



UOW  
COLLEGE  
AUSTRALIA

PATHWAYS TO  
UNIVERSITY OF  
WOLLONGONG

# Diploma of Information Technology

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## Course Outline



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# Diploma of Information Technology

## Course Outline

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### 1 Course Description

The UOW College Australia (UOWCA) Diploma of Information Technology provides students with access to the university experience within a supported context. In the introductory phase of this course, students will complete subjects specifically designed to assist them to develop effective approaches to learning in the higher education context. In Sessions 2 and 3, students are provided with a range of experiences and opportunities to engage with key disciplinary areas including programming, systems analysis and web technology.

The Diploma provides pathways for entry into the Bachelor of Business Information Systems (BBIS), the Bachelor of Computer Science (BCompSc) or the Bachelor of Information Technology (BIT) at the University of Wollongong (UOW) with specified credit of up to 48 credit points for subjects in the compulsory core component of these degrees.

Diploma qualifications are located at level 5 of the Australian Qualifications Framework. The purpose of the Diploma qualification type is to qualify individuals who apply integrated technical and theoretical concepts in a broad range of contexts to undertake advanced skilled or paraprofessional work and as a pathway for further learning.

## 2 Graduate Qualities

The Diploma of Information Technology course is designed to assist students in developing the UOW College Australia Graduate Qualities. It helps students become:

1. **Informed:** Have a basic knowledge of an area of study and understand its issues. Know how to apply this knowledge.
2. **Independent Learners:** Begin to engage with new ideas and ways of thinking and critically analyse issues. Seek to extend knowledge through ongoing enquiry and active learning. Find and evaluate information, using a variety of sources and technologies. Acknowledge the work and ideas of others.
3. **Problem Solvers:** Demonstrate introductory levels of creative, logical and critical thinking skills to respond effectively to problems. Be flexible and thorough.
4. **Effective Communicators:** Articulate and convey ideas effectively using a range of media. Work collaboratively and engage with people in different settings.
5. **Responsible:** Understand how decisions can affect others and make ethically informed choices. Appreciate and respect diversity and act with integrity. Take responsibility for one's own learning and completion of assessment tasks.

## 3 Course Learning Outcomes

Graduates will be able to:

1. Demonstrate language and literacy skills in order to read, write, present and listen effectively at a tertiary level.
2. Demonstrate the ability to locate, evaluate and use information appropriately at a tertiary level.
3. Demonstrate numeracy skills in order to interpret, understand and analyse information at a tertiary level.
4. Apply a range of skills that demonstrate independent learning.
5. Demonstrate theoretical and technical knowledge of information technologies.
6. Think critically and creatively to solve problems and identify better system solutions within business contexts.
7. Work collaboratively with others to solve information technology problems.

## 4 Course Learning Outcomes Mapped to Graduate Qualities

The table below shows how the graduate qualities are integrated into the course learning outcomes:

<b>Course Learning Outcomes/Graduate Qualities</b>	<b>1. Informed</b>	<b>2. Independent Learners</b>	<b>3. Problem Solvers</b>	<b>4. Effective Communicators</b>	<b>5. Responsible</b>
1. Apply language skills in order to read, write, present and listen effectively and critically at a tertiary level.		✓		✓	✓
2. Demonstrate the ability to locate, evaluate and use information appropriately at a tertiary level.	✓	✓		✓	✓
3. Demonstrate numeracy skills in order to interpret, understand and analyse information at a tertiary level.	✓		✓		
4. Apply a range of skills that demonstrate independent learning.	✓				✓
5. Demonstrate theoretical and technical knowledge of information technologies.	✓				
6. Think critically and creatively to solve problems and identify better system solutions within business contexts.	✓		✓	✓	✓
7. Work collaboratively with others to solve information technology problems.				✓	✓

