



Republic of Rwanda
Ministry of Education



RTB | RWANDA
TVET BOARD

USER INTERFACE DESIGN

MMPUI501

Design User Interface

RQF Level: 5

Learning Hours

Credits: 8



Sector: ICT AND MULTIMEDIA

Trade: MULTIMEDIA PRODUCTION

Module Type: SPECIFIC

Curriculum: ICTMMP5001-TVET Level 5 in Multimedia Production

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Elements of competency	Performance criteria
1. Produce wireframes	1.1. Project requirements are properly interpreted according to the project brief elements
	1.2. Wireframes are properly defined based on device specification, content, and user interactions
	1.3. Wireframes are properly created according to UI design principles.
2. Design UI elements	2.1. Tools are appropriately selected based on their features and capabilities
	2.2. Style guide document is properly designed based on design principles and brand guidelines.
	2.3. UI layouts are strategically created according to responsiveness across devices
3. Test usability	3.1. Usability testing is properly conducted according to usability test methods.
	3.2. Feedback is systematically gathered according to feedback collection methods
	3.3. UI designs are properly refined based on feedback.
4. Produce mock-ups	4.1. UI specifications are properly documented in accordance with implementation requirements
	4.2. UI products are properly displayed for different devices according to responsive design principles
	4.3. Files are properly exported according to export guidelines

Purpose statement	At the end of this module, trainees will have acquired User Interface design fundamentals. They will be equipped to interpret project goals, create wireframes, and design visually appealing User Interface elements. They will also be able to gather user feedback and refine their designs accordingly. Ultimately, they will have the ability to produce mock-ups suitable for developer implementation.						
Learning assumed to be in place	N/A						
Delivery modality	Training delivery			100%	Assessment		Total 100%
	Theoretical content			30%	Formative assessment	30%	50%
	Practical work:			70%		70%	
	• Group work and presentation	30%					
	• Individual work	40%					
				Summative Assessment		50%	

Knowledge, Skills, and Attitude

Knowledge	Skills	Attitude
✓ Describe user experience (UI/UX) principles ✓ Describe Interaction design ✓ Describe usability testing ✓ Interpret mobile and web design trends ✓ Describe platform guidelines and standards	✓ Create Graphic designs ✓ Apply CSS and HTML ✓ Create Animations ✓ Use motion graphics software ✓ Manage time ✓ Create Wireframes ✓ Perform prototyping ✓ Collaborate with clients ✓ Interpret Information architecture	✓ Demonstrate creativity by generating original and innovative design concepts ✓ Show passion by showcasing enthusiasm for design and creating captivating work ✓ Demonstrate proactivity in taking initiatives ✓ Maintain professionalism by adhering to high standards of conduct ✓ Punctuality to deliver the project ✓ Embrace continuous learning to stay abreast of new techniques and trends in design ✓ Demonstrate resilience in handling criticism and challenges ✓ Be detail-oriented to ensure polished and accurate designs ✓ Showcase flexibility in adjusting to changes and feedbacks ✓ Demonstrate communication skills to communicate with the team and the client effectively ✓ Demonstrate empathy in understanding audience needs for user-friendly designs.

Course content

Learning outcomes	At the end of the module the learner will be able to: 1. Produce wireframes 2. Design UI elements
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	3. Test usability 4. Produce mock-ups
Learning outcome 1: PRODUCE WIREFRAMES	Learning hours: 20 HOURS
Indicative content	
• Interpreting Project requirements ✓ Identifying Project Goals and Objectives ✓ Identifying Success Metrics ✓ Describing the target audience ✓ Key features and functionalities + Describing common UI Features + Describing common UI functionalities ✓ Identifying technical considerations + Target platforms + Responsive design + Image size optimization ✓ Common UI deliverables + Wireframes + UI Designs + Interactive Prototypes + Final Mockups + Design Assets + Documentation + Presentation Materials • Defining Wireframes ✓ Device Specifications + Screen sizes + Resolution + Touch vs. mouse input ✓ Specifying content, and interactions + Defining user flows and user journeys	

