


Skills Programme Curriculum Document	
Curriculum Code	Curriculum Title
900145-000-00-00	Front-end Web Designer



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## **SECTION 1: SKILLS PROGRAMME CURRICULUM SUMMARY**

### **1. Skills Programme Information**

#### **1.1 Skills Addressed by this Curriculum**

- Front-end Web Designer, NQF Level 4, Credits 60

#### **1.2 Skills Programme Entry Requirements**

- NQF 3 with Computer Literacy (end-user computing competency)

#### **1.3 Associated Occupations**

- Web Designer

#### **1.4 Registered Related Qualifications**

- Occupational Certificate: Software Developer

## **2. Curriculum Information**

### **2.1 Curriculum Structure**

This Skills Programme consist of two components namely Knowledge/Theory component and Application component. The following are compulsory modules in each of the two components:

#### **2.1.1. Knowledge/Theory Component:**

The following Modules are compulsory:

- 900145-000-00-KM-01, Introduction to Front-end Web Design, NQF Level 4, Credits 11
- 900145-000-00-KM-02, Fundamentals of Design Thinking and Innovation, NQF Level 4, Credits 1
- 900145-000-00-KM-03, Visual Design, NQF Level 4, Credits 4
- 900145-000-00-KM-04, Creating Responsive Websites, NQF Level 4, Credits 11

Total number of credits for Knowledge Component: 27

#### **2.1.2. Application Component:**

- 900145-000-00-PM-01, Getting started with the toolkit/platform, NQF Level 4, Credits 10
- 900145-000-00-PM-02, Participate in a Design Thinking for Innovation Workshops, NQF Level 4, Credits 4
- 900145-000-00-PM-03, Design and Create Aesthetically Pleasing Responsive Websites, NQF Level 4, Credits 10
- 900145-000-00-PM-04, Advancing in Website Design, NQF Level 4, Credits 9

Total number of credits for Application Component: 33

### **2.2 Skills Development Provider Accreditation Requirements**

## **Knowledge Modules**

### *Physical Requirements:*

- The provider must have lesson plans and structured learning material or provide learners with access to structured learning material that addresses all the topics in all the knowledge modules as well as the applied knowledge in the practical skills.
- QCTO/ MICT SETA requirements

### *Human Resource Requirements:*

- Lecturer/learner ratio of 1:20 (Maximum)
- Qualification of lecturer (SME):
  - NQF 5 qualified in industry recognised qualifications with 1 years' experience in the IT industry
  - Cybersecurity vendor certification
- Assessors and moderators: accredited by the MICT SETA

### *Legal Requirements:*

- Legal (product) licences to use the software for learning and training
- OHS compliance certificate

## **Application Modules**

### *Physical Requirements:*

- Valid licenses software and application, including OS.
- Internet connection and hardware availability.
- Examples and information specified in the scope statement and all the case studies, scenarios and access to hardware and software implied in the scope statements of the modules.
- Remote learners: Provider must provide business IT simulation system (e.g. invoice processing).

### *Human Resource Requirements:*

- Qualification of lecturer (SME):
  - NQF 5 industry recognised qualification with 1 year relevant experience
- Assessors and moderators: accredited by the MICT SETA

### *Legal Requirements:*

- Legal (product) licences to use the software for learning and training
- OHS compliance certificate
- Ethical clearance (where necessary)

## **SECTION 2: SKILLS PROGRAMME PROFILE**

### **1. Skills Programme Purpose**

A Front-end Web Designer takes that which is conceptual and translates it into visuals, bringing images, typography, colours, text, negative space and structure together, offering a user experience and a conduit for communicating ideas

### **2. Skills Programme Tasks**

- Design and create responsive sites (NQF Level 4)
- Apply the design cycle (NQF Level 4)

### **3. Skills Programme Task Details**

#### **3.1. Design and create responsive websites (NQF Level 4)**

##### **Unique Product or Service:**

- Responsive websites

##### **Occupational Responsibilities:**

- Design and create aesthetically pleasing and responsive websites

#### **3.2. Know and apply technical and graphic requirements of front-end web design (NQF Level 4)**

##### **Unique Product or Service:**

- Aesthetically pleasing websites

##### **Occupational Responsibilities:**

- Incorporate artwork, animation and automation into front-end web design

## **SECTION 3: SKILLS PROGRAMME COMPONENT SPECIFICATIONS**

### **SECTION 3A: KNOWLEDGE/THEORY MODULE SPECIFICATIONS**

The following modules are compulsory:

- 900145-000-00-KM-01, Introduction to Front-end Web Design, NQF Level 4, Credits 11
- 900145-000-00-KM-02, Fundamentals of Design Thinking and Innovation, NQF Level 4, Credits 1
- 900145-000-00-KM-03, Visual Design, NQF Level 4, Credits 4
- 900145-000-00-KM-04, Creating Responsive Websites, NQF Level 4, Credits 11

# 1. 900145-000-00-KM-01, Introduction to Front-end Web Design, NQF Level 4, Credits 11

## 1.1 Purpose of the Knowledge Module

The main focus of the learning in this knowledge module is to build an understanding of the application of UX (on an internet-based platform) and the legislation and standards which governs front-end web design.

The learning will enable learners to demonstrate an understanding of:

- KM-01-KT01 : The front-end designer **20%**
- KM-01-KT02 : Uses of the internet, the web, mobiles and social media, etc. **35%**
- KM-01-KT03 : Application of UX (on an internet-based platform) design in business **10%**
- KM-01-KT04 : Legislation **35%**

## 1.2 Guidelines for Topics

### 1.2.1. KM-01-KT01 : The front-end designer **20%**

**Topic elements to be covered include:**

- KT0101 The role of a front-end designer
- KT0102 Is coding a necessity?
- KT0103 Value of front-end designers
- KT0104 How front-end designers think
- KT0105 Front-end web designer mind-set
- KT0106 Innovative approach
- KT0107 User experience centeredness (UX)

#### **Internal Assessment Criteria and Weight**

- IAC0101 The role, functions and value of a front-end web designer are clarified.
- IAC0102 Characteristics of a front-end web designer mind-set are clarified.
- IAC0103 The importance of innovation in front-end web design is argued.
- IAC0104 The importance of user experience centeredness (UX) in front-end web design is argued.

