



MINISTRY OF INFORMATION,
COMMUNICATIONS AND THE
DIGITAL ECONOMY



ICT
Authority



DIGITAL SKILLS CURRICULUM





Ministry of Information,
Communications &
The Digital Economy



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Interpretation of Terms, Abbreviations and Acronyms

AI	Artificial Intelligence
CATs	Computerized Adaptive Tests
CBL	Competency-Based Learning
CSS	Cascading Style Sheets
DC	Direct Current
DeFi	Decentralized Finance
DHCP	Dynamic Host Configuration Protocol
DNS	Domain Name System
DDoS	Distributed Denial-of-Service
DoS	Denial-of-Service
EDA	Electronic Design Automation
ESD	Electrostatic Discharge
ESP32	A low-cost microcontroller with Wi-Fi/Bluetooth ESD
FinTech	Financial Technology
FTP	File Transfer Protocol
GDPR	General Data Protection Regulation
HTML	HyperText Markup Language
HTTP	Hypertext Transfer Protocol
HTTPS	Hypertext Transfer Protocol Secure
ICMP	Internet Control Message Protocol
ICT	Information and Communications Technology
ICTA	The Information and Communications Technology Authority
ICs	Integrated Circuits
IoT	Internet of Things
KNQA	Kenya National Qualifications Authority
KNQF	Kenya National Qualifications Framework
KPIs	Key Performance Indicators
M&E	Monitoring and Evaluation
MitM	Man-in-the-Middle Attack
ML	Machine Learning
NICs	Network Interface Cards
NOS	National Occupational Standards
PCB	Printed Circuit Board
PBL	Project-Based Learning
RATs	Random Assessment Test
RMSE	Root Mean Square Error
ROI	Return on Investment
SDGs	Sustainable Development Goals
SHA	Social Health Authority
SMTP	Simple Mail Transfer Protocol
SNMP	Simple Network Management Protocol
SOPs	Standard Operating Procedures
TCP/IP	Transmission Control Protocol / Internet Protocol
TINA-TI	SPICE-based circuit simulation software
UDP	User Datagram Protocol
USSD	Unstructured Supplementary Service Data (mobile communication protocol)
UV	Ultraviolet
WAPs	Wireless Access Points

Forward

In an increasingly digital world, education is no longer just a tool for empowerment—it is the very foundation upon which inclusive progress is built. As Kenya steps confidently into the digital era, the ability to acquire and apply digital skills is essential for all citizens to fully participate in the economy, governance, and social life.

The Digital Skills Curriculum, developed by the ICT Authority in partnership with key stakeholders, reflects our national commitment to equipping individuals with relevant competencies to thrive in this evolving landscape. Designed with a tiered structure—Foundational, Basic, Intermediate, and Advanced—this curriculum provides a clear and inclusive pathway for learners at different stages of digital proficiency.

At the Foundational and Basic levels, learners are introduced to the essential functions of digital devices, digital safety, e-waste and how to access and utilize e-government services. These modules ensure that no one is left behind in the journey toward digital inclusion, particularly marginalized groups, persons with disabilities, and those in underserved communities.

At the Intermediate and Advanced levels, the curriculum explores more complex digital competencies including cybersecurity, data analytics, artificial intelligence, and digital entrepreneurship. These modules are geared towards individuals seeking to deepen their skills for career advancement, innovation, and business development in a digitally driven economy.

Central to the curriculum is the principle of equity, inclusivity and employability. The curriculum is designed to ensure that all learners—regardless of gender, age, ability, or background—have equal access to digital skills training and opportunities for advancement. Content and assessments are tailored to accommodate diverse learning needs and to dismantle barriers that perpetuate exclusion or bias. Furthermore, the curriculum is intentionally aligned with current labour market demands and technological trends, ensuring that learners not only gain relevant knowledge but also enhance their employability in a competitive and evolving digital economy.

Through practical, accessible, and career-focused modules, this curriculum empowers individuals to participate meaningfully in the workforce and to contribute to Kenya’s socio-economic development.

We are proud of the collaborative efforts that have shaped this curriculum—from policy designers and educators to technical experts and community representatives. Their contributions ensure that the curriculum is not only comprehensive but also responsive to the realities of Kenyan society.

As we roll out this program, we encourage educators, public servants, community leaders, and learners from all walks of life to embrace the opportunity it offers. Let this curriculum be more than a guide—it should serve as a catalyst for personal transformation, digital empowerment, and national development.

Together, let us build a digitally skilled Kenya—inclusive, innovative, and prepared for the future.

H.E Hon. William Kabogo Gitau

Cabinet Secretary,

Ministry of Information, Communication and the Digital Economy

Preface

In today's rapidly evolving digital landscape, the ability to navigate and utilize digital tools and technologies is no longer just a valuable skill—it is an essential requirement for participation in modern society and the global economy. The Digital Skills Curriculum has been developed to address this critical need, empowering citizens with the digital competencies necessary to thrive in a digitally connected world.

Structured across four progressive levels—Foundational, Basic, Intermediate, and Advanced—this curriculum serves diverse learners, from students preparing for digital careers to professionals seeking to upskill, and educators aiming to integrate digital literacy into teaching. It also includes targeted training for public sector workers to enhance service delivery and operational efficiency.

Developed through extensive research and collaboration with stakeholders across government, academia, and industry, this curriculum ensures relevance, practicality, and inclusivity. Each module combines theoretical foundations with hands-on learning and real-world applications, fostering both competence and confidence in digital engagement.

By acquiring these skills, individuals can unlock opportunities, increase productivity, and contribute meaningfully to a digitally inclusive and competitive Kenya. We invite all learners to embark on this transformative journey and embrace the boundless possibilities enabled by digital literacy.

Eng. John Tanui, CBS.

Principal Secretary,
State Department for ICT & Digital Economy

Acknowledgement

The development of the Digital Skills Curriculum has been a collaborative effort, made possible by the dedication and contributions of a wide range of individuals and institutions.

We extend our deepest gratitude to the ICT Authority for spearheading this initiative, and to the Ministry of Information, Communications, and the Digital Economy for providing policy guidance and strategic oversight.

We especially appreciate the financial support of the UK Government's Digital Access Programme through the British High Commission in Nairobi and their Partners including the British Council, The African Centre for Women, Information and Communications Technology, and Kenya Society of the Blind.

Special thanks go to the curriculum development team, subject matter experts, educators, and digital training specialists whose insights and expertise shaped the content and structure of the curriculum. Your commitment to quality and accessibility has ensured that the curriculum is relevant, inclusive, and impactful. Special Thanks to Prof. Jimmy K. Macharia (USIU-A), Prof. Tom Kwanya (TUK), Dr. Vincent Omwenga (Strathmore University) and Eng. Thomas Wanzallah Wetsahulliah (Consultant) for your tireless efforts in steering the process.

We also acknowledge our partners in the private sector, civil society, and academic institutions, whose input enriched the curriculum and strengthened its alignment with both market and societal needs.

Lastly, we appreciate the learners, pilot testers, and stakeholders who provided valuable feedback during the development process. Your voices have helped us create a curriculum that is practical, responsive, and future-ready. Together, we are laying the foundation for a digitally empowered Kenya.

Hon. Lily Ng'ok

Chairperson, Board of Directors

Information and Communications Technology Authority Board

Executive Summary

The Digital Skills Curriculum, developed by the ICT Authority in collaboration with government, academia, industry, and development partners, aims to equip all Kenyans with essential digital competencies for effective participation in the digital economy.

Structured across four levels—Foundational, Basic, Intermediate, and Advanced—the curriculum caters to diverse learners, from beginners to professionals, and integrates practical, inclusive, and career-focused training.

It emphasizes equity, accessibility, and employability to ensure that all citizens, including marginalized and underserved groups, can benefit from digital transformation opportunities.

Guided by the Ministry of Information, Communications, and the Digital Economy and supported by the UK Government's Digital Access Programme, this curriculum reflects Kenya's commitment to building a digitally skilled and inclusive society.

Through hands-on learning and alignment with labour market demands, it strengthens service delivery, enhances innovation, and empowers individuals to contribute to the nation's socio-economic growth and global competitiveness.

Jessy Maruti Kiveu

Chief Executive Officer

Information and Communications Technology Authority

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1.0 Background Information

The Information and Communications Technology Authority (ICTA) is a State Corporation operating under the Ministry of Information, Communications and the Digital Economy in Kenya. The core mandate of ICTA entails enforcing ICT standards in Government, establishing, developing and maintaining secure ICT infrastructure systems, supervision of electronic communications, as well as promoting digital literacy, capacity, innovation and enterprise.

1.1 Institutional Mandate of ICTA

The ICT Authority (ICTA) has a broad mandate focused on streamlining and enhancing the use of information and communication technologies across government institutions. This includes enforcing ICT standards, developing secure infrastructure, overseeing electronic communications, and promoting digital literacy, innovation, and enterprise.

Key Functions of the ICT Authority:

- a. Set and enforce ICT standards and guidelines for human resources, infrastructure, processes, systems, and technology within public offices and the public service.
- b. Facilitate and regulate the design, implementation, and use of ICTs in the public service.
- c. Promote e-Government services to enhance efficiency and accessibility.
- d. Advance ICT literacy and capacity building among public sector stakeholders and citizens.
- e. Facilitate optimal use of electronic systems, forms, records, and equipment in public service.
- f. Support ICT innovation and enterprise to drive economic growth and digital advancement.
- g. Establish, develop, and maintain secure ICT infrastructure and systems across the public sector.
- h. Supervise the design, development, and implementation of critical ICT projects within the public service.
- i. Implement and manage the Kenya National Spatial Data Infrastructure (KNSDI) to support spatial planning and decision-making.

1.2 ICT Standards and Frameworks

The Foundational Skills course focuses on equipping citizens, public sector employees, and ICT professionals with essential digital skills to support Kenya's digital transformation agenda. The course aligns with national ICT standards and frameworks to ensure that learners gain practical skills that are relevant, up-to-date, and aligned with global best practices.

1.3 Strategic Goals of ICTA

ICT Authority aims to advance Kenya's digital transformation through the following strategic goals:

- a. Enhancing Digital Government Services: Promoting automation and digitization of public services.
- b. Building ICT Human Capacity: Supporting digital skills development and ICT training in the public sector.
- c. Improving Cybersecurity Resilience: Facilitating secure and reliable government ICT systems.
- d. Promoting ICT Innovation and Research: Supporting local innovation, ICT start-ups, and research institutions.
- e. Ensuring Policy and Standards Compliance: Monitoring and evaluating adherence to national ICT policies across government.



LEVEL 1
FOUNDATIONAL DIGITAL SKILLS
CURRICULUM

2.0 Introduction

The Foundational Digital Skills Curriculum is designed to empower individuals with the fundamental knowledge and capabilities needed to thrive in our interconnected, technology-driven world. The curriculum is focused on bridging the digital divide, ensuring that individuals from all walks of life (farmers, traders, nurses, community health workers, Agricultural extension officers, fishermen, informal associations like boda-boda, house assistance, Chamas, construction workers, plumbers, shoe makers, “Mama Mboga”) have equal access to the transformative power of digital skills and the myriad of digital work and digital opportunities.

It is a testament to the belief that in this digital age, everyone should have the opportunity to unlock their full potential for personal economic growth, contribute to society, and shape their future. Through this curriculum, learners will understand the digital landscape, harness digital tools, and build the confidence to adapt to the ever-changing digital ecosystem.

The Foundational Digital Skills Curriculum is more than just a syllabus; it is a gateway to empowerment, innovation, and a brighter digital future for all Kenyans. By embarking on this transformational journey, learners will not only gain technical proficiency but also develop critical thinking, problem-solving, and ethical decision-making skills that are essential in the digital age.

2.1 General Objectives of the Course

By the end of the course, the trainee should be able to:

- a. Operate basic digital devices (e.g., computers, tablets, smartphones).
- b. Use common software applications (e.g., Word, Excel, PowerPoint).
- c. Access and navigate the internet and search for information effectively.
- d. Communicate using email and other digital messaging tools.
- e. Manage files and folders on a digital device.
- f. Identify and apply basic cybersecurity and digital safety practices.
- g. Demonstrate responsible and ethical behaviour when using digital tools.
- h. Solve simple technical issues on digital devices.

2.2 Institutional Training Guidelines

To ensure effective and inclusive learning, institutional training under the Foundational Digital Skills Programme is designed to accommodate diverse learner needs and preferences. Training providers are encouraged to adopt flexible delivery methods that align with available resources and learner accessibility.

2.2.1 Training Delivery

The training programme can be offered through:

- a. Physical Classes – These are conducted in person at designated consortium centres, providing hands-on, face-to-face instruction.
- b. Virtual Classes – These are delivered online through reliable virtual meeting platforms, offering flexible access to learning from any location.

All training must align with ICTA approved curricula and standards for delivering digital skills.

2.2.2 Eligibility Criteria

To participate in ICTA's training programmes candidates must meet the following requirements:

- Foundational Digital Skills training is open to all Kenyan citizens, including rural populations, women, senior citizens, youth and public sector employees.
- Participants should have basic literacy skills (ability to read and write in English or Kiswahili) to engage with training materials and the facilitators.
- Participants are encouraged to have access to a digital device (e.g., smartphone, tablet or laptop) for practical training.
- Participants must commit to completing the training as specified.

2.2.3 ICT Skills Training Scheme

The mode involves structured physical or virtual sessions with certified institutions and trainers. The training is conducted for 2 days, with daily sessions lasting 4.5 hours.

Table 1: Foundational digital skills modules

CODE	TRAINING	DURATION
F101	Operating Digital Devices	1.5 Hrs
F102	Making Social Connections	1.5 Hrs
F103	Doing Business	1.5 Hrs
F104	Accessing Government Services	1.5 Hrs
F105	Cyber Hygiene for Everyone	1.5 Hrs
F106	eWaste Management	1.5 Hrs

2.3 Entry Requirements

The Foundational Digital Skills Course is open to all Kenyan citizens, providing equal access to essential digital knowledge and training.

2.4 Requirements for Assessment

Candidates must complete the required training hours to be eligible for task assessment.

2.4.1 Final Assessment

Final assessments are designed to evaluate overall competency based on the National Occupational Standards (NOS) performance outcomes. Participants are required to complete a series of tasks assigned by the instructor before they can be certified. These tasks assess the participants' ability to effectively apply their knowledge and skills in real-world scenarios.

2.5 Attendance Requirements

Consistent attendance is essential for effective learning and successful completion of the Foundational Digital Skills Course. To ensure participants gain the necessary knowledge and practical experience, the programme sets clear attendance standards that must be met for certification eligibility. This includes:

- Candidates must achieve at least 80% attendance of the total course duration to be eligible for the final assessment.
- Attendance records must be maintained by the training institution and verified by ICTA.

2.6 Test Development and Administration

Assessment plays a critical role in measuring the acquisition of foundational digital skills and ensuring that learning outcomes are achieved. The testing process is designed to be fair, standardized, and reflective of real-world applications. It involves collaborative development and a streamlined, accessible administration process. The assessment Guidelines for the programme includes:

- a. **Test Development** – Assessment tasks are collaboratively developed and moderated by the ICT Authority (ICTA) in partnership with accredited consortium partners. This ensures consistency, quality, and alignment with the National Occupational Standards (NOS).
- b. **Test Administration** – Assessments are self-administered by participants and submitted electronically to the assigned facilitator for grading. This method supports flexibility while maintaining accountability and transparency in the evaluation process.

2.7 Award of Certificates

Upon successful completion of training and assessments, ICTA awards participants a Foundational Digital Skills Certificate of completion through the smartacademy portal.

2.8 Quality Assurance

- a. Training and assessments are subject to internal and external quality assurance mechanisms, including audits by ICTA and peer reviews by accredited bodies.
- b. Quality assurance ensures compliance with both ICTA and national training standards and alignment with national ICT policies.

2.9 Saving Clause

In case of inconsistencies between this curriculum and ICTA's general regulations, the general regulations published by ICTA shall prevail.

2.10 Curriculum content

The contents of the curriculum are outlined below highlighting the specific module, the expected learning outcomes, and course content.

DLC1 1.0 OPERATING DIGITAL DEVICES

DLC1 1.1 Competence

The trainee should have the ability to safely operate digital devices

DLC1 1.2T Theory

DLC1 1.2T0 Specific learning outcomes

By the end of this session, the trainee should be able to

- a. Define key terms and identify features of a digital device
2. Explain the operation and navigation of a digital device
3. Discuss the procedure of troubleshooting and resolving common digital device issues
4. Describe the steps of finding information on the internet using a search engine
5. Explain how to customize accessibility and convenience features on the digital device
- f. Observe safety while operating digital devices
- g. Power and work with a digital device
- h. Use a mobile operating system

DLC1 1.3T Content

DLC1 1.3T0 Defining key terms and identify features of a digital device

- a. Hardware
- b. Software
- c. Storage
- d. Application

DLC1 1.3T1 Operating and navigating a digital device

- a. Power on
- b. Navigate
- c. Shutdown

DLC1 1.3T2 Troubleshooting and resolving common digital device issues

- a. Identify the problem
- b. Establish the cause
- c. Power on/off

DLC1 1.3T3 Finding information on the internet using a search engine

- a. Open a browser
- b. Search using keywords

DLC1 1.3T4 Customizing accessibility and convenience features on the digital device

- a. Enable accessibility settings
- b. Configure accessibility settings
- c. Customize accessibility features

DLC1 1.4P Practice

DLC1 1.4P0 Specific learning outcomes

By the end of this session, the trainee should be able to

- a. Identify features of a digital device
- b. Operate and navigate a digital device
- c. Troubleshoot and resolve common digital device issues
- d. Find information on the internet using a search engine
- e. Customize accessibility and convenience features on the digital device

DLC1 1.5 Content

DLC1 1.5P0 Identify features of a digital device

- a. Hardware features
- b. Input features
- c. Output features
- d. Storage features
- e. Processing
- f. Software features
- g. System
- h. Application

DLC1 1.5P1 Operate and navigate a digital device

- a. Power on
- b. Explore menus and settings
- c. Create, rename and delete data
- d. Shutdown

DLC1 1.5P2 Troubleshooting and resolving common digital device issues

- a. Identify the problem
- b. Establish the cause
- c. Power on/off

DLC1 1.5P3 Find information on the internet using a search engine

- a. Open a browser
- b. Search using keywords

DLC1 1.5P4 Customize accessibility and convenience features on the digital device

- a. Enable accessibility settings
- b. Configure accessibility settings
- c. Customize accessibility features

DLC1 1.6 Suggested Training Resources

- a. Smartphones
- b. Laptop
- c. Projector
- d. Smart boards
- e. Internet
- f. Manuals and training guides
- g. Print and electronic media
- h. Chargers and power banks
- i. Brail keyboards

DLC1 1.7 Suggested Training and Learning Approaches

- a. Lecture method
- b. Demonstrations
- c. Discussions
- d. Question and answer
- e. Presentations
- f. Tutorial videos

DLC1 1.8 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Step-by-step task execution
- c. Scenario based tasks
- d. Observations
- e. Practical demonstrations
- f. Role playing
- g. Peer assessments

DLC1 2.0 MAKING ONLINE SOCIAL CONNECTIONS

DLC1 2.1 Competence

The trainee should be able to use digital devices to make online social connections that are beneficial to personal and business growth

DLC1 2.2T Theory

DLC1 2.2T0 Specific Objectives

By the end of this session the trainee should be able to

- a. Identify and compare different online platforms suitable for personal and/or business connections
- b. Create an online profile on a preferred platform
- c. Connect with individuals or groups
- d. Communicate online
- e. Sustain mutually-beneficial social connections

DLC1 2.3T Content

DLC1 2.3T0 Identify and compare different online platforms suitable for personal and/or business connections

- a. Types of online platforms
- b. Advantages and disadvantages of different platforms
- c. Use cases for different platforms

DLC1 2.3T1 Create an online profile on a social networking platform

- a. Importance of professional content
- b. Personal branding
- c. Privacy and visibility settings

DLC1 2.3T2 Connect with individuals or groups

- a. Networking strategies
- b. Group dynamics and interactions

DLC1 2.3T3 Communicate online

- a. Digital communication etiquette
- b. Effective messaging techniques

DLC1 2.4P Practice

DLC1 2.4P0 Specific learning outcomes

By the end of this session the trainee should be able to

- a. Identify and compare different online platforms suitable for personal and/or business connections
- b. Create an online profile on a preferred platform
- c. Connect with individuals or groups
- d. Communicate online

DLC1 2.5 Content

DLC1 2.5P0 Create an online profile on a social networking platform

- a. Upload professional photo
- b. Write an effective bio
- c. Complete profile sections

DLC1 2.5P1 Connect with individuals or groups

- a. Join a group or discussion forum
- b. Send request
- c. Respond to posts

DLC1 2.5P2 Communicate online

- a. Compose a professional message
- b. Compose clear and concise messages
- c. Express viewpoint politely
- d. Adequate communication structure

DLC1 2.6 Suggested Training Resources

- a. Smartphones
- b. Laptop
- c. Projector
- d. Smart boards
- e. Internet
- f. Manuals and training guides
- g. Print and electronic media
- h. Chargers and power banks
- i. Brail keyboards

DLC1 2.7 Suggested Training and Learning Approaches

- a. Demonstrations
- b. Discussions
- c. Question and answer
- d. Presentations
- e. Tutorial videos

DLC1 2.8 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Step-by-step task execution
- c. Scenario based tasks
- d. Observations
- e. Practical demonstrations
- f. Role playing
- g. Peer assessments

DLC1 3.0 DOING BUSINESS IN THE DIGITAL SPACE

DLC1 3.1 Competence

The trainee should have the ability to conduct business in the digital space

DLC1 3.2T Theory

DLC1 3.2T0 Specific learning outcomes

By the end of this session, the trainee should be able to

- a. Define terms used in e-commerce
- b. Select suitable e-commerce models of selling and buying in digital space
- c. Use appropriate e-commerce platforms
- d. Engage in social media management

DLC1 3.3T Content

DLC1 3.3T0 Define terms used in e-commerce

- a. E-commerce
- b. B2B
- c. B2C
- d. C2C
- e. C2B
- f. CRM

DLC1 3.3T1 Select suitable e-commerce models of selling and buying in digital space

- a. Business to Business
- b. Business to Customer
- c. Customer to Customer
- d. Customer to Business

DLC1 3.3T2 Use appropriate e-commerce platforms

- a. Jumia
- b. Kilimall
- c. Jiji

DLC1 3.4P Practice

DLC1 3.4P0 Specific learning outcomes

By the end of this session, the trainee should be able to

- a. Select suitable e-commerce models of selling and buying in digital space
- b. Use appropriate e-commerce platforms
- c. Engage in social media management

DLC1 3.5 Content

DLC1 3.5P0 Selecting suitable e-commerce models of selling and buying in digital space