- Identifying key navigation elements - Identifying user input methods Creating wireframes ✓ Hand-Drawn Wireframes - Wireframe sketching tools - Sketching techniques for UI elements ✓ Digital Wireframing - Wireframing software - Exploring the interface and basic functionalities - Creating simple digital wireframes using pre-built components - Creating layouts for different screen sizes - Mobile-first approach	
Resources required for the learning outcome	
Equipment	- Computer - Projector
Materials	- Papers, Pencils, Erasers, Marker pens, Didactic materials, Internet, Storage devices, Learning Resources (Books, online resources), Fonts and Icon Libraries
Tools	- Whiteboard, User interface (UI) Design, Wireframing and Prototyping software: Sketch, Figma, Adobe XD, InVision Studio, Balamiq, Axure RP, Adobe Photoshop, Adobe Illustrator, Proto.io, Marvel, Geometrical drawing tools, Graphic Tablet, Color Reference Tools
Facilitation techniques	Brainstorming and Trainer Guide Brainstorming - Trainer helps trainee to form small group - Trainer asks trainee to discuss about production of Wireframe. - Trainer supervises discussion and provide support where it is needed - Trainees present their work - The trainer wraps up with question-and-answer session. Trainer Guide - Trainer demonstrates steps of create a hand-drawn wireframe and digital wireframe - Trainer asks each trainee to repeat those steps accordingly. - Trainees ask for clarification if any.

Formative assessment methods /(CAT)	▪ Written Assessment ▪ Performance Assessment ▪ Oral Presentation

Learning outcome 2: DESIGN UI ELEMENTS	Learning hours: 30 HOURS
Indicative content	
• Selecting Tools ✓ UI Design & Prototyping Tools ✓ Wireframing ✓ Prototyping ✓ Collaboration ✓ UI Component Libraries & Assets ✓ Integrations with other design software ✓ Usability Testing Features ✓ Version Control • Designing UI components ✓ Principles of UI design  Clarity & Simplicity  Hierarchy  Consistency  Proximity  Whitespace  Balance ✓ Creating Brand Assets  Typography Styles  Colour Palettes  Creating Graphics  Logos	

✓ Creating UI Components

- ✚ Buttons
- ✚ Forms
- ✚ Input Fields
- ✚ Navigation
- ✚ Icons
- ✚ UI Patterns

✓ Creating grid system and spacing guidelines

✓ Structuring a UI style guide document

- ✚ Organizing sections for easy reference
- ✚ Adding annotations, descriptions, and usage guidelines
- ✚ Identifying common UI patterns and interactions
- ✚ Documenting UI patterns such as navigation bars, cards, and modals

● **Creating UI layouts**

✓ Responsive Design Principles

- ✚ Mobile-First Approach
- ✚ Fluid Grid Systems
- ✚ Responsive Images and Media
- ✚ Media Queries and Breakpoints

✓ Building Responsive screen layouts

- ✚ Defining breakpoints
- ✚ Establishing layout grids
- ✚ Arranging and organizing UI elements
- ✚ Scaling and Resizing UI Elements
- ✚ Adjusting Typography and Text Layouts for Different Screen Sizes
- ✚ Adapting Navigation Menus and Interactive Elements
- ✚ Establishing accessibility guidelines
- ✚ Simulating user interactions like button clicks, form filling, and page transitions
- ✚ Adding basic animations and micro-interactions

Resources required for the learning outcome

Equipment

- Computer

	- Projector
Materials	- Papers, Pencils, Erasers, Marker pens, Didactic materials, Internet, Storage devices, Learning Resources (Books, online resources), Fonts and Icon Libraries
Tools	- Whiteboard, User interface (UI) Design, Wireframing and Prototyping software: Sketch, Figma, Adobe XD, InVision Studio, Balamiq, Axure RP, Adobe Photoshop, Adobe Illustrator, Proto.io, Marvel, Geometrical drawing tools, Graphic Tablet, Color Reference Tools
Facilitation techniques	• Trainer Guide 1.Trainer explains factors like project complexity, collaboration needs, and target platforms to consider when choosing UI design tools. 2. Trainer demonstrates steps to design UI Components like forms, button, icon and UI patterns. 3. Trainer asks each trainee to repeat those steps accordingly. 4. Trainees ask for clarification if any. • Practical exercises on creation of UI layouts. 1. Trainer asks each trainee to Create UI layouts. 2. Trainer asks trainees to consider the environmental, social, health and safety plans were followed/implemented by Trainees while Creating UI Layout. 3. Trainer provides inputs and clarification / answer any questions they might have. 4. Trainer assesses all trainee's work and provides them with feedbacks
Formative assessment methods /(CAT)	▪ Written Assessment ▪ Oral Presentation ▪ Performance Assessment

