

Diploma of Information Technology

Burwood | Jakarta | Online

**DEAKIN
COLLEGE**

in association with


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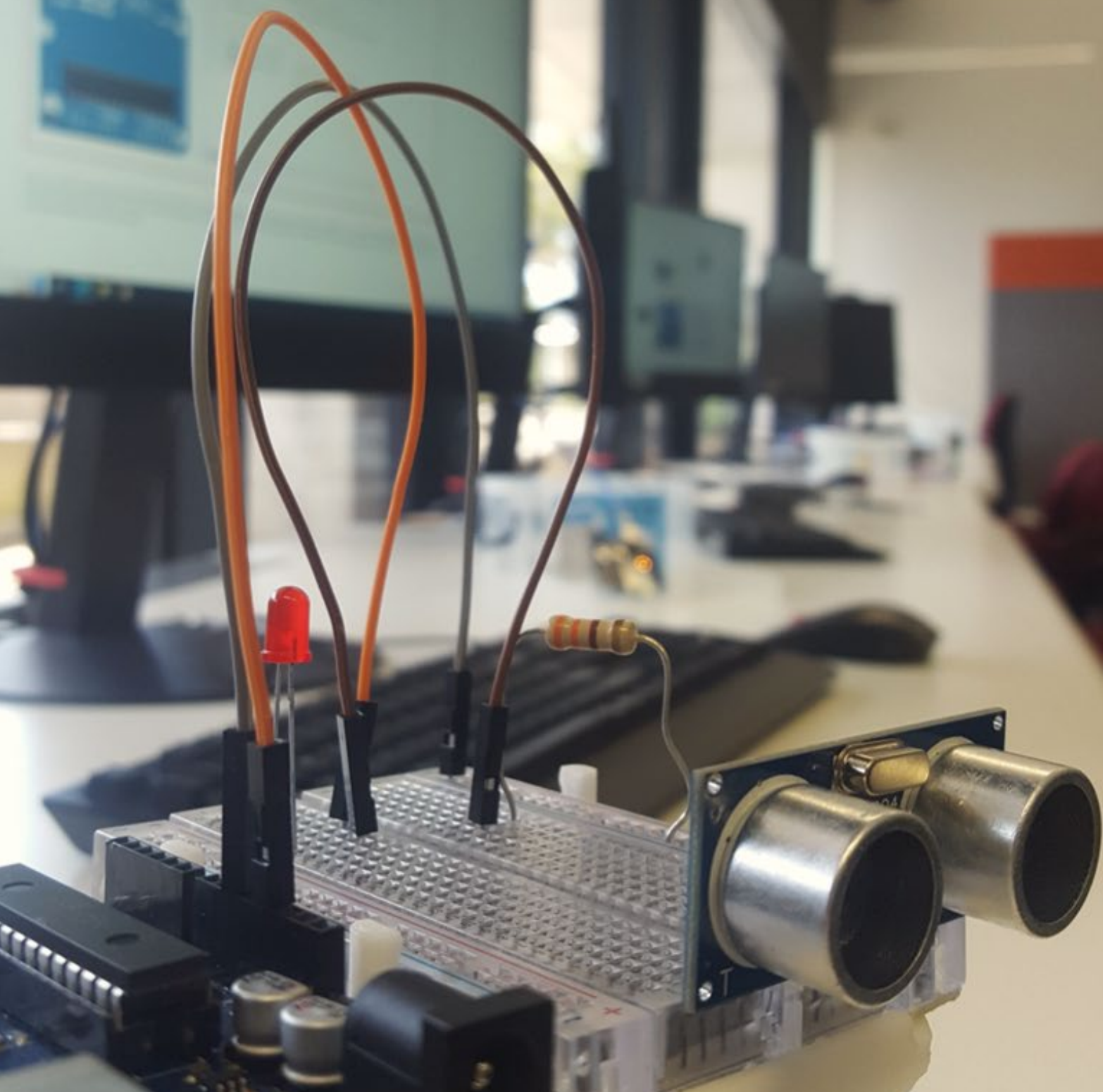


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Course Outline

(T1, 2025)

Course Name	Diploma of Information Technology
Course Code	X099
Campus	Melbourne Burwood Campus / Jakarta Campus, Indonesia / Online (Domestic only)
Intake	March, June, October
CRICOS	097891B
Course Duration	The Diploma of Information Technology can be completed within a three-trimester “Normal Track” (12 months) or can be completed on a two-trimester “Fast Track” (8 months).
Modes of Delivery	On Campus: (International and Domestic Students) Generally, four hours of class contact per week are allocated to each unit. Online: (Domestic Students Only) Weekly self-directed study + one hour of scheduled contact per week administered online via Zoom.
Assessment	Assessment for all units is ongoing and continuous, consisting of tests, portfolios, reports, and presentations. Some units have a final examination at the end of the trimester. Both on campus and online students are expected to complete assessments as per the scheduled dates provided in each Unit Outline and/or the exam timetable.
Course Structure	Eight Diploma units must be completed and passed to be awarded the Diploma of Information Technology (8 credit points).
Units[^]	Complete and pass eight units (8 credit points): <ul style="list-style-type: none"> • SIT102 Introduction to Programming • SIT103 Database Fundamentals • SIT111 Computer Systems • SIT112 Introduction to Data Science and Artificial Intelligence • SIT120 Introduction to Responsive Web Apps • SIT182 Real World Practices for Cyber Security • SIT190 Introduction to Functions, Relations and Graphs # • SIT192 Discrete Mathematics # • SIT194 Introduction to Mathematical Modelling # • SIT199 Applied Algebra and Statistics • MMM132 Management ^ • SET111 Sustainable Design ^ • SEJ104 Engineering in Society ^