- a. Identify suitable digital markets for your goods and services
- b. Implement the e-commerce model of choice
- c. Build trust with digital consumers

DLC1 3.5P1 Using appropriate e-commerce platforms

- a. Open an account
- b. Manage account or profile
- c. Set up a Store
- d. Upload products
- e. Set payment gateways/wallets
- f. Order Management
- g. Customer Engagement
- h. Performance Tracking

DLC1 3.5P2 Engaging in social media management

- a. Promote products on market place
- b. Customer engagement
- c. Analyse social media trends

DLC1 3.6 Suggested Training Resources

- a. Laptop
- b. Projector
- c. Smart boards
- d. Internet
- e. Text references
- f. Print and electronic media

DLC1 3.7 Suggested Training and Learning Approaches

- a. Lecture method
- b. Demonstrations/case study
- c. Discussions
- d. Question and answer
- e. Presentations
- f. Videos

DLC1 3.8 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Continuous assessment (CATs)
- c. Random Assessment Tests (RATs)
- d. Assignments
- e. Observations
- f. Summative assessment

DLC1 4.0 ACCESSING GOVERNMENT SERVICES

DLC1 4.1 Competence

The trainee should have the ability to navigate and access digital government services at ease

DLC1 4.2T Theory

DLC1 4.2T0 Specific learning outcomes

- a. By the end of this session, the trainee should be able to
- b. Navigate government web sites and portals
- c. Create and manage accounts for government digital services
- d. Access services through government portals

DLC1 4.3T Content

DLC1 4.3T0 Define terms used in access digital government services

- a. Digital platform
- b. Website, e-citizen
- c. Payment gateway
- d. E-government
- e. Digital id
- f. Portal

DLC1 4.3T1 Identify e-government platforms and services

- a. E-Citizen portal
- b. KRA iTax System
- c. NTSA TIMS platform
- d. NSSF and SHA online services
- e. ePassport application and renewal
- f. eVisa and immigration services
- g. Judiciary Case Tracking System
- h. Ajira
- i. Ardhi Sasa

DLC1 4.3T2 Understand the categories of digital government services

- a. Health
- b. Education
- c. Governance

DLC1 4.3T3 Explain the benefits and challenges of accessing government services online

- a. Reduced travel costs
- b. Timely access to services
- c. Service transparency
- d. Ease of tracking progress
- e. Challenges
- f. Limited Connectivity
- g. Cost
- h. Accessibility (devices, digital skills)

DLC1 4.3T4 Describe the different payment processes

- a. Mobile Money Platforms/online banking
- b. Cash payments
- c. QR code
- d. Use of credit and debit cards
- e. Payslip deductions
- f. Swift
- g. RTGS

DLC1 4.3T5 Describe error handling

- a. Input validation
- b. Login error
- c. Fall back procedure
- d. Session time out

DLC1 4.4P Practice

DLC1 4.4P0 Specific learning outcomes

By the end of this session, the trainee should be able to

- a. Navigate through government websites
- b. Create and manage accounts
- c. Access personal records and services
- d. Pay taxes and manage finances
- e. Apply for government services

DLC1 4.5 Content

DLC1 4.5P0 Navigating through government websites

- a. Browsing government websites effectively
- b. Finding and accessing relevant information and services
- c. Interpreting government web content and documents

DLC1 4.5P1 Creating and managing accounts

- a. Setting up user accounts on government portals
- b. Managing account information securely
- c. Password management and online security best practices

DLC1 4.5P2 Accessing personal records and services

- a. Accessing personal identification documents (e.g., birth certificates, IDs)
- b. Applying for government-issued certificates (e.g., police clearance, driving license)
- c. Accessing land and property records (e.g., title deeds)

DLC1 4.5P3 Paying taxes and managing finances

- a. Understanding the iTax system for tax filing and payment
- b. Managing personal finances and financial records online
- c. Navigating online banking and financial services

DLC1 4.5P4 Applying for government services

- a. Step-by-step guide to applying for government services (e.g., passports, licenses)
- b. Uploading required documents and information
- c. Tracking application progress and status

DLC1 4.6 Suggested Training Resources

- a. Laptop
- b. Projector
- c. Smart boards
- d. Internet
- e. Text references
- f. Print and electronic media

DLC1 4.7 Suggested Training and Learning Approaches

- a. Lecture method
- b. Demonstrations
- c. Discussions
- d. Question and answer
- e. Presentations
- f. Field visits
- g. Videos
- h. Industry based learning

DLC1 4.8 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Continuous assessment (CATs)
- c. Random Assessment Tests (RATs)
- d. Assignments
- e. Observations
- f. Summative assessment

DLC1 5.0 CYBER HYGIENE

DLC1 5.1 Competence

The trainee should have the ability to understand the opportunities and risks of using digital devices and be equipped with simple and practical skills needed to safeguard themselves against cyber threats.

DLC1 5.2T Theory

DLC1 5.2 TO Specific learning outcomes

- a. By the end of this session, the trainee should be able to
- b. Secure a device or application with a password
- c. Browse more safely and teach children to browse safely
- d. Recognize and counter common social engineering schemes
- e. Appreciate the value of data and protect the data on their device

DLC1 5.3T Content

DLC1 5.3T0 Define cyber hygiene

- a. Cyber hygiene
- b. Value of a device
- c. Value of data
- d. Value of application

DLC1 5.3T1 Explain how to secure a device or application

- a. Securing digital devices
- b. Creation of strong and unique pins/passwords
- c. Changing pins and passwords
- d. Manage pins and passwords

DLC1 5.3T2 Describe the procedure for safe browsing

- a. Secure browsers
- b. Authentic websites
- c. Immoral and unwholesome content
- d. Parental control tools

DLC1 5.3T3 Identify common online risks

- a. Social engineering schemes
- b. Cyberbullying
- c. Data breaches

DLC1 5.3T4 Describe the value of personal data

- a. Types of data
- b. Attributes of data
- c. Data collection methods

DLC1 5.3T5 Explain how to protect data.

- a. Two-Factor Authentication (2FA)
- b. Phone Lock

DLC1 5.4P Practice**DLC1 5.4P0 Specific learning outcomes**

By the end of this session, the trainee should be able to

- a. Secure a device or application
- b. Browse safely
- c. React to common online threats
- d. Implement personal data protection methods

DLC1 5.5 Content**DLC1 5.5P0 Demonstrate how to secure a device or application**

- a. Securing digital devices
- b. Creation of strong and unique pins/passwords
- c. Changing pins and passwords
- d. Manage pins and passwords

DLC1 5.5P1 Demonstrate how to browse safely

- a. Secure browsers
- b. Authentic websites
- c. Immoral and unwholesome content
- d. Parental control tools

DLC1 5.5P2 React to common online risks

- a. Social engineering schemes
- b. Data breaches

DLC1 5.5P3 Implement personal data protection methods.

- a. Two-Factor Authentication (2FA)
- b. Phone Lock

DLC1 5.6 Suggested Training Resources

- a. Laptop
- b. Projector
- c. Smart boards
- d. Internet
- e. Text references
- f. Print and electronic media

DLC1 5.7 Suggested Training and Learning Approaches

- a. Lecture method
- b. Demonstrations
- c. Discussions
- d. Question and answer
- e. Presentations
- f. Field visits
- g. Videos
- h. Industry-based learning

DLC1 5.8 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Continuous assessment (CATs)
- c. Random Assessment Tests (RATs)
- d. Assignments
- e. Observations
- f. Summative assessment

DLC1 6.0 INTRODUCTION TO E-WASTE MANAGEMENT

DLC1 6.1 Competence

The trainee should have the ability to identify and categorize electronic waste

DLC1 6.2T Theory

DLC1 6.2 T0 Specific Objectives

By the end of this session, the trainee should be able to

- a. Identifying streams of E-waste
- b. Identify environmental and health challenges associated with e-waste
- c. How to manage E-waste

DLC1 6.3T Content

DLC1 6.3T0 Define E-waste

- a. Define terms used in E-waste
- b. List electronic devices used at home
- c. List how electronic waste is discarded at home

DLC1 6.3T1 Identify streams of e-waste

- a. Large household appliances
- b. Small household appliances
- c. IT, telecommunication and equipment
- d. Electrical and electronic tools
- e. Hazardous and non-hazardous products

DLC1 6.3T2 Identify challenges associated with E-waste

- a. Environmental Impact
- b. Social and Economic Challenges
- c. Health and Safety Risks
- d. Regulatory gaps

DLC1 6.4P Practice

DLC1 6.4PO Specific objectives

By the end of this session, the trainee should be able to

- a. Identify streams of e-waste
- b. Identify environmental and health challenges associated with e-waste

DLC1 6.5 Content

DLC1 6.5P0 Identify streams of e-waste

- a. Large household appliances
- b. Small household appliances
- c. IT, telecommunication and equipment
- d. Electrical and electronic tools
- e. Hazardous and non-hazardous products

DLC1 6.6 Suggested Training Resources

- a. Laptop
- b. Projector
- c. Smart boards
- d. Internet
- e. Text references
- f. Print and electronic media

DLC1 6.7 Suggested Training and Learning Approaches

- a. Lecture method
- b. Demonstrations
- c. Discussions
- d. Question and answer
- e. Presentations
- f. Field visits
- g. Videos
- h. Industry-based learning

DLC1 6.8 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Continuous assessment (CATs)
- c. Random Assessment Tests (RATs)
- d. Assignments
- e. Observations
- f. Summative assessment



LEVEL 2
BASIC DIGITAL SKILLS
CURRICULUM

3.0 Introduction

The Basic Digital Skills is a short course curriculum that serves as a guide to empower individuals with the essential knowledge and proficiencies required to thrive in a digitally driven society. It recognizes that basic digital skills are not just about clicking buttons and navigating screens; they are about unlocking the potential for learning, communication, innovation, and empowerment for digital opportunities. Through this curriculum, learners will gain the confidence and competence to engage with digital tools, explore new horizons, and adapt to the ever-evolving digital landscape. As we introduce this Basic Digital Skills Curriculum, we open the doors to a world of opportunities, creativity, and digital fluency. It will provide individuals with foundational skills and equip them for success in not only in their personal and professional lives but also for active participation in shaping the future of our digital society

3.1 General Objectives of the Course

By the end of the course, the trainee should be able to:

- a. Operate basic digital devices (e.g., computers, tablets, smartphones).
- b. Use common software applications (e.g., Word, Excel, PowerPoint).
- c. Access and navigate the internet and search for information effectively.
- d. Communicate using email and other digital messaging tools.
- e. Manage files and folders on a digital device.
- f. Identify and apply basic cybersecurity and digital safety practices.
- g. Demonstrate responsible and ethical behaviour when using digital tools.
- h. Solve simple technical issues on digital devices.

3.2 Institutional Training Guidelines

To ensure effective and inclusive learning, institutional training under the Basic Digital Skills Programme is designed to accommodate diverse learner needs and preferences. Training providers are encouraged to adopt flexible delivery methods that align with available resources and learner accessibility.

3.2.1 Training Delivery

The training programme can be offered through:

- a. Physical Classes – These are conducted in person at designated consortium centres, providing hands-on, face-to-face instruction.
- b. Virtual Classes – These are delivered online through reliable virtual meeting platforms, offering flexible access to learning from any location.

All training must align with ICTA approved curricula and standards for delivering digital skills.

3.2.2 Eligibility Criteria

To participate in ICTA's training programmes candidates must meet the following requirements:

- Basic Digital Skills training is open to all Kenyan citizens, including rural populations, women, senior citizens, youth and public sector employees.
- Participants should have basic literacy skills (ability to read and write in English or Kiswahili) to engage with training materials and the facilitators.
- Participants are encouraged to have access to a digital device (e.g., smartphone, tablet or laptop) for practical training.
- Participants must commit to completing the training as specified.

3.2.3 ICT Skills Training Scheme

The mode involves structured physical or virtual sessions with certified trainers. The training is conducted for 10 days, with sessions lasting 4 hours.

Table 2: Basic digital skills modules

CODE	TRAINING	DURATION
B201	Digital Devices in Digital Workspace	4 Hrs
B202	Skills in Basic Productivity Tools	4 Hrs
B203	Communication and Collaboration	4 Hrs
B204	Access to Government Services and Youth Opportunities	4 Hrs
B205	Basic Video Production and Editing	4 Hrs
B206	Learning Online	4 Hrs
B207	Basic Online Work Skills	4 Hrs
B208	Online Business & Digital Entrepreneurship	4 Hrs
B209	Cyber hygiene For Workers	4 Hrs
B210	Basic E-waste Management	4 Hrs

3.3 Entry Requirements

The Basic Digital Skills Course is open to all Kenyan citizens who meet any of the following requirements:

- Have a minimum of a The Kenya Certificate of Primary Education (KCPE) or the Kenya Primary School Education Assessment (KPSEA).
- Have successfully completed the Foundational Digital Skills course

3.4 Requirements for Assessment

Candidates must complete the required training hours to be eligible for the course assessment.

3.4.1 Final Assessment

Final assessments are designed to evaluate overall competency based on the National Occupational Standards (NOS) performance outcomes. Participants are required to complete an assessment before they can be certified. These tasks assess the participants' ability to effectively apply their knowledge and skills in real-world scenarios.

3.5 Attendance Requirements

Consistent attendance is essential for effective learning and successful completion of the Basic Digital Skills Course. To ensure participants gain the necessary knowledge and practical experience, the programme sets clear attendance standards that must be met for certification eligibility. This includes:

- a. Candidates must achieve at least 80% attendance of the total course duration to be eligible for the final assessment.
- b. Attendance records must be maintained by the training institution and verified by ICTA.

3.6 Test Development and Administration

Assessment plays a critical role in measuring the acquisition of Basic digital skills and ensuring that learning outcomes are achieved. The testing process is designed to be fair, standardized, and reflective of real-world applications. It involves collaborative development and a streamlined, accessible administration process. The assessment Guidelines for the programme includes:

- a. **Test Development** – Assessment tasks are collaboratively developed and moderated by the ICT Authority (ICTA) in partnership with accredited consortium partners. This ensures consistency, quality, and alignment with the National Occupational Standards (NOS).
- b. **Test Administration** – Assessments are self-administered by participants through smartacademy. This method supports flexibility while maintaining accountability and transparency in the evaluation process.

3.7 Award of Certificates

Upon successful completion of training and assessments, ICTA awards candidates a Basic Digital Skills proficiency certificate through the smartacademy portal.

3.8 Quality Assurance

Training and assessments are subject to internal and external quality assurance mechanisms, including audits by ICTA and peer reviews by accredited bodies.

Quality assurance ensures compliance with both ICTA and national training standards and alignment with national ICT policies.

3.9 Saving Clause

In case of inconsistencies between this curriculum and ICTA's general regulations, the general regulations published by ICTA shall prevail.

3.10 Curriculum content

The contents of the curriculum are tabulated below highlighting the specific module, the expected learning outcomes, course content and the hours allocated.

DLC2 1.0 DIGITAL DEVICES IN A DIGITAL WORK WORKSPACE

DLC2 1.1 Competence

The trainee should have the ability to set up digital devices, manage software, diagnose issues, and apply ergonomic principles in a digital workspace

DLC2 1.2T Theory

DLC2 1.2T0 Specific learning outcomes

By the end of this session, the trainee should have the ability to

- a. Identify basic functions of an operating system
- b. Explain the steps of installing and managing software
- c. Discuss common device health issues and basic troubleshooting methods
- d. List procedures for handling multiple devices
- e. Describe key principles of digital workspace ergonomics

DLC2 1.3T Content

DLC2 1.3T0 Identifying basic functions of an operating system

- a. Manage user interfaces
- b. Hardware and application software management
- c. Managing user accounts

DLC2 1.3T1 Explain the steps of installing and managing software

- a. Identify software
- b. Install software
- c. Configure user settings
- d. Update software
- e. Uninstall software

DLC2 1.3T2 Common device health issues and basic troubleshooting methods

- a. Slow performance
- b. Connectivity issues
- c. Overheating problems
- d. Storage capacity issues
- e. Audio and sound issues
- f. Basic troubleshooting
- g. Restarting the device
- h. Running antivirus scans
- i. Resetting Wi-Fi settings
- j. Deleting unnecessary files and applications

DLC2 1.3T3 Procedures for handling multiple devices

- a. Set up and connect devices
- b. Switch between devices for task management
- c. Sync data across multiple devices
- d. Monitor and maintain device performance

DLC2 1.3T4 Key principles of digital workspace ergonomics

- a. Screen height and distance
- b. Sitting posture
- c. Keyboard and mouse position
- d. Lighting

DLC2 1.4P Practice

DLC2 1.4P0 Specific learning outcomes

By the end of this session, the trainee should be able to

- a. Install and manage software
- b. Identify and resolve common device health issues
- c. Manage and switch between multiple devices
- d. Set up a workspace for ergonomic comfort

DLC2 1.5 Content

DLC2 1.5P0 Install and manage software

- a. Identify the software to install
- b. Download the installation file
- c. Run the installer
- d. Configure software settings
- e. Uninstall or update software as needed

DLC2 1.5P1 Resolve common device health issues

- a. Restart the device to improve performance
- b. Troubleshoot network settings for connectivity
- c. Close unnecessary apps to reduce overheating
- d. Adjust sound settings or update drivers
- e. Force close or reinstall problematic applications

DLC2 1.5P2 Manage and switch between multiple devices

- a. Connect devices to a shared network
- b. Sync data between devices
- c. Switch between devices for task management
- d. Monitor performance on multiple devices
- e. Troubleshoot device connectivity issues

DLC2 1.5P3 Set up a workspace for ergonomic comfort

- a. Adjust chair height for proper posture
- b. Position the monitor at eye level
- c. Ensure proper keyboard and mouse placement

- d. Maintain a neutral wrist position
- e. Organize the workspace to minimize strain

DLC2 1.6 Suggested Training Resources

- a. Smartphones
- b. Laptop/desktops
- c. Projector
- d. Smart boards
- e. Internet
- f. Manuals and training guides
- g. Print and electronic media
- h. Chargers and power banks
- i. Brail keyboards

DLC2 1.7 Suggested Training and Learning Approaches

- a. Lecture method
- b. Demonstrations
- c. Discussions
- d. Question and answer
- e. Presentations
- f. Tutorial videos

DLC2 1.8 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Step-by-step task execution
- c. Scenario based tasks
- d. Observations
- e. Practical demonstrations
- f. Role playing
- g. Peer assessments

DLC2 2.0 SKILLS IN BASIC PRODUCTIVITY

DLC2 2.1 Competence

The learner should be able to use digital devices, communication tools, and basic productivity software to access, manage, and share information effectively

DLC2 2.2T Theory

DLC2 2.2T0 Specific Objectives

By the end of this session the trainee should be able to

- a. Identify the basic steps to safely operate a computer
- b. Recognize functions of desktop operating systems for managing folders and files
- c. Describe how to create and format documents using a word processor
- d. Explain the process of creating and formatting workbooks using spreadsheet software
- e. Outline the steps to create and format presentations using presentation graphics software
- f. Identify the steps to schedule and manage online meetings using a virtual meeting platform

DLC2 2.3T Content

DLC2 2.3T0 Basic steps to safely operate a computer

- a. Identify computer components and their functions
- b. Describe the basics steps of safely operating a computer

DLC2 2.3T1 Recognize functions of desktop operating systems for managing folders and files

- a. Explain the role of operating system in file management
- b. Discuss the different file types by their extensions

DLC2 2.3T2 Describe how to create and format documents using a word processor

- a. Identify the formatting tools and their use in word processors

DLC2 2.3T3 Explain the process of creating and formatting workbooks using spreadsheet software

- a. Identify the formatting tools and their use in workbooks

DLC2 2.3T4 Outline the steps to create and format presentations using presentation graphics software

- a. Identify the formatting tools and their use in presentation software

DLC2 2.3T5 Identify the steps to schedule and manage online meetings using a virtual meeting platform

- a. Identify the various virtual meeting platforms
- b. Identifying the various in-meeting features and tools
- c. Explain how to manage participation in online meetings

DLC2 2.4P Practice

DLC2 2.4P0 Specific learning outcomes

- a. Safely Operate a computer
- b. Use desktop operating systems to manage folders and files
- c. Create and format various documents using a word processor
- d. Create and format various workbooks using spreadsheets
- e. Create and format presentations using presentation graphics
- f. Schedule and manage online meetings using an online virtual meeting platform

DLC2 2.5 Content

DLC2 2.5P0 Safely Operate a computer

- a. Power on the computer safely
- b. Log in securely
- c. Navigate the desktop environment
- d. Shut down the computer

DLC2 2.5P1 Use desktop operating systems to manage folders and files

- a. Create new folders
- b. Name and rename files/folders
- c. Save and open files
- d. Copy, move, search and delete files and folders

DLC2 2.5P2 Create and format various documents using a word processor

- a. Launch the word processor
- b. Start with a blank document or choose a template
- c. Type your content
- d. Use paragraphs to structure ideas
- e. Change font type, size, color
- f. Apply bold, italics, underline
- g. Align text (left, center, right, justify)
- h. Set line spacing and indentation
- i. Use bullet points and numbered lists
- j. Adjust margins, orientation, and page size
- k. Add headers, footers, and page numbers
- l. Add images, tables, charts, hyperlinks, and shapes
- m. Use spell check and grammar tools
- n. Review for clarity and flow
- o. Save in formats like .docx or .odt

DLC2 2.5P3 Create and format various workbooks using spreadsheets

- a. Open the spreadsheet software
- b. Create a new workbook
- c. Enter data into cells
- d. Format cells
- e. Use basic formulas and functions
- f. Insert charts and graphs
- g. Save the workbook

DLC2 2.5P4 Create and format presentations using presentation graphics

- a. Open the presentation software
- b. Create a new presentation
- c. Choose a slide theme or template
- d. Insert and edit slides
- e. Format text and layout
- f. Insert visual elements, animations, and slide transitions
- g. Save and share presentation

DLC2 2.5P5 Schedule, and manage online meetings using an online virtual meeting platform

- a. Open the virtual platform and sign in with your account
- b. Schedule a meeting
- c. Set meeting options e.g., password, enable waiting room
- d. Invite participants
- e. Start the meeting
- f. Manage participants during the meeting
- g. End the meeting

DLC2 2.6 Suggested Training Resources

- a. Smartphones
- b. Laptop
- c. Projector
- d. Productivity software
- e. Smart boards
- f. Internet
- g. Manuals and training guides
- h. Print and electronic media
- i. Chargers and power banks
- j. Brail keyboards

DLC2 2.7 Suggested Training and Learning Approaches

- a. Demonstrations
- b. Open Discussions
- c. Focus Group Discussions
- d. Peer to peer learning
- e. Question and answer
- f. Presentations
- g. Tutorial videos

DLC2 2.8 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Step-by-step task execution
- c. Scenario based tasks
- d. Observations
- e. Practical demonstrations
- f. Role playing
- g. Peer assessments

DLC2 3.0 COMMUNICATION AND COLLABORATION

DLC2 3.1 Competence

The trainee should have the ability to communicate and collaborate effectively using digital tools, manage virtual meetings, and ensure online security

DLC2 3.2T Theory

DLC2 3.2T0 Specific learning outcomes

By the end of this session, the trainee should have the ability to

- a. Identify key email etiquette rules
- b. List common online communication tools
- c. Describe steps to set up and manage virtual meetings
- d. Discuss how to use social media for business purposes
- e. Explain how to work together on document editing
- f. Describe basic online security and privacy practices

DLC2 3.3T Content

DLC2 3.3T0 Key email etiquette rules

- a. Professional tone
- b. Clear and concise subject lines
- c. Greetings and sign-offs
- d. Timely responses
- e. Professional email addresses
- f. Use of cc and bcc
- g. Confidentiality in emails
- h. Proper attachment labelling and file management

DLC2 3.3T1 Common online communication tools

- a. Email
- b. Gmail
- c. Outlook
- d. Instant Messaging
- e. Slack
- f. Microsoft Teams
- g. Video Conferencing
- h. Zoom
- i. Google Meet
- j. Social Media Platforms
- k. Facebook
- l. TikTok
- m. Twitter
- n. LinkedIn
- o. Collaboration Platforms
- p. Google Workspace
- q. Microsoft 365
- r. File Sharing Services
- s. Google Drive
- t. Dropbox
- u. OneDrive

DLC2 3.3T2 Steps to set up and manage virtual meetings

- a. Choose a Meeting Platform
- b. Schedule the Meeting
- c. Send Invitations
- d. Set Up the Meeting Room
- e. Manage Attendees
- f. Follow the Meeting Agenda
- g. Record the Meeting (if needed)
- h. Manage Screen Sharing and Permissions

- i. Engage Participants
- j. End the Meeting Properly
- k. Follow Up After the Meeting

DLC2 3.3T3 Using social media for business purposes.