**(Weight 20%)**

### 1.2.2. KM-01-KT02 : Uses of the internet, the web, mobiles and social media, etc. **35%**

**Topic elements to be covered include:**

- KT0201 Internet
- KT0202 Web
- KT0203 Social media vs instant messaging
- KT0204 Mobiles
- KT0205 Blogs
- KT0206 Online stores
- KT0207 YouTube
- KT0208 Search engines
- KT0209 Augmented reality and virtual reality (AR and VR)
- KT0210 Graphical user interfaces (UI)
- KT0211 Streaming devices
- KT0212 Difference between front-end and back-end development

### **Internal Assessment Criteria and Weight**

- IAC0201 Definitions and terminology are defined.
- IAC0202 The uses and applications of internet, web, mobile4 and social media are described.
- IAC0203 Purpose and function of UX and UI in the range of applications and uses are defined.

**(Weight 35%)**

#### **1.2.3. KM-01-KT03 : Application of UX (on an internet based platform) design in business 10%**

**Topic elements to be covered include:**

- KT0301 Industries (e.g. banking, insurance, retail, health, etc.)
- KT0302 Search engine optimisation and key-word planning

### **Internal Assessment Criteria and Weight**

- IAC0301 Various industries are listed and the importance of UX and UI design is reasoned.

**(Weight 10%)**

#### **1.2.4. KM-01-KT04 : Legislation 35%**

**Topic elements to be covered include:**

- KT0401 Copyright
- KT0402 Plagiarism
- KT0403 POPI Act
- KT0404 Cybercrimes Act
- KT0405 EU Copyright and data protection
- KT0406 US Copyright and data protection
- KT0407 Lack of copyright protection in Russia and China
- KT0408 Disability laws and accessibility
- KT0409 Compliance, non-compliance and penalties
- KT0410 Monetisation of the solution design elements

### **Internal Assessment Criteria and Weight**

- IAC0401 Understanding of fundamentals of the legal implications of UI design and how it impacts on the design, is demonstrated.

**(Weight 35%)**

## **1.3 Provider Programme Accreditation Criteria**

*Physical Requirements:*

- The provider must have lesson plans and structured learning material or provide learners with access to structured learning material that addresses all the topics in all the knowledge modules as well as the applied knowledge in the practical skills.



- QCTO/ MICT SETA requirements

*Human Resource Requirements:*

- Lecturer/learner ratio of 1:20 (Maximum)
- Qualification of lecturer (SME):
  - NQF 5 qualified in industry recognised qualifications with 1 years' experience in the IT industry
  - Cybersecurity vendor certification
- Assessors and moderators: accredited by the MICT SETA

*Legal Requirements:*

- Legal (product) licences to use the software for learning and training
- OHS compliance certificate

**1.4 Exemptions**

- RPL based

## 2. 251201-005-00-KM-12, Design Thinking Principles for Innovation, NQF Level 4, Credits 1

### 2.1 Purpose of the Knowledge Module

The main focus of the learning in this knowledge module is to build an understanding of the design thinking principles and applications in the workplace

The learning will enable learners to demonstrate an understanding of:

- KM-02-KT01 : Introduction to design thinking **15%**
- KM-02-KT02 : The human element **10%**
- KM-02-KT03 : Creativity **20%**
- KM-02-KT04 : Innovation **20%**
- KM-02-KT05 : Design **10%**
- KM-02-KT06 : Design thinking methodology **10%**
- KM-02-KT07 : Application of design thinking **15%**

### 2.2 Guidelines for Topics

#### 2.2.1. KM-02-KT01 : Introduction to design thinking **15%**

**Topic elements to be covered include:**

- KT0101 Philosophy
- KT0102 Approach and concepts
- KT0103 Definitions and terminology
- KT0104 History

**Internal Assessment Criteria and Weight**

- IAC0101 Design thinking methodology is understood  
**(Weight 15%)**

#### 2.2.2. KM-02-KT02 : The human element **10%**

**Topic elements to be covered include:**

- KT0201 Human centeredness
- KT0202 Human participation

**Internal Assessment Criteria and Weight**

- IAC0201 The principles of design thinking are understood  
**(Weight 10%)**

#### 2.2.3. KM-02-KT03 : Creativity **20%**

**Topic elements to be covered include:**

- KT0301 Creativity is unleashing the potential of the mind to conceive new ideas
- KT0302 Perceiving the world in new ways
- KT0303 Finding hidden patterns
- KT0304 Making connections between seemingly unrelated phenomena
- KT0305 Generating solutions
- KT0306 Application in the workplace

**Internal Assessment Criteria and Weight**

- IAC0301 Creativity is analysed and possible applications are identified

**(Weight 20%)**

**2.2.4. KM-02-KT04 : Innovation**

**20%**

**Topic elements to be covered include:**

- KT0401 Innovation is the action of putting things into practical reality, despite challenges and resistance
- KT0402 Different innovations:
  - Incremental
  - Disruptive
  - Architectural and
  - Radical
- KT0403 Main types of innovation:
  - Process innovation
  - Product innovation
  - Organisational innovation
  - Market innovation
- KT0404 What innovation means to business

**Internal Assessment Criteria and Weight**

- IAC0401 Innovation is analysed and possible applications are identified

**(Weight 20%)**

**2.2.5. KM-02-KT05 : Design**

**10%**

**Topic elements to be covered include:**

- KT0501 Thinking outside the box
- KT0502 Pushing beyond the obvious solutions
- KT0503 Communication through shape and form