	<p>^ Unit availability is dependent on the enrolled pathway.</p> <p># SIT190 Introduction to Functions, Relations and Graphs is a mathematics unit designed to prepare students for tertiary level mathematics. Students who have not completed VCE Mathematical Methods 3 and 4 should complete SIT190 (in place of an elective) prior to enrolling into SIT192 or SIT194. SIT190 is a <u>required unit</u> for the Cyber Security and AI pathways.</p> <p>All Diploma of Information Technology students must complete DAI001 Academic Integrity, which is a free, zero credit point compulsory online unit and does not count toward your total units.</p> <p>Diploma of Information Technology international students may be required to complete LDM100 Language Development Module, which is a zero-credit point compulsory unit, and is free for the first attempt.</p>
Transfer to Deakin University	<p>The following transfer criteria apply:</p> <ul style="list-style-type: none"> You must complete and pass eight (8) Deakin College Diploma of IT units. Your average mark after completing eight (8) Deakin College Diploma of IT units must meet the minimum described in your pathway. See the section “Understanding your Weighted Average Mark” for more information. Transfer to some degrees requires specific core units to be completed to receive the appropriate credits. See the Deakin University degree pathways in this document for core units.
Study Load	<ul style="list-style-type: none"> If you are a domestic student, you can enrol in 1 to 4 units, also known as modules (25%-100% study load) each trimester. If you are seeking Centrelink assistance, you must enrol in 3 or 4 units. If you are an international student, you must enrol in 3 or 4 units, also known as modules (75%-100% study load) per trimester to meet progression requirements to Deakin University, as outlined in your offer letter. <ul style="list-style-type: none"> International students commencing in trimester 3 are required to enrol in 4 units to align your Diploma completion with a Deakin University intake period.

CRICOS codes

Bachelor of Artificial Intelligence
0100304

Bachelor of Computer Science
083695K

Bachelor of Cyber Security
091336M

Bachelor of Data Science 109274B

Bachelor of Information
Technology 053993D

Bachelor of Software Engineering
(Honours) 092212D

Diploma Structure and Bachelor Pathways

Diploma of Information Technology units must be taken in the recommended order indicated in this course outline. This order is maintained by a system of credit prerequisites, which require students to earn a set number of credit points before they can unlock enrolment into further units. Credit points are earned by completing credit point units.

If students have reason to enrol in units out of the recommended order, they can submit an *Enrolment Variation Form* for consideration.

Unit availability per trimester

Unit	Trimester 1 2025	Trimester 2 2025	Trimester 3 2025
SIT102 – Introduction to Programming	✓	✓	✓
SIT103 – Database Fundamentals	✓	✓	✓
SIT111 – Computer Systems	✓	✓	✓
SIT112 – Introduction to Data Science and Artificial Intelligence	✓	✓	✓
SIT120 – Introduction to Responsive Web Apps	✓	✓	✓
SIT182 – Real-World Practices for Cyber Security	✓	✓	✓
SIT190 – Introduction to Functions, Relations and Graphs	✓	✓	✓
SIT192 – Discrete Mathematics	✓	✓	✓
SIT194 – Introduction to Mathematical Modelling	✓	✓	✓

Unit availability per trimester (continued)

Unit	Trimester 1 2025	Trimester 2 2025	Trimester 3 2025
SIT199 – Applied Algebra and Statistics	✓	✓	✓
MMM132 – Management	✓	✓	✓
SEJ104 – Engineering in Society	✓	✓	✓
SET111 – Sustainable Design	✓	✓	✓

Equipment Requirements and Bring Your Own Device (BYOD) Guidelines

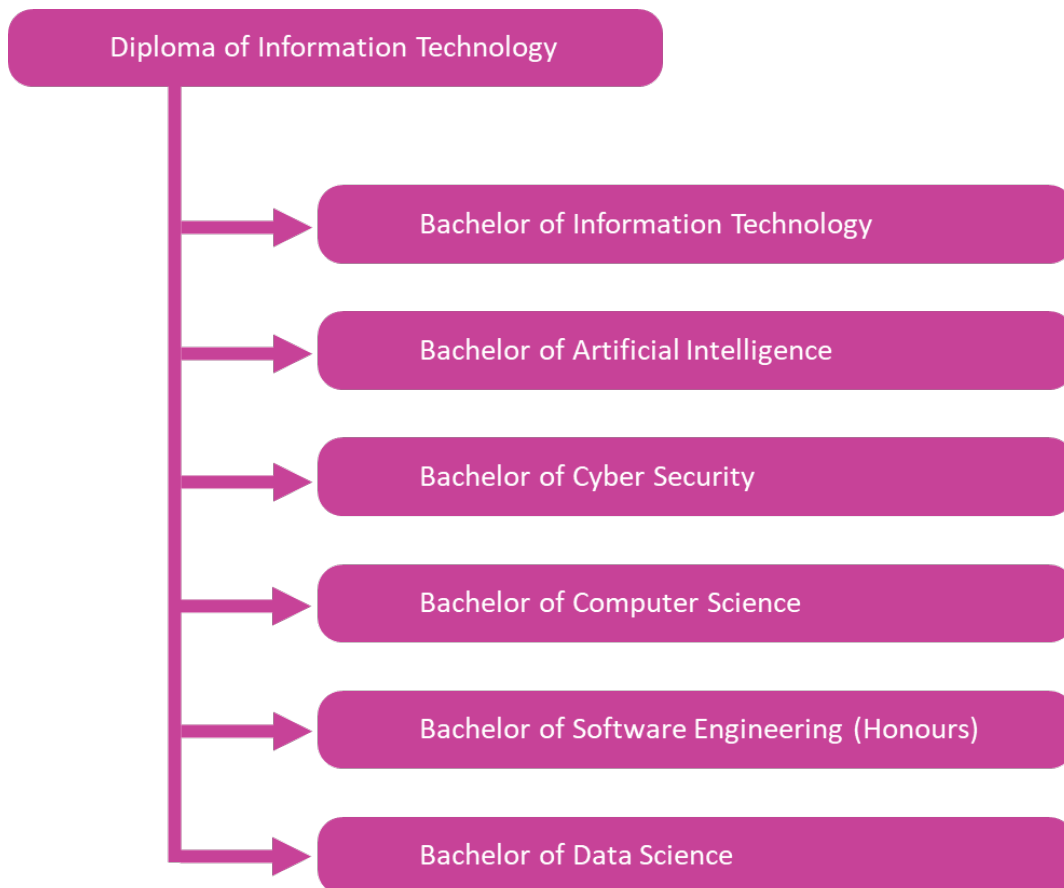
The learning experiences and assessment activities within the Diploma of Information Technology require students have access to a desktop computer or laptop.