- a. Create a Business Profile or Page
- b. Develop a Content Strategy
- c. Engage with the Audience
- d. Use Paid Advertising
- e. Monitor Analytics and Insights
- f. Leverage Influencer Marketing
- g. Maintain Consistency and Branding

DLC2 3.3T4 Working together on document editing

- a. Choosing a Collaborative Document Editing
- b. Create and Share the Document
- c. Set Clear Roles and Responsibilities
- d. Use Comments and Suggestions
- e. Edit and Revise in Real-Time
- f. Track Changes
- g. Resolve Conflicts
- h. Review the Document as a Group
- i. Finalize and Save the Document

DLC2 3.3T5 Basic online security and privacy practices

- a. Strong and unique passwords
- b. Two-factor authentication (2FA)
- c. Software updates
- d. Secure websites (https)
- e. Privacy settings
- f. Logging out

DLC2 3.4P Practice

DLC2 3.4P0 Specific learning outcomes

- a. By the end of this session, the trainee should be able to
- b. Practice email etiquette
- c. Use online communication tools
- d. Manage virtual meetings
- e. Use social media for business
- f. Collaborate in document editing
- g. Practice online security and privacy

DLC2 3.5 Content

DLC2 3.5P0 Practice email etiquette

- a. Compose emails using a professional tone
- b. Write clear and concise subject lines
- c. Use greetings and sign-offs
- d. Respond in time
- e. Create professional email addresses
- f. Use of cc and bcc correctly
- g. Observe confidentiality in emails
- h. Proper attachment labelling and file management

DLC2 3.5P1 Use online communication tools

- a. Set Up an Account
- b. Initiate Communication
- c. Share Relevant Information
- d. Engage with Participants
- e. Use Notifications and Alerts
- f. Manage Group Communication
- g. Log Out After Use

DLC2 3.5P2 Manage virtual meetings

- a. Choose a Meeting Platform
- b. Schedule the Meeting
- c. Send Invitations
- d. Manage Attendees
- e. Follow the Meeting Agenda
- f. Record the Meeting (if needed)
- g. Manage Screen Sharing and Permissions
- h. Engage Participants
- i. End the Meeting Properly
- j. Follow Up After the Meeting

DLC2 3.5P3 Use social media for business

- a. Create a Business Profile or Page
- b. Develop a Content plan
- c. Engage with the Audience
- d. Use Paid Advertising
- e. Monitor Analytics and Insights
- f. Leverage Influencer Marketing
- g. Maintain Consistency and Branding

DLC2 3.5P4 Collaborate in document editing

- a. Choosing a Collaborative Document Editing
- b. Create and Share the Document
- c. Set Clear Roles and Responsibilities

- d. Use Comments and Suggestions
- e. Edit and Revise in Real-Time
- f. Track Changes
- g. Review the Document as a Group
- h. Finalize and Save the Document

DLC2 3.5P5 Practice online security and privacy

- a. Create Strong and Unique Passwords
- b. Enable Two-Factor Authentication (2FA)
- c. Update software
- d. Use Secure Websites
- e. Privacy Settings
- f. Log out

DLC2 3.6 Suggested Training Resources

- a. Smartphones
- b. Laptop/desktops
- c. Projector
- d. Smart boards
- e. Internet
- f. Manuals and training guides
- g. Print and electronic media
- h. Chargers and power banks
- i. Braille keyboards

DLC2 3.7 Suggested Training and Learning Approaches

- a. Lecture method
- b. Demonstrations
- c. Discussions
- d. Question and answer
- e. Presentations
- f. Tutorial videos

DLC2 3.8 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Step-by-step task execution
- c. Scenario based tasks
- d. Observations
- e. Practical demonstrations
- f. Role playing
- g. Peer assessments

DLC2 4.0 ACCESSING GOVERNMENT SERVICES & YOUTH OPPORTUNITIES

DLC2 4.1 Competence

The trainee should be able to access e-Government services and youth opportunities

DLC2 4.2T Theory

DLC2 4.2T0 Specific learning outcomes

By the end of this session, the trainee should be able to

- a. Identify government websites and portals
- b. Explain how to navigate government websites and portals
- c. Describe how to create accounts for government digital services
- d. Explain how to manage accounts for government digital services
- e. Explain how to access services through government portals

DLC2 4.3T Content

DLC2 4.3T0 Government websites and portals

- a. Government websites and services
- b. Log-in and service requirements
- c. Functions of various Government websites and services

DLC2 4.3T1 How to navigate government websites and portals

- a. Browse government websites
- b. Access relevant information and services
- c. Interpret government web content and documents

DLC2 4.3T2 How to create accounts for government digital services

- a. Set up user accounts
- b. Update user profile

DLC2 4.3T3 How to manage accounts for government digital services

- a. Manage passwords
- b. Update account information
- c. Practice online security

DLC2 4.3T4 How to access services through government portals

- a. Access personal identification documents
- b. Apply for government-issued certificates
- c. Access land and property records
- d. Pay taxes using the government portal
- e. Upload the required documents and information
- f. Payment methods
- g. Track application progress and status
- h. Error reporting

DLC2 4.4P Practice

DLC2 4.4P0 Specific learning outcomes

- a. By the end of this session, the trainee should be able to
- b. Access government websites
- c. Create accounts for accessing government digital services
- d. Navigate government websites and portals
- e. Manage accounts for government digital services
- f. Access services through government portals

DLC2 4.5 Content

DLC2 4.5P0 Access government websites

- a. Identify government website links
- b. Access relevant information and services

DLC2 4.5P1 Create accounts for accessing government digital services

- a. Register a user account
- b. Update user profile

DLC2 4.5P2 Navigate government portals

- a. Browse government services
- b. Access relevant information and service requirements

DLC2 4.5P3 Manage accounts for government digital services

- a. Recover passwords
- b. Enable 2 FA
- c. Store password securely
- d. Update account information

DLC2 4.5P4 Access services through government portals

- a. Login
- b. Access personal identification documents
- c. Apply for government-issued certificates
- d. Access land and property records
- e. Pay taxes using the government portal
- f. Upload the required documents and information
- g. Download the required documents and information
- h. Payment methods
- i. Track application progress and status
- j. Error reporting

DLC2 4.6 Suggested Training Resources

- a. Laptop
- b. Projector
- c. Smart boards
- d. Internet
- e. Text references
- f. Print and electronic media

DLC2 4.7 Suggested Training and Learning Approaches

- a. Lecture method
- b. Demonstrations
- c. Discussions
- d. Question and answer
- e. Presentations
- f. Field visits
- g. Videos
- h. Industry-based learning

DLC2 4.8 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Continuous assessment (CATs)
- c. Random Assessment Tests (RATs)
- d. Assignments
- e. Observations
- f. Summative assessment

DLC2 5.0 BASIC VIDEO PRODUCTION AND EDITING

DLC2 5.1 Competence

The trainee should have the ability to create videos for personal, professional or creative purposes.

DLC2 5.2T Theory

DLC2 5.2T0 Specific Objectives

By the end of this session, the trainee should be able to

- a. Describe Video Pre-production processes.
- b. Explain Basic Video Production processes.
- c. Explain Basic Video Post-production process.

DLC2 5.3T Content

DLC2 5.3T0 Describe Video Pre-production processes

- a. Visual outline of the video's scenes and shots
- b. Script and outlines
- c. Filming locations
- d. Lighting and sound conditions
- e. Choosing equipment

DLC2 5.3T1 Explain basic Video Production processes

- a. Set up and operate a camera
- b. Positioning and Focus
- c. Change Settings
- d. Take a video
- e. Different angles and movements
- f. Save and organize

DLC2 5.3T2 Explain basic video post-production processes

- a. Identify video editing software
- b. Install video editing software
- c. Import video clips and assets
- d. Organize footage
- e. Cut video clips
- f. Trim video clips
- g. Arrange clips to create a coherent story
- h. Enhance the quality of the video
- i. Enhance the audio quality
- j. Incorporate smooth transitions between clips and scenes
- k. Publish in the relevant platforms

DLC2 5.4P Practice

DLC2 5.4P0 Specific objectives

- a. By the end of this session, the trainee should be able to
- b. Apply video pre-production processes
- c. Perform Basic Video Production processes
- d. Demonstrate Basic Video Post-production process

DLC2 5.5 Content

DLC2 5.5P0 Apply video Pre-production processes

- a. Visual outline of the video's scenes and shots
- b. Create script and outlines
- c. Choosing equipment
- d. Set up filming locations
- e. Set up lighting and sound conditions

DLC2 5.5P1 Perform Basic Video Production processes

- a. Set up and operate a camera
- b. Position and Focus
- c. Change Settings
- d. Take a video
- e. Take audios
- f. Different angles and movement

DLC2 5.5P2 Perform Basic Video Post-production processes

- a. Select video editing software
- b. Install video editing software
- c. Import video clips and assets
- d. Organize footage
- e. Cut video clips
- f. Trim video clips
- g. Arrange clips to create a coherent story
- h. Enhance video quality

- i. Enhance audio quality
- j. Incorporate smooth transitions between clips and scenes
- k. Publish in the relevant platforms

DLC2 5.6 Suggested Training Resources

- a. Laptop
- b. Projector
- c. Smart boards
- d. Internet
- e. Text references
- f. Print and electronic media

DLC2 5.7 Suggested Training and Learning Approaches

- a. Lecture method
- b. Demonstrations
- c. Discussions
- d. Question and answer
- e. Presentations
- f. Field visits
- g. Videos
- h. Industry-based learning

DLC2 5.8 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Continuous assessment (CATs)
- c. Random Assessment Tests (RATs)
- d. Assignments
- e. Observations
- f. Summative assessment

DLC2 6.0 LEARNING ONLINE

DLC2 6.1 Competence

The learner should be able to use digital skills to effectively navigate, participate in, and thrive within online learning environments

DLC2 6.2T Theory

DLC2 6.2T0 Specific Objectives

- a. By the end of this session, the trainee should be able to
- b. Explain online learning platforms and tools
- c. Describe how to manage online learning time effectively
- d. Describe the process for conducting digital research
- e. Describe the steps to create and manage digital credentials and online portfolios
- f. Explain the process of online collaboration and group work

DLC2 6.3T Content

DLC2 6.3T0 Explain the commonly used online learning platforms and tools

- a. Identify Online learning platforms
- b. Identify Online collaboration and communication tools
- c. Identify digital tools for assessment and feedback
- d. Identify digital tools for Research
- e. Describe digital credentials and professional portfolios

DLC2 6.3T1 Describe how to manage online learning time effectively

- a. Identify the importance of managing online learning
- b. List effective practices that can help in managing online learning
- c. Describe the importance of setting clear goals
- d. Describe the benefits of setting priorities

DLC2 6.3T2 Describe the process for conducting digital research

- a. Define the Research Topic or Question
- b. List Keywords and Phrases
- c. List the search sources

DLC2 6.3T3 Describe the steps to create and manage digital credentials and online portfolios

- a. Define digital credentials
- b. Explain how to manage online portfolios

DLC2 6.3T4 Explain the process of online collaboration and group work.

- a. Identify online tools that can be used to collaborate online
- b. Describe the different features that can be used to manage the collaboration process online
- c. Explain how to collaborate online using various tools
- d. Explain how to safely collaborate Online

DLC2 6.4P Practice

DLC2 6.4P0 Specific learning outcomes

- a. By the end of this session, the trainee should be able to
- b. Use online learning platforms and tools
- c. Manage online learning time
- d. Conduct digital research
- e. Create and manage digital credentials and online portfolios
- f. Demonstrate competency in online collaboration and group work

DLC2 6.4P Content

DLC2 6.4P0 Use online learning platforms and tools

- a. Create an Account and Log In
- b. Set Up Your Profile
- c. Explore the Dashboard
- d. Enrol in a Course or Learning Path
- e. Access Course Content
- f. Participate in Discussions

- g. Upload Assignments and take quizzes
- h. Track progress e.g., check grades
- i. Provide feedback e.g., course evaluation
- j. Log out securely

DLC2 6.4P1 Manage online learning time effectively

- a. Set aside specific times each day for learning
- b. Create a study schedule using a planner or calendar
- c. Break tasks into manageable chunks
- d. Identify the most important or urgent tasks first
- e. Focus on one task at a time for better retention and productivity
- f. Choose a well-lit study environment
- g. Take notes, engage in forums, and participate in discussions
- h. Review and summarize what you've learned daily
- i. Use course dashboards or your own tracker to monitor completion rates and performance
- j. Adjust your schedule based on what's working and what's not
- k. Implement Hourly and Daily health breaks to avoid health strains
- l. Use tech related resources to track progress

DLC2 6.4P2 Conduct digital research.

- a. Generate Keywords and Phrases
- b. Select Digital Platforms and Databases
- c. Carry out the initial searches
- d. Apply search filters
- e. Evaluate source credibility
- f. Compile a preliminary source list
- g. Review and refine

DLC2 6.4P3 Create and manage digital credentials and online portfolios

- a. Choose a platform for digital credentials and Portfolios
- b. Set up your account
- c. Add digital credentials
- d. Organize and categorize credentials
- e. Customize your online portfolio
- f. Add content to the portfolio
- g. Share and display portfolio

DLC2 6.4P4 Collaborate online and group work.

- a. Select online tools based on the nature of your work
- b. Break down the work into manageable parts. Assign clear roles
- c. Ensure everyone knows what they are responsible for
- d. Establish a communications guideline
- e. Share any documents or media that need to be worked on
- f. Enable and manage different access features
- g. Integrate or enable task tracking features

DLC2 6.5 Suggested Training Resources

- a. Smartphones
- b. Laptop/desktops
- c. Projector
- d. Smart boards
- e. Internet
- f. Manuals and training guides
- g. Print and electronic media
- h. Chargers and power banks
- i. Braille keyboards

DLC2 6.6 Suggested Training and Learning Approaches

- a. Lecture method
- b. Demonstrations
- c. Discussions
- d. Question and answer
- e. Presentations
- f. Tutorial videos

DLC2 6.7 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Step-by-step task execution
- c. Scenario based tasks
- d. Observations
- e. Practical demonstrations
- f. Role playing
- g. Peer assessments

DLC2 7.0 BASIC ONLINE WORK SKILLS

DLC2 7.1 Competence

The trainee should have the ability to excel in online work environments whether one is new to remote work or looking to enhance his/her online skills

DLC2 7.2T Theory

DLC2 7.2T0 Specific learning outcomes

By the end of this session, the trainee should have the ability to

- a. Define basic concepts related to online work and digital freelancing
- b. Explain proper email and social media etiquette
- c. Identify common online work platforms and communication tools
- d. Recognize the importance of safe online behaviours and professionalism
- e. Explain online payment and file management system

DLC2 7.3T Content

DLC2 7.3T0 Define basic concepts related to online work and digital freelancing

- a. Netiquette
- b. Email etiquette
- c. Social media
- d. Spamming
- e. Freelance

DLC2 7.3T1 Explain proper email and social media etiquette

- a. Email etiquette
- b. Proper email addressing
- c. Use of professional tone
- d. Proofreading emails
- e. Proper salutations and sign-offs
- f. Prompt responses
- g. Social Media etiquette
- h. Be respectful
- i. Honesty and Transparency
- j. Be Authentic
- k. Engage Positively
- l. Use proper grammar

DLC2 7.3T2 Identify common online work platforms and communication tools

- a. Online Work platforms
- b. Free lancer
- c. Amazon
- d. Remote tasks
- e. Fiverr
- f. Communication tools
- g. Explain Communication tools
- h. Email
- i. Chats
- j. Sms/texting
- k. Google docs
- l. Dropbox
- m. Web conferencing

DLC2 7.3T3 Recognize the importance of safe online behaviours and professionalism

- a. Report cyber bullying
- b. Tell scams and fraud
- c. Interpret misinformation
- d. Identify Predatory Behaviour

DLC2 7.3T4 Explain online payment and file management system

- a. Online payment systems
- b. Explain different online payment systems- Mobile wallets, Debit/Credit cards, RTGS, mobile banking
- c. Describe how to access a mobile wallet such as Mpesa
- d. Explain money making apps -Instagram, Facebook, YouTube
- e. File Management systems
- f. Explain a digital file management
- g. Describe how to create folders and name files appropriately
- h. Recognize various Cloud storage platforms: Google Drive, Dropbox, OneDrive
- i. Describe how to upload, download, share, and organize files
- j. Explain File versioning and backup practices
- k. Describe Safe storage of sensitive documents (e.g., ID, invoices, CVs)

DLC2 7.4P Practice

DLC2 7.4P0 Specific learning outcomes

By the end of this session, the trainee should be able to

- a. Practice proper email and social media etiquette
- b. Use common online work platforms and communication tools
- c. Demonstrate safe online behaviours and professionalism
- d. Use online payment and file management system

DLC2 7.5 Content

DLC2 7.5P0 Practicing proper email and social media etiquette

- a. Writing professional and concise emails
- b. Effective use of greetings and sign-offs
- c. Posting appropriate content
- d. Handling disagreements and negative feedback
- e. Understanding the tone of written communication

DLC2 7.5P1 Using common online work platforms and communication tools

- a. Online Work platforms
- b. Free lancer
- c. Amazon
- d. Remote tasks
- e. Fiverr
- f. Communication tools
- g. Explain Communication tools
- h. Email
- i. Chats
- j. Sms/texting
- k. Google docs
- l. Dropbox
- m. Web conferencing

DLC2 7.5P2 Demonstrating safe online behaviours and professionalism

- a. Reporting cyber bullying
- b. Telling scams and fraud
- c. Interpreting misinformation
- d. Identifying Predatory Behaviour

DLC2 7.5P3 Using online payment and file management systems

- a. Online payment systems
- b. Mobile wallets
- c. Debit/Credit cards
- d. RTGS
- e. Mobile banking
- f. Mobile wallets such as Mpesa
- g. Money making apps -Instagram, Facebook, YouTube
- h. File Management systems
- i. Implementing a digital file management
- j. Folders and name files appropriately
- k. Various Cloud storage platforms: Google Drive, Dropbox, OneDrive
- l. Uploading, downloading, sharing, and organizing files
- m. Implementing File versioning and backup practices
- n. Implementing Safe storage of sensitive documents (e.g., ID, invoices, CVs)

DLC2 7.6 Suggested Training Resources

- a. Laptop
- b. Projector
- c. Smart boards
- d. Internet
- e. Text references
- f. Print and electronic media

DLC2 7.7 Suggested Training and Learning Approaches

- a. Lecture method
- b. Demonstrations/case study
- c. Discussions
- d. Question and answer
- e. Presentations
- f. Videos

DLC2 7.8 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Continuous assessment (CATs)
- c. Random Assessment Tests (RATs)
- d. Assignments
- e. Observations
- f. Summative assessment

DLC2 8.0 ONLINE BUSINESS AND ENTREPRENEURSHIP

DLC2 8.1 Competence

The trainee should have the ability to plan, start, and manage an online business using e-commerce platforms, digital tools, and entrepreneurial strategies

DLC2 8.2T Theory

DLC2 8.2T0 Specific learning outcomes

- a. By the end of this session, the trainee should have the ability to
- b. Identify key concepts and trends in online business
- c. Explain how to conduct market research and analysis
- d. Identify suitable e-commerce platforms and tools
- e. Explain the website development process
- f. Identify product management and sourcing techniques
- g. Explain how to develop and execute digital marketing strategies
- h. Describe the role of content marketing and blogging
- i. Recognize the importance of secure online payment systems

DLC2 8.3T Content

DLC2 8.3T0 Define terms concepts and trends in online business

- a. E-commerce
- b. Marketplace
- c. Revenue Model
- d. Order Fulfilment
- e. Conversion Rate
- f. Content Marketing
- g. Payment Gateway
- h. CRM (Customer Relationship Management)
- i. Analytics

DLC2 8.3T1 Explain how to conduct market research and analysis

- a. Conducting Market Research
- b. Explain how to Conduct Surveys
- c. Describe Social Media Listening
- d. Recognize online forums
- e. Review competitor analysis
- f. Explain Data Analysis
- g. Conducting Market Analysis
- h. Recognize the purpose of the study
- i. Review the Industry trends
- j. Locate the target customers
- k. Recognize the competition
- l. Discuss additional information arising from the previous steps
- m. Report on findings
- n. Take Action

DLC2 8.3T2 Identify suitable e-commerce platforms and tools

- a. Shopify
- b. Jumia/Kilimall
- c. Wix/Squarespace
- d. BigCommerce, Ecwid, Magento
- e. Payment Gateways: PayPal, M-PESA, Flutterwave
- f. Marketing Tools: Mailchimp, Buffer, Meta Business Suite
- g. Analytics Tools: Google Analytics, Hotjar
- h. Design Tools: Canva, Figma

DLC2 8.3T3 Explain the website development process

- a. Planning
- b. Registering Domain and Hosting
- c. Designing
- d. Development
- e. Content Uploading
- f. Testing and Launching
- g. Maintenance

