Emeris

IIE Bachelor of Computer and Information Sciences in Game Design and Development

Vega School

3 Years Full-Time Degree | NQF Level 7
360 Credits | SAQA ID: 94726 | BCGD0701

- Umhlanga
- Sandton
- Cape Town-City

Qualification Description

Develop the singular skillset required to thrive in one of the most exciting, lucrative, and fastest-growing industries on the planet. The IIE Bachelor of Computer and Information Sciences (BCIS) in Game Design and Development equips students with the necessary skills to pursue a career in creating digital games for different platforms, from computers to platforms like mobile phones and other hand-held devices.

A graduate will be qualified in both the programming and creative aspects of a career in designing and developing games; gamified applications and immersive content for new technologies.

Who Is This Qualification Aimed At?

The programme is aimed at individuals who want to pursue a career in game design and development. Game designers and developers design and develop immersive digital (and sometimes physical) experiences for players.

The qualification prepares graduates for creative career opportunities across a diverse range of sectors from Game Developer/ Programmer (various platforms), Commercial Software Developer/ Programmer, Game Designer, Digital Animator, Concept Artist, Texture Artist, Level Designer, and Simulation Designer.

CONTACT FULL-TIME

Admission Requirements

Minimum Admission Requirements		English	Math/HG	Math Lit/SG/ Technical Maths	Notes
	NSC: Bachelor's Degree pass with	30%	40% or	60%	Applicants who were admitted via Maths Lit/Maths SG/Technical Maths or Higher Certificate are admitted subject to completing the Mathematical Short Learning Programme (SMAPD022) (or equivalent). Successful completion of SMAPD022 (or equivalent) shall be required before students can be permitted to register for the module Mathematical Principles for Developers (MAPD6112).
	NC(V): Bachelor's Degree pass with	50%	50% or	60%	
	SC: Endorsement with	33.3%	40% or	60%	
	SC(a): HC pass with		40% or	60%	
	International	An USAf Exemption Certificate is required and meeting the relevant Maths and English requirements.			
	A cognate Higher Certificate or cognate 240 credit Diploma OR an Advanced Certificate OR 360 credit Diploma or Degree may satisfy the minimum admission requirements to degree studies.			If discipline not cognate at least 20% of credits must be academic literacy or numeracy related.	

Should you have any other school leaving qualification not mentioned above, please reach out to a Student Advisor.

Scan the QR Code to learn more about Alternate Admission requirements for:
RPL | Mature Age Exemptions | USAf International Students | One module outstanding from a Higher Certificate

Curriculum Outline

The curriculum is designed to provide students with a structured progression through core disciplines, fostering both theoretical understanding and applied competence across key areas of study.

The core disciplines included in this programme are:

Modules	Module Purpose
Year 1	
Game Design 1A & 1B	These foundational modules introduce students to the core elements and principles of game design, emphasizing a player-centric approach. Through hands-on ideation and prototyping, students learn to navigate the design process and apply user-centered design theories to solve increasingly complex game design challenges. The module fosters creative thinking and equips students with the tools to conceptualize and develop innovative gameplay experiences.
Game Development 1A & 1B	These introductory modules equip students with foundational programming skills tailored to the gaming industry. Beginning with basic game programming concepts, students progress to advanced object-oriented programming techniques, including class manipulation and complex problem-solving. These modules build a strong technical base essential for game development.
Game Art 1A & 1B	This module introduces students to essential visual communication skills for game design. Students begin by developing core drawing techniques to visualize characters, objects, and environments, and progress to learning the fundamentals of 3D animation. Through hands-on projects, they gain experience in planning and producing assets within a 3D environment, laying the groundwork for visual storytelling in games.
Programming Logic and Design	The purpose of this module is to provide students with foundational and practical knowledge required for effective programming. Students learn the various programming concepts and approaches and then proceed to study more complex concepts and elements critical to a good understanding of programming methodology.
Mathematical Principles for Developers*	The purpose of this module is to provide students with fundamental mathematical and physics principles for computer gaming applications. *Applicants who were admitted via Maths Lit/Maths SG/Technical Maths or Higher Certificate are admitted subject to completing the Mathematical Short Learning Programme (SMAPD022) (or equivalent). Successful completion of SMAPD022 (or equivalent) shall be required before students can be permitted to register for the module Mathematical Principles for Developers (MAPD6112).