Online students are required to purchase additional equipment, such as small single board computers, microcontrollers and sensors, for certain units – this equipment will be later reused in a range of units within the School of Information Technology Bachelor courses. On campus students are encouraged to purchase this equipment as well, but also have the option of accessing shared equipment during class - after transferring to Deakin University, students are expected to purchase this equipment. Equipment requirements and details of suppliers will be provided in units where equipment is needed.

For information regarding hardware and software requirements for desktop/laptop computers, please refer to the [Bring Your Own Device \(BYOD\) Guidelines](#) via the Deakin University School of Information Technology website.

Bachelor Pathways

Students completing the Diploma of Information Technology can transition to Deakin University into one of six Bachelor degree pathways:



Major and Minor Sequences

Bachelor degrees may include major or minor sequences. These are combinations of units that represent a specialisation in the degree – for example, students can complete a *Bachelor of Information Technology* with a major of *Application Development*. Typically, major sequences are a combination of 6 units and minor sequences are a combination of 4 units. While most major/minor units are studied in second and third year at Deakin University, some can be started by selecting the correct units within the Diploma of Information Technology.

The pathways described in this document will list any compatible majors or minors – where possible, students should begin studying a major or minor during the diploma. When transferring to Deakin University after completing the Diploma of Information Technology, students can discuss with the university about studying a different major or minor sequence.

Unit Grading System

Each unit in your Diploma of Information Technology will give you a variety of activities and tasks that are used to determine your overall understanding of the unit content. For each unit, you will be graded according to Deakin College's standard grading system. The main grade descriptions are described below:

Grade	Percentage Mark
High Distinction (HD)	80 – 100
Distinction (D)	70 – 79
Credit (CR)	60 – 69
Pass (P)	50 – 59
Fail (N)	0 – 49

Students that Fail a core unit in their pathway are required to reenrol and attempt the unit again in the following trimester of study. Students that Fail an elective or major/minor unit may choose a different unit, or attempt the same unit again, depending on the bachelor pathway – see the pathway descriptions further in this document for more information about unit availability.

Understanding your Weighted Average Mark (WAM)

Part of the transfer criteria to continue into a Deakin University Bachelor degree pathway is to achieve a minimum Weighted Average mark (WAM) in your Diploma units. Your WAM is calculated by adding all your unit results together and dividing by the total number of attempts.

Note that if you fail a unit on the first attempt and then pass the unit on the second attempt, the results of both attempts are added to the average mark calculation.

➤ Example case 1 (WAM required: 50)

A student has completed 8 units in their Diploma of IT. They failed 1 attempt, but successfully passed the unit on their second attempt – therefore their Diploma took 9 unit attempts. Their unit results are below:

SIT102: 60	SIT103: 63	SIT111: 65
SIT112: 70	SIT120: 34	SIT182: 80
SIT190: 67	SIT192: 73	SIT120 (second attempt): 73

$$\begin{aligned} \text{WAM} &= (60 + 63 + 65 + 70 + 34 + 80 + 67 + 73 + 73) / 9 \text{ unit attempts} \\ &= 585 / 9 = \text{WAM } 65 \end{aligned}$$

This student meets their WAM requirement to transfer to Deakin University under their chosen Bachelor pathway.

➤ Example case 2 (WAM required: 50)

A student has completed 8 units in their Diploma of IT. They failed 4 attempts before eventually passing their 8 units – therefore their Diploma took 12 unit attempts. Their unit results are below:

SIT102: 15	SIT103: 53	SIT111: 55
SIT112: 50	SIT120: 53	SIT182: 10
SIT190: 55	SIT192: 27	SIT102 (second attempt): 30
SIT182 (second attempt): 57	SIT192 (second attempt): 56	SIT102 (third attempt): 55

$$\begin{aligned} \text{WAM} &= (15 + 53 + 55 + 50 + 53 + 10 + 55 + 27 + 30 + 57 + 56 + 55) / 12 \text{ unit attempts} \\ &= 516 / 12 = \text{WAM } 43 \end{aligned}$$

This student does not meet their WAM requirement to transfer to Deakin University and cannot continue towards their chosen pathway.

Course Maps - How to Read and Select Units

The following pages describe each of the six Bachelor pathways offered by the Diploma of Information Technology. Each pathway offers example course maps that indicate when units should be taken in the Diploma.

When considering your units, follow these steps:

Step 1: Select core units first

Units described as CORE in a course map means that they must be completed in your Diploma of IT for the pathway you are enrolled in. When enrolling, always choose CORE units first.

Step 2: Add a major or minor sequence (where applicable)

Spaces that say MAJOR/MINOR in a course map means that you should add a unit from the listed major or minor sequences.