DLC2 8.3T4 Identify product management and sourcing techniques

- a. Product listing and categorization
- b. Understand Inventory tracking and restocking
- c. Describe how to price monitoring and updates
- d. Descriptions, images, and reviews management
- e. Sourcing Techniques
- f. Local sourcing: directly from local suppliers and wholesalers
- g. Online platforms: Alibaba, AliExpress, local B2B networks
- h. Private labelling: buying generic products and re-branding
- i. Dropshipping: third-party supplier handles stock & delivery

DLC2 8.3T5 Explain how to develop and execute digital marketing strategies

- a. Define clear marketing goals for the business
- b. Identify the intended target group
- c. Identify digital marketing strategies
- d. Describe suitable digital marketing channels
- e. Explain how to monitor digital marketing campaigns
- f. Discuss how to measure and optimize results

DLC2 8.3T6 Describe the role of content marketing and blogging

- a. Understand how to build trust and credibility through good content
- b. Describe how to drive traffic to your website
- c. Describe how to support sales and conversion
- d. Understand how to be Cost-effective when posting content unlike using paid ads
- e. Recognize the importance of blog posts to promote products and keep customers engaged

DLC2 8.3T7 Recognize the importance of secure online payment systems

- a. Explain protecting sensitive data (Financial, Personal, Business)
- b. Recognize maintaining trust and reputation
- c. Describe preventing financial and legal consequences

DLC2 8.4P Practice

DLC2 8.4P0 Specific learning outcomes

By the end of this session, the trainee should be able to

- a. Conduct market research and analysis
- b. Use suitable e-commerce platforms and tools
- c. Utilize the website development process
- d. Use product management and sourcing techniques
- e. Develop and execute digital marketing strategies
- f. Conduct content marketing and blogging
- g. Use secure online payment system

DLC2 8.5 Content

DLC2 8.5P0 Conducting market research and analysis

- a. Conducting Market Research
- b. Conducting Surveys
- c. Social Media Listening
- d. Joining online forums
- e. Conducting competitor analysis
- f. Performing Data Analysis
- g. Conducting Market Analysis
- h. Recognizing the purpose of the study
- i. Reviewing Industry trends
- j. Locating the target customers
- k. Recognizing the competition
- l. Discussing additional information arising from the previous steps
- m. Reporting on findings
- n. Taking Action

DLC2 8.5P1 Using suitable e-commerce platforms and tools

- a. Shopify
- b. Jumia/Kilimall
- c. Wix/Squarespace
- d. BigCommerce, Ecwid, Magento
- e. Payment Gateways: PayPal, M-PESA, Flutterwave
- f. Marketing Tools: Mailchimp, Buffer, Meta Business Suite
- g. Analytics Tools: Google Analytics, Hotjar
- h. Design Tools: Canva, Figma

DLC2 8.5P2 Utilizing the website development process

- a. Planning
- b. Registering Domain and Hosting
- c. Designing
- d. Development
- e. Content Uploading
- f. Testing and Launching
- g. Maintaining

DLC2 8.5P3 Using product management and sourcing techniques

- a. Listing products and categorizing
- b. Sourcing Techniques

DLC2 8.5P4 Developing and executing digital marketing strategies

- a. Establishing clear marketing goals for the business
- b. Focusing on the intended target group
- c. Applying digital marketing strategies
- d. Describing suitable digital marketing channels
- e. Monitoring digital marketing campaigns
- f. Measuring and optimizing results

DLC2 8.5P5 Conducting content marketing and blogging

- a. Building trust and credibility through good content
- b. Driving traffic to your website
- c. Supporting sales and conversion
- d. Being Cost-effective when posting content unlike using paid ads
- e. Creating blog posts to promote products and keep customers engaged

DLC2 8.5P6 Using secure online payment systems

- a. Protecting sensitive data (Financial, Personal, Business)
- b. Maintaining trust and reputation
- c. Preventing financial and legal consequences

DLC2 8.6 Suggested Training Resources

- a. Laptop
- b. Projector
- c. Smart boards
- d. Internet
- e. Text references
- f. Print and electronic media

DLC2 8.7 Suggested Training and Learning Approaches

- a. Lecture method
- b. Demonstrations/case study
- c. Discussions
- d. Question and answer
- e. Presentations
- f. Videos

DLC2 8.8 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Continuous assessment (CATs)
- c. Random Assessment Tests (RATs)
- d. Assignments
- e. Observations
- f. Summative assessment

DLC2 9.0 CYBER HYGIENE FOR WORKERS

DLC2 9.1 Competence

The trainee should be able to protect themselves and their digital assets from cyber threats

DLC2 9.2T Theory

DLC2 9.2T0 Specific learning outcomes

- a. By the end of this session, the trainee should have the ability to
- b. Define terms in cyber hygiene
- c. Explain secure use of shared devices
- d. Describe how to securely collaborate with others online using electronic mail, social media and other collaborative tools
- e. Explain how to report incidents appropriately
- f. Describe Network Safety
- g. Identify mobile money, e-commerce, and banking apps

DLC2 9.3T Content

DLC2 9.3T0 Define terms in cyber hygiene

- a. Cyber Hygiene
- b. Malware
- c. Strong Password
- d. Phishing
- e. Spam
- f. Secure Browsing
- g. Inappropriate content
- h. Person Identifiable information
- i. Public Wi-Fi
- j. Encryption
- k. Digital Footprint

DLC2 9.3T1 Explain secure use of shared devices

- a. List shared devices on a network
- b. Identify the security features of the devices
- c. Identify the risks of shared device
- d. Explain best practices for secure use of shared devices

DLC2 9.3T2 Describe how to securely collaborate with others online using electronic mail, social media and other collaborative tools

- a. Identify secure platforms for collaboration
- b. Describe strong password protection
- c. Explain multi factor authentication
- d. Describe Software updates
- e. Explain phishing and malware attacks

DLC2 9.3T3 Explain how to report incidents appropriately

- a. List cyber hygiene incidents
- b. Identify reporting procedures
- c. Explain designated reporting channels
- d. Describe the cyber hygiene incidents to the authorities correctly
- e. Explain cyber hygiene practices

DLC2 9.3T4 Describe Network Safety

- a. Describe key goals of network safety
- b. Identify common threats to network safety
- c. Describe network safety measures

DLC2 9.3T5 Identify mobile money, e-commerce, and banking apps

- a. M-pesa
- b. Airtel money
- c. T kash
- d. Jiji
- e. Alibaba
- f. Amazon
- g. Ebay
- h. Equitel
- i. Kcb
- j. NCBA

DLC2 9.4P Practice

DLC2 9.4P0 Specific learning outcomes

By the end of this session, the trainee should be able to

- a. Demonstrate secure use of shared devices
- b. Collaborate with others by using electronic mail, social media and other collaborative tools
- c. Report incidents appropriately
- d. Demonstrate Network Safety
- e. Use mobile money, e-commerce, and banking apps safely

DLC2 9.5 Content

DLC2 9.5P0 Demonstrating secure use of shared devices

- a. Devices on a network
- b. Computers
- c. Switches
- d. Routers
- e. Printers
- f. Scanners
- g. Wireless access points
- h. Test the security features of the devices
- i. Analyse the risks of shared devices
- j. Implement the best practices for secure use of shared devices

DLC2 9.5P1 Collaborating with others by using electronic mail, social media and other collaborative tools

- a. Secure platforms for collaboration
- b. Maintain strong password protection
- c. Perform multi factor authentication
- d. Perform Software updates
- e. Detect phishing and malware attacks

DLC2 9.5P2 Reporting Incidents appropriately

- a. Cyber hygiene incidents
- b. Phishing attacks
- c. Unauthorized access by logging in
- d. Unsafe file handling
- e. Apply reporting procedures
- f. Use designated reporting channels
- g. Detect cyber hygiene incidents
- h. Implement cyber hygiene practices

DLC2 9.5P3 Demonstrating Network Safety

- a. Detect common threats to network safety
- b. Use strong passwords
- c. Perform Data Backup
- d. Deploy firewall security
- e. Perform Network audits

DLC2 9.5P4 Using mobile money, e-commerce, and banking apps safely

- a. M-pesa
- b. Airtel money
- c. T kash
- d. Jiji
- e. Alibaba
- f. Amazon

- g. Ebay
- h. Equitel
- i. Kcb
- j. NCBA

DLC2 9.6 Suggested Training Resources

- a. Laptop
- b. Projector
- c. Smart boards
- d. Internet
- e. Text references
- f. Print and electronic media

DLC2 9.7 Suggested Training and Learning Approaches

- a. Lecture method
- b. Demonstrations/case study
- c. Discussions
- d. Question and answer
- e. Presentations
- f. Videos

DLC2 9.8 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Continuous assessment (CATs)
- c. Random Assessment Tests (RATs)
- d. Assignments
- e. Observations
- f. Summative Assessment

DLC2 10.0 E-WASTE REGULATIONS AND FRAMEWORKS

DLC2 10.1 Competence

The trainee should be able to apply E-waste regulatory frameworks

DLC2 10.2T Theory

DLC2 10.2T0 Specific learning outcomes

By the end of this session, the trainee should be able to

- a. Explain the key E-waste regulatory frameworks and policies in Kenya
- b. Describe the roles of government and regulatory bodies in E-waste management
- c. Identify compliance requirements for individuals, businesses, and institutions

DLC2 10.3T Content

DLC2 10.3T0 E-waste regulatory frameworks and policies in Kenya

- a. e - waste component in Environmental Management and Coordination Act (EMCA)
- b. e - waste component in E-waste Management Regulations (Draft – NEMA)
- c. e - waste component in The Sustainable Waste Management Act (2022)
- d. Article 42 and 69 in the constitution of Kenya 2010
- e. e- waste strategy

DLC2 10.3T1 Roles of government and regulatory bodies in E-waste management

- a. NEMA (National Environment Management Authority)
- b. KEBS (Kenya Bureau of Standards)
- c. Ministry of Environment, Climate Change, and Forestry
- d. County Governments

DLC2 10.3T2 Compliance requirements

- a. Individuals
- b. Businesses
- c. Producers/Importers

DLC2 10.4P Practice

DLC2 10.4P0 Specific learning outcomes

By the end of this session, the trainee should be able to

- a. Identify relevant E-waste regulations and policies applicable to specific cases
- b. Demonstrate how to classify and record E-waste in line with compliance guidelines
- c. Map out the roles of key agencies involved in enforcing E-waste regulations

DLC2 10.5 Content

DLC2 10.5P0 Identify relevant E-waste regulations and policies applicable to specific cases

- a. Research local and international E-waste regulations relevant to the specific case
- b. Match the identified regulations to the scenario
- c. Document the applicable policies and summarize compliance requirements
- d. Identify appropriate actions to align with the relevant E-waste laws and guidelines

DLC2 10.5P1 Demonstrate how to classify and record E-waste in line with compliance guidelines

- a. Apply compliance guidelines
- b. Analyse categorized E-waste
- c. Evaluate the classification process
- d. Create accurate records or logs of the classified E-waste

DLC2 10.5P2 Map out the roles of key agencies involved in enforcing E-waste regulations

- a. Identify key national and international agencies responsible for enforcing E-waste regulations
- b. Analyse the specific roles and responsibilities of each agency in regulation, monitoring, and enforcement
- c. Compare the functions of different agencies
- d. Organize findings into a visual map or chart showing the relationships and workflows among the agencies
- e. Present the mapped roles in a group discussion or practical assignment

DLC2 10.6 Suggested Training Resources

- a. Laptop
- b. Projector
- c. Smart boards
- d. Internet
- e. Text references
- f. Print and electronic media

DLC2 10.7 Suggested Training and Learning Approaches

- a. Lecture method
- b. Demonstrations
- c. Discussions
- d. Question and answer
- e. Presentations
- f. Field visits
- g. Videos
- h. Industry-based learning

DLC2 10.8 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Continuous assessment (CATs)
- c. Random Assessment Tests (RATs)
- d. Assignments
- e. Observations
- f. Summative assessment



LEVEL 3

**INTERMEDIATE DIGITAL SKILLS
CURRICULUM**

4.0 Introduction

Intermediate Digital Skills course, a comprehensive exploration of key topics that will empower learners in the digital realm and beyond. This course targets people with average digital skills who wish to upscale their skills and strengthen their digital capabilities. It equips learners with the skills to collaborate effectively in today's digital workspace; navigate digital ethics while enhancing their cybersecurity knowledge to ensure a principled and secure online presence; discover how to craft engaging eLearning content for impactful online learning experiences; unleash the power of data by mastering its management, analysis, and application in decision-making; navigate digital marketing strategies and grasp the essentials of online commerce; create visually appealing and responsive websites using user-centric design principles and coding skills; embark on your coding journey, grasping programming fundamentals with Python; create multimedia content, from graphic design to effective visual storytelling; understand the intricacies of computer networking, protocols, and online connectivity; explore emerging digital payment trends and even develop your solutions. Guided by experts, learners are expected to engage in hands-on projects mirroring real-world scenarios, equipping themselves with crucial intermediate digital skills. This course provides the launching pad into emerging business, self-employment or formal employment opportunities using emerging technologies.

4.1 General objectives of the course

By the end of the Intermediate Digital Skills Course, the learner should be able to:

- a. Strengthen their ability to collaborate effectively using digital tools in modern work environments.
- b. Apply digital ethics and cybersecurity best practices to maintain a secure and responsible online presence.
- c. Design and develop engaging eLearning content for use in digital training and education environments.
- d. Collect, manage, analyse, and interpret data to support informed decision-making.
- e. Implement digital marketing strategies and understand the fundamentals of e-commerce.
- f. Design and build responsive, user-friendly websites using appropriate tools and design principles.
- g. Understand programming fundamentals and write basic scripts using Python.
- h. Create multimedia content, including graphic designs and visual stories, for digital communication.
- i. Demonstrate a working knowledge of computer networking, internet protocols, and connectivity principles.
- j. Understand and apply digital payment solutions in various business or entrepreneurial contexts.
- k. Complete hands-on projects that simulate real-world applications of digital skills to enhance job-readiness and self-employment potential.

4.2 General Regulations

The following general regulations will apply to intermediate digital skills course:

4.2.1 Duration of the Course

The Intermediate Level course shall be delivered over a minimum of 40 hours per module, structured as follows:

Table 3: Courses under intermediate digital skills and duration

MODULE	MODULE TITLE	STRUCTURE	HOURS
Module 301	Tools for Digital Workspace	Unit	40
Module 302	Digital Ethics, Security and Privacy	Unit	40
Module 303	eLearning Content Production	Unit	40
Module 304	Data Management and Analytics using spreadsheets	Unit	40

MODULE	MODULE TITLE	STRUCTURE	HOURS
Module 305	Digital Marketing and E-Commerce	Unit	40
Module 306	Web Design and Development	Unit	40
Module 307	Introduction to Programming with Python	Unit	40
Module 308	Multimedia and Content Creation	Unit	40
Module 309	Fundamentals of Networking	Unit	40
Module 310	Digital Payment Solutions Development	Unit	40
Module 311	Fundamentals of Project Management	Unit	40
Module 312	eWaste Management & Circularity	Unit	40
Module 313	Cyber hygiene for Small and Medium Enterprises (SMEs)	Unit	40

4.3 Entry Requirements

For successful enrolment in the training course, participants should meet at least one of the following criteria: successful completion of basic digital skills training; demonstrated equivalent proficiency through prior learning or relevant experience; possession of a Certificate, Diploma, or Degree in ICT or any other field; or be a professional or practitioner in the specific field of training.

4.4 Requirements for Assessment

Candidates will be required to complete an online assessment upon successfully finishing each level of training. The assessment process will be designed with inclusivity in mind, ensuring that learners with disabilities receive reasonable accommodations such as screen readers, extended time, or modified assessments when necessary. These measures aim to accurately evaluate the knowledge, skills, and competencies of all learners, including those for whom standard assessments may not be suitable.

Formative assessments will be ongoing and delivered through diverse formats, including online quizzes, exams, projects, group work, presentations, and online portfolios. These tools will help track learner progress and promote continuous engagement. Candidates must achieve a minimum score of 70% to pass. Those who fail any component will be required to retake and pass the respective assessment before receiving a proficiency certificate. The overall approach emphasizes a competency-based framework to ensure all learners meet the required standards.

4.5 Attendance Requirements

The trainees are expected to register for training in an accredited institution/work site. They shall be required to attain 80% attendance of the course duration for the eligibility for assessment.

4.5.1 Project Work

The training shall be learner-centred with the trainee being subjected to supervised routine practical tasks intended to reinforce theoretical concepts acquired in learning.

4.6 Test Development and Administration

All aspects of assessment including test development, moderation, scheduling, and scoring shall be conducted through the official digital skills Smartacademy portal. The portal provides a secure and standardized environment to manage the entire assessment lifecycle, ensuring transparency, integrity, and consistency in the evaluation process.

4.7 Award of Certificates

Upon successful completion of the training, the Authority shall award the trainee with a certificate of proficiency for the intermediate level.

4.8 Quality Assurance

Training and assessment shall be subjected to internal and external quality assurance mechanisms in line with existing Industrial Training Standards and guidelines.

4.9 Saving Clause

In case of inconsistencies between this curriculum and ICTA's general regulations, the general regulations published by ICTA shall prevail.

4.10 Curriculum Content

The contents of the curriculum are outlined below highlighting the specific courses.

DLC3 1.0 TOOLS FOR DIGITAL WORKSPACE

DLC3 1.1 Competence

The trainee should have the ability to use digital tools to boost productivity, communicate and collaborate.

DLC3 1.2 Theory

DLC3 1.2 Specific learning outcomes

By the end of this session, the trainee should be able to:

- a. Name digital tools for communication, collaboration and productivity.
- b. Describe digital tools for communication, collaboration and productivity.
- c. Explain the functions of digital tools for communication, collaboration and productivity in the workplace
- d. Explain the benefits of digital tools for communication, collaboration and productivity in the workplace

DLC3 1.3T Content

DLC3 1.3T0 Name Digital tools for communication, collaboration and productivity

- a. Name Communication tools
- b. Virtual meeting tools
- c. Emails
- d. USSD
- e. Social media
- f. Text messages
- g. Name Collaboration Tools
- h. File Sharing and Cloud Storage Tools
- i. Project Management Tools
- j. Document Collaboration Tools
- k. Virtual meeting tool
- l. Name Productivity Tools

- m. Task Management Tools
- n. Time Management Tools
- o. Note-Taking and Organization Tools
- p. Office and Document Tools
- q. Automation Tools
- r. AI Tools

DLC3 1.3T1 Describe Digital tools for communication, collaboration and productivity.

- a. Describe Communication tools
- b. Virtual meeting tools
- c. Emails
- d. USSD
- e. Social media
- f. Describe Collaboration Tools
- g. File Sharing and Cloud Storage Tools
- h. Project Management Tools
- i. Document Collaboration Tools
- j. Virtual meeting tool
- k. Describe Productivity Tools
- l. Task Management Tools
- m. Time Management Tools
- n. Note-Taking and Organization Tools
- o. Office and Document Tools
- p. Automation Tools
- q. AI Tools

DLC3 1.3T2 Functions of digital tools for communication, collaboration and productivity in the work-place

- a. Explain Communication tools
- b. Virtual meeting tools
- c. Emails
- d. USSD
- e. Social media
- f. Name Collaboration Tools
- g. File Sharing and Cloud Storage Tools
- h. Project Management Tools
- i. Document Collaboration Tools
- j. Virtual meeting tool
- k. Name Productivity Tools
- l. Task Management Tools
- m. Time Management Tools
- n. Note-Taking and Organization Tools
- o. Office and Document Tools
- p. Automation Tools
- q. AI Tools

DLC3 1.3T3 Benefits of digital tools for communication, collaboration and productivity in the workplace

Explain Communication tools

- a. Virtual meeting tools
- b. Emails
- c. USSD
- d. Social media
- e. Name Collaboration Tools
- f. File Sharing and Cloud Storage Tools
- g. Project Management Tools
- h. Document Collaboration Tools
- i. Virtual meeting tool
- j. Name Productivity Tools
- k. Task Management Tools
- l. Time Management Tools
- m. Note-Taking and Organization Tools
- n. Office and Document Tools
- o. Automation Tools
- p. AI Tools

DLC3 1.4P Practice

DLC3 1.4P0 Specific learning outcomes

- a. By the end of this session, the trainee should be able to;
- b. Use digital tools for collaboration.
- c. Use digital tools for communication.
- d. Use digital tools for productivity.

DLC3 1.5 Content

DLC3 1.5P0 Demonstrate digital tools for collaboration.

- a. File Sharing and Cloud Storage Tools
- b. Project Management Tools
- c. Document Collaboration Tools
- d. Virtual meeting tool

DLC3 1.5P1 Digital tools for communication.