**Internal Assessment Criteria and Weight**

- IAC0501 Design is analysed and possible applications are identified

**(Weight 10%)**

**2.2.6. KM-02-KT06 : Design thinking methodology**

**10%**

**Topic elements to be covered include:**

- KT0601 Design thinking phases
- KT0602 Design thinking tools and techniques

### **Internal Assessment Criteria and Weight**

- IAC0601 Design thinking phases, tools and techniques are understood

**(Weight 10%)**

#### **2.2.7. KM-02-KT07 : Application of design thinking**

**15%**

**Topic elements to be covered include:**

- KT0701 Application in software development
- KT0702 Application in cyber security
- KT0703 Business innovation
- KT0704 Innovative problem solving

### **Internal Assessment Criteria and Weight**

- IAC0701 Possible design thinking applications are explored and discussed

**(Weight 15%)**

## **2.3 Provider Programme Accreditation Criteria**

*Physical Requirements:*

- The provider must have lesson plans and structured learning material or provide learners with access to structured learning material that addresses all the topics in all the knowledge modules as well as the applied knowledge in the practical skills.
- QCTO/ MICT SETA requirements

*Human Resource Requirements:*

- Lecturer/learner ratio of 1:20 (Maximum)
- Qualification of lecturer (SME):
  - NQF 5 qualified in industry recognised qualifications with 1 years' experience in the IT industry
  - Cybersecurity vendor certification
- Assessors and moderators: accredited by the MICT SETA

*Legal Requirements:*

- Legal (product) licences to use the software for learning and training
- OHS compliance certificate

## **2.4 Exemptions**

- RPL based

### 3. 900145-000-00-KM-03, Visual Design, NQF Level 4, Credits 4

#### 3.1 Purpose of the Knowledge Module

The main focus of the learning in this knowledge module is to build an understanding of the key concepts related to visual design, graphic design, UX and the affect it has on the design of a website.

The learning will enable learners to demonstrate an understanding of:

- KM-03-KT01 : Key concepts of visual design 5%
- KM-03-KT02 : Look and feel 5%
- KM-03-KT03 : Creative writing 5%
- KM-03-KT04 : Foundations of user experience (UX) 15%
- KM-03-KT05 : User interfaces (UI) 5%
- KM-03-KT06 : General best practices and principles of interface design 15%
- KM-03-KT07 : Key graphic design principles in UI 20%
- KM-03-KT08 : Creating layouts and prototypes (automated process) 15%
- KM-03-KT09 : Typography 5%
- KM-03-KT10 : Style sheets 5%
- KM-03-KT11 : Web forms 5%

#### 3.2 Guidelines for Topics

- 3.2.1. KM-03-KT01 : Key concepts of visual design 5%**

*Topic elements to be covered include:*

- KT0101 Line
- KT0102 Shapes
- KT0103 Texture
- KT0104 Colour
- KT0105 Grids

##### **Internal Assessment Criteria and Weight**

- IAC0101 An understanding of the key concepts of visual design is demonstrated.
- IAC0102 The application of key concepts of visual design is understood.

**(Weight 5%)**

- 3.2.2. KM-03-KT02 : Look and feel 5%**

*Topic elements to be covered include:*

- KT0201 Colour scheme
- KT0202 Content
- KT0203 Typography
- KT0204 Layout
- KT0205 Visuals
- KT0206 Arrangement of elements

##### **Internal Assessment Criteria and Weight**

- IAC0201 An understanding of the key concepts of the look and feel of the UI and how it affects UX is demonstrated.

- IAC0202 The application of key concepts of look and feel is understood.

**(Weight 5%)**

**3.2.3. KM-03-KT03 : Creative writing 5%**

**Topic elements to be covered include:**

- KT0301 Creative writing for business
- KT0302 Setting search words or phrases

**Internal Assessment Criteria and Weight**

- IAC0301 An understanding of the key concepts of creative writing for business and how it affects UX is demonstrated.
- IAC0302 The application of key concepts of creative writing for business is understood.

**(Weight 5%)**

**3.2.4. KM-03-KT04 : Foundations of user experience (UX) 15%**

**Topic elements to be covered include:**

- KT0401 Engaging the emotions of the user
- KT0402 User personas
- KT0403 Information architecture
- KT0404 User flows
- KT0405 Wireframes and sequence of wireframes
- KT0406 Prototyping and mock-ups
- KT0407 UX designer tasks and responsibilities
  - Understand the user and the brand
  - Conduct user research
  - Analyse what you've learned
  - Design
  - Conduct user testing
  - Present work

**Internal Assessment Criteria and Weight**

- IAC0401 An understanding of the foundations of UX is demonstrated.
- IAC0402 The application of the foundations of UX is understood.

**(Weight 15%)**

**3.2.5. KM-03-KT05 : User interfaces (UI) 5%**

**Topic elements to be covered include:**

- KT0501 Concept, definition, terminology
- KT0502 UI elements
- KT0503 User flows
- KT0504 Key principles:

- Intuitive design
- Simplicity
- Call-to-action

**Internal Assessment Criteria and Weight**

- IAC0501 An understanding of the foundations of UI is demonstrated.
- IAC0502 The application of the foundations of UI is understood.

**(Weight 5%)**

**3.2.6. KM-03-KT06 : General best practices and principles of interface design 15%**

**Topic elements to be covered include:**

- KT0601 Make user interfaces consistent
- KT0602 Allow users to navigate easily via shortcuts
- KT0603 Provide informative feedback
- KT0604 Design dialog to yield closure
- KT0605 Support internal locus of control (keep users in control)
- KT0606 Minimize short-term memory load
- KT0607 Seek universal usability
- KT0608 Prevent errors
- KT0609 Permit easy reversal of actions
- KT0610 SEO and key-word planning

**Internal Assessment Criteria and Weight**

- IAC0601 An understanding of the general best practices and principles of UI design is demonstrated.
- IAC0602 The application of general best practices and principles of UI design is understood.