Not all major and minor sequences for a degree are described in this document, as many cannot be started until transferring into second year study at Deakin University. Refer to the Deakin University course page links in your pathway for more information about your degree and the major/minor sequences offered.

Major or minor sequences can be started in the Diploma of Information Technology for the following pathways:

- *Bachelor of Information Technology*
- *Bachelor of Computer Science*
- *Bachelor of Cyber Security*

Step 3: Add electives, or additional major/minor units

Spaces that say ELECTIVE in a course map means that you can select any unit from the described list of elective units for your pathway. If you are studying a pathway with major or minor sequences, you can also fill in your elective spaces with more major/minor units.

Bachelor of Artificial Intelligence Pathway

Deakin University Course Code: S308
CRICOS Code: 0100304

Availability: Burwood | Trimester 1 | Trimester 2

International Students WAM (Burwood): 50

Domestic Students WAM (Burwood): 50

Credits for Transfer: 8

Description

The Bachelor of Artificial Intelligence pathway gives students the knowledge and skills to explore computational solutions using modern advancements in Artificial Intelligence. Topics include exploring the latest in Deep Learning, Natural Language processing, and Computer Vision. Students that take this pathway will be prepared for a future of AI integration in a variety of professional fields, as well as contribute towards future improvements in AI-driven technologies.



Deakin University Course Pages

More information for the Bachelor of Artificial Intelligence degree is available through Deakin University's course pages:

- Domestic students: [Bachelor of Artificial Intelligence course page](#)
- International students: [Bachelor of Artificial Intelligence course page](#)

Example Course Maps

The following tables show example course maps for students in the *Diploma of IT → Bachelor of Artificial Intelligence* pathway. Students should always try to keep to the recommended sequencing of units as described in the below course maps. Variations to this sequencing can be discussed with the Academic Coordinator.

Normal Track (Completing In 12 months/3 trimesters)

1 st Trimester	CORE SIT102 Introduction to Programming	CORE SIT103 Database Fundamentals	CORE SIT111 Computer Systems	DAI001 Academic Integrity Unit (Compulsory, zero credit point, online only)
2 nd Trimester	CORE SIT194 Introduction to Mathematical Modelling	ELECTIVE UNIT	ELECTIVE UNIT	
3 rd Trimester	CORE SIT112 Introduction to Data Science and Artificial Intelligence	CORE SIT192 * Discrete Mathematics		

Fast Track (Completing In 8 months/2 trimesters)

1 st Trimester	CORE SIT102 Introduction to Programming	CORE SIT103 Database Fundamentals	CORE SIT111 Computer Systems	ELECTIVE UNIT	DAI001 Academic Integrity Unit (Compulsory, zero credit point, online only)
2 nd Trimester	CORE SIT112 Introduction to Data Science and Artificial Intelligence	CORE SIT192 * Discrete Mathematics	CORE SIT194 Introduction to Mathematical Modelling	ELECTIVE UNIT	

* Students who have not completed VCE Mathematical Methods 3 and 4 must complete SIT190 prior to enrolling into SIT192.

Electives for Bachelor of Artificial Intelligence

Bachelor of Artificial Intelligence students can select electives from the following units. Please refer to the [Bachelor of Artificial Intelligence course page](#) for more information about units available in your Bachelor course.

Students can choose their electives from the following:

- SIT120 Introduction to Responsive Web Apps
- SIT182 Real World Practices for Cyber Security
- SIT190 Introduction to Functions, Relations, and Graphs
- SIT199 Applied Algebra and Statistics

Bachelor of Computer Science Pathway

Deakin University Course Code: S306
CRICOS Code: 083695K

Availability: Burwood | Trimester 1 | Trimester 2

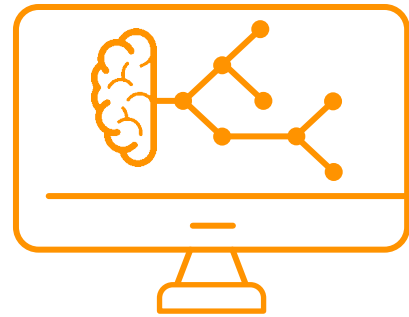
International Students WAM (Burwood): 50

Domestic Students WAM (Burwood): 50

Credits for Transfer: 8

Description

The Bachelor of Computer Science pathway equips students with the skill to develop innovative software solutions to complex problems within community, business and industry. Topics include Advanced Algorithm Design, Concurrent Programming techniques, and exploring Computational Intelligence. Students that take this pathway will be prepared to be the next generation of critical problem solvers, capable of applying their skills into data analytics, robotics, and telecommunications, among many more areas.



Deakin University Course Pages

More information for the Bachelor of Computer Science degree is available through Deakin University's course pages:

- Domestic students: [Bachelor of Computer Science course page](#)
- International students: [Bachelor of Computer Science course page](#)

Example Course Maps

The following tables show example course maps for students in the *Diploma of IT → Bachelor of Computer Science* pathway. Students should always try to keep to the recommended sequencing of units as described in the below course maps. Variations to this sequencing can be discussed with the Academic Coordinator.