- a. Virtual meeting tools
- b. Emails
- c. USSD
- d. Social media

DLC3 1.5P2 Digital tools for productivity

- a. Task Management Tools
- b. Time Management Tools
- c. Note-Taking and Organization Tools
- d. Office and Document Tools
- e. Automation Tools
- f. AI Tools

DLC3 1.6 Suggested Training Resources

- a. Laptop
- b. Projector
- c. Smart boards
- d. Internet
- e. Text references
- f. Print and electronic media

DLC3 1.7 Suggested Training and Learning Approaches

- a. Lecture method
- b. Demonstrations
- c. Discussions
- d. Question and answer
- e. Presentations
- f. Field visits
- g. Videos
- h. Industry-based learning

DLC3 1.8 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Continuous assessment (CATs)
- c. Random Assessment Tests (RATs)
- d. Assignments
- e. Observations
- f. Summative assessment

DLC3 2.0 DIGITAL ETHICS, SECURITY AND PRIVACY

DLC3 2.1 Competence

The trainee should have the ability to implement digital ethics, security and privacy in the modern digital environment

DLC3 2.2T Theory

DLC3 2.2T0 Specific learning outcomes

By the end of this session, the trainee should be able to:

- a. Define terms in digital ethics, security and privacy
- b. Explain the basic security measures
- c. Describe the methods of how to safeguard information
- d. Describe how to practice safe online behaviour
- e. Explain the digital ethical principles in daily technology use

DLC3 2.3T Content

DLC3 2.3T0 Define terms in digital ethics, security and privacy

- a. Digital Citizenship
- b. Cyberbullying
- c. Digital Footprint
- d. Intellectual Property
- e. Online Etiquette (Netiquette)
- f. Digital Consent
- g. Cybersecurity
- h. Phishing
- i. Malware
- j. Encryption
- k. Firewall
- l. Authentication
- m. Incident Response
- n. Personal Identifiable Information (PII)
- o. Data Protection
- p. Privacy Policy

DLC3 2.3T1 Explain the basic security measures

- a. Identify security threats
- b. Describe how to mitigate security violations
- c. Report security violation
- d. Report Security resolutions

DLC3 2.3T2 Describe the methods of how to safeguard information

- a. Identify critical assets
- b. Classify critical assets
- c. Protect critical assets
- d. Respond to incidents

- e. Use privacy-enhancing technologies
- f. Document security incidents

DLC3 2.3T3 Describe how to practice safe online behaviour

- a. Define strong passwords
- b. Explain two-factor authentication
- c. Describe a secure internet connection
- d. Explain Software updates

DLC3 2.3T4 Explain the digital ethical principles in daily technology use

- a. Define data transparency
- b. Explain data consent
- c. Define data security
- d. Describe data accountability and equity
- e. Define Bias Mitigation

DLC3 2.4P Practice

DLC3 2.4P0 Specific learning outcomes

- a. Use basic security measures
- b. Apply methods of safeguarding information
- c. Practice safe online behaviour
- d. Apply digital ethical principles in daily technology use

DLC3 2.5 Content

DLC3 2.5P0 Use basic security measures

- a. Detect security threats
- b. Mitigate security violations
- c. Inspect security violation
- d. Test Security resolutions

DLC3 2.5P1 Apply methods of safeguarding information

- a. Identify critical assets
- b. Classify critical assets
- c. Protect critical assets
- d. Respond to incidents
- e. Use privacy-enhancing technologies
- f. Analyse security incidents

DLC3 2.5P2 Practice safe online behaviour

- a. Create strong passwords
- b. Use two-factor authentication
- c. Set up a secure internet connection
- d. Plan Software updates

DLC3 2.5P3 Apply digital ethical principles in daily technology use

- a. Practise data transparency
- b. Manage data consent
- c. Examine data security
- d. Assess data accountability and equity
- e. Apply Bias Mitigation

DLC3 2.6 Suggested Training Resources

- a. Laptop
- b. Projector
- c. Smart boards
- d. Internet
- e. Text references
- f. Print and electronic media

DLC3 2.7 Suggested Training and Learning Approaches

- a. Lecture method
- b. Demonstrations/case study
- c. Discussions
- d. Question and answer
- e. Presentations
- f. Videos

DLC3 2.8 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Continuous assessment (CATs)
- c. Random Assessment Tests (RATs)
- d. Assignments
- e. Observations
- f. Summative assessment

DLC3 3.0 ELEARNING CONTENT PRODUCTION

DLC3 3.1 Competence

- a. The trainee should have the ability to produce eLearning Content

DLC3 3.2T Theory

DLC3 3.2T0 Specific learning outcomes

By the end of this session, the trainee should be able to:

- a. Explain learning objectives
- b. Define appropriate assessment strategies
- c. List pedagogical principles for eLearning
- d. List content principles and models of eLearning
- e. Explain Curriculum design and sequencing
- f. Identify Interactive learning
- g. List types of authoring tools

- h. Define quality checks on eLearning content

DLC3 3.3T Content

DLC3 3.3T0 Define learning objectives

DLC3 3.3T1 Define appropriate assessment strategies

- a. Formative assessment
- b. Summative Assessments
- c. Performance-Based Assessments
- d. Peer & peer -Assessments
- e. Peer & Self-Assessments
- f. Analytics-Based Assessments

DLC3 3.3T2 List pedagogical principles for eLearning

- a. Learner-Centered Approach
- b. Active Learning
- c. Contextual and Real-World Relevance
- d. Scaffolded Learning
- e. Feedback and Reflection

DLC3 3.3T3 List content principles and models of eLearning

- a. Synchronous eLearning
- b. Adaptive eLearning
- c. Asynchronous eLearning
- d. Hybrid Model
- e. Flipped Classroom
- f. Mobile Learning
- g. Simulation-Based Learning
- h. Social eLearning

DLC3 3.3T4 Explain Curriculum design and sequencing

- a. Define Learning Outcomes
- b. Conduct a Needs Analysis
- c. Organize Content into Modules and Topics
- d. Design Engaging Learning Activities
- e. Align Assessments with Outcomes
- f. Integrate Progression and Feedback
- g. Incorporate Accessibility and Usability
- h. Pilot, Review, and Iterate

DLC3 3.3T5 Identify Interactive learning

- a. Define learning outcomes
- b. Describe interactive learning

DLC3 3.3T6 List types of authoring tools

- a. Standalone Authoring Tools
- b. Web-Based Authoring Tools
- c. PowerPoint-Based Authoring Tools

- d. Video-Based Authoring Tools
- e. Simulation-Based Authoring Tools

DLC3 3.3T7 Define quality checks on eLearning content

- a. Assessment feedback and validation
- b. Peer review and pilot testing

DLC3 3.4P Practice

DLC3 3.4P0 Specific learning outcomes

- a. By the end of this session, the trainee should be able to;
- b. Practice proper email and social media etiquette.
- c. Use common online work platforms and communication tools.
- d. Demonstrate safe online behaviours and professionalism.
- e. Use online payment and file management system

DLC3 3.5 Content

DLC3 3.5P0 Apply learning objectives

Use (Specific, Measurable, Achievable, Result-oriented, and Time-bound (SMART)).

DLC3 3.5P1 Apply appropriate assessment strategies

- a. Use Bloom's Taxonomy to structure objectives
- b. Use Formative Assessment During Content Creation
- c. Apply Summative Assessment After Completion
- d. Use Authentic and Performance-Based Assessments
- e. Integrate Peer and Self-Assessment
- f. Review Assessment Results

DLC3 3.5P2 Apply pedagogical principles for eLearning

- a. Use Learner- centred Design
- b. Employ Active Learning
- c. Apply Constructivist Approach
- d. Apply Learning Outcomes
- e. Execute Feedback and Assessment

DLC3 3.5 P3 Implement content principles and models of eLearning

- a. Apply core eLearning content principles
- b. Integrate eLearning models
- c. Use visual & instructional tools
- d. Employ track learning and compliance

DLC3 3.5 P4 Implement Curriculum design and sequencing

- a. Conduct a Needs Analysis
- b. Define Learning Outcomes
- c. Determine Content Scope and Structure
- d. Use sequencing strategies
- e. Select Teaching and Learning Methods
- f. Integrate Assessment Strategies

- g. Develop or Select Learning Resources
- h. Review the Curriculum
- i. Use monitoring tools

DLC3 3.5 P5 Apply Interactive learning

- a. Use action verbs
- b. Apply Basic Interaction methods
- c. Use Storyboard or Script the Interaction
- d. Use eLearning tools
- e. Implement Feedback
- f. Use Integrate assessment
- g. Review the accessibility of eLearning content
- h. DLC3.5 P6 Employ quality checks on eLearning content
- i. Design instructional methods
- j. Apply Visual and Media Design
- k. Employ accessibility compliance
- l. Review

DLC3 3.6 Suggested Training Resources

- a. Laptop
- b. Projector
- c. Smart boards
- d. Internet
- e. Text references
- f. Print and electronic media

DLC3 3.7 Suggested Training and Learning Approaches

- a. Lecture method
- b. Demonstrations/case study
- c. Discussions
- d. Question and answer
- e. Presentations
- f. Videos

DLC3 3.8 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Continuous assessment (CATs)
- c. Random Assessment Tests (RATs)
- d. Assignments
- e. Observations
- f. Summative assessment

DLC3 4.0 DATA MANAGEMENT AND ANALYTICS USING SPREADSHEETS

DLC3 4.1 Competence

The trainee should have the ability to efficiently do data entry, analysis, visualization, and collaboration using spreadsheets.

DLC3 4.2T Theory

DLC3 4.2T0 Specific learning outcomes

By the end of this session, the trainee should be able to:

- a. Describe data entry, formatting, editing, and worksheet management.
- b. Describe spreadsheet functions and formulas used for problem-solving.
- c. Explain the purpose of conditional formatting and data validation.
- d. Describe techniques for creating data visualizations.
- e. Explain the process of collaborative editing and document sharing.

DLC3 4.3T Content

DLC3 4.3T0 Data entry, formatting, editing, and worksheet management.

- a. Data entry
 - b. manual entry
 - c. autofill
 - d. importing data
- e. Formatting data
 - f. changing font
 - g. cell color
 - h. number formatting
 - i. alignment
- j. Editing Data
 - k. copy
 - l. cut
 - m. paste
 - n. find and replace
 - o. undo/redo
- p. Managing Worksheets
 - q. creating
 - r. renaming
 - s. deleting
 - t. organizing

DLC3 4.3T1 Spreadsheet functions and formulas used for problem-solving.

- a. Difference between functions and formulas.
- b. Basic Arithmetic Operations
 - c. SUM
 - d. AVERAGE
 - e. MIN
 - f. MAX
- g. Logical Functions
 - h. IF
 - i. AND
 - j. OR
 - k. NOT
- l. Lookup & Reference Functions
 - m. VLOOKUP
 - n. HLOOKUP
 - o. INDEX
 - p. MATCH
- q. Date & Time Functions
 - r. NOW
 - s. TODAY
 - t. DATEDIF
- u. Text Functions
 - v. CONCATENATE
 - w. LEFT
 - x. RIGHT
 - y. MID
 - z. LEN
- aa. Error Handling Functions
 - ab. IFERROR
 - ac. ISERROR

DLC3 4.3T2 Purpose of conditional formatting and data validation.

- a. Highlight Important Values
- b. Identify Duplicates
- c. Restrict data entry

DLC3 4.3T3 Techniques for creating data visualizations.

- a. Types of Charts – Bar, column, line, pie, scatter, histogram
- b. Choosing the Right Chart for Data

DLC3 4.3T4 Collaborative editing and document sharing.

- a. Cloud-Based Spreadsheets – Google Sheets, Microsoft Excel Online.
- b. Setting permissions (view, edit, comment).
- c. Tracking changes, comments, version history.

- d. Online Storage – Google Drive, OneDrive integration with spreadsheets.
- e. Security & Privacy Considerations – Protecting shared documents, managing access.

DLC3 4.4P Practice

DLC3 4.4P0 Specific learning outcomes

By the end of this session, the trainee should be able to;

- a. Organize data in worksheets.
- b. Use spreadsheet functions and formulas to solve problems.
- c. Apply conditional formatting and data validation
- d. Create data visualisations.
- e. Edit and share documents collaboratively.

DLC3 4.5 Content

DLC3 4.5P0 Organize data in worksheets.

- a. Data entry
 - b. manual entry
 - c. autofill
 - d. importing data
- e. Formatting data
 - f. changing font
 - g. cell color
 - h. number formatting
 - i. alignment
- j. Editing Data
 - k. copy
 - l. cut
 - m. paste
 - n. find and replace
 - o. undo/redo
- p. Managing Worksheets
 - q. creating
 - r. renaming
 - s. deleting
 - t. organizing

DLC3 4.5P1 Use spreadsheet functions and formulas to solve problems.

- a. Difference between functions and formulas.
- b. Basic Arithmetic Operations
 - c. SUM
 - d. AVERAGE
 - e. MIN
 - f. MAX
- g. Logical Functions

- h. IF
- i. AND
- j. OR
- k. NOT
- l. Lookup & Reference Functions
 - m. VLOOKUP
 - n. HLOOKUP
 - o. INDEX
 - p. MATCH
- q. Date & Time Functions
 - r. NOW
 - s. TODAY
 - t. DATEDIF
- u. Text Functions
 - v. CONCATENATE
 - w. LEFT
 - x. RIGHT
 - y. MID
 - z. LEN
- aa. Error Handling Functions
 - ab. IFERROR
 - ac. ISERROR

DLC3 4.5P2 Apply conditional formatting and data validation

- a. Conditional Formatting
- b. Highlight Important Values
- c. Identify Duplicates
- d. Custom Alerts – (specific formatting when conditions are met)
- e. Perform data validation
- f. Number
- g. Text length
- h. Date
- i. Drop-down lists
- j. Error Messages & Alerts – Creating input messages and error alerts.

DLC3 4.5P3 Create and interpret data visualizations.

- a. Create Data Visualizations
- b. Select Data
- c. Open Chart Options
- d. Choose the Right Chart Type
- e. Customize the Chart
- f. Save and Embed
- g. Interpret Data Visualizations

- h. Identify Key Trends
- i. Compare Categories
- j. Spot Outliers
- k. Draw Insights
- l. Communicate Findings

DLC3 4.5P4 Edit and share documents collaboratively.

- a. Cloud-Based Spreadsheets
- b. Setting permissions (view, edit, comment).
- c. Tracking changes, comments, version history.
- d. Online Storage – Google Drive, OneDrive integration with spreadsheets.
- e. Security & Privacy Considerations – Protecting shared documents, managing access.

DLC3 4.5 Suggested Training Resources

- a. Smartphones
- b. Laptop/desktops
- c. Projector
- d. Smart boards
- e. Internet
- f. Manuals and training guides
- g. Print and electronic media
- h. Chargers and power banks
- i. Braille keyboards

DLC3 4.6 Suggested Training and Learning Approaches

- a. Lecture method
- b. Demonstrations
- c. Discussions
- d. Question and answer
- e. Presentations
- f. Tutorial videos

DLC3 4.7 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Step-by-step task execution
- c. Scenario based tasks
- d. Observations
- e. Practical demonstrations
- f. Role playing
- g. Peer assessments

DLC3 5.0 DIGITAL MARKETING AND E-COMMERCE

DLC3 5.1 Competence

- a. The trainee should have the ability to excel in online work.

DLC3 5.2T Theory

DLC3 5.2T0 Specific learning outcomes

By the end of this session, the trainee should be able to:

- a. Identify the E-commerce platforms and models that can be used to grow businesses.
- b. Describe the key functions of Payment Gateways
- c. Identify the popular payment gateways
- d. Explain digital marketing strategies, i.e., social media marketing (SMM), Content marketing and brand storytelling, Email marketing, Affiliate marketing, Mobile marketing
- e. Identify Emerging trends in digital marketing and e-commerce to grow enterprises

DLC3 5.3T Content

DLC3 5.3T0 State the E-commerce platforms and models that can be used to grow businesses.

- a. Wix eCommerce
- b. Shopify
- c. Ecwid

DLC3 5.3T1 State the key functions of payment gateways

- a. Authorization – Confirms the customer has enough funds.
- b. Encryption – Secures data transmission between customer, store, and bank.
- c. Transaction processing – Moves funds from the customer to the seller.
- d. Fraud prevention – Detects suspicious transactions.

DLC3 5.3T2 State the popular payment gateways

- a. PayPal
- b. Stripe
- c. Square
- d. Authorize.Net

DLC3 5.3T3 List digital marketing strategies,

- a. Social media marketing (SMM),
- b. Content marketing and brand storytelling,
- c. Email marketing,
- d. Affiliate marketing,
- e. Mobile marketing

DLC3 5.3T4 List Emerging trends in digital marketing and e-commerce to grow enterprises

- a. AI-Powered Marketing
- b. Conversational Marketing
- c. Interactive Content
- d. Short-Form Video Content
- e. Online payment systems

DLC3 5.4P Practice

DLC3 5.4P0 Specific learning outcomes

- a. By the end of this session, the trainee should be able to;
- b. Identify the E-commerce platforms and models that can be used to grow businesses.
- c. Apply the key functions of Payment Gateways
- d. Use the popular payment gateways
- e. Apply digital marketing strategies
- f. Analyse the Emerging trends in digital marketing and e-commerce to grow enterprises

DLC3 5.5 Content

DLC3 5.5P0 Identify the E-commerce platforms and models that can be used to grow businesses.

- a. Market and Business Analysis
- b. Selecting the Right E-commerce Model
- c. Technical Setup and Infrastructure
- d. Marketing and Growth Tools

DLC3 5.5P1 Apply the key functions of Payment Gateways

- a. Selecting a Suitable Payment Gateway
- b. Integration with E-commerce Platform
- c. Security and Compliance
- d. Settlement and Pay-outs

DLC3 5.5P2 Identify the popular payment gateways

- a. Use tools like BuiltWith or Wappalyzer to scan e-commerce sites in market research.
- b. Classify of Global and Regional Popular Gateways.
- c. Ask for testimonials or references from providers for feedback

DLC3 5.5P3 Apply digital marketing strategies

- a. Social Media Marketing
- b. Email marketing
- c. Paid marketing

DLC3 5.5P4 Analyse the Emerging trends in digital marketing and e-commerce to grow enterprises

- a. Data Analytics and Insights
- b. SEO (Search Engine Optimization) Trends
- c. Social Media Marketing

DLC3 5.5 Suggested Training Resources

- a. Laptop
- b. Projector
- c. Smart boards
- d. Internet
- e. Text references
- f. Print and electronic media
- g. Videos

DLC3 5.6 Suggested Training and Learning Approaches

- a. Lecture method
- b. Demonstrations/case study
- c. Discussions
- d. Question and answer
- e. Presentations

DLC3 5.7 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Continuous assessment (CATs)
- c. Random Assessment Tests (RATs)
- d. Assignments
- e. Observations
- f. Summative assessment

DLC3 6.0 WEB DESIGN AND DEVELOPMENT

DLC3 6.1 Competence

- a. The trainee should be able to design and develop user-friendly and functional websites.

DLC3 6.2T Theory

DLC3 6.2 T0 Specific learning outcomes

- a. By the end of this session, the trainee should be able to;
- b. Describe Key concepts of Front-End Development
- c. Describe Key concepts of Back-End Development
- d. Explain accessibility features and functionality
- e. Explain the Industry standards tools and frameworks
- f. Explain responsive and user-friendly design

DLC3 6.3T Content

DLC3 6.3T0 Describe Key concepts of Front-End Development

- a. Programming languages
- b. HTML tags and attributes
- c. Hyperlinks, lists, forms and multimedia content
- d. Text styles, colour codes, backgrounds and layouts in CSS
- e. Image optimization for the web
- f. Incorporation of audio and video elements
- g. Handling user events and interactions

DLC3 6.3T1 Describe Key concepts of Back-End Development

- a. Server-side programming languages and frameworks
- b. Web domain
- c. Web Hosting
- d. Uploading files using FTP
- e. Website deployment

DLC3 6.3T2 Explain accessibility features and functionality

- a. Text content
- b. Image content
- c. Video content

DLC3 6.3T3 Explain the Industry standards tools and frameworks

- a. Industry Accessibility Guidelines for Inclusivity
- b. Industry standards and frameworks
- c. Secure websites
- d. Emerging technologies

DLC3 6.3T4 Explain responsive and user-friendly designs

- a. Website responsiveness
- b. Database-Connected Websites

DLC3 6.4P Practice

DLC3 6.4P0 Specific objectives

- a. By the end of this session, the trainee should be able to;
- b. Integrate Front-End and Back-End Development
- c. Integrate accessibility features
- d. Apply the Industry standards, tools and frameworks
- e. Develop a responsive and user-friendly website

DLC3 6.5 CONTENT

DLC3 6.5P0 Integrate Front-End and Back-End Development

- a. Write HTML, CSS, and JavaScript for a functional user interface.
- b. Use hyperlinks, lists, forms, and multimedia elements for navigation and content.
- c. Apply CSS for text styles, colours, backgrounds, and layouts
- d. Optimize multimedia.
- e. Handle user events and interactions
- f. Server-side scripting
- g. Connect front-end forms to a database.
- h. Use AJAX or Fetch API to send and retrieve data
- i. Web domain
- j. Web Hosting
- k. Uploading files using FTP
- l. Website deployment

DLC3 6.5P1 Integrate accessibility features

- a. High Contrast & Resizable Text
- b. Responsive Images with Alt Text
- c. Captions & Keyboard Controls

DLC3 6.5P2 Apply the Industry standards tools and frameworks

- a. Industry Accessibility Guidelines for Inclusivity
- b. Industry standards and frameworks
- c. HTTPS for secure connections.
- d. Emerging technologies

DLC3 6.5P3 Develop a responsive and user-friendly website

- a. Responsive website
- b. Connecting to databases

DLC3 6.6 Suggested Training Resources

- a. Laptop
- b. Projector
- c. Smart boards
- d. Internet
- e. Text references
- f. Print and electronic media

DLC3 6.7 Suggested Training and Learning Approaches

- a. Lecture method
- b. Demonstrations
- c. Discussions
- d. Question and answer
- e. Presentations
- f. Field visits
- g. Videos
- h. Industry-based learning

DLC3 6.8 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Continuous assessment (CATs)
- c. Random Assessment Tests (RATs)
- d. Assignments
- e. Observations
- f. Summative assessment

DLC3 7.0 PROGRAMMING USING PYTHON

DLC3 7.1 Competence

- a. The learner should be able to set up and use a Python environment to write and execute simple Python code, apply programming best practices, and solve basic real-world problems using Python.

DLC3 7.2T Theory

DLC3 7.2T0 Specific Objectives

- a. By the end of this session, the trainee should be able to;
- b. Identify the steps to set up and use the Python environment
- c. Explain how to write and run simple Python code following basic coding practices
- d. Describe how Python can be used to address simple real-world problems

DLC3 7.3T Content

DLC3 7.3T0 Identify the steps to set up and use the Python environment

- a. Explain what a Python environment is and its importance in programming.
- b. Identify different Python IDEs and interpreters
- c. Explain the steps involved in installing Python and setting up the environment.

DLC3 7.3T1 Explain how to write and run simple Python code following basic coding practices

- a. Understand basic syntax and semantics of Python, including variables, data types, and indentation.
- b. Explain the importance of code readability and Python Enhancement Proposal (PEP 8) standards in Python programming.
- c. Identify common programming structures, such as conditionals, loops, and functions.

DLC3 7.3T2 Describe how Python can be used to address simple real-world problems

- a. Explain the application of Python in different domains, such as data analysis, web development, automation, and IoT.
- b. Describe problem-solving strategies like breaking a problem into steps and using algorithms.
- c. Explain the concept of reusability and modularity in solving problems using functions and libraries.

DLC3 7.4P Practice

DLC3 7.4P0 Specific learning outcomes

- a. Set up and use a Python development environment
- b. Write and execute simple Python programs using correct syntax, proper indentation, and naming conventions while adhering to basic coding best practices.
- c. Develop basic Python solutions to simple real-world problems

DLC3 7.5 Content

DLC3 7.5P0 Set up and use a Python development environment

- a. Download and install Python on a personal computer.
- b. Install and configure an IDE or text editor for Python development.
- c. Navigate the Python interface (terminal, editor, file system) to open and run files.

DLC3 7.5P1 Write and execute simple Python programs using correct syntax, proper indentation, and naming conventions while adhering to basic coding best practices.

- a. Write and execute basic Python scripts that include input/output, variables, and expressions.
- b. Use proper indentation and naming conventions to write clean and readable code.
- c. Debug and correct syntax errors in simple code examples using error messages.

DLC3 7.5P2 Develop basic Python solutions to simple real-world problems

- a. Create a basic Python script to solve a real-world task
- b. Use external libraries to perform specific tasks relevant to simple problems.
- c. Document code with comments to explain how it addresses each part of the problem.

