



UOW
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AUSTRALIA

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PATHWAYS TO
UNIVERSITY OF
WOLLONGONG

Undergraduate Certificate in Information Technology

Document Number: UOWC-AQ-REF-27

Course Code: 3148

Course Outline



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Undergraduate Certificate in Information Technology Course Outline

1 Course Description

The UOW College Australia (UOWCA) Undergraduate Certificate in Information Technology provides students with knowledge, technical skills and capabilities to prepare them for further studies and for employment in the Information Technology industry. Students are provided a range of experiences and opportunities to engage with core aspects of Information Technology, including programming, systems analysis, networks and web technologies, at the tertiary level.

The Undergraduate Certificate provides pathways for entry into the UOWCA Diploma of Information Technology with 24 points of credit.

Undergraduate Certificates are higher education qualifications of six months duration that may be used to articulate with an existing qualification at AQF levels 5, 6, or 7. They qualify individuals with knowledge and skills for further study, professional upskilling, employment and participation in lifelong learning.

2 Graduate Qualities

The Undergraduate Certificate in 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 a broad and coherent body of knowledge required to upskill professionally.
2. Demonstrate knowledge and skills sufficient to sustain lifelong learning in higher education and vocational settings.
3. Apply knowledge in new or existing disciplines or professional areas.
4. Demonstrate an appropriate depth of integrated knowledge of the specialisation area.

4 Course Learning Outcomes Mapped to Graduate Qualities

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

Course Learning Outcomes/Graduate Qualities	1. Informed	2. Independent Learners	3. Problem Solvers	4. Effective Communicators	5. Responsible
1. Demonstrate a broad and coherent body of knowledge required to upskill professionally.	✓			✓	
2. Demonstrate knowledge and skills sufficient to sustain lifelong learning in higher education and vocational settings.	✓	✓			✓
3. Apply knowledge in new or existing disciplines or professional areas.	✓	✓	✓		
4. Demonstrate an appropriate depth of integrated knowledge of the specialisation area.	✓		✓	✓	

5 Course Structure and Subjects by Campus

Undergraduate Certificate in Information Technology – (Autumn / Spring / Summer)			
UOW College Session Dates			
Subject Code	Subject Name (UOW Equivalent Subject Code)	Credit Points	Contact Hours a Week
DPIT110*	Fundamental Programming with Python (CSIT110)	6	5
DPIT123	Computing and Cyber Security Fundamentals (CSIT123)	6	6
DPIT114*	System Analysis (CSIT114)	6	5
DPIT115	Data Management and Security (CSIT115)	6	5
DPIT127*	Networks and Communications (CSIT127)	6	5
DPIT128*	Introduction to Web Technology (CSIT128)	6	5
WUCB113	Human-Centred Systems Design (OPS 113)	6	5

* The Undergraduate Certificate in Information Technology will be awarded for the completion of four subjects from the schedule above. Additional subjects may be substituted for those listed at the discretion of the Academic Program Manager.

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. Demonstrate a broad and coherent body of knowledge required to upskill professionally.	2. Demonstrate knowledge and skills sufficient to sustain lifelong learning in higher education and vocational settings.	3. Apply knowledge in new or existing disciplines or professional areas.	4. Demonstrate an appropriate depth of knowledge of the specialisation area.
*DPIT110 Fundamental Programming with Python	✓	✓	✓	✓
DPIT23 Computing and Cyber Security Fundamentals	✓	✓	✓	✓
*DPIT114 System Analysis	✓	✓	✓	✓
DPIT115 Data Management and Security	✓	✓	✓	✓
*DPIT127 Networks and Communications	✓	✓	✓	✓
*DPIT128 Introduction to Web Technology	✓	✓	✓	✓
WUCB113 Human-Centred Systems Design	✓	✓	✓	✓

7 Progression Guidelines

Course Progression Requirements

1. To qualify for the award of the Undergraduate Certificate in Information Technology, students must achieve a minimum result of 50% in any four approved subjects.
2. Students who meet the requirements for the award of the Undergraduate Certificate can progress to the Diploma of Information Technology with 24 points of credit.

8 Entry Requirements / Admissions Guidelines

Entry requirements for this course can be viewed online at:

<https://coursefinder.uow.edu.au/information/index.html?course=undergraduate-certificate-information-technology-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

This 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 the 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.

***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.

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.

12 Version Control Table

Version Control	Date Effective	Approved By	Amendment
1	18/12/2020	Vice-Chancellor	Initial release – 2021 delivery
2	25/11/2021	UOWCA Academic Board	Action recommendation of 2020 course review 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