Normal Track (Completing In 12 months/3 trimesters)

1 st Trimester	CORE SIT102 Introduction to Programming	CORE SIT103 Database Fundamentals	CORE SIT111 Computer Systems	DAI001 Academic Integrity Unit (Compulsory, zero credit point, online only)
2 nd Trimester	CORE SIT112 Introduction to Data Science and Artificial Intelligence	MAJOR/MINOR UNIT	MAJOR/MINOR OR ELECTIVE UNIT	
3 rd Trimester	CORE SIT192 * Discrete Mathematics	MAJOR/MINOR OR ELECTIVE UNIT		

Fast Track (Completing In 8 months/2 trimesters)

1 st Trimester	CORE SIT102 Introduction to Programming	CORE SIT103 Database Fundamentals	CORE SIT111 Computer Systems	MAJOR/MINOR OR ELECTIVE UNIT	DAI001 Academic Integrity Unit (Compulsory, zero credit point, online only)
2 nd Trimester	CORE SIT112 Introduction to Data Science and Artificial Intelligence	CORE SIT192 * Discrete Mathematics	MAJOR/MINOR UNIT	MAJOR/MINOR OR ELECTIVE UNIT	

* Students who have not completed VCE Mathematical Methods 3 and 4 (or equivalent) should complete SIT190 Introduction to Functions, Relations and Graphs prior to enrolling into SIT192 Discrete Mathematics.

Major & Minor Sequences



Students must choose electives that align to a major or minor sequence. Majors and minors listed here are only for those that can be started within the Diploma of Information Technology. Other majors and minors may be available after transferring to second year at Deakin University - refer to the [Bachelor of Computer Science course page](#) for full details on major and minor sequences available.

Add at least one of the following Major or Minor sequences to the course map on the previous page.

Major Sequences

Data Science	Requires: SIT199 Applied Algebra and Statistics
Computational Mathematics	Requires: SIT190 Introduction to Functions, Relations and Graphs SIT194 Introduction to Mathematical Modelling

Minor Sequences

Computational Mathematics	Requires: SIT194 Introduction to Mathematical Modelling
Full Stack Development	Requires: SIT120 Introduction to Responsive Web Apps

Electives for Bachelor of Computer Science

After adding at least one of the above major or minor sequences to the course map, any remaining space can be filled with the following elective units. Note that electives do not count toward any major or minor sequence and should always be picked after selecting your core and major/minor units. Please refer to the [Bachelor of Computer Science course page](#) for the number of electives available in your chosen major and minor sequences.

Students can choose their electives from the following:

- SIT182 Real World Practices for Cyber Security
- SIT190 Introduction to Functions, Relations and Graphs (if taken by itself without SIT194)

Bachelor of Cyber Security Pathway

Deakin University Course Code: S334
CRICOS Code: 091336M

Availability: Burwood | Waurn Ponds | Trimester 1 | Trimester 2

International Students WAM (Burwood): 50
International Students WAM (Waurn Ponds): 50

Domestic Students WAM (Burwood): 50
Domestic Students WAM (Waurn Ponds): 50

Credits for Transfer: 8

Description

The Bachelor of Cyber Security pathway equips students with the essential skills and knowledge to investigate and combat cybercrime and cyberterrorism, and manage the challenges presented by the business, ethical, and legal issues of cyber security. Topics include performing Digital Forensics and Cyber Security Analysis, Ethical Hacking and Computer Networks. Students that take this pathway will be prepared for a career in the high demand industry of cyber security and will be able to support businesses in protecting their systems from harm.



Deakin University Course Pages

More information for the Bachelor of Cyber Security degree is available through Deakin University's course pages:

- Domestic students: [Bachelor of Cyber Security course page](#)
- International students: [Bachelor of Cyber Security course page](#)

Example Course Maps

The following tables show example course maps for students in the *Diploma of IT → Bachelor of Cyber Security* pathway. Students should always try to keep to the recommended sequencing of units as described in the below course maps. Variations to this sequencing can be discussed with the Academic Coordinator.

Normal Track (Completing In 12 months/3 trimesters)

1 st Trimester	CORE SIT102 Introduction to Programming	CORE SIT111 Computer Systems	REQUIRED SIT190 ^ Introduction to Functions, Relations and Graphs	DAI001 Academic Integrity Unit (Compulsory, zero credit point, online only)
2 nd Trimester	CORE SIT182 Real World Practices for Cyber Security	ELECTIVE UNIT	ELECTIVE UNIT	
3 rd Trimester	CORE SIT192 * Discrete Mathematics	MINOR UNIT		

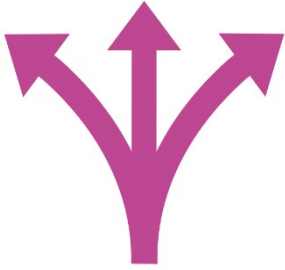
Fast Track (Completing In 8 months/2 trimesters)

1 st Trimester	CORE SIT102 Introduction to Programming	CORE SIT111 Computer Systems	REQUIRED SIT190 ^ Introduction to Functions, Relations and Graphs	ELECTIVE UNIT	DAI001 Academic Integrity Unit (Compulsory, zero credit point, online only)
2 nd Trimester	CORE SIT182 Real World Practices for Cyber Security	CORE SIT192 * Discrete Mathematics	MINOR UNIT	ELECTIVE UNIT	

[^] *SIT190 is a required unit but will count as an elective within your Bachelor of Cyber Security degree. Students who have completed VCE Mathematical Methods 3 and 4, Specialist Maths, or equivalent can request to take an elective instead by submitting an Enrolment Variation Form.*

^{*} *Students enrolling into SIT190 should complete this unit before enrolling into SIT192.*

Minor Sequences



Students must choose electives that align to a minor sequence. Minors listed here are only for those that can be started within the Diploma of Information Technology. Other minors may be available after transferring to second year at Deakin University - refer to the [Bachelor of Cyber Security course page](#) for full details on minor sequences available.

Add the following Minor sequence to the course map on the previous page.

Minor Sequences

Security Management	Requires: MMM132 Management
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Note: the Bachelor of Cyber Security has only two minor sequences: Security Management, and Network Security. Students are strongly advised to begin the Security Management minor in their Diploma of IT by studying MMM132, then when transferring to Deakin University decide whether to remain in this minor, or switch to Network Security. The Network Security minor can only be started after transferring into second year at Deakin University.