DLC3 7.6 Suggested Training Resources

- a. Smartphones
- b. Laptop
- c. Projector
- d. Productivity Software
- e. Smart boards
- f. Internet
- g. Manuals and training guides
- h. Print and electronic media
- i. Chargers and power banks
- j. Brail keyboards

DLC3 7.7 Suggested Training and Learning Approaches

- a. Demonstrations
- b. Open Discussions
- c. Focus Group Discussions
- d. Peer to peer learning
- e. Question and answer
- f. Presentations
- g. Tutorial videos

DLC3 7.8 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Step-by-step task execution
- c. Scenario based tasks
- d. Observations
- e. Practical demonstrations
- f. Role playing
- g. Peer assessments

DLC3 8.0 MULTIMEDIA AND CONTENT CREATION

DLC3 8.1 Competence

The trainee should have the ability to create engaging and impactful multimedia content

DLC3 8.2T Theory

DLC3 8.2T0 Specific learning outcomes

By the end of this session, the trainee should be able to:

- a. Differentiate between various multimedia elements
- b. Identify the principles of visual design and composition

- c. Describe structured narratives, storylines and storytelling
- d. Identify different multimedia software
- e. Identify multimedia content to be adapted in different online platforms

DLC3 8.3T Content

DLC3 8.3T0 Differentiate between various multimedia elements

- a. Images
- b. Graphics
- c. Audio
- d. Video
- e. Animations
- f. Interactive Elements
- g. Infographics

DLC3 8.3T1 Identify the principles of visual design and composition

- a. Balance
- b. Contrast
- c. Emphasis
- d. Rhythm
- e. Proximity
- f. Alignment
- g. Movement
- h. Typography

DLC3 8.3T2 Describe structured narratives, storylines and storytelling

- a. Three-Act Structure
- b. Hero's Journey (Monomyth)
- c. Five-Point Structure
- d. The Fichtean Curve
- e. Circular Structure
- f. Nonlinear Narrative

DLC3 8.3T3 Identify different multimedia software

- a. Audio Editing Software
- b. Video Editing Software
- c. Graphic Design Software
- d. Animation and 3D Modelling Software
- e. Web Design and Development Software
- f. Interactive Media Software
- g. Presentation Software

DLC3 8.3T4 Identify multimedia content to be adapted in different online platforms

- a. Videos
- b. Infographics
- c. Interactive Content
- d. Live Streams
- e. Social Media Posts

DLC3 8.4P Practice

DLC3 8.4P0 Specific learning outcomes

- a. By the end of this session, the trainee should be able to;
- b. Create various multimedia elements
- c. Apply the principles of visual design and composition
- d. Use structured narratives, storylines and storytelling
- e. Use different multimedia software
- f. Create multimedia content to be adapted in different online platforms

DLC3 8.5 Content

DLC3 8.5P0 Create various multimedia elements

- a. Images
- b. Graphics
- c. Audio
- d. Video
- e. Animations
- f. Interactive Elements
- g. Infographics

DLC3 8.5P1 Apply the principles of visual design and composition

- a. Balance
- b. Contrast
- c. Emphasis
- d. Rhythm
- e. Proximity
- f. Alignment
- g. Movement
- h. Typography

DLC3 8.5P2 Use structured narratives, storylines and storytelling

- a. Three-Act Structure
- b. Hero's Journey (Monomyth)
- c. Five-Point Structure
- d. The Fichtean Curve
- e. Circular Structure
- f. Nonlinear Narrative

DLC3 8.5P3 Use different multimedia software

- a. Audio Editing Software
- b. Video Editing Software
- c. Graphic Design Software
- d. Animation and 3D Modelling Software
- e. Web Design and Development Software
- f. Interactive Media Software
- g. Presentation Software

DLC3 8.5P4 Create multimedia content to be adapted in different online platforms

- a. Videos
- b. Infographics
- c. Interactive Content
- d. Live Streams
- e. Social Media Posts

DLC3 8.6 Suggested Training Resources

- a. Laptop
- b. Projector
- c. Smart boards
- d. Internet
- e. Text references
- f. Print and electronic media

DLC3 8.7 Suggested Training and Learning Approaches

- a. Lecture method
- b. Demonstrations/case study
- c. Discussions
- d. Question and answer
- e. Presentations
- f. Videos

DLC3 8.8 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Continuous assessment (CATs)
- c. Random Assessment Tests (RATs)
- d. Assignments
- e. Observations
- f. Summative assessment

DLC3 9.0 FUNDAMENTALS OF NETWORKING

DLC3 9.1 Competence

The trainee should be able to design, setup, configure and manage a network

DLC3 9.2T Theory

DLC3 9.2T0 Specific learning outcomes

By the end of this session, the trainee should be able to:

- a. Explain the fundamentals of computer networks
- b. Describe network components and functionality
- c. Explain network design and implementation
- d. Highlight network security and troubleshooting procedures
- e. Explain best practices and emerging trends in computer networking

DLC3 9.3T Content

DLC3 9.3T0 Fundamentals of Computer Networks

- a. Key terms used in computer networks.
- b. Importance and benefits of computer networks.
- c. Types of computer networks.

DLC3 9.3T1 Explain Network Components and Functionality:

- a. Components of computer networks.
- b. IP addressing and its significance in networking.
- c. Protocols used in computer networking.

DLC3 9.3T2 Describe Network Design and Implementation

- a. Network design concepts and requirements.
- b. Procedures for network setup and design

DLC3 9.3T3 Describe Network Security and Troubleshooting procedures

- a. Network security requirements.
- b. Troubleshooting processes for computer networks.

DLC3 9.3T4 Describe Best Practices and Emerging Trends:

- a. Best practices in computer networking.
- b. Emerging technologies in computer networking.

DLC3 9.4P Practice

DLC3 9.4P0 Specific learning outcomes

By the end of this session, the trainee should be able to:

- a. Identify network components
- b. Design a computer network
- c. Setup, configure and test a network
- d. Manage a network

DLC3 9.5 Content

DLC3 9.5P0 Identify network components

- a. Router
- b. Switch
- c. Hub
- d. Modem
- e. NIC (Network Interface Card)
- f. Cables (Ethernet)
- g. Access points.
- h. Firewall

DLC3 9.5P1 Design a computer network

- a. Design a basic logical network plan
- b. Design a basic physical network plan

DLC3 9.5P2 Setup, configure and test a network

- a. Assemble and label components of a computer network
- b. Deploy devices on the network - connect the devices.
- c. Assign IP addresses and protocols on network components
- d. configure firewalls
- e. Verify connectivity using tools like “ping” commands.

DLC3 9.5P3 Manage a network

- a. Diagnose network connectivity problems using diagnostic tools
- b. Analyse network traffic to determining bandwidth
- c. Conduct a risk assessment of a network and evaluate potential vulnerabilities
- d. Examine logs from routers or switches to diagnose issues like unauthorized access

DLC3 9.6 Suggested Training Resources

- a. Laptop
- b. Projector
- c. Smart boards
- d. Internet
- e. Text references
- f. Print and electronic media

DLC3 9.7 Suggested Training and Learning Approaches

- a. Lecture method
- b. Demonstrations
- c. Discussions
- d. Question and answer
- e. Presentations
- f. Field visits
- g. Videos
- h. Industry-based learning

DLC3 9.8 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Continuous assessment (CATs)
- c. Random Assessment Tests (RATs)
- d. Assignments
- e. Observations
- f. Summative assessment

DLC3 10.0 DIGITAL PAYMENT SOLUTIONS DEVELOPMENT

DLC3 10.1 Competence

The learner should be able to design, develop, secure, and integrate digital payment solutions into web and mobile applications.

DLC3 10.2T Theory

DLC3 10.2T0 Specific Objectives

- a. By the end of this session, the trainee should be able to;
- b. Identify ways digital payment solutions are used in web and mobile applications.
- c. Describe basic concepts of data security and fraud prevention in digital payments.
- d. List common features of innovative digital payment solutions.
- e. Explain what makes a payment process seamless and user-friendly.
- f. Identify common problems in digital payment systems and their possible causes.

DLC3 10.3T Content

DLC3 10.3T0 Identify ways digital payment solutions are used in web and mobile applications.

- a. Define digital payment solutions.
- b. List examples of digital payment solutions used in web and mobile platforms.
- c. Identify the components involved in a basic digital payment process.
- d. Explain the role of digital payments in e-commerce and mobile transactions.

DLC3 10.3T1 Describe basic concepts of data security and fraud prevention in digital payments.

- a. Define key terms related to data security (e.g., encryption,)
- b. List common types of digital payment fraud.
- c. Identify basic methods used to secure online transactions.
- d. Describe why fraud prevention is important in digital payment systems.

DLC3 10.3T2 List common features of innovative digital payment solutions.

- a. Identify emerging trends in digital payment technologies.
- b. List features commonly found in modern payment solutions (e.g., biometric authentication, QR codes, USSD code).

DLC3 10.3T3 Explain what makes a payment process seamless and user-friendly.

- a. Describe characteristics of a seamless user interface in payment systems.
- b. Identify user expectations when using digital payment platforms.
- c. Explain the importance of reducing steps in the payment process.
- d. List common usability features that enhance digital payment systems.

DLC3 10.3T4 Identify common problems in digital payment systems and their possible causes

- a. List typical technical issues in digital payment systems.
- b. Identify causes of failed or delayed transactions.
- c. Describe the impact of user errors in digital payments.
- d. Explain how connectivity and device compatibility can affect payments.

DLC3 10.4P Practice

DLC3 10.4P0 Specific learning outcomes

- a. Integrate digital payment solutions into web and mobile applications.
- b. Apply data security principles and implement fraud prevention measures in digital payment systems.
- c. Develop innovative digital payment solutions
- d. Design and prototype seamless and user-friendly payment processes
- e. Diagnose and troubleshoot technical and functional issues in digital payment systems.

DLC3 10.5 Content

DLC3 10.5P0 Integrate digital payment solutions into web and mobile applications.

- a. Select appropriate digital payment APIs (e.g., Stripe, PayPal, M-Pesa) for integration.
- b. Configure payment gateways within a web or mobile development environment.
- c. Write and test code for processing transactions, handling call-backs, and error messages.
- d. Deploy and verify the integration in real or sandbox environments.

DLC3 10.5P1 Apply data security principles and configure fraud prevention tools in digital payment systems.

- a. Apply encryption & tokenization methods to protect sensitive payment data.
- b. Configure authentication protocols such as OTPs, biometrics, or 2FA in payment systems.
- c. Implement and test fraud detection tools or rules (e.g., transaction monitoring, velocity checks)

DLC3 10.5P2 Develop innovative digital payment solutions

- a. Gather and analyse user or client requirements for a digital payment system.
- b. Explore current trends and technologies in the fintech space (e.g., contactless payments, crypto).
- c. Design and build a prototype solution using suitable tools and frameworks.
- d. Test the solution for usability, performance, and compliance with relevant standards.

DLC3 10.5P3 Design and prototype seamless and user-friendly payment processes

- a. Create wireframes or mock-ups illustrating intuitive payment flows.
- b. Develop front-end components with responsive and accessible UI design.
- c. Evaluate user interaction and refine the process for a smoother experience.

DLC3 10.5P4 Diagnose and troubleshoot technical and functional issues in digital payment systems.

- a. Monitor and Log system activities to detect transaction failures or anomalies.
- b. Use debugging tools and logs to isolate the source of issues in payment APIs or workflows.
- c. Apply testing methods (e.g., unit, integration, regression testing) to validate fixes.
- d. Document and communicate the resolution steps for future reference or team collaboration.

DLC3 10.6 Suggested Training Resources

- a. Smartphones/Laptop/desktops
- b. Projector
- c. Developer tools and platforms (e.g., CodePen / JSFiddle – For prototyping UI components)
- d. Simulation tools (sandbox environments from Stripe, PayPal, or M-Pesa)
- e. Tutorials e.g., Figma & Adobe XD tutorials – For prototyping seamless payment processes

DLC3 10.7 Suggested Training and Learning Approaches

- a. Lecture method
- b. Demonstrations
- c. Discussions
- d. Question and answer
- e. Presentations
- f. Tutorial videos

DLC3 10.8 Suggested Assessment Methods

- a. Payment Integration Project
- b. Presentation & Demo
- c. Case Study Analysis
- d. Scenario-based tasks
- e. Code Reviews
- f. Peer assessments

DLC3 11.0 FUNDAMENTALS IN PROJECT MANAGEMENT

DLC3 11.1 Competence

The trainee should gain key competencies skills in project management that include; planning, executing and closing projects effectively

DLC3 11.2T Theory

DLC3 11.2T0 Specific Objectives

By the end of this session, the trainee should be able to:

- a. List the steps involved in starting a project.
- b. Name the key people or groups involved (stakeholders).
- c. Describe what a project plan should include (scope, time, resources, and risks).
- d. Aligning project goals can match the goals of an organization.
- e. Tracking project timelines and Budget lines
- f. Identify project stakeholders
- g. List basic quality assurance activities.
- h. Explain why ethics are important in managing projects.

DLC3 11.3T Content

DLC3 11.3T0 List the steps involved in starting a project.

- a. Explain the purpose of identifying a project need or opportunity.
- b. Analyse the components of a feasibility study.
- c. Define SMART (Specific, Measurable, Achievable, Relevant, Time-bound) project objectives.
- d. Illustrate methods for stakeholder identification and analysis.
- e. Describe the elements of a business case or project charter.
- f. Discuss the importance of obtaining executive approval and funding.
- g. Examine the role and responsibilities of the project manager.
- h. Demonstrate the process of developing a comprehensive project plan.

DLC3 11.3T1 Name the key people or groups involved (stakeholders)

- a. Classify different types of stakeholders: internal vs. external.
- b. Analyse the roles of key stakeholders in project success.
- c. Discuss the influence and power dynamics among stakeholders.
- d. Identify methods for engaging and managing stakeholder expectations.

DLC3 11.3T2 Describe what a project plan should include (scope, time, resources, and risks).

- a. Define project scope and its limitations.
- b. Break down the concept of a Work Breakdown Structure
- c. Evaluate time management tools
- d. Identify types and sources of project resources.
- e. Analyse risk identification and mitigation strategies.

DLC3 11.3T3 Aligning Project Goals with Organizational Goals

- a. Define strategic alignment in project management.
- b. Analyse how project objectives support business strategies.
- c. Evaluate tools for aligning project outcomes with key performance indicators (KPIs).
- d. Discuss the role of organizational culture in project planning.

DLC3 11.3T4 Identify Project stakeholders

- a. List and describe primary and secondary stakeholders.
- b. Analyse the roles of sponsors, end-users, and suppliers.
- c. Discuss how stakeholder type influences their project interest and impact.
- d. Map stakeholders using influence-interest matrices.
- e. Identify effective communication tools and channels.
- f. Describe a stakeholder communication plan.
- g. Analyse the importance of transparency and regular updates.
- h. Evaluate feedback mechanisms for stakeholder input.

DLC3 11.3T5 Tracking project timelines and Budget lines

- a. Identify time-saving project management techniques.
- b. Analyse cost estimation and control methods.
- c. Evaluate the importance of clear scheduling and milestones.
- d. Discuss effective resource allocation strategies.

DLC3 11.3T6 Basic Quality Assurance Activities

- a. Identify key QA processes (e.g., audits, process reviews).
- b. Explain how to document and track QA activities.
- c. Evaluate the importance of preventive actions in quality management.
- d. Discuss methods for continuous improvement

DLC3 11.3T7 Importance of Ethics in Project Management

- a. Define ethics in the context of project management.
- b. Analyse the importance of integrity and accountability.
- c. Discuss how ethical behaviour builds stakeholder trust.
- d. Evaluate ethical decision-making frameworks

DLC3 11.4P Practice

DLC3 11.4P0 Specific Objectives

By the end of this session, the trainee should be able to:

- a. Execute Steps Involved in Starting a Project
- b. Implement project planning fundamentals
- c. Aligning Project Goals with Organizational Goals
- d. Identify Key People or Groups Involved (Stakeholders)
- e. Tracking Project Timelines and Budget lines
- f. Project Execution
- g. Basic Quality Assurance Activities
- h. Work with stakeholders
- i. Importance of Ethics in Project Management

DLC3 11.5P Practice

DLC3 11.5P0 Execute Steps Involved in Starting a Project

- a. Draft a project proposal for a specific need or challenge.
- b. Conduct a basic feasibility analysis using available data.
- c. Write SMART objectives for a project.
- d. Create a stakeholder map for a project.
- e. Developing project charters.
- f. Assign project roles and responsibilities within a team.

DLC3 11.5P1 Implement project planning fundamentals

- a. Draft a sample scope statement with clear deliverables.
- b. Break a project into tasks using a Work Breakdown Structure (WBS).
- c. Create a project timeline with milestones using project software.
- d. List all required resources (human, material, financial) for a hypothetical project.
- e. Develop a basic risk register with mitigation actions.

DLC3 11.5P2 Aligning Project Goals with Organizational Goals

- a. Match project goals with a company's mission statement.
- b. Work with KPIs to measure project contribution to business growth.
- c. Create a project report linking deliverables to business outcomes.

DLC3 11.5P3 Work with Stakeholders in a Project

- a. Identify key stakeholders that can help implement a real or hypothetical project.
- b. Categorize stakeholders from a real or hypothetical project.
- c. Create a stakeholder influence matrix and discuss actions to take.
- d. Prepare communication strategies for different types of stakeholders.
- e. Designing a project communication plan (schedule, channel, format).
- f. Working with Dashboard tools to share real-time project data.
- g. Document stakeholders' engagement progress

DLC3 11.5P4 Tracking project timelines and Budget lines

- a. Create a project calendar and Workplan
- b. Develop Project Budget lines
- c. Use project tracking resources
- d. Use a budget tracking resources to monitor costs in real-time.

DLC3 11.5P5 Project Execution

- a. Carry out the work as outlined in the project scope, schedule, and budget.
- b. Track performance metrics
- c. Analyse project progress
- d. Coordinate project resources
- e. Manage stakeholder Engagement
- f. Addressing any issues or risks that arise to minimize impact on the project.

DLC3 11.5P6 Basic Quality Assurance Activities

- a. Define quality standards, procedures, and responsibilities in a QA plan.
- b. Establish and document the processes to ensure consistent quality.
- c. Develop a quality audit checklist for a project.
- d. Conducting regular reviews (e.g., peer reviews, code reviews, document reviews) to catch issues early.
- e. Checking if project activities comply with defined processes and standards.
- f. Equip team members with knowledge and skills to follow quality procedures.
- g. Collecting feedback and analysing performance data to improve processes over time.

DLC3 11.5P7 Importance of Ethics in Project Management

- a. Analyse and project code of conducts
- b. Develop an ethics checklist for decision-making.
- c. Evaluate the consequences of unethical choices through role-play.
- d. Practice ethical leadership in project management

DLC3 11.6 Suggested Training Resources

- a. PC/Laptop
- b. Projector
- c. Smart boards
- d. Internet
- e. Training materials (manuals, presentations)
- f. Project Management Software
- g. Text references

- h. Templates and Frameworks
- i. Print and electronic media
- j. Case Studies

DLC3 11.7 Suggested Training and Learning Approaches

- a. Lecture method
- b. Demonstrations
- c. Discussions
- d. Question and answer
- e. Presentations
- f. Field visits
- g. Videos
- h. Industry based learning

DLC3 11.8 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Continuous assessment (CATs)
- c. Random Assessment Tests (RATs)
- d. Projects based Assessments
- e. Assignments
- f. Observations
- g. Summative assessment

DLC3 12.0 EWASTE CIRCULARITY

DLC3 12.1 Competence

The trainee should be able to describe and explain the circular economy approach in E-waste management

DLC3 12.2T Theory

DLC3 12.2T0 Specific Objectives

- a. By the end of this session, the trainee should be able to;
- b. Describe the circular economy approach in e-waste.
- c. Explain the role of eco-design in reducing e-waste.
- d. Evaluate global policies and best practices in E-waste circulation

DLC3 12.3T Content

DLC3 12.3T0 Describe the circular economy approaches in E-waste

- a. Reduce: Minimize the amount of E-waste produced by using longer-lasting products and efficient production methods.
- b. Reuse: Extend the life of electronics by repairing, upgrading, or repurposing them for other uses.
- c. Recycle: Extract valuable materials (like metals, plastics) from old electronics and use them in new products.
- d. Recover: Recover precious metals and other components from E-waste for reuse in manufacturing.
- e. Refuse e-waste

DLC3 12.3T1 Explain the role of eco-design in reducing e-waste.

- a. Eco-Design Concepts in Electronics
- b. Design for Repair ability and Upgradability
- c. Reducing Environmental Impact in Electronics Manufacturing

DLC3 12.3T2 Evaluate global policies and best practices in E-waste circulation

- a. Segregation of E-waste at source
- b. Collection of e-waste
- c. Transportation of E-waste
- d. Disposal of E-waste
- e. Recycling & refurbishing
- f. E-waste take-back

DLC3 12.4P Practice

DLC3 12.4P0 Specific objectives

- a. By the end of this session, the trainee should be able to;
- b. Analyse Case-study of Circular Economy
- c. Demonstrate the circular economy approach in E-waste
- d. Demonstrate the role of eco-design in reducing e-waste.

DLC3 12.5 Content

DLC3 12.5P0 Demonstrate the circular economy approach in E-waste

- a. Circular Economy Approach Evaluation
- b. Disassembly
- c. Propose Circular Economy Changes
- d. Prototype
- e. Presentation

DLC3 12.5P1 Demonstrate the role of eco-design in reducing e-waste.

- a. Eco-Design Product Evaluation
- b. Disassembly
- c. Propose Eco-Design Change
- d. Prototype
- e. Presentation

DDLC3 12.6 Suggested Training Resources

- a. Laptop
- b. Projector
- c. Smart boards
- d. Internet
- e. Text references
- f. Print and electronic media

DLC3 12.7 Suggested Training and Learning Approaches

- a. Lecture method
- b. Demonstrations
- c. Discussions
- d. Question and answer
- e. Presentations
- f. Field visits
- g. Videos
- h. Industry-based learning

DLC3 12.8 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Continuous assessment (CATs)
- c. Random Assessment Tests (RATs)
- d. Assignments
- e. Observations
- f. Summative assessment

DLC3 13.0 CYBER HYGIENE FOR SMALL AND MEDIUM ENTERPRISES (SMES)

DLC3 13.1 Competence

The trainee should have the ability to protect their digital investments and operations from cyber risks and inculcate a culture of good cyber hygiene practices.

DLC3 13.2T Theory

DLC3 13.2T0 Specific learning outcomes

By the end of this session, the trainee should be able to:

- a. Define terms used in Cyber Hygiene.
- b. Explain the key technologies and primary concepts of cyber hygiene.