## 5 Course Structure and Subjects

3187: DIPLOMA OF INFORMATION TECHNOLOGY			
<b>SESSION 1</b>			
Subject Code	Subject Name	Credit Points	Contact Hours a Week
PREP030	Launch	2	2*
PREP031	Language for Learning	6	4
PREP032	Scientific Thinking	6	4
PREP034	Mathematics for the Sciences	8	8
<b>Total Session 1</b>		<b>22</b>	<b>18*</b>
<b>SESSION 2</b>			
Subject Code	Subject Name (UOW Equivalent Subject Code)	Credit Points	Contact Hours a Week
DPIT110 <sup>^</sup>	Fundamental Programming with Python (CSIT110)	6	5
DPIT123	Computing and Cyber Security Fundamentals (CSIT123)	6	6
DPIT114	System Analysis (CSIT114)	6	5
WUCB113	Human-Centred Systems Design (OPS 113)	6	5
<b>Total Session 2</b>		<b>24</b>	<b>21</b>
<b>SESSION 3</b>			
Subject Code	Subject Name (UOW Equivalent Subject Code)	Credit Points	Contact Hours a Week
DPIT115	Data Management and Security (CSIT115)	6	5
DPIT121 <sup>^</sup>	Object Oriented Design and Programming (CSIT121)	6	5
DPIT127	Networks and Communications (CSIT127)	6	5
DPIT128	Introduction to Web Technology (CSIT128)	6	5
<b>Total Session 3</b>		<b>24</b>	<b>20</b>

\* Weekly contact hours calculated for Launch are based on a sessional average.

<sup>^</sup> DPIT110 Fundamental Programming with Python (CSIT110) is a pre-requisite for DPIT121 Object Oriented Design and Programming. Students are required to achieve a minimum result of 50% in DPIT110 to enrol in DPIT121.

### Bridging Subject

Applicants who do not meet the Mathematics course entry requirements as indicated via the link in Section 8 may be eligible to attempt a bridging subject, PREP033 Mathematics for the Humanities, to meet this requirement. Students who achieve a final subject mark of 50% in PREP033 will satisfy the Mathematics entry requirements to this course. Students must achieve a minimum result of 50% in PREP033 to be eligible to enrol in PREP034 Mathematics for the Sciences.

### Expected Course Workload

As a guide, the workload for your course is determined by the number of subjects you take each session. Attempting four subjects in a standard session is considered to be a fulltime load i.e. equivalent to working fulltime (35-45hrs a week).

Each subject in this course has designated contact hours where you are required to attend classes including lectures, tutorials, workshops or other structured learning experiences.

To be successful in this course you are also required to undertake independent learning activities outside of your scheduled classes, this includes:

- Preparing for classes: homework, readings and reviewing learning materials.
- Independently researching and/or practicing knowledge and skills.
- Completing all assessment tasks and studying for examinations.
- Attending learning support services.

## 6 Subjects Mapped to Course Learning Outcomes

Subject/Course Learning Outcomes	1. Apply language skills in order to read, write, present and listen effectively and critically at a tertiary level.	2. Demonstrate the ability to locate, evaluate and use information appropriately at a tertiary level.	3. Demonstrate numeracy skills in order to interpret, understand and analyse information at a tertiary level.	4. Apply a range of skills that demonstrate independent learning.	5. Demonstrate theoretical and technical knowledge of information technologies.	6. Think critically and creatively to solve problems and identify better system solutions within business contexts.	7. Work collaboratively with others to solve information technology problems.
DPIT110 Fundamental Programming with Python			✓		✓	✓	
DPIT123 Computing and Cyber Security Fundamentals			✓		✓	✓	
DPIT114 System Analysis	✓	✓			✓	✓	✓
DPIT115 Data Management and Security					✓	✓	
DPIT121 Object Oriented Design and Programming			✓		✓	✓	
DPIT127 Networks and Communications					✓	✓	
DPIT128 Introduction to Web Technology	✓				✓	✓	
PREP030 Launch		✓		✓			
PREP031 Language for Learning	✓	✓					
PREP032 Scientific Thinking	✓	✓					



