



# GAMES SOFTWARE DESIGN & PRODUCTION



★ Most Awarded Private Education Provider<sup>1</sup> | Best Private Education Institution<sup>2</sup> ★



## What Will I Learn?

In this programme, you will explore games software design, the development and processes involved in creating computer, mobile and video games. You will also explore 3D graphics and animations, games software design, games mechanics, games software development and production, user interface design for games, artificial intelligence and interaction design. The Games industry is rapidly expanding. You will find excellent career opportunities in Singapore and overseas.



## Career Opportunities

- ▼ Games Publisher
- ▼ Games Producer
- ▼ Games Designer
- ▼ Games Programmer
- ▼ Mobile Games Server Developer
- ▼ Network Games Server Development

# Professional Accreditation

The programmes are accredited at the professional level with the Australian Computer Society (ACS).



## Unit Outlines

### Databases

This unit provides an introduction to database design, implementation and management. Topics include data modelling, the relational model, SQL, logical and physical database design, database application design, transaction management, concurrency, recovery, security, database architectures and database administration. The theory material is complemented by practical work using common database management systems.

### Games and Virtual Reality Software Production

This unit focuses on the theories, techniques and tools for designing, constructing and producing interactive 3D visualisation systems including computer games, interactive modelling software, Virtual Reality and Augmented Reality software. Besides focusing on the theories, techniques and tools, additional topics include budgeting, design documentation, evaluation, group dynamics, project management, team roles and responsibilities. Using industry standard design and development tools, students will apply the theoretical aspects of this unit to create games and virtual/augmented reality applications in a team environment.

### Games and Virtual Reality Software Design

This unit aims to give students the general background of game software design to create something fun and entertaining. It addresses issues in the computer and video game software design which includes elements of games creation, gameplay and game concepts. Topics include character design, creative play, design process, design documentation, environment, game-balancing, player motivation, and user interface design. This unit does not treat game software design as purely art or engineering.

### IT Professional Practice Project

Students in this team-based unit will use IT approaches to solve 'real-world' problems from a range of domains. Creation of relevant project deliverables will require students to build upon skills developed during their studies. Students will be expected to appreciate the interdisciplinary nature of their project and how the skills of team members from different IT majors are required to solve complex problems. Project management and communication with clients and other stakeholders in a professional manner will be emphasised.

### Principles of Computer Science

This unit is designed to develop the skills of problem solving and programme design using an Object Oriented programming language. Major topics include algorithm design; procedural abstractions; the use of libraries as collection of black-box code modules; the concepts of pre- and post-conditions; strings, arrays, introduction to object-oriented concepts including data abstraction, encapsulation, classes and object references, inheritance; introduction to recursion; streams and file input and output; the definition and use of common classes – lists, stack and queues.

### Software Development Frameworks

This unit aims to provide a general understanding of software development frameworks, and the practical experience and skills in using an important software development framework, with an emphasis on language interoperability, platform independence and software reuse using Microsoft .NET Framework. Topics include: Common Language Runtime, .NET Framework Class Library, C# and other .NET languages, and application packaging and deployment. It also discusses the history and background of .NET and its relationship with J2EE.

### Systems Analysis and Design

This unit introduces methods and techniques for analysing problematic organisational situations, particularly those leading to the development of an information system, and draws on both technical and organisational material to provide the knowledge and skills necessary to design and implement an operational system.

### User Interface Design

This unit focuses on providing an understanding of interface and interaction design especially for game and simulation systems.

Topics include overview of HCIs and NUIs, concepts of interface design, interaction design for different platforms, functions of interface and interaction, and gesture-driven interface design.

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Find out more at [www.murdochatkaplan.com.sg/gamesdeveloper](http://www.murdochatkaplan.com.sg/gamesdeveloper)

# The ICT Industry Is Booming



**World's Top 100  
Young Universities<sup>3</sup>**



**More than 42,000  
job openings by 2020<sup>4</sup>**



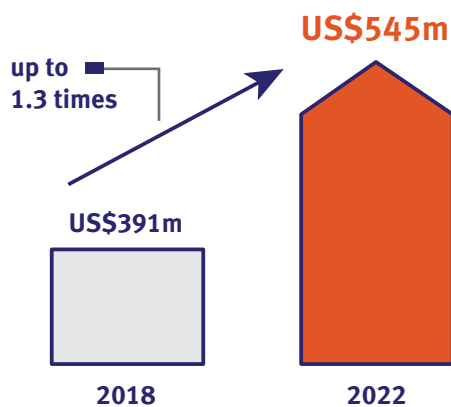
**Strong demand  
for IT professionals<sup>4</sup>**



**Hands-on  
modules**

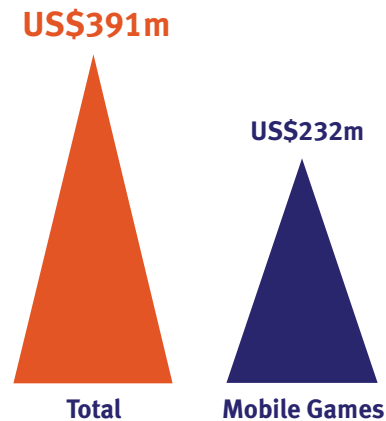
## Video Games Industry Overview

The digital gaming industry is expansive. Revenue in the video games segment amounts to US\$391 million in 2018<sup>7</sup>.



## Market Segment in 2018

Among the three segments – download games, mobile games and online games, Mobile games is the largest segment with a market volume of US\$232m in 2018, contributing almost 60% to the total segment<sup>7</sup>.



## Bachelor's Degree Programmes

- ▼ Bachelor of Science in Games Software Design and Production (Single Major)
- ▼ Bachelor of Science in Games Software Design and Production and Business Information Systems (Double Major)
- ▼ Bachelor of Science in Games Software Design and Production and Computer Science (Double Major)
- ▼ Bachelor of Science in Games Software Design and Production and Cyber Security and Forensics (Double Major)
- ▼ Bachelor of Science in Games Software Design and Production and Management (Double Major)
- ▼ Bachelor of Science in Games Software Design and Production and Marketing (Double Major)
- ▼ Bachelor of Science in Games Software Design and Production and Mobile and Web Application Development (Double Major)
- ▼ Bachelor of Science in Games Software Design and Production and Web Communication (Double Major)

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Validity: 17/08/2018-16/08/2022