Modules	Module Purpose
Year 2	
Game Design 2A & 2B	Building on foundational skills, these modules deepens students' understanding of player psychology and user experience (UX) to design immersive, player-centric games. Students are also introduced to the creation of serious games with ethical and legal considerations, aimed at brand building, sustainability, and education. Students enhance their collaborative skills by working in multidisciplinary teams to develop innovative and socially impactful game experiences.
Game Development 2A & 2B	These modules advance students' programming capabilities by guiding them through the development of complete digital games using object-oriented programming techniques. Students also gain practical experience applying design patterns within a game engine environment, enhancing their ability to build scalable and maintainable game systems.
Game Art 2A & 2B	These modules advance students' technical and creative capabilities in 3D game art. Students apply principles of physics, animation, and scripting to produce dynamic character animations using industry-standard software. They also explore semiotic principles in 3D games while developing advanced rigging, sculpting, shading, and texturing skills to create visually compelling and believable characters.
Narrative for Gaming	The purpose of this module is to develop knowledge in the theory of creative writing and storytelling as an integral element of game design and development, and to practically apply this theory to create plausible characters, interactive worlds, narratives, storyboards and scripts across various game types and genres.
Databases	The purpose of this module is to provide students with the knowledge and applied skills necessary for the design, implementation and management of database systems.
Year 3	
Game Design 3A & 3B	In their final year, students explore speculative futures through emerging technologies, experimental gameplay, and innovative mechanics to craft impactful, thought-provoking experiences. The modules encourage critical reflection on the ethical and moral dimensions of game design. Students also gain insight into the business and commercial aspects of the games industry, developing entrepreneurial skills and building a strong personal brand supported by a curated professional portfolio.
Game Development 3A & 3B	In their final year, students apply advanced computer science concepts to game development, deepening their technical expertise. These modules cover procedural generation of game assets, shader programming for custom visual effects, and performance optimisation techniques. These skills prepare students to tackle complex development challenges and produce high-quality, efficient games.
Work Integrated Learning 3A & 3B	These capstone modules immerses students in the full game design and development lifecycle, combining theoretical knowledge and practical skills to collaboratively ideate, conceptualize, and plan player-centric games that address complex real-world issues. Students then bring their concepts to life by developing a fully playable 3D video game, demonstrating their ability to integrate design thinking, technical execution, and teamwork in a professional production environment.
Introduction to Research for ICT	The purpose of this module is to introduce students to the process of research and to develop in them an ability to assess the validity of research findings by defining a research question and to develop an understanding of the processes and techniques of gathering, analysing, interpreting, and evaluating data. Emphasis is placed on theoretical principles and procedures as well as ethical considerations. Skills are developed through controlled application of techniques as well as in interpretation and critical analysis of research within ICT.
Open-Source Coding (Introduction)	The purpose of this module is to introduce students to open source software development for mobile devices.

Curriculum Structure

Year 1							
Semester 1				Semester 2			
Code	Module Name	NQF	Credits	Code	Module Name	NQF	Credits
GADE5121*	Game Development 1A	5	15	GADE6122*	Game Development 1B	5	15
GADS5111	Game Design 1A	5	15	GADS5112	Game Design 1B	5	15
GART5111	Game Art 1A	5	15	GART5112	Game Art 1B	5	15
PRLD5121	Programming Logic and Design	5	15	MAPD6112	Mathematical Principles for Developers	5	15
Year 2							
Semester 3				Semester 4			
Code	Module Name	NQF	Credits	Code	Module Name	NQF	Credits
GADE6221	Game Development 2A	6	15	NAGA6211	Narrative for Gaming	6	15
GADS6221	Game Design 2A	6	15	GADE7222	Game Development 2B	6	15