<b>Subject/Course Learning Outcomes</b>	1. Apply language skills in order to read, write, present and listen effectively and critically at a tertiary level.	2. Demonstrate the ability to locate, evaluate and use information appropriately at a tertiary level.	3. Demonstrate numeracy skills in order to interpret, understand and analyse information at a tertiary level.	4. Apply a range of skills that demonstrate independent learning.	5. Demonstrate theoretical and technical knowledge of information technologies.	6. Think critically and creatively to solve problems and identify better system solutions within business contexts.	7. Work collaboratively with others to solve information technology problems.
PREP034 Mathematics for the Sciences			✓				
WUCB113 Human-Centred Systems Design					✓	✓	✓

# 7 Progression Guidelines

## Course Progression Requirements

1. Students who have not met the Mathematics entry requirements to this course, and who complete bridging subject PREP033 Mathematics for the Humanities, must achieve a minimum final subject mark of 50% in PREP033 to enrol in PREP034 Mathematics for the Sciences.
2. Progression from Session 1 to Session 2 is conditional upon satisfying the following minimum final results in Session 1:
  - i. A Pass grade (minimum final result of 50%) or Satisfactory grade (in the case of PREP030 Launch) result in a minimum of three of the four Session 1 subjects, including PREP031 Language for Learning and PREP034 Mathematics for the Sciences; AND,
  - ii. A minimum average mark of 50% in PREP031, PREP032 and PREP034 (a minimum average result will be calculated based upon final subject results achieved in these subjects).

Note: Whilst progression from Session 1 to Session 2 may be permitted if a student satisfies the conditions outlined above, any subject for which a Pass or Satisfactory grade is not achieved will have to be repeated until a final subject mark of 50% (or grade of Satisfactory in the case of PREP030 Launch) is achieved to qualify for the award of the Diploma.

3. DPIT110 Fundamental Programming with Python is a pre-requisite for DPIT121 Object Oriented Design and Programming. Students are required to achieve a minimum result of 50% in DPIT110 to enrol in DPIT121.
4. To qualify for the award of the Diploma of Information Technology, students must achieve a final minimum result of 50% for each subject, or in the case of PREP030 Launch, a grade of Satisfactory.
5. Students who meet the requirements for the award of the Diploma can progress to the second year of the Bachelor of Business Information Systems or the Bachelor of Computer Science or the Bachelor of Information Technology in the Faculty of Engineering and Information Sciences Faculty with 48 points of UOW credit transfer. Students who meet the requirements for the award of the Diploma can progress into the first year of the Bachelor of Technology (BT) at the University of Wollongong with specified credit of up to 18 credit points for subjects in the compulsory core component of this degree.
6. There is no UOW credit transfer available for the following subjects: PREP030 Launch; PREP031 Language for Learning; PREP032 Scientific Thinking; PREP033 Mathematics for the Humanities, and; PREP034 Mathematics for the Sciences.
7. Students may exit the Diploma course early and enter the relevant degree ('Accelerated Exit') if they have achieved the following conditions:

- i. Students must have achieved a minimum final mark of 70% in each Session 1 subject, or in the case of PREP030 Launch, a grade of Satisfactory, at the first attempt (that is, they do not fail and repeat any subjects).

Note: There is no UOW Credit transfer available for Accelerated Exit as per (6).

8. Students may exit the Diploma course early and enter the relevant degree with 36 or 42 points of UOW credit transfer ('Early Exit – Incomplete Award'), if they have achieved the following conditions:

- i. Students must have achieved a minimum final mark of 50% in at least 6 credit-bearing subjects in the Diploma (all subjects except those listed at 6, above); and,
- ii. WUCB113 Human-Centred Systems Design does not count toward the 36 or 42 points of UOW credit required to exit the Diploma; and,
- iii. Students must be on Active Status to exit the Diploma. Students who are not on Active status must successfully complete the Diploma in full to progress to UOW.

Note: Where a student has opted for Early Exit – Incomplete Award, they will not be eligible for the Diploma award until they successfully complete the outstanding equivalent subjects in their UOW degree. Once a student has completed the equivalent subjects at UOW, the student can submit an [application for credit transfer](#) directly to UOW College for the Diploma qualification to be awarded.