Learning outcome 3: TEST USABILITY		Learning hours: 10 hours
Indicative content		
• Usability testing ✓ Basic usability testing methods ✚ Think-aloud protocol ✚ Task-based testing ✚ A/B Testing ✓ Visual Design Evaluation ✚ Color contrast testing ✚ Typography evaluation ✓ Responsive Design Testing ✚ Manual Testing ✚ Visual Inspection ✚ Interactive Testing • Gathering feedback ✓ Importance of User feedback ✓ User Surveys ✓ User Interviews ✓ Analytics Data Analysis • Refining UI designs ✓ Qualitative and quantitative feedback data ✓ Identifying recurring themes and usability issues within feedback ✓ Creating iterations		
Resources required for the learning outcome		
Equipment	- Computer - Projector	

Materials	- Papers, Pencils, Erasers, Marker pens, Didactic materials, Internet, Storage devices, Learning Resources (Books, online resources), Fonts and Icon Libraries
Tools	- Whiteboard, User interface (UI) Design, Wireframing and Prototyping software: Sketch, Figma, Adobe XD, InVision Studio, Balamiq, Axure RP, Adobe Photoshop, Adobe Illustrator, Proto.io, Marvel, Geometrical drawing tools, Graphic Tablet, Color Reference Tools
Facilitation techniques	• Brainstorming 1. Trainer helps trainee to form small group 2. Trainer asks trainee to brainstorm Basic usability testing methods like Think-aloud protocol, Task-based testing and A/B Testing 3. Trainer supervises discussion and provide support where it is needed 4. Trainee present their work 5. Trainer provides expert view for recovering gaps in trainees understanding 6. The trainer wraps up with question-and-answer session. • Practical exercises on Refining UI designs. 1. Trainer asks each trainee to Refining UI designs 2. Trainer asks trainees to consider the environmental, social, health and safety plans were followed/implemented by Trainees while Refining UI design 3. Trainer provides inputs and clarification / answer any questions they might have. 4. Trainer assesses all trainee's work and provides them with feedbacks
Formative assessment methods /(CAT)	▪ Written Assessment ▪ Oral Presentation ▪ Performance Assessment

Learning outcome 4: PRODUCE MOCKUPS	Learning hours: 20 hours
Indicative content	
• Documenting UI specifications ✓ Key elements of a UI specification document  Project overview	

- + Target audience
- + User flows
- + Wireframes
- + Style guide
- + Interaction design Notes
- + Design Annotations
- + Specifications for dimensions, spacing, and colours
- + Screen Layouts & Measurements

✓ Organizing and Structuring UI Specifications

- **Displaying UI products for different devices**

✓ Mock-up concept

✓ Mock-up creation Tools

✓ Creating Mock-ups

- + Positioning and aligning UI designs within device frames for a realistic presentation
- + Adding Realistic Textures, Shadows, and Depth Effects
- + Add backgrounds
- + Adding annotations
- + Organizing High-Fidelity Mockups into engaging Presentations or Portfolios

- **Exporting Files**

✓ Common File Formats for UI Assets

- + PNG (Portable Network Graphic)
- + JPG (JPEG - Joint Photographic Experts Group)
- + SVG (Scalable Vector Graphics)
- + Webfonts

✓ Exporting UI Files and Assets

- + Organizing layers and artboards
- + Asset Structure and Folders
- + Naming conventions
- + Specifying export formats and sizes
- + Export settings for different platforms and resolutions
- + Exporting individual elements (icons, buttons, images)



