

Diploma of Information Technology

Course Code: X099

Course Outline (T2, 2023)

Campus	Jakarta Campus, Indonesia
Intake	March, July, October
CRICOS	097891B
Course Duration	The duration of the Diploma course is three trimesters (12 months). There is an option, however, to fast track the course and complete it in two trimesters (8 months).
Modes of Delivery	On Campus: Generally, four hours of class contact per week are allocated to each unit. Online: Weekly self-directed study + one hour of scheduled contact per week administered online (Zoom/MS Teams).
Assessment	Assessment for all units is ongoing and continuous consisting of tests, assignments and reports. Some units have a final two-hour examination. Both on campus and online students are expected to complete assessments as per the scheduled dates provided in each Unit Outlines and/or the exam timetable.
Course Structure	Eight units must be completed and passed to be awarded the Diploma (8 credit points).
Units[^]	Complete and pass eight units (8 credit points): <ul style="list-style-type: none"> • SIT102 Introduction to Programming • SIT103 Data and Information Management • SIT111 Computer Systems • SIT112 Data Science Concepts • SIT114 Introduction to Artificial Intelligence' • SIT120 Introduction to Responsive Web Apps • SIT123 Data Capture Technologies • SIT124 Exploring I.T. • 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[^]

	<p>^Unit availability is dependent on the enrolled pathway. #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. ‘SIT114 is incompatible with SIT112 and requires SIT102 & SIT192 as corequisites.</p> <p>All Diploma of Information Technology students must complete STP050 Academic Integrity, which is a free, zero credit point compulsory online unit and does not count toward your total units.</p>
<p>Transfer to Deakin University</p>	<p>The following transfer criteria apply:</p> <ul style="list-style-type: none"> • You must complete and pass eight Deakin College diploma units. • You must achieve the required Weighted Average Mark (WAM) for your Deakin College diploma taking into account all units attempted at Deakin College (required WAMs are included under each Deakin University degree on the following pages). • Transfer to some degrees requires specific Deakin College units to be completed in order to receive the appropriate credits (see Deakin University degrees below for core units).
<p>Study Load</p>	<ul style="list-style-type: none"> • You must enrol in 3 or 4 units, also known as modules (75%-100% study load) per trimester in order to meet progression requirements to Deakin University, as outlined in your offer letter.

Deakin University Campuses and Trimester codes

B Melbourne Burwood Campus **WP** Geelong Waurn Ponds Campus **C** Deakin Online

T1 Trimester 1 entry **T2** Trimester 2 entry

CRICOS Codes

Bachelor of Information Technology 053993D,
 Bachelor of Computer Science 083695K,
 Bachelor of Cyber Security 091336M,
 Bachelor of Artificial Intelligence 0100304.

Unit availability

UNITS*
• SIT102 Introduction to Programming
• SIT103 Data and Information Management
• SIT111 Computer Systems
• SIT112 Data Science Concepts
• SIT114 Introduction to Artificial Intelligence'
• SIT120 Introduction to Responsive Web Apps
• SIT123 Data Capture Technologies
• SIT124 Exploring I.T.
• 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 ^
• STP050 Academic Integrity Unit (Compulsory zero credit point online)

^Unit availability is dependent on the enrolled pathway.

#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 required unit for the Cyber Security and AI pathways.

'SIT114 is incompatible with SIT112 and requires SIT102 & SIT192 as corequisites.

*** Not all units are available every trimester**

Units per trimester

Standard Track (Completing in 8 months/2 trimesters)					
<i>1st Trimester of study</i>	SIT102 Introduction to Programming	SIT111 Computer Systems	SIT120 Introduction to Responsive Web Apps	SIT124 Exploring I.T.	STP050 Academic Integrity Unit (Compulsory zero credit point online)
<i>2nd Trimester of study</i>					

Bachelor of Information Technology Pathway

S326
(B WP T1 T2)

International Students WAM: **B 50 WP 50**

Australian Students WAM: **B 50 WP 50 C 50**

Credits for Transfer: 8

Core units

SIT102 Introduction to Programming

SIT103 Data and Information Management

SIT112 Data Science Concepts

SIT120 Introduction to Responsive Web Apps

SIT124 Exploring I.T.

SIT182 Real World Practices for Cyber Security

Major & Minor Sequences

Students must choose elective that aligns to a major or minor sequence. Majors and minors listed are only those available in the Diploma of Information Technology.

Major Sequences	
Cyber Security	Requires: <u>SIT190</u> Introduction to Functions, Relations and Graphs, <u>SIT192*</u> Discrete Mathematics
Networking and Cloud Computing	Requires: <u>SIT192*</u> Discrete Mathematics
Minor Sequences	
Cyber Security Network Operations	Requires: <u>SIT192*</u> Discrete Mathematics
Embedded Systems	Requires: <u>SIT123</u> Data Capture Technologies
Security Management	Requires: <u>MMM132</u> Management

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

Please refer to [Bachelor of Information Technology course page](#) for full details on major and minor sequences available.