**(Weight 15%)**

**3.2.7. KM-03-KT07 : Key graphic design principles in UI 20%**

**Topic elements to be covered include:**

- KT0701 Clarity
- KT0702 Familiarity
- KT0703 User control
- KT0704 Hierarchy
- KT0705 Negative space
- KT0706 Flexibility
- KT0707 Accessibility
- KT0708 Contrast
- KT0709 Balance
- KT0710 Emphasis
- KT0711 Proportion
- KT0712 Repetition

- KT0713 Rhythm
- KT0714 Pattern
- KT0715 Movement (of the eye over the design)
- KT0716 Variety
- KT0717 Unity

**Internal Assessment Criteria and Weight**

- IAC0701 An understanding of the key design principles in UI is demonstrated.
- IAC0702 The application of the key design principles in UI is understood.

**(Weight 20%)**

**3.2.8. KM-03-KT08 : Creating layouts and prototypes (automated process) 15%**

**Topic elements to be covered include:**

- KT0801 Layout types
  - Magazine style
  - Container free format
  - Split screen
  - Single-page layouts
  - F-pattern
  - Z-pattern
  - Horizontal symmetry
  - Approximate horizontal symmetry
  - Vertical symmetry
  - Asymmetry
- KT0802 Wireframes
- KT0803 Navigation tabs
- KT0804 Cards
- KT0805 Grids
- KT0806 Progressive disclosure
- KT0807 Carousels
- KT0808 Breadcrumbs
- KT0809 Common patterns
- KT0810 Prototyping

**Internal Assessment Criteria and Weight**

- IAC0801 An understanding of patterns and designs for front-end web development is demonstrated.
- IAC0802 The application of patterns and designs for front-end web development is understood.
- IAC0803 An understanding of the principles of creating layouts and prototypes in front-end web development is demonstrated.
- IAC0804 The application of the principles of creating layouts and prototypes in front-end web development is understood.

**(Weight 15%)**



### 3.2.9. KM-03-KT09 : Typography

5%

**Topic elements to be covered include:**

- KT0901 Serif
- KT0902 Sans serif
- KT0903 Display typefaces

**Internal Assessment Criteria and Weight**

- IAC0901 An understanding of the design considerations on which typefaces to use is demonstrated.

**(Weight 5%)**

### 3.2.10. KM-03-KT10 : Style sheets

5%

**Topic elements to be covered include:**

- KT1001 What they are and how to use them
- KT1002 Advantages
- KT1003 Cascading style sheets
- KT1004 Technologies (language extensions, plug-ins and frameworks)
- KT1005 Browser vendors and how they apply the style sheet rules

**Internal Assessment Criteria and Weight**

- IAC1001 An understanding of style sheets is demonstrated.
- IAC1002 An understanding of the design consideration on which style sheets to use is demonstrated.

**(Weight 5%)**

### 3.2.11. KM-03-KT11 : Web forms

5%

**Topic elements to be covered include:**

- KT1101 What they are and how to use them
- KT1102 Advantages

**Internal Assessment Criteria and Weight**

- IAC1101 Web forms are defined.
- IAC1102 Application of web forms is understood.
- IAC1103 The advantages of web forms are analysed.

**(Weight 5%)**

## 3.3 Provider Programme Accreditation Criteria

*Physical Requirements:*

- The provider must have lesson plans and structured learning material or provide learners with access to structured learning material that addresses all the topics in all the knowledge modules as well as the applied knowledge in the practical skills.
- QCTO/ MICT SETA requirements

*Human Resource Requirements:*

- Lecturer/learner ratio of 1:20 (Maximum)
- Qualification of lecturer (SME):
  - NQF 5 qualified in industry recognised qualifications with 1 years' experience in the IT industry
  - Cybersecurity vendor certification
- Assessors and moderators: accredited by the MICT SETA

*Legal Requirements:*

- Legal (product) licences to use the software for learning and training
- OHS compliance certificate

**3.4 Exemptions**

- RPL based

## 4. 900145-000-00-KM-04, Creating Responsive Websites, NQF Level 4, Credits 11

### 4.1 Purpose of the Knowledge Module

The main focus of the learning in this knowledge module is to build an understanding of the methods available and the design process for front-end web design.

The learning will enable learners to demonstrate an understanding of:

- KM-04-KT01 : Responsive design process: creating the solution **10%**
- KM-04-KT02 : UX development lifecycle **20%**
- KM-04-KT03 : Front-end web design software, platforms and languages **35%**
- KM-04-KT04 : Graphic design for front-end web development **25%**
- KM-04-KT05 : Introduction to suitable IDE (Integrated Development Environment) **10%**

### 4.2 Guidelines for Topics

- 4.2.1. KM-04-KT01 : Responsive design process: creating the solution **10%****

**Topic elements to be covered include:**

- KT0101 Design process – call-to-action features
- KT0102 Integration of plugin-ins (Optional)
- KT0103 Wire-framing
- KT0104 Prototyping
- KT0105 Minimum errors
- KT0106 Understanding clients' needs
- KT0107 Expressing clients' needs in design, with mini client reviews

#### **Internal Assessment Criteria and Weight**

- IAC0101 Concepts of the responsive design process are defined.
- IAC0102 An understanding of the principles of responsive design is demonstrated.
- IAC0103 The application of the principles of responsive design is understood.

**(Weight 10%)**

- 4.2.2. KM-04-KT02 : UX development lifecycle **20%****

**Topic elements to be covered include:**

- KT0201 What is a UX development lifecycle?
- KT0202 Important characteristics of a UX development lifecycle
- KT0203 Understand different life cycles
- KT0204 Select a suitable UX development lifecycle for UX product development
- KT0205 Main stages in UX development life cycle
  - Design briefs
  - Gathering relevant information
  - Planning
  - Design layout
  - Development
  - Testing, review and launch

### **Internal Assessment Criteria and Weight**

- IAC0201 The concept of UX development lifecycle is defined.
- IAC0202 A basic understanding of the UX development lifecycle is demonstrated.
- IAC0203 The application of the UX development lifecycle is understood.

