



Higher Certificate in Information Systems (Game Design and Development)

SAQA ID 120688 NQF Level 5

🕒 Mode and duration

Contact

Full-Time (Campus)

- Minimum: 1 year
- Maximum: 3 years

Part-Time (Campus)

- Minimum: 2 years
- Maximum: 5 years

☰ Qualification description

In recent decades, the gaming industry has experienced exponential development and become a significant contributor to the global economy. With the introduction of cutting-edge technology, virtual reality, augmented reality, and other innovations, the demand for expert game design and development professionals has skyrocketed. Game design and development is a complex and multidisciplinary field requiring a combination of technical skills, creative skills, and a profound comprehension of player psychology.

The Higher Certificate in Information Systems (Game Design and Development) gives you a strong theoretical and intensive practical foundation in Programming and Databases, with a focus on game development. Game Design Fundamentals, Game Development and Programming, Game Art and Audio, Game Development Platforms, and Game Project Management are the core modules. Computer Literacy, Programme Design, Mathematical Problem Solving, and Reasoning are some of the other foundational modules. You will complete technical projects throughout the qualification to ensure that you are well prepared for the real world.

Over and above this, you will develop essential skills for the world of work, especially for the IT industry, such as analysing and solving real problems, logical thinking, being innovative and adaptable, working in teams and communicating effectively.

Are you curious about the inner workings of game design and development, and do you wonder how you would install game development platforms and use them? Eduvos will give you the answers.

☑ Entry requirements

1. South African National Senior Certificate (NSC) with Bachelor's degree, Diploma or Higher Certificate endorsement.
2. Or a National Certificate (Vocational) level 4 issued by the Council of General and Further Education and Training with Bachelor's degree, Diploma or Higher Certificate endorsement.
3. Or a Certificate of evaluation on a minimum NQF level 4 for foreign qualification confirmed by SAQA.
4. Or a letter or certificate confirming an exemption from Universities South Africa (USAF) for any other school-leaving results.
5. Or completion of a Bachelor's degree, Diploma, Higher Certificate or equivalent.

📁 Possible career options

As a graduate of the Higher Certificate in Information Systems (Game Design and Development), your career options include entry-level positions such as:

- Game Animator
- Game Audio Engineer
- Game Artist: 2D and/or 3D
- Game Content Creator/Streamer
- Game Designer, Level Designer
- Game Development Educator/Trainer
- Game Developer, Simulation Developer
- Game Interface Designer
- Game Producer/Project Manager
- Game Programmer

This qualification is offered at the following campuses:

- Bedfordview
- Bloemfontein
- Claremont
- Durban
- East London
- Mbombela
- Nelson Mandela Bay
- Potchefstroom
- Pretoria
- Tyger Valley
- Vanderbijlpark

📄 Qualification accreditation

- Accredited by the Higher Education Quality Committee (HEQC) of the Council on Higher Education (CHE)
- Registered with the South African Qualifications Authority (SAQA)



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Qualification structure

Year 1

- Computer Literacy (Microsoft)
- Database Design Concepts
- Game Art and Audio
- Game Design Fundamentals
- Game Development and Programming
- Game Development Platforms
- Game Project Management
- Mathematical Problem Solving and Reasoning
- Personal Skills Development
- Program Design
- Software Engineering



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Module Descriptors

Year 1

Computer Literacy (Microsoft)

The module teaches students how to use Microsoft Office applications such as Word, Excel, PowerPoint, Access, and Outlook. This is intended to strengthen students' computer application skills because, throughout game creation, students will use Microsoft Office and computer operations for documentation, presentations, and data management. These skills assist students in the preparation of design documents, presentations, budgeting spreadsheets, and other administrative tasks.

Database Design Concepts

In this module, students learn about database management systems, data modelling, and database design. The module applies to game development, especially persistent data games like role-playing games and internet games. Students will learn how to create databases for player data, game progress, and other information. Students working on games with complicated data structures need this module to efficiently manage and retrieve data.

Game Art and Audio

In the first section of this module, students learn the fundamentals of game design. Students will examine game mechanics, gameplay, level design, narrative, and user experience in order to design an engaging video game. It includes development of game concepts, design documents, and prototyping. In addition, students will analyse and assess existing games to determine the success or failure of their designs. The second section of the module discusses game development and programming. Students will be instructed in either C#, Python, or JavaScript. The module covers variables, loops, conditionals, functions, and OOP. There will be instruction on interactive and dynamic gameplay elements, game mechanics, and game engines. Students will use their programming skills to develop miniature video games.

Game Design Fundamentals

This module introduces the fundamental principles of game design. Students will investigate the essential components of a successful and engaging video game, including game mechanics, gameplay, level design, narrative, and user experience. It covers the conceptualization of a game concept, the creation of design documents, and prototyping. In addition, students will analyse and evaluate extant games to determine what makes them successful or unsuccessful from a design standpoint. Upon completion of the module, they will have a firm grasp of the fundamentals of game design and be able to apply them to their own game development initiatives.

Game Development and Programming

This module introduces game development and programming. Students will study C#, Python, or JavaScript foundations for game development. The module covers variables, loops, conditional statements, functions, and object-oriented programming. Interactive and dynamic gameplay components, game mechanics, and game engines will be taught. Students will use their programming skills to create mini games and interactive experiences in projects and assignments.

Game Development Platforms

Students will investigate several platforms and technologies for game production in this module. They will learn how to use well-known game engines like Godot, Unreal Engine, or Unity to create games for a variety of platforms, including PC, consoles, and mobile devices. The module will cover cross-platform development and introduce students to optimisation methods to make sure games operate smoothly on target systems. Students will be able to create games that are ready for release on several platforms at the end of this module.

Game Project Management

This module teaches game development-specific project management. Project planning, scope definition, scheduling, budgeting, and resource allocation are covered. Game production requires teamwork; thus the module will address team collaboration, communication, and dispute resolution. Students will learn industry-standard project management tools. They will plan and manage a game development project from inception through release, tackling risks and challenges.



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Module Descriptors

Mathematical Problem Solving and Reasoning

The module improves students' mathematical skills and capacity to apply maths to real-world problems. Mathematical problem-solving is vital in game creation, notably for physics-based simulations, character movement algorithms, game balancing, and other technical components. Game programming and design are easier for mathematicians. They may employ logic for gaming mechanics, math for physics simulations, and linear algebra for 3D transformations.

Personal Skills Development

This module will improve students' soft skills—communication, teamwork, problem-solving, time management, and adaptability. It builds students' personal and professional skills. Game creators need soft skills to collaborate, communicate, and solve problems. Hence, upon completion of the module, students can improve their teamwork, communication, and time management throughout game production by developing their personal abilities. Game industry cooperation and project management require these talents.

Program Design

The module teaches students software development concepts like algorithmic thinking, data structures, and program logic. Students will learn computer program design, planning, and implementation, which are needed to make interactive games. Students will build algorithms and implement them in Python to generate gaming elements, game mechanics, and other functionalities.

Software Engineering

The module covers software design, coding, testing, debugging, and maintenance. It complements the "Game Development and Programming" module. Professional game creation requires these skills. Hence, students will learn best practices for building maintainable, scalable programming, testing games for quality assurance, and troubleshooting and debugging programs.