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Year 2							
Semester 3				Semester 4			
Code	Module Name	NQF	Credits	Code	Module Name	NQF	Credits
GART6211	Game Art 2A	6	15	GADS6222	Game Design 2B	6	15
DBAS6211	Databases	6	15	GART6212	Game Art 2B	6	15
Year 3							
Semester 5				Semester 6			
Code	Module Name	NQF	Credits	Code	Module Name	NQF	Credits
GADE7321	Game Development 3A	7	15	GADE7322	Game Development 3B	7	15
GADS7331	Game Design 3A	7	15	GADS7332	Game Design 3B	7	15
IRIT7311	Introduction to Research for ICT	7	15	OPSC7311	Open Source Coding (Introduction)	7	15
*XBCGD7311	Work Integrated Learning 3A	7	15	XBCGD7312	Work Integrated Learning 3B	7	15

*There are prerequisites for this programme that must be met in order to progress through the qualification.

Further Study Pathways

The successful completion of the IIE BCIS in Game Design and Development enables you to progress into the IIE Bachelor of Arts (BA) Honours in Design Leadership delivered at Emeris, or the IIE Bachelor of Computer and Information Sciences Honours delivered at Emeris, subject to meeting the admission requirements.

Career Opportunities

- Game Developer/ Programmer (various platforms)
- Commercial Software Developer/ Programmer
- Game Designer
- Digital Animator
- Concept Artist
- Texture Artist
- Level Designer
- Simulation Designer
- Systems Designer
- Game Play Engineer
- Multimedia Specialist

Timetables

This qualification is aimed at students who wish to complete full-time face-to-face studies for the duration of their qualification. This means that students are expected to be available Mon-Fri 8:00 - 17:00 throughout the day for class in the academic year depending on how the timetable is structured.

Students must also note that timetables remain subject to change throughout the academic year.

System and Software Requirements

Minimum Computer/Laptop Specifications:

- OS - Windows 11 *
- Processor (CPU) - Intel Core i5 / Ultra 5 or better / AMD Ryzen 5 or better Ram - 16GB (Should be upgradable to 32GB)
- GPU - Nvidia RTX 4000 OR 5000 Series with a minimum of 8GB of VRAM
- Storage Space - 1TB NVME SSD or larger

Recommended Computer/Laptop Specifications (For future proofing):

- OS - Windows 11 *
- Processor (CPU) - Intel Core i5 / Ultra 5 or better / AMD Ryzen 5 or better
- Ram - 16GB (Should be upgradable to 32GB)
- GPU - Nvidia RTX 4000 OR 5000 Series with a minimum of 8GB of VRAM
- Storage Space - 1TB NVME SSD or larger

*PLEASE NOTE that a laptop with a Windows Operating System is preferable, as most 3D modelling software is not Mac Native and does not perform reliably on IOS.

Additional Requirements:

- Wireless Mouse (It is not possible to achieve fine selections and very small moves required for using design software with a trackpad. Using a trackpad also puts tremendous unnecessary strain on shoulder and hand muscles which can be detrimental in the long term.)
- Drawing tablet (highly recommended) Brands to consider: Wacom Intuos S or M, X-Pen Deco 3, Huion HS611 or 610

Software Requirements:

- Unity Engine, Unreal Engine, Visual Studio Community, JetBrains Rider, Blender / 3DS Max, Adobe CC, MS Office 365

Graduation and Completion Requirements for This Qualification

In order to be awarded this qualification, you must have achieved a minimum final year mark of fifty percent (50%) for all 24 modules in the curriculum.

As a contact student, this qualification is structured to be completed over 3 years. The maximum time for completing a qualification full-time is double the minimum time associated with the qualification, and for part-time an additional year is allowed.

Apply Online

After your application is submitted, we will review your documentation and provide an outcome regarding your chosen study.

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