DLC3 13.3T Content

DLC3 13.3T0 Define Terms used in Cyber Hygiene

- a. Access Control
- b. Application Security
- c. Encryption
- d. Phishing
- e. Authentication
- f. Backing Up
- g. Malware
- h. Hacker
- i. Firewall

DLC3 13.3T1 Explain the key technologies and primary concepts of cyber hygiene.

- a. Technological concepts;
- b. Describe strong password management
- c. Explain multi-factor authentication
- d. Describe regular software updates
- e. Define robust endpoint security
- f. Explain email security solutions
- g. Primary concepts;
- h. Explain Backing Up
- i. Describe Firewalls
- j. Explain control access
- k. Define Encryption
- l. Describe Incidence response

DLC3 13.4P Practice

DLC3 13.4P0 Specific learning outcomes

By the end of this session, the trainee should be able to;

- a. Apply the key technologies and primary concepts of cyber hygiene.

DLC3 13.4P Content

DLC3 13.4P0 Apply the key technologies and primary concepts of cyber hygiene

- a. Technological concepts;
- b. Practise strong password management
- c. Use multi-factor authentication
- d. Practise regular software updates
- e. Apply robust endpoint security
- f. Use email security solutions
- g. Primary concepts;
- h. Practise Backing Up
- i. Use Firewalls
- j. Formulate control access
- k. Apply Encryption techniques
- l. Use Incidence response

DLC3 13.5 Suggested Training Resources

- a. Laptop
- b. Projector
- c. Smart boards
- d. Internet
- e. Text references
- f. Print and electronic media

DLC3 13.6 Suggested Training and Learning Approaches

- a. Lecture method
- b. Demonstrations/case study
- c. Discussions
- d. Question and answer
- e. Presentations
- f. Videos

DLC3 13.7 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Continuous assessment (CATs)
- c. Random Assessment Tests (RATs)
- d. Assignments
- e. Observations
- f. Summative assessment



LEVEL 4
ADVANCED DIGITAL SKILLS
CURRICULUM

5.0 Introduction

Advanced digital skills are critical in today's technology-driven world, where digital transformation is reshaping economies and societies globally. By fostering advanced digital literacy and proficiency, this program seeks to empower individuals, promote economic growth, reduce inequalities in technology access, and support the development of a knowledge-based economy.

Through this initiative, the government aims to drive economic empowerment by enhancing employability and unlocking new opportunities in the fast-changing job market. It also seeks to bridge the digital divide, promote social inclusion, and contribute to technological innovation and entrepreneurship.

The curriculum is designed to nurture critical thinking, analytical reasoning, and problem-solving skills, while also developing competencies in advanced data analysis and interpretation. Participants will be equipped with the expertise needed to navigate and thrive in a rapidly evolving digital environment.

This comprehensive program extends beyond basic digital literacy, covering a wide range of advanced topics, including digital transformation awareness, data analytics and interpretation, artificial intelligence and machine learning, cybersecurity and data privacy, programming and software development, cloud computing and infrastructure, Internet of Things (IoT), blockchain and cryptocurrency, financial technologies (FinTech), project management and agile methodologies, as well as digital leadership and innovation.

Upon completion, participants will have the capacity to innovate, develop digital solutions, and respond to emerging technological needs in a dynamic ecosystem. In addition, they will gain project management skills necessary to lead and execute initiatives effectively in complex environments. Ultimately, the goal of the program is to develop a well-rounded talent pool with a blend of technical expertise, strategic thinking, and adaptability—key attributes for success in the modern digital landscape and for driving sustainable innovation.

5.1 General Objectives of the Course

By the end of this course, the trainee should be able to:

- a. Apply advanced digital tools and platforms to solve sector-specific challenges.
- b. Analyse, design, and implement solutions using AI, Data Analytics, and IoT.
- c. Demonstrate advanced competence in cybersecurity practices and protocols.
- d. Evaluate FinTech innovations and their impact on financial services and regulation.
- e. Manage and monitor complex digital projects using contemporary tools and techniques.
- f. Integrate sustainability and ethical practices into digital solution development.
- g. Demonstrate leadership, collaboration, and communication skills in digital environments.
- h. Promote innovation, entrepreneurship, and continuous improvement through digital skills.

5.2 Institutional Training Guidelines

To ensure effective and inclusive learning, institutional training under the Advanced Digital Skills Programme is designed to accommodate diverse learner needs and preferences. Training providers are encouraged to adopt flexible delivery methods that align with available resources and learner accessibility.

5.2.1 Training Delivery

The training programme can be offered through:

- Physical Classes – These are conducted in person at designated consortium centres, providing hands-on, face-to-face instruction.
- Virtual Classes – These are delivered online through reliable virtual meeting platforms, offering flexible access to learning from any location.

5.2.2 Eligibility Criteria

To participate in ICTA's training programmes candidates must meet the following requirements:

- Foundational Digital Skills training is open to all Kenyan citizens, including rural populations, women, senior citizens, youth and public sector employees
- Participants should have basic literacy skills (ability to read and write in English or Kiswahili) to engage with training materials and the facilitators.
- Participants are encouraged to have access to a digital device (e.g., smartphone, tablet or laptop) for practical training.
- Participants must commit to completing the training as specified.

5.2.3 ICT Skills Training Scheme

Each course shall take a minimum of 80 hours, including both theoretical and practical instruction. It may be offered under institutional-based training and supplemented by project-based learning or industry-based learning depending on available infrastructure and resources.

Table 4: Courses under Advanced digital skills and duration

CODE	COURSE TITLE	TYPE	DURATION
A401	AI for SDGs	Unit	80 Hours
A402	Fintech Technologies (Fintech)	Unit	80 Hours
A403	Cybersecurity and Analytics	Unit	80 Hours
A404	Integrated Circuit Design and Fabrication (IoT)	Unit	80 Hours
A405	Data Analytics for Decision Making	Unit	80 Hours
A406	Advanced Project Management	Unit	80 Hours
A407	EWaste Management and Circular AI	Unit	80 Hours
A408	Digital Project Monitoring and Evaluation (MeL)	Unit	80 Hours
A409	Large Programme Management	Unit	80 Hours

5.3 Entry Requirements

The Advanced Digital Skills Course is open to all Kenyan citizens who meet any of the following requirements:

- Successful completion of intermediate digital skills course.
- A certificate diploma or a bachelor's degree in any of the related fields.

5.4 Requirements for Assessment

Assessment shall comprise both formative and summative components:

Formative Assessment: Conducted continuously through assignments, projects, and presentations, accounting for 30% of the final score.

5.4.1 Final Assessment

Final assessments are designed to evaluate overall competency based on the National Occupational Standards (NOS) performance outcomes. Participants are required to complete a series of assessments and a project assigned by the instructor before they can be certified. These tasks assess the participants' ability to effectively apply their knowledge and skills in real-world scenarios.

5.4.2 Accreditation of Training Institutions

This course shall be implemented by the ICT Authority (ICTA) in collaboration with approved training institutions and other relevant partners. All participating institutions must meet set standards including but not limited to availability of qualified trainers, appropriate infrastructure, and access to necessary digital tools and resources as specified in the course guidelines.

5.4.3 Assessment Requirements

Assessment will comprise both formative and summative components. Formative assessment will be conducted continuously through assignments, projects, and presentations, contributing 30% to the final score. Summative assessment will take place at the end of the course, accounting for 70% of the final score, and will include both theoretical and practical components. The pass mark for the course is 70%. In terms of assessment weighting, the theory component will constitute 30%, while the practical component will make up 70%.

5.5 Attendance Requirements

Consistent attendance is essential for effective learning and successful completion of the Advanced Digital Skills Course. To ensure participants gain the necessary knowledge and practical experience, the programme sets clear attendance standards that must be met for certification eligibility. This includes:

- a. Candidates must achieve at least 80% attendance of the total course duration to be eligible for the final assessment.
- b. Attendance records must be maintained by the training institution and verified by ICTA.

5.5.1 Project Work

Learners will be expected to undertake a capstone project or portfolio that demonstrates application of knowledge in real-world scenarios. The project will be assessed and form part of the final evaluation.

5.6 Test Development and Administration

Assessment plays a critical role in measuring the acquisition of foundational digital skills and ensuring that learning outcomes are achieved. The testing process is designed to be fair, standardized, and reflective of real-world applications. It involves collaborative development and a streamlined, accessible administration process. The assessment Guidelines for the programme includes:

- a. **Test Development** – Assessment tasks are collaboratively developed and moderated by the ICT Authority (ICTA) in partnership with accredited consortium partners. This ensures consistency, quality, and alignment with the National Occupational Standards (NOS).
- b. **Test Administration** – Assessments are self-administered by participants online through the smartacademy portal. The projects shall be evaluated by the course facilitator to ensure they meet the stipulated requirements. This method supports flexibility while maintaining accountability and transparency in the evaluation process.

5.7 Award of Certificates

Upon successful completion of the course and meeting the assessment requirements, the trainee will be awarded a Certificate Advanced digital skills certificate of proficiency.

5.8 Quality Assurance

Training delivery and assessments shall be subjected to internal and external quality assurance in line with national training and certification standards

5.9 Saving Clause

In case of inconsistencies between this curriculum and ICTA's general regulations, the general regulations published by ICTA shall prevail.

5.10 Curriculum content

The contents of the curriculum are outlined below highlighting the specific module, the expected learning outcomes, and course content.

DLC4 1.0 AI FOR SDGS

DLC4 1.1 Competence

The trainee should be able to tackle developmental challenges using AI.

DLC4 1.2 T Theory

DLC 1.2 T0 Specific learning outcomes

By the end of this session, the trainee should be able to:

- a. Explain AI Applications in different SDG scenarios

DLC4 1.3T Content

DLC4 1.3T0 AI Applications in different SDG scenarios

- a. Identify the problem
- b. Assess solution feasibility
- c. Discuss the steps involved in building a solution.
- d. Discuss the steps involved in validating a solution
- e. Explain how to deploy the solution
- f. Discuss how to track performance

DLC4 1.4P Practice

DLC4 1.4P0 Specific learning outcomes

- a. By the end of this session, the trainee should be able to;
- b. Design AI Applications in different SDG scenarios
- c. Develop AI Applications in different SDG scenarios

DLC4 1.5 Content

DLC4 1.5P0 Design AI Applications in different SDG scenarios

- a. Problem Selection & Analysis
- b. Solution Mapping
- c. Tool Selection
- d. Storyboard / Flowchart Design

DLC4 1.5P1 Develop AI Applications in different SDG scenarios

- a. Data Collection or Simulation
- b. Model Development
- c. Testing the Solution
- d. Interface Integration (Optional for advanced trainees)
- e. Presentation & Reflection
- f. Deploy the solution
- g. Monitor the solution

DLC4 1.6 Suggested Training Resources

- a. Laptop
- b. Projector
- c. Smart boards
- d. Internet
- e. Text references
- f. Print and electronic media

DLC4 1.7 Suggested Training and Learning Approaches

- a. Demonstrations
- b. Simulations
- c. Discussions
- d. Question and answer
- e. Presentations
- f. Field visits
- g. Videos
- h. Industry-based learning
- i. Lecture method

DLC4 1.8 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Continuous assessment (CATs)
- c. Random Assessment Tests (RATs)
- d. Assignments
- e. Observations
- f. Summative assessment

DLC4 2.0 FINTECH TECHNOLOGIES

DLC4 2.1 Competence

The trainee should have the ability to evaluate FinTech innovations, their regulatory implications, and emerging trends shaping financial services.

DLC4 2.2T Theory

DLC4 2.2T0 Specific learning outcomes

- a. By the end of this session, the trainee should have the ability to:
- b. Analyse FinTech and its impact on financial services
- c. Evaluate key FinTech technologies
- d. Synthesize crowdfunding models and their role in financing ventures
- e. Critique FinTech regulations, focusing on compliance and security
- f. Investigate emerging trends in FinTech, including AI, machine learning, and Open Banking

DLC4 2.3T Content

DLC4 2.3T0 Analyse FinTech and its impact on financial services

- a. Research FinTech Basics
- b. Assess FinTech's Impact on Traditional Financial Services
- c. Evaluate Benefits of FinTech for Financial Services
- d. Identify Challenges Associated with FinTech
- e. Investigate the Role of Government and Regulatory Bodies
- f. Summarize Key Findings

DLC4 2.3T1 Evaluate key FinTech technologies

- a. Illustrate the Functionality and Applications of Blockchain in Financial Transactions
- b. Assess the Impact of Digital Payments on Consumer Transactions and Businesses
- c. Evaluate the Role of AI and Machine Learning in Personal Finance Management
- d. Synthesize the Implications of Open Banking and InsurTech in the Financial Ecosystem
- e. Assess the Role of RegTech and Biometrics in Strengthening Security and Compliance

DLC4 2.3T2 Synthesize crowdfunding models and their role in financing ventures

- a. Analyse Different Types of Crowdfunding Models
- b. Evaluate the Role of Crowdfunding in Financing Ventures
- c. Assess the Impact on Risk and Return for Both Investors and Entrepreneurs
- d. Critique the Challenges and Opportunities in Crowdfunding
- e. Synthesize the Future of Crowdfunding in Financing Ventures

DLC4 2.3T3 Critique FinTech regulations, focusing on compliance and security

- a. Evaluate the Need for Comprehensive FinTech Regulations
- b. Assess the Role and challenges of Compliance in FinTech Regulations
- c. Examine the Importance of Security in FinTech Regulations
- d. Critique Current Regulatory Frameworks
- e. Suggest Improvements to FinTech Regulations

DLC4 2.3T4 Investigate emerging trends in FinTech, including AI, machine learning, and Open Banking

- a. Analyse the Role of AI and Machine Learning in FinTech
- b. Evaluate the Impact of Open Banking on Financial Ecosystems
- c. Investigate the Potential of Blockchain and Decentralized Finance (DeFi)
- d. Assess the Challenges and Opportunities of Emerging FinTech Technologies
- e. Critique the Future of FinTech Innovation and Regulation

DLC4 2.4P Practice

DLC4 2.4P0 Specific learning outcomes

- a. By the end of this session, the trainee should have the ability to:
- b. Analyse FinTech and its impact on financial services
- c. Examine key FinTech technologies
- d. Apply crowdfunding models and their role in financing ventures
- e. Critique FinTech regulations, focusing on compliance and security
- f. Investigate emerging trends in FinTech, including AI, machine learning, and Open Banking

DLC4 2.5 Content

DLC4 2.5P0 Analyse digital payment solutions into web and mobile applications.

- a. Research FinTech Basics
- b. Assess FinTech's Impact on Traditional Financial Services
- c. Evaluate Benefits of FinTech for Financial Services
- d. Identify Challenges Associated with FinTech
- e. Investigate the Role of Government and Regulatory Bodies
- f. Summarize Key Findings

DLC4 2.5P1 Examine key FinTech technologies

- a. Illustrate the Functionality and Applications of Blockchain in Financial Transactions
- b. Assess the Impact of Digital Payments on Consumer Transactions and Businesses
- c. Evaluate the Role of AI and Machine Learning in Personal Finance Management
- d. Synthesize the Implications of Open Banking and InsurTech in the Financial Ecosystem
- e. Assess the Role of RegTech and Biometrics in Strengthening Security and Compliance

DLC4 2.5P2 Synthesize crowdfunding models and their role in financing ventures

- a. Analyse Different Types of Crowdfunding Models
- b. Evaluate the Role of Crowdfunding in Financing Ventures
- c. Assess the Impact on Risk and Return for Both Investors and Entrepreneurs
- d. Critique the Challenges and Opportunities in Crowdfunding
- e. Synthesize the Future of Crowdfunding in Financing Ventures

DLC4 2.5P3 Critique FinTech regulations, focusing on compliance and security

- a. Evaluate the Need for Comprehensive FinTech Regulations
- b. Assess the Role and challenges of Compliance in FinTech Regulations
- c. Examine the Importance of Security in FinTech Regulations
- d. Critique Current Regulatory Frameworks
- e. Suggest Improvements to FinTech Regulations

DLC4 2.5P4 Investigate emerging trends in FinTech, including AI, machine learning, and Open Banking

- a. Analyse the Role of AI and Machine Learning in FinTech
- b. Evaluate the Impact of Open Banking on Financial Ecosystems
- c. Investigate the Potential of Blockchain and Decentralized Finance (DeFi)
- d. Assess the Challenges and Opportunities of Emerging FinTech Technologies
- e. Critique the Future of FinTech Innovation and Regulation

DLC4 2.6 Suggested Training Resources

- a. Smartphones/Laptop/desktops
- b. Projector
- c. Tutorials
- d. Seamless payment processes
- e. Tutorials (e.g., Figma & Adobe XD)
- f. Simulation Tools (Sandbox Environments from Stripe, PayPal, M-Pesa)

DLC4 2.7 Suggested Training and Learning Approaches

- a. Lecture method
- b. Demonstrations
- c. Discussions
- d. Question and answer
- e. Presentations
- f. Tutorial videos

DLC4 2.8 Suggested Assessment Methods

- a. Payment Integration Project
- b. Presentation & Demo
- c. Case Study Analysis
- d. Scenario-based tasks
- e. Code Reviews
- f. Peer assessments

DLC4 3.0 CYBER SECURITY AND ANALYTICS

DLC4 3.1 Competence

- a. The trainee should have the ability to apply cyber security measures and analyse possible threats.

DLC4 3.2T Theory

DLC4 3.2T0 Specific learning outcomes

By the end of this session, the trainee should be able to:

- a. Identify various network devices
- b. Distinguish the different types of network protocols
- c. Explain network topologies
- d. Analyse possible cyber threats
- e. Explain the incident response procedure

DLC4 3.3T Content

DLC4 3.3T0 Identify various network devices

- a. Hubs
- b. Routers
- c. Gateways
- d. NICs
- e. Modems
- f. Repeaters
- g. WAPs
- h. Firewalls

DLC4 3.3T1 Distinguish the different types of network protocols

- a. HTTP/HTTPS
- b. TCP/IP
- c. UDP
- d. FTP
- e. SMTP
- f. DNS
- g. DHCP
- h. SNMP
- i. ICMP

DLC4 3.3T2 Explain network topologies

- a. Bus Topology
- b. Star Topology
- c. Ring Topology
- d. Mesh Topology
- e. Tree Topology
- f. Hybrid Topology

DLC4 3.3T3 Analyse possible cyber threats

- a. Malware
- b. Phishing
- c. Denial-of-Service (DoS) and Distributed Denial-of-Service (DDoS) Attacks
- d. Man-in-the-Middle (MitM) Attacks
- e. Ransomware

DLC4 3.3T4 Explain the incident response procedure

- a. Preparation
- b. Identification
- c. Containment
- d. Eradication
- e. Recovery
- f. Post-Incident Review

DLC4 3.4P Practice

DLC4 3.4P0 Specific learning outcomes

- a. By the end of this session, the trainee should be able to;
- b. Use various network devices
- c. Apply the different types of network protocols
- d. Apply network topologies
- e. Identify possible cyber threats
- f. Use the incident response procedure

DLC4 3.5 Content

DLC4 3.5P0 Use various network devices

- a. Hubs
- b. Routers
- c. Gateways
- d. NICs
- e. Modems
- f. Repeaters
- g. WAPs
- h. Firewalls

DLC4 3.5P1 Apply the different types of network protocols

- a. HTTP/HTTPS
- b. TCP/IP
- c. UDP
- d. FTP
- e. SMTP
- f. DNS
- g. DHCP
- h. SNMP
- i. ICMP

DLC4 3.5P2 Apply network topologies

- a. Bus Topology
- b. Star Topology
- c. Ring Topology
- d. Mesh Topology
- e. Tree Topology
- f. Hybrid Topology

DLC4 3.5P3 Identify possible cyber threats

- a. Malware
- b. Phishing
- c. Denial-of-Service (DoS) and Distributed Denial-of-Service (DDoS) Attacks
- d. Man-in-the-Middle (MitM) Attacks
- e. Ransomware

DLC4 3.5P4 Use the incident response procedure

- a. Preparation
- b. Identification
- c. Containment
- d. Eradication
- e. Recovery
- f. Post-Incident Review

DLC4 3.6 Suggested Training Resources

- a. Laptop
- b. Projector
- c. Smart boards
- d. Internet
- e. Text references
- f. Print and electronic media

DLC4 3.7 Suggested Training and Learning Approaches

- a. Lecture method
- b. Demonstrations/case study
- c. Discussions
- d. Question and answer
- e. Presentations
- f. Videos

DLC4 3.8 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Continuous assessment (CATs)
- c. Random Assessment Tests (RATs)
- d. Assignments
- e. Observations
- f. Summative assessment

DLC4 4.0 INTEGRATED CIRCUIT DESIGN AND FABRICATION (IOT)

DLC4 4.1 Competence

- a. The learner should be able to develop and evaluate digital and analog circuits, including IC design, simulation, fabrication, and testing, tailored for Internet of Things (IoT) applications.

DLC4 4.2T Theory

DLC4 4.2T0 Specific Objectives

- a. By the end of this session, the trainee should have the ability to:
- b. Explain the fundamental principles and components of digital and analog circuit design.
- c. Describe the theoretical frameworks and processes involved in IC simulation using EDA tools.
- d. Outline the key steps, materials, and conditions required for IC fabrication.
- e. Analyse standard testing methodologies used to assess IC functionality and performance.

DLC4 4.3T Content

DLC4 4.3T0 Explain the fundamental principles and components of digital and analog circuit design.

- Identify the basic components used in digital and analog circuits (e.g., resistors, capacitors, logic gates, transistors).
- Discuss the underlying principles of operation for both digital and analog circuits.
- Differentiate between digital and analog circuit behaviours and their respective applications.

DLC4 4.3T1 Describe the theoretical frameworks and processes involved in IC simulation using EDA tools.

- Summarize the stages involved in IC simulation, including schematic entry, simulation setup, and output analysis.
- Explain the role and functionality of common EDA tools used in IC design and simulation.
- Interpret typical simulation results and waveforms to validate circuit behaviour theoretically.

DLC4 4.3T2 Outline the key steps, materials, and conditions required for IC fabrication.

- List the essential materials and technologies used in IC fabrication (e.g., silicon wafers, doping agents, photolithography).
- Describe the step-by-step process of IC fabrication, including wafer preparation, layering, and etching.
- Discuss the theoretical considerations and limitations of different IC fabrication techniques.

DLC4 4.3T3 Analyse standard testing methodologies used to assess IC functionality and performance.

- Identify various IC testing methods (e.g., functional testing, parametric testing, boundary scan).
- Explain the principles and purposes of each testing method in quality assurance.
- Evaluate how theoretical parameters such as timing, power consumption, and signal integrity affect IC performance.

DLC4 4.4P Practice

DLC4 4.4PO Specific learning outcomes

- By the end of this session, the trainee should have the ability to:
- Assemble and configure basic digital and analog circuits for practical applications.
- Simulate and interpret integrated circuit (IC) designs using standard EDA tools.
- Apply basic techniques in the fabrication of simple ICs under guided conditions.
- Conduct and report tests to assess the functionality of fabricated ICs.