**(Weight 20%)**

#### **4.2.3. KM-04-KT03 : Front-end web design software, platforms and languages 35%**

##### **Topic elements to be covered include:**

- KT0301 Technology changes and keeping website current
- KT0302 Changing to keep up with updates, trends or customer and user needs
- KT0303 Coding vs scripting vs plug-and-play
- KT0304 Available languages: open source and proprietary
- KT0305 Common front-end web design languages – what they do and their respective advantages  
Language for layout and structure (HTML/HTML5)  
Language for styling a website (CSS)  
Language for developing website content, games, apps and software (JavaScript)  
Language for automating the process  
A platform for building web applications and extending through frameworks library
- KT0306 Basic comparison of front-end web design software, platforms and languages in terms of expressiveness, reliability and performance

### **Internal Assessment Criteria and Weight**

- IAC0301 Aspects impacting on the currency of the website and the importance of keeping the website current are stated.
- IAC0302 Common front-end web design languages are described in terms of their respective uses and functions.
- IAC0303 A basic comparison of front-end web design software, platforms and languages in terms of expressiveness, reliability and performance is conducted and selection is motivated.

**(Weight 35%)**

#### **4.2.4. KM-04-KT04 : Graphic design for front-end web development 25%**

##### **Topic elements to be covered include:**

- KT0401 Vector design applications
- KT0402 Types of animation and how to use them
  - Traditional animation
  - 2D animation
  - 3D animation
  - Motion graphics

- Stop motion
- KT0403 Image galleries
- KT0404 Automation
- KT0405 Light weight
- KT0406 Artwork (Raster vs Vector)
- KT0407 Using the graphic tools to design website that is responsive to the resolution of the device
- KT0408 Sourcing of royalty free elements (Royalties related to the platform)
- KT0409 Graphic design tools and toolkits

**Internal Assessment Criteria and Weight**

- IAC0401 Concepts of graphic design are defined.
- IAC0402 An understanding of the principles and functions of graphic design for front-end development is demonstrated.
- IAC0403 The application of the principles and functions of graphic design for front-end development is understood.

**(Weight 25%)**

**4.2.5. KM-04-KT05 : Introduction to suitable IDE (Integrated Development Environment) 10%**

**Topic elements to be covered include:**

- KT0501 Definition (What is an IDE?)
- KT0502 Purpose of an IDE
- KT0503 Useful features of IDE
- KT0504 Strengths and weakness of the IDE
- KT0505 Define refactoring
- KT0506 Define debugging

**Internal Assessment Criteria and Weight**

- IAC0501 Definitions, functions and features of each topic element are stated.

**(Weight 10%)**

**4.3 Provider Programme Accreditation Criteria**

*Physical Requirements:*

- The provider must have lesson plans and structured learning material or provide learners with access to structured learning material that addresses all the topics in all the knowledge modules as well as the applied knowledge in the practical skills.
- QCTO/ MICT SETA requirements

*Human Resource Requirements:*

- Lecturer/learner ratio of 1:20 (Maximum)
- Qualification of lecturer (SME):

- NQF 5 qualified in industry recognised qualifications with 1 years' experience in the IT industry
- Cybersecurity vendor certification
- Assessors and moderators: accredited by the MICT SETA

*Legal Requirements:*

- Legal (product) licences to use the software for learning and training
- OHS compliance certificate

**4.4 Exemptions**

- RPL based

### **SECTION 3B: APPLICATION MODULE SPECIFICATIONS**

The following Application Modules are compulsory

- 900145-000-00-PM-01, Getting started with the toolkit/platform, NQF Level 4, Credits 10
- 900145-000-00-PM-02, Participate in a Design Thinking for Innovation Workshop s, NQF Level 4, Credits 4
- 900145-000-00-PM-03, Design and Create Aesthetically Pleasing Responsive Websites, NQF Level 4, Credits 10
- 900145-000-00-PM-04, Advancing in Website Design, NQF Level 4, Credits 9

## 1. 900145-000-00-PM-01, Getting started with the toolkit/platform, NQF Level 4, Credits 10

### 1.1 Purpose of the Application Module

The focus of the learning in this module is on providing the learner with an opportunity to use the functionalities of the selected platform and to navigate between the various functionalities.

The learner will be required to:

- PM-01-PS01 : Download, install and run the selected web design toolkit/platform
- PM-01-PS02 : Getting started with web design
- PM-01-PS03 : Apply applications and features of the toolkit/platform practically
- PM-01-PS04 : Getting started with an IDE

### 1.2 Guidelines for Practical Skills

#### 1.2.1. PM-01-PS01 : Download, install and run the selected web design toolkit/platform

##### **Scope of Application Topic:**

Given an applicable instruction and access to a learning platform (Frameworks available: Angular. Aurelia. Vue.js. React. Mithril. Riot. Knockout. Backbone. Polymer), the learner must be able to:

- PA0101 Download and install the selected toolkit/platform
- PA0102 Troubleshoot installation and resolve any errors or issues
- PA0103 Become proficient with functionalities and interfaces of the toolkit/platform
- PA0104 Navigate between the different functions of the toolkit
- PA0105 Upgrade with new releases

##### **Applied Knowledge**

- AK0101 Toolkit/platform functionalities, interfaces and navigation.

##### **Internal Assessment Criteria**

- IAC0101 Selected platform is downloaded, installed and any errors or issues are resolved.
- IAC0102 Functionalities and interfaces of the toolkit/platform are explored to familiarise self.

#### 1.2.2 PM-01-PS02 : Getting started with web design

##### **Scope of Application Topic:**

Given an applicable instruction and access to a learning platform, the learner must be able to:

- PA0201 Start with a drag-and-drop interface for building a website, e.g., Wix
- PA0202 Start with HTML
- PA0203 Start with CSS - Styling HTML5 by Using CSS3
- PA0204 Start with JavaScript (writing of code) – heavy focus
- PA0205 Design page layouts – Create and style HTML pages
- PA0206 Graphic design with CSS
- PA0207 Work with tables and columns
- PA0208 Create a web form - Create Forms to Collect and Validate User Input (HTML)
- PA0209 Work with events and styles
- PA0210 Communicate with a remote server
  - Create objects and methods by using JavaScript
  - Create interactive pages by using HTML5 APIs



- Add offline support to web applications
  - Asynchronous programming in JavaScript
  - Send and receive data by using the XMLHttpRequest Object
  - Send and receive data by using the Fetch API
  - Implement real-time communication by using web sockets
  - Perform background processing by using web workers
- PA0211 Implement an adaptive user interface
  - Create advanced graphics
  - Animate the user interface
- PA0212 Package and optimise your web application for production deployment

### **Applied Knowledge**

- AK0201 Toolkit/platform functionalities, interfaces and navigation.