Bachelor of Computer Science Pathway

S306
(B T1 T2)

International Students WAM: **B 50**

Australian Students WAM: **B 50**

Credits for Transfer: 8

Core units

SIT102 Introduction to Programming

SIT103 Data and Information Management

SIT111 Computer Systems

SIT112 Data Science Concepts

SIT192 Discrete Mathematics *

Major & Minor Sequences

Students must choose electives that align to a major or minor sequence. Majors and minors listed are only those available in the Diploma of Information Technology.

Major Sequences	
Data Science	Requires: SIT199 Applied Algebra and Statistics
Internet-of-Things	Requires: SIT123 Data Capture Technologies
Robotics	Requires: SIT123 Data Capture Technologies
Minor Sequences	
Embedded Systems	Requires: SIT123 Data Capture Technologies
Full Stack Development	Requires: SIT120 Introduction to Responsive Web Apps

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

Please refer to [Bachelor of Computer Science course page](#) for full details on major and minor sequences available.

Bachelor of Cyber Security Pathway

S334
(B WP T1 T2)

International Students WAM: **B 50 WP 50**
 Australian Students WAM: **B 50 WP 50**
 Credits for Transfer: 8

Core units

- SIT102** Introduction to Programming
- SIT111** Computer Systems
- SIT182** Real World Practices for Cyber Security
- SIT190** Introductory Mathematical Methods[^]
- SIT192** Discrete Mathematics*

Minor Sequences

Students must choose electives that align to a minor sequence. Minors listed are only those available in the Diploma of Information Technology.

Minor Sequences	
Security Management	Requires: <u>MMM132</u> Management

[^]*SIT190 is required but will count as an elective within your Bachelor of Cyber Security. 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 who have not completed VCE Mathematical Methods 3 and 4 should complete SIT190 prior to enrolling into SIT192.*

Please refer to [Bachelor of Cyber Security course page](#) for full details on major and minor sequences available.

Bachelor of Artificial Intelligence Pathway

S334

(B WP T1 T2)

International Students WAM: **B 50 WP 50**

Australian Students WAM: **B 50 WP 50**

Credits for Transfer: 8

Core Units

SIT102 Introduction to Programming

SIT103 Data and Information Management

SIT111 Computer Systems

SIT114 Introduction to Artificial Intelligence'

SIT192 Discrete Mathematics*

SIT194 Introduction to Mathematical Modelling'

'SIT114 requires SIT102 & SIT192 as corequisites and is incompatible with SIT112.

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

Note: This degree requires you to take additional first year units when you transfer to Deakin University. The degree may therefore take longer to complete.

Please refer to [Bachelor of Artificial Intelligence course page](#) for full details on major and minor sequences available.

Unit Descriptions

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 Data and Information Management

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: 10% quiz, 35% two practical assessments (20% + 15%), 15% SQL online tutorials, 40% final examination

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 Data Science Concepts

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: 25% individual task, 30% group task, 20% two quizzes (10% each), 25% final examination

SIT114 Introduction to Artificial Intelligence

This unit introduces you to the discipline of artificial intelligence (AI). You will explore diverse application domains where problems can benefit from AI solutions. You will develop conceptual understanding of major AI methods and know when and where to use them. In the practical components, you will implement simple AI algorithms.

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: 30% project, 40% project implementation and presentation, 30% practical portfolio

SIT123 Data Capture Technologies

This unit will introduce students to ubiquitous and readily accessible devices for data capture, such as the sensor suite on a mobile smartphone, and those commonly used in homes, vehicles and current examples of cyber-physical systems. Students will be introduced to data capture protocols and methodologies, as well as data presentation and visualisation methods. Through practical investigations and analysis, students will investigate issues of robustness, reliability and validity of data and the effects of these on conclusions drawn from data.

Assessment: 50% ten practical lab reports (5% each), 40% project report, 10% project poster and presentation

SIT124 Exploring I.T.

SIT124 is about exploring the IT Industry in the 21st century and the development and innovations that had led up to where IT stands today. Exploring IT focuses on how the web has been one of the biggest contributors in regards to the direction that IT has taken over the last decade. Within SIT124 students will start to develop their professional identity and explore the requirements needed to gain employment within the field through case studies and a peek behind the curtain provided by recent graduates. Students will also explore and acquire skills in web design and development, in order to gain an understanding of the important role that the web plays in the delivery and storage of information within the IT industry.

Assessment: 15% professional preparation document, 20% new technology website, 25% website development project, 40% final examination

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