

# Handbook 2020

**Coursecode**

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B1317A

**Murdoch University**

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#### **Cancellation of Courses, Majors, Minors and Units**

The University reserves the right to cancel, without notice, any course, major, minor or unit if the number of students enrolled falls below limits set by the University or in other unforeseen circumstances.

#### **Alternative Formats**

Handbook home page:

<http://handbook.murdoch.edu.au>

This publication can also be provided in alternative formats by contacting the Equity and Social Inclusion Office at Murdoch University

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<http://goto.murdoch.edu.au/EquitySocialInclusion>

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<b>Group</b>	<b>Course</b>	<b>Offerings</b>
<b>Games Technology</b>	Games Technology (BSc)	<ul style="list-style-type: none"> <li>• Murdoch campus (internal)</li> <li>• Murdoch campus (external)</li> </ul>

## GAMES TECHNOLOGY

### GAMES TECHNOLOGY (BSC)

#### Recommended Double Majors:

Business Information Systems; Computer Science; Cyber Security and Forensics; Games Software Design and Production; Internetworking and Network Security; Mobile and Web Application Development

Duration: 3 years full-time or part-time equivalent

Mathematics and Statistics

#### Availability:

- Murdoch campus (internal) Murdoch campus (external)

The Games Technology major prepares and provides students with a thorough understanding of the theory, design and programming techniques required for developing games, simulation and visualisation software applications. The required topics include but are not limited to introduction to programming; advanced programming; game engine design and construction; game mechanics; graphics programming; virtual environments; mobile application and multi-user game development; advanced game production using software development tools.

Course Codes: B1317 B1317A

Bachelor of Science (BSc) in Games Technology

Murdoch's Bachelor of Science is a flexible degree which gives you the opportunity to build deep understanding and practical experience as well as to supplement your studies by engaging with industry and the community on relevant problems. You can even undertake studies through another discipline to broaden your understanding of the way in which science operates in relation to social, business, health and policy environments.

#### Employment Prospects:

The major equips students with a broad range of technical, problem solving and professional skills which are essential for working in not just in the games (or visual simulations) but the wider Information Technology industry. The outcomes of the major are aligned with Software & Apps Programmer, Systems Analyst, Analyst Programmer, ICT Consultant, ICT Architect and Software Engineer roles listed in the Australian Computer Society's Common ICT Job Profiles & Indicators of Skills Mobility document.

#### Admission Requirements (Onshore):

As per normal undergraduate admission requirements.

### Course Structure - 72 credit points

#### Part I - 24 credit points

##### Year 1 - 24 credit points

##### Transition Unit - 3 credit points

ICT100 Transition to IT - 3 points  
MURDOCH: S1-internal, S1-external, S2-internal, S2-external

OR (for Kaplan and Dubai students only)

BBS100 Academic Skills for Business - 3 points

##### Breadth Unit for Degree - 3 credit points

MSP100 Career Learning: Managing Your Career - 3 points  
MURDOCH: S1-external, S2-external

##### Core Units - 15 credit points

ICT167 Principles of Computer Science - 3 points  
MURDOCH: S2-internal, S2-external

ICT159 Foundations of Programming - 3 points  
MURDOCH: S1-internal, S1-external

ICT169 Foundations of Data Communications - 3 points

MURDOCH: S2-internal, S2-external

MAS162 Foundations of Discrete Mathematics - 3 points

MURDOCH: S1-internal, S1-external, S2-internal, S2-external

ICT170 Foundations of Computer Systems - 3 points

MURDOCH: S2-internal, S2-external

#### General Electives - 3 credit points

Select from any 100-level units offered by the University, subject to individual unit prerequisites. Students are advised to consider using General Elective points to meet the requirements of a second major or minor. Any recommended double majors and minors will be included in the major's description.

#### Recommended General Electives

ICT101 Introduction to 3D Graphics and Animation - 3 points

MURDOCH: S2-internal, S2-external

OR

ICT105 Introduction to Information Technology - 3 points

Not available this year

### Part II - 48 credit points

#### University-Wide Breadth Unit - 3 credit points

Select from the prescribed list of University-Wide Breadth Units. A unit cannot be used to satisfy both this Breadth Unit requirement and the requirements of a major or minor. If taken at 100 level the unit(s) will be attributed to Part I. Note that no more than 30 credit points at Part I may be credited towards course completion requirements.

#### Year 2 - 21 credit points

##### Research Skills Unit - 3 credit points

BSC203 Introduction to ICT Research Methods - 3 points

MURDOCH: S1-internal, S1-external

##### Core Units - 9 credit points

ICT283 Data Structures and Abstractions - 3 points

MURDOCH: S1-internal, S1-external

ICT289 Computer Graphics Principles and Programming - 3 points

MURDOCH: S1-internal, S1-external

ICT290 Games Design and Programming - 3 points

MURDOCH: S2-internal, S2-external

#### General Electives - 9 credit points

Select from any 200- to 400-level units offered by the University, subject to individual unit prerequisites. Students are advised to consider using General Elective points to meet the requirements of a second major or minor. Any recommended double majors and minors will be included in the major's description.

