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EMPOWERED

Executive Summary

Qualification	Occupational Certificate Extended Reality Developer
Purpose	The purpose of this qualification is to prepare a learner to operate as an Extended Reality (XR) Developer. An Extended Reality (XR) Developer researches, analyses, designs, develops, integrates, codes, tests, troubleshoots, maintains, deploys and implements extended reality software and/or applications using different programming languages and platforms for a specific development engine, to support augmented, virtual and mixed reality enabling environments in compliance with the applicable standards, design guidelines and best practice. Qualifying learners will be able to work collaboratively to develop XR content ideas and create assets for XR experiences.
Qualification ID	121296
NQF Level	6
Minimum Credits	218
Duration	One to two years
Field	Physical, Mathematical, Computer, and Life Sciences
Subfield	Information Technology and Computer Sciences
Quality Partner	MICT SETA
Entry Requirements	NQF Level 4 qualification

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Qualification Overview

The digital economy plays a significant role in aspects of the global economy. Currently there is a growing trend among companies especially those in entertainment, gaming, and mobile computing, to use immersive technologies to create extended reality (augmented reality, virtual reality and mixed reality) experiences which involve the use of digital visual elements, sounds or other sensory stimuli to engage and delight audiences.

This qualification will benefit the economy and individuals as extended reality becomes more accessible to consumers and as companies continue to expand their XR programmes.
It provides learners with requisite knowledge and skills for researching, evaluating, implementing and testing new and innovative ways of using emerging technologies for extended reality design and animation that develops and produces full motion and animated content. Typical learners include school leavers, individuals who are already working in the industry, and individuals who are passionate about immersive technology wishing to pursue their own projects and become self-employed.

Qualifying learners will be able to:

- Conduct research and establish customer requirements
- Develop XR applications and solutions
- Diagnose and troubleshoot problems relating to XR software and applications

The KLM Empowered Learning X Perience

X Cite
Learners receive a welcome letter and an X Perience Map detailing the flow of their qualification. An orientation session helps them to understand the benefits and career options linked to the qualification.

X Plore
For each of the integrated learning blocks, learners explore content on their own before engaging with others. Guided by self-study plans and diagnostic self-assessment, they formulate their own insights to share.

X Change
Learners attend facilitator-led sessions, either in class or online, to share their learning and refine their skills in a safe environment. Collaborative activities and peer feedback build learning synergy and allow learners to master specific skills.

X Tend
Workplace application assignments allow learners to put their new learning to use on the job. Under the guidance of mentors, and with access to performance and wellness support, learners hone their skills and add value.

X Cel
Each learner's progress is measured against assessment criteria through formative and summative assessment. Final examinations and presentations are used to obtain an accurate picture of overall understanding and mastery of the content.

Qualification Outline

- The Occupational Certificate: Extended Reality Developer consists of the following Knowledge, Practical and Work Experience Modules.
- Workplace Experience Modules are completed throughout the learning journey and assessed every quarter.
- Formative and summative assessments are conducted at regular intervals to prepare learners for the External Integrated Summative Assessment (EISA).

Knowledge Modules

ID	Title	Level	Credits
KM-01	Introduction to Extended Reality	5	3
KM-02	Extended Reality Content Pipeline	6	8
KM-03	Fundamentals of Programming in Extended Reality	6	20
KM-04	Fundamentals of Interactive Application Development	6	2
KM-05	Fundamentals of Mobile App Development	6	2
KM-06	Fundamentals of Immersive XR Systems and Shaders	6	15
KM-07	Documenting XR Software and App Development Processes	5	2
KM-08	Leadership and Seld-Management	6	15

Practical Modules

ID	Title	Level	Credits
PM-01	Determine work package requirements using established system design methodologies	6	3
PM-02	Participate in change and release management of XR work packages	6	10
PM-03	Plan and develop XR software and applications	7	15
PM-04	Diagnose, debug and resolve issue/problems pertaining to XR applications	7	30

Work Experience Modules

The focus of the work experience modules is to provide the learner an opportunity to implement Extended Reality solutions under authentic working conditions and to develop confidence by working under the supervision of a workplace mentor. This also provides for the exposure of learners to the complexities of dealing with workplace demands, the pressures of work, and the dynamics of stakeholder management.

ID	Title	Level	Credits
WM-01	Developing/coding work packages and designed solutions	6	15
WM-02	XR software and applications development	6	20
WM-03	Change and release management	6	5
WM-04	Animation for XR experiences	7	15
WM-05	Fault-finding and troubleshooting on XR software and applications	7	38