### **Internal Assessment Criteria**

- IAC0201 Functionalities and interfaces of the toolkits/platforms are explored to familiarise self.
- IAC0202 Complete self-paced exercises to experience and apply the various toolkits.
- IAC0203 Navigate between the different functions of the toolkit(s).

### **1.2.3. PM-01-PS03 : Apply applications and features of the toolkit/platform practically**

#### **Scope of Application Topic:**

Given an applicable instruction and access to a learning platform (for example: Canvas component, Inkscape, GIMP, Blender, Photopea), the learner must be able to:

- PA0301 Identify the capabilities of the toolkit/platform and the files it generates
- PA0302 Identify components of the toolkit/platform environment
- PA0303 Publish a file for display on the Web
- PA0304 Create a new file from a template
- PA0305 Create and modify freeform shapes
- PA0306 Use the Help window effectively
- PA0307 Edit Vector paths
- PA0308 Import a video file using HTML5

### **Applied Knowledge**

- AK0301 Toolkit/platform tools, functionalities and components

### **Internal Assessment Criteria**

- IAC0301 The toolkits are used to write a single page application that performs the basic functions of the framework.
- IAC0302 It is made available offline in the browser and the data are visually manipulated.

### **1.2.4. PM-01-PS04 : Getting started with an IDE**

#### **Scope of Application Topic:**

Given an applicable instruction and access to a learning platform, the learner must be able to:

- PA0401 Install IDE and experience introduction to IDE
- PA0402 Create a new UX project with IDE

- PA0403 Make the code more efficient and maintainable with refactoring with IDE
- PA0404 Perform debugging with IDE
- PA0405 Extend IDE capabilities with plug-ins
- PA0406 Use version and source code control using IDE
- PA0407 Perform repository management for version control
- PA0408 Rapidly put together a complete website using WYSIWYG Development using CASE Tools (weebly, etc.)

### ***Applied Knowledge***

- AK0401 Toolkit/platform tools, functionalities and components

### ***Internal Assessment Criteria***

- IAC0401 IDE is installed and successfully used for creating a new Java project using mentioned functionalities.

## **1.3 Provider Programme Accreditation Criteria**

### *Physical Requirements:*

- Valid licenses software and application, including OS.
- Internet connection and hardware availability.
- Examples and information specified in the scope statement and all the case studies, scenarios and access to hardware and software implied in the scope statements of the modules.
- Remote learners: Provider must provide business IT simulation system (e.g. invoice processing).

### *Human Resource Requirements:*

- Qualification of lecturer (SME):
  - NQF 5 industry recognised qualification with 1 year relevant experience
- Assessors and moderators: accredited by the MICT SETA

### *Legal Requirements:*

- Legal (product) licences to use the software for learning and training
- OHS compliance certificate
- Ethical clearance (where necessary)

## **1.4 Exemptions**

- None, but the module can be achieved through RPL

## **2. 251201-005-00-PM-13, Participate in a Design Thinking for Innovation Workshop, NQF Level 4, Credits 4**

### **2.1 Purpose of the Application Module**

The focus of the learning in this module is on providing the learner with an opportunity to acquire the skills to participate in a design thinking intervention, apply design thinking methodologies and look for opportunities to apply the same methodology in world-of-work and personal life

The learner will be required to:

- PM-02-PS01 : Collaborate with team members to apply innovative and problem-solving strategies
- PM-02-PS02 : Apply design thinking process to solve a problem creatively and innovatively

### **2.2 Guidelines for Practical Skills**

- 2.2.1. PM-02-PS01 : Collaborate with team members to apply innovative and problem-solving strategies**

#### ***Scope of Application Topic:***

Given access to a Design Thinking workshop with multidisciplinary team members, the learner must be able to:

- PA0101 Interact and collaborate with team members
- PA0102 Engage in dialogues as required by the process
- PA0103 Participate in the activities as presented by the facilitator
- PA0104 Actively contribute to the discussions and activities

#### ***Applied Knowledge***

- AK0101 Design Thinking as a solution-based approach to solving problems

#### ***Internal Assessment Criteria***

- IAC0101 The ability to collaborate with team members towards a joint goal is demonstrated

- 2.2.2 PM-02-PS02 : Apply design thinking process to solve a problem creatively and innovatively**

#### ***Scope of Application Topic:***

Given access to a Design Thinking workshop with multidisciplinary team members, techniques and equipment, the learner must be able to:

- PA0201 Empathise with users/customers by setting aside own assumptions and formulating real insights about the user
- PA0202 Define the problem statement and create a point-of-view statement, indicating a specific user, a need and an insight
- PA0203 Ideate by challenging assumptions and creating ideas for innovative solutions to help resolve the challenges and needs
- PA0204 Prototype workable ideas
- PA0205 Test the solution applying a reiterative process and using various techniques

#### ***Applied Knowledge***

- AK0201 Involving five phases: Empathize, Define, Ideate, Prototype and Test

### **Internal Assessment Criteria**

- IAC0201 The ability to participate in the design thinking phases is demonstrated
- IAC0202 Skills are used to understand users, challenge assumptions, redefine problems and create innovative solutions to prototype and test an innovative and creative solution

### **2.3 Provider Programme Accreditation Criteria**

#### *Physical Requirements:*

- Valid licenses software and application, including OS.
- Internet connection and hardware availability.
- Examples and information specified in the scope statement and all the case studies, scenarios and access to hardware and software implied in the scope statements of the modules.
- Remote learners: Provider must provide business IT simulation system (e.g. invoice processing).