Electives for Bachelor of Cyber Security

After adding at least one of the above major or minor sequences to the course map, any remaining space can be filled with the following elective units. Note that electives do not count toward any major or minor sequence and should always be picked after selecting your core and major/minor units. Please refer to the [Bachelor of Cyber Security course page](#) for the number of electives available in your chosen minor sequence.

Students can choose their electives from the following:

- SIT103 Database Fundamentals
- SIT112 Introduction to Data Science and Artificial Intelligence
- SIT120 Introduction to Responsive Web Apps
- SIT194 Introduction to Mathematical Modelling
- SIT199 Applied Algebra and Statistics

Bachelor of Information Technology Pathway

Deakin University Course Code: S326
CRICOS Code: 053993D

Availability: Burwood | Waurm Ponds | Online (domestic only) | Trimester 1 | Trimester 2

International Students WAM (Burwood): 50
International Students WAM (Waurm Ponds): 50

Domestic Students WAM (Burwood): 50
Domestic Students WAM (Waurm Ponds): 50
Domestic Students WAM (Online): 50

Credits for Transfer: 8

Description

The Bachelor of Information Technology pathway provides students with the essential skills to embark in a career in IT, while developing specialist knowledge in industry-relevant areas. The degree allows students to explore the foundational skills and knowledge expected of IT professionals across multiple industries. Topics include Networking, Programming, Cyber Security, Cloud Applications, Entrepreneurship and Innovation, and User-Centred Design. Students that complete this pathway will be prepared for collaborative careers in the IT field and will be able to kickstart their own professional network.



Deakin University Course Pages

More information for the Bachelor of Information Technology degree is available through Deakin University's course pages:

- Domestic students: [Bachelor of Information Technology course page](#)
- International students: [Bachelor of Information Technology course page](#)

Example Course Maps

The following tables show example course maps for students in the *Diploma of IT → Bachelor of Information Technology* pathway. Students should always try to keep to the recommended sequencing of units as described in the below course maps. Variations to this sequencing can be discussed with the Academic Coordinator.

Normal Track (Completing In 12 months/3 trimesters)#

1 st Trimester	CORE SIT102 Introduction to Programming	CORE SIT103 Database Fundamentals	CORE SIT111 Computer Systems	DAI001 Academic Integrity Unit (Compulsory, zero credit point, online only)
2 nd Trimester	CORE SIT112 Introduction to Data Science and Artificial Intelligence	CORE SIT182 Real World Practices for Cyber Security	MAJOR/MINOR UNIT	
3 rd Trimester	CORE SIT120 Introduction to Responsive Web Apps	MAJOR/MINOR OR ELECTIVE UNIT		

Fast Track (Completing In 8 months/2 trimesters)#

1 st Trimester	CORE SIT102 Introduction to Programming	CORE SIT103 Database Fundamentals	CORE SIT111 Computer Systems	MAJOR/MINOR UNIT	DAI001 Academic Integrity Unit (Compulsory, zero credit point, online only)
2 nd Trimester	CORE SIT112 Introduction to Data Science and Artificial Intelligence	CORE SIT182 Real World Practices for Cyber Security	CORE SIT120 Introduction to Responsive Web Apps	MAJOR/MINOR OR ELECTIVE UNIT	

Major & Minor Sequences



Students must choose electives that align to a major or minor sequence. Majors and minors listed here are only for those that can be started within the Diploma of Information Technology. Other majors and minors may be available after transferring to second year at Deakin University - refer to the [Bachelor of Information Technology course page](#) for full details on major and minor sequences available.

Add at least one of the following Major or Minor sequences to the course map on the previous page.

Major Sequences

Cyber Security	Requires: SIT190 Introduction to Functions, Relations and Graphs SIT192* Discrete Mathematics
Networking and Cloud Computing	Requires: SIT192* Discrete Mathematics

Minor Sequences

Cyber Security Network Operations	Requires: SIT192* Discrete Mathematics
Security Management	Requires: MMM132 Management

* Students who have not completed VCE Mathematical Methods 3 and 4 should complete SIT190 prior to enrolling into SIT192.

Electives for Bachelor of Information Technology

After adding at least one of the above major or minor sequences to the course map, any remaining space can be filled with the following elective units. Note that electives do not count toward any major or minor sequence and should always be picked after selecting your core and major/minor units. Please refer to the [Bachelor of Information Technology course page](#) for the number of electives available in your chosen major and minor sequences.

Students can choose their electives from the following:

- SIT194 Introduction to Mathematical Modelling
- SIT199 Applied Algebra and Statistics

Bachelor of Data Science Pathway

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Deakin University Course Code: S379

CRICOS Code: 109274B

Availability: Burwood | Trimester 1 | Trimester 2

International Students WAM (Burwood): 50

Domestic Students WAM (Burwood): 50

Credits for Transfer: 8

Description

The Bachelor of Data Science pathway gives students the knowledge and skills to explore how information is created, processed and analysed to generate insights and inform strategic business decisions. Topics include Statistics and Data Analysis, Data Wrangling, Data Capture Technologies, Natural Language Processing and Machine Learning. Students that take this pathway will be prepared for integrating innovative technologies and data analytics methods to help businesses harness the opportunities of Big Data to remain competitive in their industry.



Deakin University Course Pages

More information for the Bachelor of Data Science degree is available through Deakin University's course pages:

- Domestic students: [Bachelor of Data Science course page](#)
- International students: [Bachelor of Data Science course page](#)

Example Course Maps

The following tables show example course maps for students in the *Diploma of IT → Bachelor of Data Science* pathway. Students should always try to keep to the recommended sequencing of units as described in the below course maps. Variations to this sequencing can be discussed with the Academic Coordinator.