#### Year 3 - 24 credit points

##### Research Skills Unit - 3 credit points

BSC301 Applied Research Skills in ICT - 3 points

MURDOCH: S1-internal, S1-external

##### Core Units - 12 credit points

ICT397 Advanced Games Design and Programming - 3 points

MURDOCH: S1-internal, S1-external

ICT371 Game Development - 3 points

MURDOCH: S1-internal, S1-external

ICT398 Virtual Environments for Games and Simulations - 3 points

MURDOCH: S2-internal, S2-external

ICT302 IT Professional Practice Project - 3 points

MURDOCH: S1-internal, S1-external, S2-internal, S2-external

**General Electives - 9 credit points**

Select from any 200- to 400-level units offered by the University, subject to individual unit prerequisites. Students are advised to consider using General Elective points to meet the requirements of a second major or minor. Any recommended double majors and minors will be included in the major's description.

**Recommended General Electives**

ICT319 Intelligent Systems - 3 points  
MURDOCH: S2-internal, S2-external

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**PREREQUISITES****Academic Skills for Business (BBS100)**

Enrolment in Bachelor of Business, Bachelor of Commerce, Bachelor of Economics, Bachelor of Business in Applied Accounting, or Bachelor of Digital Marketing and Media, Bachelor of Business in Sustainability, or Bachelor of Science, or Bachelor of Arts

**Advanced Games Design and Programming (ICT397)**

ICT290/ICT207 Games Design and Programming.

**Applied Research Skills in ICT (BSC301)**

BSC203 Introduction to ICT Research Methods and enrolment in one of the following Information Technology majors: Computer Science or Business Information Systems or Cyber Forensics and Information Security or Games Software Design and Production, or Games Technology or Internetworking and Network Security or Mobile and Web Application Development.

**Career Learning: Managing Your Career (MSP100)**

Nil.

**Computer Graphics Principles and Programming (ICT289)**

ICT167 Principles of Computer Science OR ICT104 Principles of Computer Science. Students are encouraged to also complete MAS162 Foundations of Discrete Mathematics AND ICT170 Foundations of Computer Systems.

**Data Structures and Abstractions (ICT283)**

ICT167/ICT104 Principles of Computer Science. Students are encouraged to also complete MAS162 Foundations of Discrete Mathematics AND ICT170 Foundations of Computer Systems.

**Foundations of Computer Systems (ICT170)**

Nil.

**Foundations of Data Communications (ICT169)**

Nil.

**Foundations of Discrete Mathematics (MAS162)**

MAS164 Fundamentals of Mathematics/MAS182/MAS161 OR a final scaled score of 55% or more in ATAR Mathematics Applications or WACE Mathematics 2C/2D OR a final scaled score of 50% or more in ATAR Mathematics Methods or WACE Mathematics 3A/3B (or higher) OR equivalent.

**Foundations of Programming (ICT159)**

Nil.

**Game Development (ICT371)**

ICT290/ICT207 Games Design and Programming.

**Games Design and Programming (ICT290)**

ICT167 Principles of Computer Science. Students are encouraged to complete ICT283 Data Structures and Abstractions and ICT289 Computer Graphics Principles and Programming prior to taking this unit.

**IT Professional Practice Project (ICT302)**

Students must be enrolled in an IT major and have accumulated 56 credit points. Students should also have passed ICT290 Games Design and Programming, OR ICT284 Systems Analysis and Design and ICT285 Databases.

**Intelligent Systems (ICT319)**

ICT167 Principles of Computer Science OR ICT104 Principles of Computer Science.

**Introduction to 3D Graphics and Animation (ICT101)**

Nil.

**Introduction to ICT Research Methods (BSC203)**

BSC100 Building Blocks for Science and enrolment in one of the following Information technology majors: Computer Science or Business Information Systems or Cyber Forensics and Information Security or Games Software Design and Production, or Games Technology or Internetworking and Network Security or Mobile and Web Application Development.

**Introduction to Information Technology (ICT105)**

Nil.

**Principles of Computer Science (ICT167)**

ICT159 Foundations of Computer Programming or ICT102 Introduction to Computer Science.

**Transition to IT (ICT100)**

Enrolment in the Bachelor of IT & Business or the Bachelor of Science (Information Technology).

**Virtual Environments for Games and Simulations (ICT398)**

ICT397/ICT311 Advanced Games Design and Programming.

# Personal Study Plan

Unit Sets:

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Year	Semester 1	Semester 2
1		
2		
3		
4		