#### *Human Resource Requirements:*

- Qualification of lecturer (SME):
  - NQF 5 industry recognised qualification with 1 year relevant experience
- Assessors and moderators: accredited by the MICT SETA

#### *Legal Requirements:*

- Legal (product) licences to use the software for learning and training
- OHS compliance certificate
- Ethical clearance (where necessary)

### **2.4 Exemptions**

- None, but the module can be achieved through RPL

### 3. 900145-000-00-PM-03, Design and Create Aesthetically Pleasing Responsive Websites, NQF Level 4, Credits 10

#### 3.1 Purpose of the Application Module:

The focus of the learning in this module is on providing the learner with an opportunity to apply design principles and technical requirements for front-end web development.

The learner will be required to:

- PM-03-PS01 : Create aesthetically pleasing digital designs for delivery using a responsive design process (mobile, tablet and desktop)
- PM-03-PS02 : Combine multi-media, text and data into digital is dit korrek?? interfaces that can be consumed by users across any device
- PM-03-PS03 : Create a UI (user interface) that enhances UX
- PM-03-PS04 : Conduct testing of the website features to ensure minimum errors
- PM-03-PS05 : Implement secure access to information from any device
- PM-03-PS06 : Launch the website and provide after-launch services

#### 3.2 Guidelines for Practical Skills

- 3.2.1. PM-03-PS01 : Create aesthetically pleasing digital designs for delivery using a responsive design process (mobile, tablet and desktop)**

##### **Scope of Application Topic:**

Given an applicable instruction and access to a learning platform, the learner must be able to:

- PA0101 Interpret a design brief
- PA0102 Understand client's needs
- PA0103 Apply design techniques and concepts to enhance user experience (UX)
- PA0104 Express client's needs in design, with mini client reviews

##### **Applied Knowledge**

- AK0101 Design process
- AK0102 Design lifecycle

##### **Internal Assessment Criteria**

- IAC0101 A responsive design process is applied.
- IAC0102 Client needs are expressed in the digital design.
- IAC0103 Solution is applicable to mobile, tablet and desktop environments.

- 3.2.2 PM-03-PS02 : Combine multi-media, text and data into digital interfaces that can be consumed by users across any device**

##### **Scope of Application Topic:**

Given an applicable instruction and access to a learning platform, the learner must be able to:

- PA0201 Apply the web design life-cycle
- PA0202 Integrate plugin-ins
- PA0203 Provide styling and additional instructions on how elements are going to appear through applying fonts, adding padding, setting alignment, choosing colours and creating grids, typesets and colours
- PA0204 Design a wireframe (Do a minimum of 4 wireframes)

- step through the wireframes with the client
- PA0205 Construct user flows to communicate how people will move through a design
- PA0206 Use user flows to prioritize the most important sections and make sure that people can access them
- PA0207 Ensure logic arrangement of ideas and visuals on each page that directs how users will traverse through it
- PA0208 Conduct keyword planning for web design including call-to-action features
- PA0209 Construct an information architecture providing a clear customer journey using information architecture and content mapping to provide a blueprint for how the website and each section will work together
- PA0210 Ensure social media integration and SEO (search engine optimisation) integration and key-word planning
- PA0211 Create a prototype (interactive mock-up) of the web design to present to the client. Use Prototypes that act as a representation of a functioning design. Images, interactions, content, and other important elements are all in place and replicate the real-world design. Prototypes are used to get feedback and to fine-tune a design throughout the process.

### **Applied Knowledge**

- AK0201 Graphic design principles
- AK0202 Toolkit/platform tools, functionalities and components

### **Internal Assessment Criteria**

- IAC0201 Attractive, responsive-design sites, blogs, and online stores are created and published
- IAC0202 A wireframe is mapped out to show where on a web page headings, text, visuals, forms, and other elements are going to be placed.
- IAC0203 Wireframes are mapped out for creating a consistent experience, for structuring layouts and to not miss anything that needs to be included.
- IAC0204 The wireframes are stepped through.

### **3.2.3. PM-03-PS03 : Create a UI (user interface) that enhances UX**

#### **Scope of Application Topic:**

Given an applicable instruction and access to a learning platform, the learner must be able to:

- PA0301 Apply principles of simplicity when creating UI for increased user-friendliness (People landing on a website should immediately understand the systems that are in place to assist navigating through it and should streamline someone's experience in interacting with a website)
- PA0302 Create user interface (UI) elements on a website to allow someone to put actions into motion
- PA0303 Create intuitive interfaces allowing for consistent interacting and engaging with a website and following repeatable patterns
- PA0304 UI exists to optimize usability by means of:
  - making the controls easy to use, as well as obvious in their functionality,
  - minimizing the number of navigational options,
  - making the checkout process quick, or
  - integrating other interactive elements that increase accessibility
- PA0305 Ensure that back-end data is supported by the front-end (Error, success messages, displaying the response data into front-end e.g., into a Bootstrap Card or table)

### **Applied Knowledge**

- AK0301 Toolkit/platform functionalities, interfaces and navigation
- AK0302 UX implications for web design
- AK0303 Aesthetic UI design principles
- AK0304 Technical UI design principles

### **Internal Assessment Criteria**

- IAC0301 Aesthetically pleasing digital designs for delivery are created, using HTML5, CSS and JavaScript

### **3.2.4. PM-03-PS04 : Conduct testing of the website features to ensure minimum errors**

#### **Scope of Application Topic:**

Given an applicable instruction, pre-launch checklist and access to a learning platform, the learner must be able to:

- PA0401 Execute testing of the solution using a pre-launch checklist e.g., checking for elements not stacking on each other, etc.
- PA0402 Execute debugging of the solution
- PA0403 Resolve elements that cannot accept the data to be displayed

### **Applied Knowledge**

- AK0401 Graphic design principles
- AK0402 Testing and debugging tools
- AK0403 Toolkit/platform tools, functionalities and components

### **Internal Assessment Criteria**

- IAC0401 Testing is performed using a pre-launch checklist.