## 8 Entry Requirements / Admissions Guidelines

Entry requirements for this course can be viewed online at:

<https://coursefinder.uow.edu.au/information/index.html?course=diploma-it-uow-college>

## 9 Assessment

Students are required to complete a number and variety of assessment tasks related to their streams of study.

Each subject has a subject outline that is issued to students. Subject outlines contain an overview of subject objectives, an assessment schedule, a list of learning resources and a weekly topic outline. Subject outlines also contain an explanation of assessment components.

All assessment tasks with a weighting of 10% or greater have marking criteria and an answer/marking guide.

All aspects of assessment are governed by the Assessment Guidelines, which can be viewed at: [Assessment & Examination Guidelines for Students](#) and [Assessment Guidelines](#).

## 10 Quality Assurance

The College applies formal quality assurance processes to its design of courses, subjects and their assessments. These processes include:

- Clear subject outlines that align with the objectives of the course and support consistent delivery of content;
- Mandatory inclusion of clear and appropriate marking criteria in assessment tasks;
- Moderation of marking of student assessment tasks, ensuring that the assessment criteria have been applied consistently and there is equity across individual markers;
- A regular schedule of audits on student assessment tasks using randomly-selected samples of student work; and
- The use of feedback from students and teachers to inform continuous improvement of curriculum, delivery, policies and procedures.

Details of the College's approach to quality assurance can be viewed at the following link: <https://www.uowcollege.edu.au/about/policies-procedures/index.html>.

# 11 Subject Descriptions

## **DPIT110 Fundamental Programming with Python**

This subject uses Python language to introduce students with fundamental programming concepts such as procedural programming, variable, data type, array, recursive function, conditional expression, selection statement, repeating instruction. This subject also develops student skills in the design and implementation of well structured algorithms to a range of mathematical problems.

## **DPIT123 Computing and Cyber Security Fundamentals**

This subject aims to equip students with an understanding of fundamental computing knowledge. In addition, the subject aims to introduce students to key cyber security concepts and principles. To achieve these aims, topics covered in this subject include fundamental computing content such as the history of computing and the evolution of technology; concepts in information processing, computer architecture, and operating systems; and cyber security topics including forms of attack, detection, and prevention, cyber security policy and risk assessment.

## **DPIT114 System Analysis**

This subject provides an introduction to different techniques and technologies for understanding and specifying what a computer-based information system should accomplish. It examines the complementary roles of systems analysts, clients and users in a system development life cycle. Students will learn different fact-finding techniques to elicit system requirements and how to develop business models, data and process models, and object models representing a system. Students will also make use of a Computer Aided Software Engineering (CASE) tool to build those models that capture the specifications of a system.

## **DPIT115 Data Management and Security**

The subject investigates three major areas of modern data management systems: data modelling, data processing, and data security. The goal of the subject is to learn the fundamental concepts in data management, including conceptual modelling, the relational data model, processing of relational data with Structured Query Language (SQL), enforcing the concepts of data confidentiality, integrity, and availability data management systems. The subject develops skills in the design, implementation, processing, and security of data management systems. The subject covers the following topics in data security: discretionary access control, user management, enforcing data security and integrity. The subject also explains the important ethical issues associated with responsible disclosure, responsibility, liability, security weaknesses, and privacy in data management systems.

## **DPIT121 Object Oriented Design and Programming**

The aims of this subject are to consolidate and extend students' knowledge and skills in structured programming and to develop their understanding and practice of object-oriented programming. To achieve this aim, the subject will provide students with an opportunity to develop further programming skills and good coding style; develop skills in using the object-oriented concepts of encapsulation, inheritance, polymorphism, access control, overloading and messaging; and develop and display competency in the design and implementation of object-oriented programs to solve business problems.

## **DPIT127 Networks and Communications**

The subject will introduce students to the fundamentals of data communications and computer networks. Topics covered include: different types of data and the history of data communications; signals, modulation and multiplexing; switching technologies and routing; network architectures: LANS, WANs and the Internet; Internet services, multimedia services, broadband services and Internet protocols; and emerging technologies: optical and wireless networks. The subject explains computer networking models that interconnect diverse communication systems, including the ISO reference model and the TCP/IP Suite.

