICT Master Plan. 3. Formulates and recommends human resource management strategy to acquire, develop, retool and retain ICT skills and capabilities. 4. Monitors, evaluates and audits implementation of major ICT programs, projects and significant activities, in coordination with concerned offices. 5. Ensures the integration of information management in all operations of the Department towards the development of a culture that embraces ICT and IM within DENR.	1. Sets standards, policies and procedures relating to ICT and IM. 2. Conducts system audits to ensure compliance with latest ICT standards. 3. Conducts periodic review and promotes ICT policies and standards.

(IS6) ICT Resource Management

Basic - Performs basic computer hardware, software and network configuration and maintenance

- Knows the basic IT policies, standards and strategies for improved ICT management.
- Reviews and evaluates proposals on ICT-related projects and programs of bureaus/regional offices.

(IS6) ICT Resource Management

Intermediate - Monitors and maintains the condition of hardware, software, network facilities and peripherals

- Conducts relevant research studies to improve the information and technology management of the Department.
- Rationalizes the procurement and distribution of ICT resources.
- Conducts computer literacy and ICT retooling programs.
- Conducts ICT information campaign, promotion and advocacy.

(IS6) ICT Resource Management

Advanced - Leads in planning, design, installation and maintenance of ICT resources; and leads support to ICT research and development

- Reviews and evaluates proposals on ICT-related projects and programs of bureaus and regional offices.

- Coordinates the formulation, implementation, monitoring and evaluation of the Department-wide ICT Master Plan.

- Formulates and recommends human resource management strategy to acquire, develop, retool and retain ICT skills and capabilities.

- Monitors, evaluates and audits implementation of major ICT programs, projects and significant activities, in coordination with concerned offices.

(IS6) ICT Resource Management

Superior - Plans, organizes and reviews ICT resources, projects and activities

- Sets standards, policies and procedures relating to ICT and IM.

- Conducts system audits to ensure compliance with latest ICT standards.

- Conducts periodic review and promotes ICT policies and standards.

POSITION	FUNCTIONAL								CROSS-CUTTING		CORE/ORGANIZATIONAL								LEADERSHIP				
	IS1	IS2	IS3	IS4	IS5	IS6	IS7	ISA8	FC1	FC2	CO1	CO2	CO3	CO4	CO5	CO6	CO7	CO8	LC1	LC2	LC3	LC4	LC5
Staff Bureaus																							
ITO II	I	I	I	A	A	A			S	B	A	A	A	A	A	A	A	A	I	I	I	I	I
ISA III	A	A	A	I	I	I			S	A	I	I	I	I	I	I	I	I	B	B	B	B	B
ISA II	I	I	I	B	B	B			S	I	I	I	I	I	I	I	I	I					
ADAS III	B	B	B	B	B	B			S	B	B	B	B	B	B	B	B	B					

POSITION	FUNCTIONAL								CROSS-CUTTING		CORE/ORGANIZATIONAL								LEADERSHIP				
	IS1	IS2	IS3	IS4	IS5	IS6	IS7	ISA8	FC1	FC2	CO1	CO2	CO3	CO4	CO5	CO6	CO7	CO8	LC1	LC2	LC3	LC4	LC5
Regional Offices																							
ISA III	A	A	A	I	I	I			S	A	I	I	I	I	I	I	I	I	B	B	B	B	B
ISA II	I	I	I	B	B	B			S	I	I	I	I	I	I	I	I	I					
ADAS II	B	B	B	B	B	B			S	B	B	B	B	B	B	B	B	B					

Workshop on Information & Network Infrastructure Management

POSITION	FUNCTIONAL								CROSS-CUTTING		CORE/ORGANIZATIONAL								LEADERSHIP				
	IS1	IS2	IS3	IS4	IS5	IS6	IS7	ISA8	FC1	FC2	CO1	CO2	CO3	CO4	CO5	CO6	CO7	CO8	LC1	LC2	LC3	LC4	LC5
PENRO																							
ISA II	I	I	I	I	I	I			S	B	I	I	I	I	I	I	I	I	B	B	B	B	B
ADAS II	B	B	B	B	B	B			S	B	B	B	B	B	B	B	B	B					