Normal Track (Completing In 12 months/3 trimesters)

1 st Trimester	CORE SIT102 Introduction to Programming	CORE SIT103 Database Fundamentals	CORE SIT111 Computer Systems	DAI001 Academic Integrity Unit (Compulsory, zero credit point, online only)
2 nd Trimester	CORE SIT182 Real World Practices for Cyber Security	CORE SIT190 Introduction to Functions, Relations and Graphs	CORE SIT112 Introduction to Data Science and Artificial Intelligence	
3 rd Trimester	CORE SIT192 Discrete Mathematics	ELECTIVE UNIT		

Fast Track (Completing In 8 months/2 trimesters)

1 st Trimester	CORE SIT102 Introduction to Programming	CORE SIT103 Database Fundamentals	CORE SIT111 Computer Systems	CORE SIT190 Introduction to Functions, Relations and Graphs	DAI001 Academic Integrity Unit (Compulsory, zero credit point, online only)
2 nd Trimester	CORE SIT112 Introduction to Data Science and Artificial Intelligence	CORE SIT192 Discrete Mathematics	CORE SIT182 Real World Practices for Cyber Security	ELECTIVE UNIT	

Electives for Bachelor of Data Science

Bachelor of Data Science students can select electives from the following units. Please refer to the [Bachelor of Data Science course page](#) for more information about units available in your Bachelor course.

Students can choose their electives from the following:

- SIT120 Introduction to Responsive Web Apps
- SIT194 Introduction to Mathematical Modelling
- SIT199 Applied Algebra and Statistics

Bachelor of Software Engineering (Honours) Pathway

Deakin University Course Code: S464

CRICOS Code: 092212D

Availability: Burwood | Trimester 1 | Trimester 2

International Students WAM (Burwood): 50

Domestic Students WAM (Burwood): 50

Credits for Transfer: 8

Description

The Bachelor of Software Engineering (Honours) pathway gives students the skills to prepare themselves for developing the smart software and systems used in robotics and cyber-physical systems, technologies that allow for new and creative solutions to emerging business challenges. Topics include Embedded Systems Development, Sustainable Design, Concurrent and Distributed Programming, and Software Architecture and Scalability for Internet of Things applications. Students that take this pathway will be prepared for working in a range of industries, working alongside both IT and Engineering professionals.



Deakin University Course Pages

More information for the Bachelor of Software Engineering (Honours) degree is available through Deakin University's course pages:

- Domestic students: [Bachelor of Software Engineering \(Honours\) course page](#)
- International students: [Bachelor of Software Engineering \(Honours\) course page](#)

Example Course Maps

The following tables show example course maps for students in the *Diploma of IT → Bachelor of Software Engineering (Honours)* pathway. Students should always try to keep to the recommended sequencing of units as described in the below course maps. Variations to this sequencing can be discussed with the Academic Coordinator.

Normal Track (Completing In 12 months/3 trimesters)

1 st Trimester	CORE SIT102 Introduction to Programming	CORE SIT103 Database Fundamentals	CORE SIT111 Computer Systems	DAI001 Academic Integrity Unit (Compulsory, zero credit point, online only)
2 nd Trimester	CORE SIT190 Introduction to Functions, Relations and Graphs	CORE SEJ104 Engineering in Society	CORE SET111 Sustainable Design	
3 rd Trimester	CORE SIT192 Discrete Mathematics	CORE SIT182 Real World Practices for Cyber Security		

Fast Track (Completing In 8 months/2 trimesters)

1 st Trimester	CORE SIT102 Introduction to Programming	CORE SIT103 Database Fundamentals	CORE SIT111 Computer Systems	CORE SIT190 Introduction to Functions, Relations and Graphs	DAI001 Academic Integrity Unit (Compulsory, zero credit point, online only)
2 nd Trimester	CORE SET111 Sustainable Design	CORE SIT192 Discrete Mathematics	CORE SIT182 Real World Practices for Cyber Security	CORE SEJ104 Engineering in Society	

Note: Please note that as shown above, all eight units are CORE units; there are no major/minor or elective units in the *Diploma of IT → Bachelor of Software Engineering (Honours)* pathway.

Unit Descriptions

The following section contains a short summary description of each unit available in the Diploma of Information Technology. Please ensure you check the most up to date trimester unit outlines for any content and assessment updates.

SIT102 Introduction to Programming

This unit explores the relationship between computer program code and the software systems that are generated from them. Students will experience developing simple software using a variety of data types, selection and repetition control structures, functions, simple text files, and console and Graphical User Interfaces (GUIs) to interact with users.

Assessment: 100% learning portfolio

SIT103 Database Fundamentals

This unit will provide a solid foundation for the design, implementation and management of database systems. Data modelling is introduced, focusing on entity-relationship (ER) modelling. The skills required to construct such ER diagrams will be explored, with a focus on ensuring that the semantics of the model match those of the real-world it is representing. The relational data model will be presented and the functionality it affords will be explored. The process of constructing, maintaining and retrieving information from the database using SQL will be a focus of this unit. Key implementation and management concepts, including transaction management and concurrency control, database backup and recovery, and security will be investigated.

Assessment: 100% learning portfolio

SIT111 Computer Systems

Over the past 70 years computing systems and algorithms have revolutionised nearly every facet of modern life, from healthcare to education, manufacturing to transport, and entertainment to agriculture. Computing hardware and the algorithms encoded into software are thus vital to the continued growth of modern society, as are computer scientists - the professionals who design and develop algorithms and computational solutions to many of the world's problems. In this unit students will investigate some of the major computing system innovations over the past 70 years, to understand the role of computer scientists, computing hardware, algorithms and software as drivers of change and innovation. The unit will also look at recent developments and applications of computer science that are set to revolutionise our futures, such as digital currencies, intelligent machines, and the Internet of Things.