### **3.2.5. PM-03-PS05 : Implement secure access to information from any device**

#### **Scope of Application Topic:**

Given an applicable instruction and access to a learning platform, the learner must be able to:

- PA0501 Integrate blocker code into the web page with HTTP and HTTPS

### **Applied Knowledge**

- AK0501 Toolkit/platform tools, functionalities and components
- AK0502 Blocker code
- AK0503 HTTP and HTTPS

### **Internal Assessment Criteria**

- IAC0501 Blocker code is integrated into the web page with HTTP and HTTPS to ensure secure access from any device.

### **3.2.6. AM-03-PS06 : Launch the website and provide after-launch services**

#### **Scope of Application Topic:**

Given an applicable instruction and access to a learning platform, the learner must be able to:

- PA0601 Launch the website
- PA0602 Provide after-launch services

**Applied Knowledge**

- AK0601 Launching procedures

**Internal Assessment Criteria**

- IAC0601 The website is successfully launched.

**3.3 Provider Programme Accreditation Criteria**

*Physical Requirements:*

- Valid licenses software and application, including OS.
- Internet connection and hardware availability.
- Examples and information specified in the scope statement and all the case studies, scenarios and access to hardware and software implied in the scope statements of the modules.
- Remote learners: Provider must provide business IT simulation system (e.g. invoice processing).

*Human Resource Requirements:*

- Qualification of lecturer (SME):
  - NQF 5 industry recognised qualification with 1 year relevant experience
- Assessors and moderators: accredited by the MICT SETA

*Legal Requirements:*

- Legal (product) licences to use the software for learning and training
- OHS compliance certificate
- Ethical clearance (where necessary)

**3.4 Exemptions**

- None, but the module can be achieved through RPL



## 4. 900145-000-00-PM-04, Advancing in Website Design, NQF Level 4, Credits 9

### 4.1 Purpose of the Application Module:

The focus of the learning in this module is on providing the learner with an opportunity to introduce animation and automation into the web design and communicate with the back-end.

The learner will be required to:

- PM-04-PS01 : Include animation into the web design
- PM-04-PS02 : Automate display of data procedure
- PM-04-PS03 : Getting started with Restful APIs
- PM-04-PS04 : Prepare for, design and hand over the web page

### 4.2 Guidelines for Practical Skills

#### 4.2.1. PM-04-PS01 : Include animation into the web design

##### **Scope of Application Topic:**

Given an applicable instruction and access to a learning platform, the learner must be able to:

- PA0101 Apply subtle animation e.g. box popping up into the UI
- PA0102 Apply full animation (transitions from one to next one and animate components in that space)
- PA0103 Include audio
- PA0104 Include library on the website and use works of art (free-to-use) complying with copyright requirements

##### **Applied Knowledge**

- AK0101 Toolkit/platform tools, functionalities and components
- AK0102 Animation principles

##### **Internal Assessment Criteria**

- IAC0101 Animation is included into the web design and enhances aesthetics and UX.
- IAC0102 A menu is created which is an animated menu system

#### 4.2.2 PM-04-PS02 : Automate display of data procedure

##### **Scope of Application Topic:**

Given an applicable instruction and access to a learning platform, the learner must be able to:

- PA0201 Include auto filling functions (e.g. typing in a name when it comes to forms)
- PA0202 Include functions for downloading a form
- PA0203 Include hyperlinking through automation
- PA0204 Introduce MVC (model view controller) functionalities (introductory level)

##### **Applied Knowledge**

- AK0201 Toolkit/platform tools, functionalities and components
- AK0202 Automation principles

##### **Internal Assessment Criteria**

- IAC0201 Automation is included into the web design and enhances website functionalities and UX.

#### **4.2.3. PM-04-PS03 : Getting started with Restful APIs**

##### ***Scope of Application Topic:***

Given an applicable instruction and access to a learning platform, the learner must be able to:

- PA0301 Interact with back-end using API functionalities
- PA0302 Call the data that had been developed
- PA0303 Pull, display and visually manipulate data into a story
- PA0304 Perform Create, Replace, Update and Delete (CRUD) actions against a database using SQL and the relevant APIs to present such data using JSON

##### ***Applied Knowledge***

- AK0301 Restful API tools, functionalities and components

##### ***Internal Assessment Criteria***

- IAC0301 Expected results with Restful API are achieved.

#### **4.2.4. AM-04-PS04 : Prepare for, design and hand over the web page**

##### ***Scope of Application Topic:***

Given an applicable instruction and access to a learning platform, the learner must be able to:

- PA0401 Initially question about client requirements
- PA0402 Understand and respond to what the client wants as well as the requirements from the client
- PA0403 Construct a workable plan in consultation with the client
- PA0404 Secure the web domain
- PA0405 Get and secure artwork for the web
- PA0406 Get approvals
- PA0407 Stay within the budget
- PA0408 Design the web page
- PA0409 Launch and hand over the solution to the client

##### ***Applied Knowledge***

- AK0401 Design lifecycle
- AK0402 Implications of legislation for the front-end web design product

##### ***Internal Assessment Criteria***

- IAC0401 The design lifecycle is implemented for front-end web design.
- IAC0402 The design process is managed and problems are solved.
- IAC0403 Compliance with copyright is ensured.

### **4.3 Provider Programme Accreditation Criteria**

#### ***Physical Requirements:***

- Valid licenses software and application, including OS.
- Internet connection and hardware availability.
- Examples and information specified in the scope statement and all the case studies, scenarios and access to hardware and software implied in the scope statements of the modules.

- Remote learners: Provider must provide business IT simulation system (e.g. invoice processing).

*Human Resource Requirements:*

- Qualification of lecturer (SME):
  - NQF 5 industry recognised qualification with 1 year relevant experience
- Assessors and moderators: accredited by the MICT SETA

*Legal Requirements:*

- Legal (product) licences to use the software for learning and training
- OHS compliance certificate
- Ethical clearance (where necessary)

**4.4 Exemptions**

- None, but the module can be achieved through RPL