DLC4 4.5 Content

DLC4 4.5P0 Assemble and configure basic digital and analog circuits for practical applications.

- Select appropriate components (e.g., resistors, capacitors, transistors, ICs) based on given circuit schematics.
- Construct circuit layouts on breadboards or PCBs using proper wiring and soldering techniques.
- Verify circuit connections and functionality against design specifications using tools like multimeters and oscilloscopes.

DLC4 4.5P1 Simulate and interpret integrated circuit (IC) designs using standard EDA tools

- Use basic features of EDA software (e.g., Multisim, Proteus, LTspice) to create and edit circuit schematics.
- Run simulations to observe voltage, current, and signal behaviours in digital and analog circuits.
- Compare and interpret simulated results with theoretical expectations to identify and correct design issues.

DLC4 4.5P2 Apply basic techniques in the fabrication of simple ICs under guided conditions

- a. Follow standard operating procedures (SOPs) for preparing substrates and applying fabrication steps such as photolithography or etching.
- b. Operate basic lab equipment (e.g., UV light box, clean bench, deposition systems) under instructor supervision.
- c. Record each step of the fabrication process in a lab logbook, including materials used and process parameters.

DLC4 4.5P3 Conduct and report tests to assess the functionality of fabricated ICs

- a. Connect test setups using instruments such as logic Analysers, signal generators, and oscilloscopes to fabricated ICs.
- b. Measure and record circuit behaviour, including voltage levels, timing diagrams, and signal outputs.
- c. Analyse results against expected performance to identify faults or confirm circuit reliability, and document findings in a lab report.

DLC4 4.6 Suggested Training Resources

Hardware for assembling and testing circuits

- a. Breadboards and PCB prototyping kits
- b. Digital multimeters and oscilloscopes
- c. Function generators and logic Analysers
- d. Soldering stations and accessories (solder wire, flux, tweezers,)
- e. Analog and digital components (resistors, capacitors, op-amps, transistors, 555 timers, logic gates, ICs, sensors, microcontrollers like Arduino or ESP32)
- f. Power supplies (DC bench power supply)
- g. IC testers

Software for circuit design, simulation, and IC layout

- a. Multisim (for analog and digital simulation)
- b. LTspice (free SPICE simulator for analog circuits)
- c. Proteus (circuit simulation and microcontroller co-simulation)
- d. KiCad (free and open-source PCB design and layout tool)
- e. Fritzing (for prototyping and simple PCB design)
- f. EasyEDA (online EDA tool with simulation and PCB layout)
- g. TINA-TI or OrCAD (industry-level simulation tools)
- h. Lab Infrastructure and Environment
- i. Electronics lab benches with proper grounding
- j. ESD protection equipment (wrist straps, mats)
- k. Ventilation for soldering
- l. Cleanroom-like mini environments for basic IC fabrication steps
- m. Storage cabinets for component organization
- n. Safety gear – goggles, gloves, first aid kit

Online Platforms and Simulators

- a. Tinkercad Circuits

- b. EveryCircuit – simulation for mobile and web
- c. CircuitVerse – for digital logic simulation

Learning Materials (Books, Videos, Tutorials)

- a. Books: Practical Electronics for Inventors” by Paul Scherz , etc
- b. Video Courses / Tutorials (Afrotechmods, GreatScott, EEVBlog)
- c. Moocs: Coursera, edX, and Udemy

DLC4 4.7 Suggested Training and Learning Approaches

- a. Competency-Based Learning (CBL)
- b. Project-Based Learning (PBL)
- c. Hands-On Lab-Based Training
- d. Blended Learning
- e. Simulation-Based Learning
- f. Peer Learning and Group Work
- g. Instructor Demonstrations

DLC4 4.8 Suggested Assessment Methods

- a. Practical Assessments
- b. Project-Based Assessments
- c. Oral Defence of Project

DLC4 5.0 DATA ANALYTICS FOR DECISION MAKING

DLC4 5.1 Competence

The trainee will be able to apply data analytics techniques to collect, interpret, and present data-driven insights that support effective decision making in a business environment

DLC4 5.2T Theory

DLC4 5.2TO Specific Objectives

- a. Describe how data analytics is used in different sectors
- b. Explain the process of collecting and preparing complex data to ensure its quality and usability for analysis.
- c. Describe how past data can be used to make simple predictions about future outcomes.
- d. Explain the theoretical concepts underlying time series analysis and forecasting models.
- e. Explain advanced data visualization concepts and analytics frameworks.
- f. Critically Analyse ethical considerations and potential biases in data analytics

DLC4 5.3T Content

DLC4 5.3T0 Data analytic in different sectors

- a. FinTech
- b. Health
- c. Education
- d. Agriculture
- e. eGovernment.

DLC4 5.3T1 Process of data collection and usability

- a. List sources of complex data.
- b. Describe stages of data collection and preparation.
- c. Explain the importance of data quality.
- d. Distinguish between structured and unstructured data.
- e. Explain the effects of poor data quality

DLC4 5.3T2 Describe how past data can be used to make simple predictions about future outcomes.

- a. Basic steps involved in building a predictive model
- b. Data collection
- c. Pre-processing
- d. Training, testing
- e. Recall the importance of data cleaning and feature selection.
- f. Describe basic evaluation metrics like accuracy, precision, recall, and RMSE.
- g. Identify some common tools and platforms used in predictive modelling

DLC4 5.3T3 Theoretical concepts underlying time series analysis and forecasting models.

- a. Time series components
- b. Stationarity
- c. Autocorrelation
- d. Deterministic vs Stochastic models
- e. White noise and residual analysis
- f. Forecasting accuracy and model evaluation

DLC4 5.3T4 Data visualization concepts and analytics frameworks

- a. Define key terms related to data visualization and analytics (e.g., dashboard, data frame, KPI, geospatial data)
- b. List common software/tools used for data visualization and analytics (e.g., Tableau, Power BI, Python libraries)
- c. Explain different types of charts and when to use them
- d. Identify appropriate visualization techniques for given data scenarios
- e. Identify appropriate tools for building specific types of visualizations
- f. Describe the interface elements of tools like Tableau, Power BI, or Jupyter Notebook

DLC4 5.3T5 Ethical considerations and potential biases in data analytics

- a. Common ethical issues
- b. Ethical frameworks
- c. GDPR
- d. AI Ethics principles
- e. data bias and their sources
- f. Sampling bias
- g. Algorithmic bias

DLC4 5.4P Practice

DLC4 5.4P0 Specific Objectives

- Apply tools and techniques to create, interpret, and present complex data visualizations and dashboards for real-world problem-solving
- Use a tool (e.g., Power BI or Tableau) to build a basic interactive dashboard
- Integrate datasets and apply filters, drilldowns, or real-time update
- Interpret trends and outliers in a multi-dimensional dashboard

DLC4 5.5P Practice

DLC4 5.5P0 Apply tools and techniques to create, interpret, and present complex data visualizations and dashboards for real-world problem-solving.

- Organize data into categories for easier interpretation in a visualization tool.
- Label parts of a dashboard (filters, slicers, graphs, KPIs, etc.) correctly.
- Use a selected data visualization tool to input and display simple data sets.
- Follow step-by-step instructions to create a basic dashboard with filters and interactive elements.
- Match specific real-world scenarios with appropriate visualization techniques.

DLC4 5.5P1 Use a tool (e.g., Power BI or Tableau) to build a basic interactive dashboard

- Connect to a sample dataset using Power BI or Tableau.
- Load and preview the data to understand its structure and key fields.
- Drag and drop fields onto the canvas to create at least two different types of visuals (e.g., bar chart, line graph, pie chart).
- Add slicers or filters (e.g., date range, category selector) to make the dashboard interactive.
- Format visuals using built-in design tools (e.g., adjusting titles, changing colours, aligning visuals).
- Create a simple layout that arranges visuals logically and is easy to interpret.
- Apply basic calculations or aggregations (e.g., sum, average) to enhance the dashboard insights.
- Incorporate a title, labels, and legends to improve clarity and usability.
- Test dashboard interactivity by using filters or clicking on visuals to see the response.
- Export or publish the dashboard to PDF or a web link for sharing.

DLC4 5.5P2 Integrate datasets and apply filters, drilldowns, or real-time update

- Import multiple datasets (e.g., sales data, customer info) into a tool like Power BI or Tableau.
- Establish relationships between datasets using keys or joins (e.g., customer ID, product code).
- Merge or blend data from different sources to create a unified dataset for analysis.
- Apply filters to control the display of data based on specific conditions (e.g., region, product category).
- Create drilldowns to enable users to explore data from summary to detailed levels (e.g., Year > Quarter > Month).
- Configure slicers or dropdowns to allow dynamic interaction with the data.
- Set up real-time data connections or refresh schedules (if supported by the platform and data source).
- Demonstrate how applying a filter in one visual affects the others on the same dashboard.
- Validate those filters, drilldowns, and real-time element function as expected in a live dashboard.
- Save and share the integrated dashboard to ensure others can interact with it as designed.

DLC4 5.5P3 Interpret trends and outliers in a multi-dimensional dashboard

- a. Examine key metrics across multiple dimensions (e.g., time, location, product) to understand overall patterns.
- b. Identify trends such as upward or downward movement over time within a chart or graph.
- c. Detect outliers—data points that deviate significantly from the norm—and explain their potential causes.
- d. Compare performance across categories or regions using filters or slicers.
- e. Break down combined visuals (e.g., stacked bars, line + bar charts) to Analyse each component.
- f. Explore relationships between variables using scatter plots, heatmaps, or correlation matrices.
- g. Use drilldowns to Analyse changes in patterns at deeper levels of detail (e.g., monthly vs. daily).
- h. Highlight possible anomalies or data quality issues by inspecting irregular data behaviour.
- i. Summarize key insights from the dashboard, supported by evidence from the visuals.
- j. Explain how trends and outliers can inform business decisions or signal the need for further investigation.

DLC4 5.5P4 Suggested Training Resources

- a. PC/Laptop
- b. Projector
- c. Smart boards
- d. Internet
- e. Training materials (manuals, presentations)
- f. Project Management Software
- g. Text references
- h. Templates and Frameworks
- i. Print and electronic media
- j. Case Studies

DLC4 5.5P5 Suggested Training and Learning Approaches

- a. Lecture method
- b. Demonstrations
- c. Discussions
- d. Question and answer
- e. Presentations
- f. Field visits
- g. Videos
- h. Industry based learning

DLC4 5.5P6 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Continuous assessment (CATs)
- c. Random Assessment Tests (RATs)
- d. Projects based Assessments
- e. Assignments
- f. Observations
- g. Summative assessment

DLC4 6.0 ADVANCE PROJECT MANAGEMENT

DLC4 6.1 Competence

The trainee should have the ability to execute strategic projects within the digital space.

DLC4 6.2T Theory

DLC4 6.2T0 Specific learning outcomes

By the end of this session, the trainee should be able to:

- a. Outline Strategic Project plans.
- b. Analyse advanced risk management.
- c. Evaluate advanced project control and monitoring

DLC4 6.3T Content

DLC4 6.3T0 Outline Strategic Project plans.

- a. Feasibility studies and impact assessments/analyses
- b. Project scope, goals, and deliverables clearly to ensure understanding.
- c. KPIs for project success that align with overall objectives.
- d. Alignment of project objectives with organizational strategy.
- e. Key stakeholders their roles in engagement strategies.
- f. Strategic meetings to project goals in relation to business priorities.
- g. Select resources to the project to maximize ROI

DLC4 6.3T1 Analyse advanced risk management.

- a. Identify and classify risks based on impact, likelihood and severity
- b. Develop contingencies and response strategies for high impact risks
- c. Develop a risk register and mitigation plans
- d. Conduct risk audits and compliance reviews

DLC4 6.3T2 Evaluate advanced project control and monitoring

- a. Utilize real-time dashboards, AI/ML predictive analytic tools for project progress and monitoring
- b. Apply advance resource levelling and allocation techniques
- c. Generate real time reports using advanced analytics for stakeholders
- d. Implement automated testing and quality control processes

DLC4 6.4 Suggested Training Resources

- a. Laptop
- b. Projector
- c. Smart boards
- d. Internet
- e. Text references
- f. Print and electronic media

DLC4 6.5 Suggested Training and Learning Approaches

- a. Lecture method
- b. Demonstrations/case study
- c. Discussions
- d. Question and answer
- e. Presentations
- f. Videos

DLC4 6.6 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Continuous assessment (CATs)
- c. Random Assessment Tests (RATs)
- d. Assignments
- e. Observations
- f. Summative assessment

DLC4 7.0 E-WASTE MANAGEMENT

DLC4 7.1 Competence

The trainee should be able to manage electronic waste (e-waste).

DLC4 7.2T Theory

DLC4 7.2 T0 Specific Objectives

- a. By the end of this session, the trainee should be able to;
- b. Describe how to manage e-waste
- c. Explain E-waste processing techniques

DLC4 7.3T Content

DLC4 7.3T0 Manage E-waste

- a. Segregation of E-waste at source
- b. Collection of e-waste
- c. Transportation of E-waste
- d. Disposal of E-waste
- e. Recycling & refurbishing
- f. Hazardous and Non-hazardous materials
- g. E-waste take-back
- h. Assess and report to the relevant authorities

DLC4 7.3T1 E-waste processing techniques

- a. Segregation of E-waste at source
- b. Collection of e-waste
- c. Transportation of E-waste
- d. Disposal of E-waste
- e. Recycling & refurbishing
- f. E-waste take-back

DLC4 7.4P Practice

DLC4 7.4P0 Specific objectives

By the end of this session, the trainee should be able to Analyse Case studies of E-waste Management

DLC4 7.5 Content

DLC4 7.5P0 E-waste Management

- a. Segregation of E-waste at source
- b. Collection of E-waste
- c. Transportation of E-waste
- d. Disposal of E-waste
- e. Recycling & refurbishing
- f. Hazardous and Non-hazardous materials
- g. Take-back E-waste
- h. Assess and report to the relevant authorities

DDLC4 7.6 Suggested Training Resources

- a. Laptop
- b. Projector
- c. Smart boards
- d. Internet
- e. Text references
- f. Print and electronic media

DLC4 7.7 Suggested Training and Learning Approaches

- a. Lecture method
- b. Demonstrations
- c. Discussions
- d. Question and answer
- e. Presentations
- f. Field visits
- g. Videos
- h. Industry-based learning

DLC4 7.8 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Continuous assessment (CATs)
- c. Random Assessment Tests (RATs)
- d. Assignments
- e. Observations
- f. Summative assessment

DLC4 8.0 DIGITAL PROJECT MONITORING AND EVALUATION

DLC4 8.1 Competence

The trainee should be able to effectively integrate digital tools and data analytics in project monitoring, evaluation and reporting.

DLC4 8.2T Theory

DLC4 8.2T0 Specific Objectives

- a. By the end of this session, the trainee should be able to;
- b. Describe digital tools for data collection, analysis, and reporting.
- c. Describe comprehensive digital M&E frameworks
- d. Describe data analytics techniques for project monitoring
- e. Explain project evaluation and reporting
- f. Explain emerging technologies (IoT, AI, blockchain) in project M&E.

DLC4 8.3T Content

DLC4 8.3T0 Describe digital tools for data collection, analysis, and reporting

- a. Describe digital tools (e.g., Excel, Power BI) to collect project data from a provided dataset.
- b. Compare features and functionalities of selected tools in a theoretical case study
- c. Outline the steps of using a chosen tool to collect and Analyse project data.

DLC4 8.3T1 Describe comprehensive digital M&E frameworks

- a. Explore the key components of a digital M&E framework through a group presentation
- b. Analyse the theoretical application of a digital M&E framework in a project lifecycle scenario.
- c. Identify challenges in implementing digital M&E frameworks and propose theoretical solutions in a discussion-based activity.

DLC4 8.3T2 Describe data analytics techniques for project monitoring

- a. Define and categorize common data analytics techniques through a structured worksheet
- b. Evaluate the suitability of specific analytics methods for monitoring a given project scenario.
- c. Develop a theoretical data dashboard layout for monitoring key project metrics

DLC4 8.3T3 Explain project evaluation and reporting

- a. Examine evaluation methodologies (e.g., formative, summative) through a comparative matrix.
- b. Analyse an example project report to identify evaluation outcomes and gaps
- c. Discuss the significance of project evaluation for accountability and decision-making in a theoretical debate.
- d. Theoretically draft an outline of a project report using sample data.
- e. Identify best practices for reporting based on provided project reporting templates.

DLC4 8.3T4 Explain emerging technologies (IoT, AI, blockchain) in project M&E.

- a. Explore use cases of IoT, AI, and blockchain in project M&E through research and group presentations.
- b. Analyse the theoretical benefits and challenges of integrating these technologies into M&E systems
- c. Propose a framework for incorporating one emerging technology into a theoretical project scenario

DLC4 8.4P Practice

DLC4 8.4P0 Specific objectives

- a. By the end of this session, the trainee should be able to;
- b. Utilize digital tools for data collection, analysis, and reporting comprehensive digital M&E frameworks
- c. Analyse comprehensive digital M&E frameworks
- d. Apply data analytics techniques for project monitoring
- e. Perform project evaluation and reporting
- f. Integrate emerging technologies (IoT, AI, blockchain) in project M&E.

DLC4 8.5P Content

DLC4 8.5P0 Utilize digital tools for data collection, analysis, and reporting

- a. Select and use a digital tool to collect project data from a provided dataset.
- b. Excel
- c. Power BI
- d. Perform data analysis using the chosen tool and generate a simple report.
- e. Simulate a scenario where digital tools are used to manage project data and troubleshoot challenges.

DLC4 8.5P1 Analyse comprehensive digital M&E frameworks

- a. Break down the components of a given digital M&E framework and present its structure in a group discussion.
- b. Analyse the suitability of a specific digital M&E framework for a theoretical project case study.
- c. Offer improvements to a provided M&E framework based on an assigned project scenario.

DLC4 8.5P2 Apply data analytics techniques for project monitoring

- a. Use a dataset to demonstrate how to calculate and interpret key performance indicators (KPIs) for a mock project.
- b. Create visualizations (e.g., charts, graphs) using analytics tools to monitor project trends.
- c. Evaluate project data to identify gaps and recommend actions in a simulated project scenario.

DLC4 8.5P3 Create and present accurate project reports

- a. Conduct a mock evaluation of a project using formative and summative evaluation techniques
- b. Compare evaluation results with project goals to identify success levels and shortcomings in a given case.
- c. Develop a written critique of a sample evaluation report, focusing on accountability and transparency.
- d. Draft a project report based on sample data, ensuring clarity and adherence to reporting standards.
- e. Present the report in a simulated team meeting, focusing on key insights and recommendations.
- f. Assess the quality of peer reports and provide feedback for improvement.

DLC4 8.5P4 Integrate emerging technologies (IoT, AI, blockchain) in M&E processes

- a. Present case studies where IoT, AI, or blockchain have been applied.
- b. Develop a proposal for using one emerging technology in a hypothetical project scenario.
- c. Simulate potential benefits and limitations of integrating emerging technologies in M&E practices through a role-playing activity.

DDLC4 8.6 Suggested Training Resources

- a. Laptop
- b. Projector
- c. Smart boards
- d. Internet
- e. Text references
- f. Print and electronic media

DLC4 8.7 Suggested Training and Learning Approaches

- a. Lecture method
- b. Demonstrations
- c. Discussions
- d. Question and answer
- e. Presentations
- f. Field visits
- g. Videos
- h. Industry-based learning

DLC4 8.8 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Continuous assessment (CATs)
- c. Random Assessment Tests (RATs)
- d. Assignments
- e. Observations
- f. Summative assessment

DLC4 9.0 LARGE PROGRAMME MANAGEMENT

DLC4 9.1 Competence

The trainee should have the ability to oversee complex and large-scale programs.

DLC4 9.2T Theory

DLC4 9.2T0 Specific learning outcomes

By the end of this session, the trainee should be able to:

- a. Describe robust programme governance structures
- b. Analyse performance-based contracts
- c. Explain stakeholder expectations and conflicts
- d. Define Program Resources
- e. Explain Monitoring and Evaluation

DLC4 9.3T Content

DLC4 9.3T0 Describe robust programme governance structures.

- a. Ensure effective oversight and control
- b. Successful program delivery
- c. Clear decision making
- d. Define roles and responsibilities
- e. Transparent communication channels

DLC4 9.3T1 Analyse performance-based contracts

- a. Focus on outcomes
- b. Maintain measurable performance indicators
- c. Incentives and consequences
- d. Versatility

DLC4 9.3T2 Explain stakeholder expectations and conflicts

- a. Identifying stakeholders
- b. Understanding their needs
- c. Setting realistic expectations
- d. Communicating effectively
- e. Actively resolving conflicts

DLC4 9.3T3 Define Program Resources

- a. Human Resources (People)
- b. Financial Resources
- c. Physical Resources
- d. Material Resources
- e. Time Resources

DLC4 9.3T4 Explain Monitoring and Evaluation

- a. Accountability
- b. Improved Decision making
- c. Learning and Adaptation
- d. Evidence Based Advocacy

DLC4 9.4P Practice

DLC4 9.4P0 Specific learning outcomes

- a. By the end of this session, the trainee should be able to;
- b. Establish robust programme governance structures
- c. Manage performance-based contracts
- d. Manage stakeholder expectations and conflicts
- e. Manage Program Resources
- f. Monitor and Evaluate Programme

DLC4 9.5 Content

DLC4 9.5P0 Use robust programme governance structures

- a. Ensure effective oversight and control
- b. Successful program delivery
- c. Clear decision making
- d. Define roles and responsibilities
- e. Transparent communication channels

DLC4 9.5P1 Manage performance-based contracts

- a. Focus on outcomes
- b. Measurable performance indicators
- c. Incentives and consequences
- d. Versatility

DLC4 9.5P2 Examine stakeholder expectations and conflicts

- a. Identifying stakeholders
- b. Understanding their needs
- c. Setting realistic expectations
- d. Communicating effectively
- e. Actively resolving conflicts

DLC4 9.5P3 Manage Program Resources

- a. Human Resources (People)
- b. Financial Resources
- c. Physical Resources
- d. Material Resources
- e. Time Resources

DLC4 9.6 Suggested Training Resources

- a. Laptop
- b. Projector
- c. Smart boards
- d. Internet
- e. Text references
- f. Print and electronic media

DLC4 9.7 Suggested Training and Learning Approaches

- a. Lecture method
- b. Demonstrations/case study
- c. Discussions
- d. Question and answer
- e. Presentations
- f. Videos

DLC4 9.8 Suggested Assessment Methods

- a. Oral (Question and answer)
- b. Continuous assessment (CATs)
- c. Random Assessment Tests (RATs)
- d. Assignments
- e. Observations
- f. Summative assessment



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