Assessment: 100% learning portfolio

SIT112 Introduction to Data Science and Artificial Intelligence

Data science is an emerging field and data scientists must be able to know how to make sense of data. In SIT112, students will develop knowledge of fundamentals in data science, in particular data manipulation and algorithms for analytics. The unit will also cover the practice of data science including ethical and responsible behaviour when crawling, cleaning, analysing, representing and repurposing the data. Students will be able to obtain data, recognise data formats, summarise and visualise relationships in the data, perform exploratory data analysis tasks and build predictive models.

Assessment: 100% learning portfolio

SIT120 Introduction to Responsive Web Apps

This unit will explore foundational knowledge of and basic skills related to responsive web app design and development. Students will learn basic HTML, responsive CSS and JavaScript skills in order to build web apps both for desktop and mobile devices. Students will develop an understanding of how web design and web programming work together, as well as learn fundamentals of responsive web design, mobile UI design, licensing of media, mobile screen handling, touch events, and game concepts.

Assessment: 100% learning portfolio

SIT182 Real World Practices for Cyber Security

In SIT182 students will learn the real world practices of cyber security by solving problems based on realistic case studies. Students will explore fundamental concepts of risks in managing communication networks and choose the appropriate means to manage these risks. The unit enables students to understand threats and vulnerabilities in the context of how systems can be compromised and how we can prevent harm to systems. There will be a practical focus on how we can detect and respond to cyber-attacks. The key to learning will be introducing students to practices through case studies.

Assessment: 80% learning portfolio, 20% final examination

SIT190 Introduction to Functions, Relations and Graphs

This unit aims to develop the fundamental functions of applied mathematics, and to introduce calculus to students who have not previously studied it in secondary school. It is designed to prepare students from a number of different disciplines for learning tertiary level mathematics. Students will explore the algebra of polynomials, exponentials, logarithms and trigonometric functions and learn rules for differentiating and integrating these functions. Applications studied include graph sketching, maximisation and minimisation problems, areas and kinematics.

Assessment: 100% learning portfolio

SIT192 Discrete Mathematics

This unit provides students with the foundations in a range of areas in discrete mathematics, which is the basis for mathematical reasoning in applied sciences. SIT192 is designed to prepare students from a number of different disciplines for further study in the areas of linear algebra, number theory, graph theory, symbolic logic, set theory and combinatorics. These areas of study are vital for studying cryptography, networks, computer programming and analysis of algorithms.

Assessment: 80% learning portfolio, 20% final examination

SIT194 Introduction to Mathematical Modelling

SIT194 aims to develop the theory of calculus and analytic geometry and to apply it to formulating and solving problems in engineering and the physical sciences.

Assessment: 50% five assignments (10% each), 50% final examination

SIT199 Applied Algebra and Statistics

This unit includes: the algebra of complex numbers, matrices, probability, and the major discrete and continuous probability distributions. The relationship algebraic and transcendental functions and complex numbers are emphasised and applied to electrical networks. Solutions to systems of linear equations using matrices and determinants, and fundamental concepts vectors are considered. The statistics techniques and examples studied are relevant to the sciences in general, and engineering in particular.

Assessment: 3 problem solving tasks (worth 10%, 20% and 20%), 50% final examination

MMM132 Management

The aim of this unit is to provide students with a critical understanding of the intellectual foundations of the study of management. The unit will provide the opportunity to analyse how the solutions to management 'problems' have developed under different conditions throughout the nineteenth and twentieth century. The unit also explores how management practice influences, and is influenced by, the external environment. This will involve examining how managerial action impacts on and is shaped by the environment, through a consideration of globalisation, ethics, social responsibility and the social and cultural context of management.

Assessment: 40% research assessment, 20% group reflection, 40% final exam

SET111 Sustainable Design

This unit focuses on the principles and practices of computer aided design. Design is an essential element of professional practice and requires unique knowledge, skills and attitudes common to a number of engineering disciplines. The unit allows students to develop their technical and professional practice skills for a career in engineering. Students will learn how to design an artefact using sustainable design principles and lay the foundations for 3D modelling and engineering drawings.

Assessment: Design Portfolio (Individual) Part 1 and Part 2 70%, CAD Skills Test (Individual) 30% To be eligible to obtain a pass in this unit, students must achieve an overall mark of at least 50% in CAD skills test

SEJ104 Engineering in Society

This unit focuses on the principles and practices of human centred design as well as whole system design, within the context of sustainable systems. Design is an essential part of engineering professional practice, and students will explore the process of design ideation, definition and problem solving, by working on an authentic, real-world problem. The unit allows the students to explore human and natural factors that influence design projects, while also considering the values and needs of clients and end users.

Assessment: Case Study Review (Individual) 25%, Career and Professional Development Reflection (Individual) 10%, Sustainable Design Project (Group) 40%, Visual Poster Presentation 25%

DAI001 Academic Integrity Module

DAI001 is a compulsory zero credit point module in all Deakin University courses. The module's learning and assessment activities allow students to develop knowledge, skills and good practice principles to understand the importance of maintaining academic integrity in their studies and career and to avoid breaching academic integrity standards.

Assessment: Online multiple-choice quiz 100%. To be eligible to obtain a pass in this unit, students must achieve a minimum mark of 85% on the quiz. Students are allowed unlimited attempts of the quiz.

LDM100 Language Development Module

This module is designed to provide students with opportunities to review, develop and practice the English language systems and skills required to successfully participate in an undergraduate degree program.

Assessment: There are multiple forms of assessment throughout the trimester to assess your English language skills.