

# 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>Computer Science</b>	Computer Science (BSc)	<ul style="list-style-type: none"> <li>• Murdoch campus (internal)</li> <li>• Murdoch campus (external)</li> <li>• Kaplan Higher Education Institute and Kaplan Higher Education Academy (Singapore) ['KAPLAN-SGP'] (internal) (language of instruction: English)</li> <li>• Murdoch University Dubai (UAE) ['DUBAI-ISC'] (internal) (language of instruction: English)</li> </ul>

## COMPUTER SCIENCE

### COMPUTER SCIENCE (BSC)

#### Mathematics and Statistics

##### Special Requirements:

There may be a reduction in choice of units if completing this course in the external mode. Individual units may require access to specific nominated software.

##### Admission Requirements (Onshore):

As per normal undergraduate admission requirements.

Bachelor of Science (BSc) in Computer Science

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.

Course Codes: B1317 B1317A

##### Employment Prospects:

Excellent career opportunities exist for Computer Science graduates in business, industry and government as programmers, systems analysts, database administrators, software architects, computer systems and network managers, user support officers and software engineers.

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

##### Availability:

- Murdoch campus (internal)<br/>Murdoch campus (external)<br/>Kaplan Higher Education Institute and Kaplan Higher Education Academy (Singapore) ['KAPLAN-SGP'] (internal) (language of instruction: English)<br/>Murdoch University Dubai (UAE) ['DUBAI-ISC'] (internal) (language of instruction: English)

The Computer Science major is designed to provide students with a thorough understanding of the theory, methods and systems used by the information technology industry. Required units cover the major areas of software development, computer technology, systems applications and software engineering.

##### Recommended Double Majors:

Business Information Systems; Cyber Security and Forensics; Games Technology; Internetworking and Network Security; Mobile and Web Application Development

#### 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  
DUBAI-ISC: TJD-internal, TMD-internal, TSD-internal

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

MSP100 Career Learning: Managing Your Career - 3 points  
MURDOCH: S1-external, S2-external  
DUBAI-ISC: TJD-internal, TMD-internal, TSD-internal

###### Core Units - 15 credit points

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

DUBAI-ISC: TJD-internal, TMD-internal, TSD-internal  
KAPLAN-SGP: TJA-internal, TMA-internal, TSA-internal

ICT159 Foundations of Programming - 3 points  
MURDOCH: S1-internal, S1-external  
DUBAI-ISC: TJD-internal, TMD-internal, TSD-internal

ICT169 Foundations of Data Communications - 3 points  
MURDOCH: S2-internal, S2-external  
DUBAI-ISC: TMD-internal  
KAPLAN-SGP: TMA-internal

MAS162 Foundations of Discrete Mathematics - 3 points  
MURDOCH: S1-internal, S1-external, S2-internal, S2-external  
DUBAI-ISC: TMD-internal

ICT170 Foundations of Computer Systems - 3 points  
MURDOCH: S2-internal, S2-external  
DUBAI-ISC: TJD-internal, TSD-internal

##### 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.

#### 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  
DUBAI-ISC: TMD-internal  
KAPLAN-SGP: TMA-internal

###### Core Units - 9 credit points

ICT284 Systems Analysis and Design - 3 points  
MURDOCH: S1-internal, S1-external  
DUBAI-ISC: TMD-internal  
KAPLAN-SGP: TMA-internal

ICT283 Data Structures and Abstractions - 3 points  
MURDOCH: S1-internal, S1-external  
DUBAI-ISC: TJD-internal, TMD-internal, TSD-internal  
KAPLAN-SGP: TJA-internal, TMA-internal, TSA-internal

ICT285 Databases - 3 points  
MURDOCH: S2-internal, S2-external  
DUBAI-ISC: TJD-internal, TSD-internal  
KAPLAN-SGP: TJA-internal, TSA-internal

##### 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  
DUBAI-ISC: TJD-internal, TSD-internal  
KAPLAN-SGP: TJA-internal, TSA-internal

###### Core Units - 12 credit points

ICT373 Software Architectures - 3 points  
MURDOCH: S1-internal, S1-external  
DUBAI-ISC: TJD-internal, TSD-internal  
KAPLAN-SGP: TJA-internal, TSA-internal

ICT319 Intelligent Systems - 3 points  
MURDOCH: S2-internal, S2-external  
DUBAI-ISC: TJD-internal, TSD-internal  
KAPLAN-SGP: TJA-internal, TSA-internal

ICT374 Operating Systems and Systems Programming - 3 points  
MURDOCH: S2-internal, S2-external  
DUBAI-ISC: TMD-internal  
KAPLAN-SGP: TMA-internal

ICT302 IT Professional Practice Project - 3 points  
MURDOCH: S1-internal, S1-external, S2-internal, S2-external  
DUBAI-ISC: TJD-internal, TMD-internal, TSD-internal  
KAPLAN-SGP: TJA-internal, TMA-internal, TSA-internal

### **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.

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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

### **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.

### **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.

### **Databases (ICT285)**

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

### **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 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.

### **Operating Systems and Systems Programming (ICT374)**

ICT283/ICT209 Data Structures and Abstractions.

### **Principles of Computer Science (ICT167)**

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

### **Software Architectures (ICT373)**

ICT104 Principles of Computer Science OR ICT167 Principles of Computer Science; ICT231 Systems Analysis and Design OR ICT284 Systems Analysis and Design.

### **Systems Analysis and Design (ICT284)**

ICT102 Introduction to Computer Science OR ICT159 Foundations of Programming OR ICT107 Principles of Information Systems OR ICT158 Introduction to Information Systems or enrolment in a postgraduate IT course.

### **Transition to IT (ICT100)**

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

# Personal Study Plan

Unit Sets:

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Year	Semester 1	Semester 2
1		
2		
3		
4		