## **DPIT128 Introduction to Web Technology**

This subject will introduce students to the fundamental technologies of the World Wide Web and its many commercial applications. The topics for this subject include HTML5, CSS3, Web Forms, XML and its definition languages, XSLT, JavaScript, AJAX and JSON. Within the scope of these topics, students will build working websites that utilise dynamic and event-driven content along with contemporary CSS styling. This subject will also explore the methods available for integrating server-side resources into client-side HTML interfaces.

## **PREP030 Launch**

This subject explores the common expectations and experiences of university study in order to assist students to transition effectively to a higher education learning environment. Students will be introduced to the technological platforms and skills required to effectively complete their studies, the importance of academic integrity, available support services and resources, and strategies to develop capabilities of independent learning. Students will be engaged in presentations and activities related to these aspects of academic life to cultivate the development of their student identity in the context of a learning community.

### **PREP031 Language for Learning**

This subject provides students with opportunities to develop their knowledge of, and competence and confidence in the use of text-based language in preparation for future studies. Students will be introduced to a variety of text types and genres commonly used in tertiary study, with a focus on engaging with, and critically analysing, sources of information in terms of purpose for writing, the style employed and writing techniques evident in the text. The focus is on developing language skills and improving students' capability to both evaluate the content of a variety of texts, and to employ that knowledge in their own written and spoken tasks.

### **PREP032 Scientific Thinking**

This subject provides students with a functional understanding of the basic tenets of science, the underlying cognitive skills that allow us to solve complex problems, and strategies to investigate and interpret the world around us. Students will be challenged with problem-solving activities relevant to the sciences to develop a range of key cognitive capacities, including critical, logical and creative thinking, and an understanding of concepts such as objectivity, variables, theory, and Occam's razor. The focus is on developing skills required to design, conduct, analyse and present the findings of primary research related to a United Nations Sustainable Development Goal (UN SDG). Students will also develop their global citizenship through evaluating the significance of their selected SDG, and its relevance to their future study and career pathways.

### **PREP034 Mathematics for the Sciences**

This subject provides a minimal assumed knowledge of mathematics for students entering a selection of Science and Technology degrees at an undergraduate level. The focus is on developing mathematics skills and improving competencies and confidence in the language and techniques of mathematics. The general topic areas covered in this subject are arithmetic, algebra, equations, functions, trigonometry, limits and calculus. Where possible science and technology applications will be used to demonstrate the relevance of these skills.

### **WUCB113 Human-Centred Systems Design**

This subject introduces the concept of a system, focusing on the importance of systems thinking as it relates to the exploration, analysis and co-design of information and other systems. As global citizens and future managers, understanding what constitutes a system and how we address challenges and think about, analyse and design complex systems is crucial. Students explore, from a human-centred perspective, ethics, responsibility and sustainability considerations that are pertinent to the design of complex systems, emerging technologies and innovation.

## **Bridging Subject**

### **PREP033 Mathematics for the Humanities**

This subject provides an introductory study of mathematics and statistics as a foundation for further study in disciplines including Business and the Humanities. Mathematics for the Humanities focusses on reinforcing the fundamental concepts of basic arithmetic, basic algebra, linear equations, probability and statistics. The subject familiarises students with language, terminology and analytical problem-solving techniques used in mathematics and statistics.



## 12 Version Control Table

Version Control	Date Effective	Approved By	Amendment
1	09/09/2021	UOWCA Academic Board	Initial release – 2022 delivery
2	25/11/2021	UOWCA Academic Board	Replace WUCB130 with WUCB113 as an outcome of 2020 ECAC.
2023_1.0	01/12/2022	UOWCA Academic Board	Replace DPIT111 with DPIT110 and DPIT113 with DPIT123 s an outcome of UOW changes to first year in Bachelor Courses.  2023 New Issue