Batch exporting multiple assets

Resources required for the learning outcome

Equipment	- Computer - Projector
Materials	- Papers, Pencils, Erasers, Marker pens, Didactic materials, Internet, Storage devices, Learning Resources (Books, online resources), Fonts and Icon Libraries
Tools	- Whiteboard, User interface (UI) Design, Wireframing and Prototyping software: Sketch, Figma, Adobe XD, InVision Studio, Balamiq, Axure RP, Adobe Photoshop, Adobe Illustrator, Proto.io, Marvel, Geometrical drawing tools, Graphic Tablet, Color Reference Tools
Facilitation techniques	• Brainstorming 1. Trainer helps trainee to form small group 2. Trainer asks trainee to brainstorm on key elements of UI specification Document. 3. Trainer supervises discussion and provide support where it is needed 4. Trainee present their work 5. Trainer provides expert view for recovering gaps in trainees understanding 6. The trainer wraps up with question-and-answer session. 7. Trainer asks trainee to make a discussion on composition element. • Trainer Guide 1. Trainer demonstrates steps to create Mock-up 2. Trainer asks trainee to repeat those steps accordingly. 3. Trainees ask for clarification if any. • Practical exercises on Exporting Files. 1. Trainer asks trainees to export files 2. Trainer checks if the environmental, social, health and safety plans were followed/implemented by Trainees while exporting files. 3. Trainer provides inputs and clarification / answer any questions they might have. 4. Trainer assesses all trainee's work and provides them with feedbacks
Formative assessment methods /(CAT)	▪ Written Assessment ▪ Performance Assessment

Integrated/Summative assessment

Integrated situation

MP Tech Ltd is a company based in Rwanda which offer mobile application, and web design services. MP Tech is currently working on a new social media app aimed at connecting people with similar interests that use mobile phone. However, during the development process, they encountered several usability issues with the app because created user interface work into computer, which led to a decrease in user engagement to use the app.

Task:

As User Interface designer you are hired to be a part of MP Tech team. You are given a project brief that will be used to develop user interface for mobile app and following activities:

1. Produce wireframes of social app
2. Design UI components of the application
3. Produce mock-ups of the application
4. Export files in PNG and SVG formats

This activity must be completed within 6 hours

Equipment	- Computer - Projector
Materials/ Consumables	- Papers, Pencils, Erasers, Marker pens, Didactic materials, Internet, Storage devices, Learning Resources (Books, online resources), Fonts and Icon Libraries
Tools	- Whiteboard, User interface (UI) Design, Wireframing and Prototyping software: Sketch, Figma, Adobe XD, InVision Studio, Balamiq, Axure RP, Adobe Photoshop, Adobe Illustrator, Proto.io, Marvel, Geometrical drawing tools, Graphic Tablet, Color Reference Tools

Assessable outcomes	Assessment criteria (Based on performance criteria)	Indicator	Observation		Marks allocation
			Yes	No	
LO1. PRODUCE WIREFRAMES 30%	1.1. Project requirements are interpreted	Project requirements			4
		Key features and Functionalities			4
		Technical considerations			3

		UI deliverables			3
	1.2. Wireframe are defined	Device Specifications			3
		Content			3
		User flow			3
	1.3. Wireframes are created	Hand-Drawn Wireframes			3
		Digital Wireframes			3
LO2. DESIGN UI ELEMENTS 30%	2.1. Tools are selected	Appropriate Features of UI design software are used			3
	2.2. Style guide document is designed	Respect of design principles			3
		Respect of brand guidelines			3
		Creation Brand assets			3
		Creation of UI components			3
		Creation grid system and spacing guidelines			3
		Structure of Style guide document			3
	2.3. UI layouts are created	Respect of Responsive Design principles			3
		Responsive screen layouts			3
		Simulating User interaction			3
LO3. TEST USABILITY 20%	3.1. Usability testing is conducted	Following usability testing methods			2
		Identifying Visual Design issues			2
		Identifying Responsive Design issues			2
	3.2. Gathering is feedback	Conduction User Surveys			2
		Conducting User Interviews			2
		Analysing Analytics Data			2

	3.3. UI designs are refined	Analysing Qualitative and quantitative feedback data			2
		Identifying Recurring themes and usability issues			3
		Refining and creating design Iterations			3
LO4.PRODUCE MOCKUPS 20%	4.1. UI specifications are documented	Identifying Key elements of a UI documentation and specification document			3
		Organizing and structuring UI Specifications document			3
	4.2. UI products are displayed for different devices	Appropriate mock-up tools are selected			3
		Creating mock-ups			3
	4.3. Files are exported	PNG file format exported			4
		SVG file format exported			4
Total marks		100			
Percentage Weightage		100%			
Minimum Passing line % (Aggregate):		70%			

References

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- The Elements of User Experience: Interaction Design, Information Architecture, and Visual Design (4th ed.). Garrett, J. J.. New Riders.
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- UX Booth. (n.d.). Retrieved May 10, 2024, from <https://uxbooth.com/>
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