BIT21 – Bachelor of Information Technology

1. About the Bachelor of Information Technology

The Bachelor of Information Technology (BIT) is an AQF 7 qualification designed to provide graduates with a well-developed theoretical and technical base on of coherent information technology knowledge and skills, closely aligned with market demands and expectations in the new era of Industry 4.0 smart applications. The Bachelor of Information Technology prepares graduates to satisfy Skills Framework for the Information Age (SFIA) skills requirements in consultancy, solution architecture, specialist advice, and use of emerging technologies, leading either to graduate-level employment in relevant IT sectors or to further study at a postgraduate level.

Graduate employment opportunities

The Bachelor of Information Technology provides graduates with the capability to seek professional level employment in either generalist or niche roles found within the IT and software industries.

Examples include:

- Solution Architect
- Network Designer
- Data Engineer
- IT Technical Writer
- IT Project Manager
- Software Developer
- System Developer

Course Overview

Course Title	**Bachelor of Information Technology (BIT21)**		
Study Options – Domestic Australian students	Face to Face delivery Online delivery Full-time and part-time options available.	**Study Options – International students**	International students on a student visa must not enroll into any more than a third or 33% of online subjects over their course and must study at least one subject that is face to face in each trimester. International students on a student visa are required to study full time, i.e. the student must complete a minimum of 1.0 EFTSL of study per year.
Start Dates	February, June, September For specific dates visit the website.	**Course Length**	Full-time: 3 years Part-time: 6 years
Payment Options - Domestic Australian students	**Upfront payment** This means tuition fees will be invoiced each semester and payment is required on or before the due date. **FEE-HELP** FEE-HELP is Australian Government's loan scheme for higher education degree courses. It can assist you in paying for all, or part of, your course fees. Repayments commence via the tax system once your income rises above a minimum threshold. Just like with any other debt, a FEE-HELP debt is a real debt that impacts your credit rating.	**Payment Options – International students**	***Upfront payment*** This means tuition fees will be invoiced each trimester and payment is required on or before the due date. *Further information within this Course Information Sheet*
Course study requirements	Each subject involves 10 hours of study per week, comprising 3 hours of facilitated study and 7 hours self-directed study.	**Assessment**	Project/Application/Research Proposal, Process/Research Documentation, Application Outcome, Reflective Journal/Blog, Report/Essay, Presentation/Pitch, Examinations/Tests/Quizzes, Research, Collaboration, Individual self-directed major project, Work integrated learning project work, Software development for social enterprise
Locations	Sydney Melbourne Brisbane	**Delivered by**	Torrens University Australia

	Adelaide Online		
Provider	Torrens University Australia Ltd is registered as a self-accrediting Australian university by the Tertiary Education Quality and Standards Agency (TEQSA).	**CRICOS Course Code**	108468M
Provider obligations	Torrens University is responsible for all aspects of the student experience, including the quality of course delivery, in compliance with the *Higher Education Standards 2015*	**Accrediting body**	Torrens University Australia Ltd
Course Fees	For details, refer to the website.	**Any other fees**	For details, refer to the website.

2. Essential requirements for admission

The general admission criteria that apply to Torrens University Australia courses can be located by visiting the Torrens University Australia website - https://www.torrens.edu.au/general-admission-information-for-torrens-university-australia-ltd.

3. Admission Criteria

Title of course of study	**Bachelor of Information Technology**
Applicants with higher education study	• A completed higher education qualification at AQF level 5 (diploma) or above, or equivalent, from an Australian University or another accredited higher education provider OR • Successful completion of at least 1 EFTSL (equivalent full-time student load, or one full year) of an AQF level 6 (Associate Degree) or above, or equivalent, from an Australian University or another accredited higher education provider.
Applicants with vocational education and training (VET) study	• A completed vocational education qualification at AQF level 4 (Certificate IV) or above, or equivalent, from a registered training organisation (RTO) OR • Successful completion of at least 1 EFTSL (equivalent full-time student load, or one full year) of an AQF level 5 (Diploma) or above, or equivalent, at a registered training organisation (RTO).
Applicants with work and life experience	Demonstrated ability to undertake study at the required level:

Title of course of study	Bachelor of Information Technology
	• broadly relevant work experience in Information Technology (documented e.g. CV), demonstrating a reasonable prospect of success; OR • formal, informal or non-formal study, completed or partially completed, demonstrating a reasonable prospect of success; OR • written submission to demonstrate reasonable prospect of success.
English Language Proficiency (applicable to international students, and in addition to academic or special entry requirements noted above)	Equivalent IELTS of 6.0 (Academic) or above, with no skills band less than 5.5.
Applicants with recent secondary education (within the past two years) with ATAR or equivalent* (for applicants who will be selected wholly or partly on the basis of ATAR)	Completed year 12 or equivalent

Other admission options
(For applicants who will be selected on a basis other than ATAR)

Special Entry	Applicants in any category whose study, work or life experiences have been impacted by disability, illness or family disruption will be given special consideration for admission. Each application will be considered on its merit, based on the evidence supplied by the applicant attesting to the circumstances of the applicant. Applicants for special entry may need to complete written or numerical tasks to assist with assessing eligibility for admission.

4. How to apply

Via direct application to the institution

- https://apply.torrens.edu.au/

5. Advanced standing/academic credit/recognition of prior learning (RPL)

You may be entitled to credit for prior learning, whether formal or informal. Formal learning can include previous study in higher education, vocational education, or adult and community education. Informal learning can include on the job learning or various kinds of work and life experience. Credit can reduce the amount of study needed to complete a degree.

Applicants admitted based on prior higher education study may be eligible for Advanced Standing in the form of credit and/or recognition of prior learning (RPL) under the Torrens University Australia Credit Policy - (https://www.torrens.edu.au/policies-and-forms).

- Students with completed subjects may be eligible for specified credit and/or elective exemptions
- Students who have completed a qualification at AQF level 5 (diploma) or above may be eligible for block credit (where a block credit agreement exists)
- Students with a mix of formal study and informal and/or non-formal learning may be eligible for recognition of prior learning in addition to any credit approved.

Credit will not be applied automatically. Applicants must apply for credit and/or RPL as early as possible prior to each study period, with applications not accepted after week 2.

For further information about credit and recognition of prior learning please see http://www.torrens.edu.au/apply-online/course-credits.

6. Where to get further information

- Torrens University Australia (TUA) Website
  - https://www.torrens.edu.au/
- Universities Admissions Centre (UAC) Website
  - http://www.uac.edu.au/
- Quality Indicators for Learning and Teaching (QILT) Website
  - https://www.qilt.edu.au/

7. Additional Information

Course Structure
The course structure comprises of 18 Information Technology (IT) core subjects and 4 specialised elective subjects over levels 100, 200 and 300, as follows:

- Level 100: 7 mandatory IT core subjects and 1 specialist elective subject
- Level 200: 6 mandatory IT core subjects and 1 specialist elective subject
- Level 300: 5 mandatory IT core subjects and 2 specialist elective subjects

Course Rules
To be awarded the Bachelor of Information Technology, students must complete 240 credit points over 22 subjects as outlined in the course structure above. Each subject has a value of 10 credit points, with one subject having a value of 30 credit points (ATW306 Advanced Tech: Work Integrated Learning).

Subjects

SUBJECT DETAILS
SUBJECT TITLE, DESCRIPTOR
LEVEL 100
CAO107 - Computer Architecture and Operating Systems This subject examines the design, organisation, and operation of modern computer systems from both a hardware and software perspective. The first half of this subject explores the five classic components of a computer system: input, output, memory, data path and control, with the last two making up the processor. We explore the history of computer systems, highlighting the recent change in trend from increasing clock speeds to increasing processor/core counts. We describe how the performance of a computer system can be evaluated, how it has been the driving factor behind progress and why this recent change in trend was necessary. Each of the five classic components are examined in both an abstract sense and by looking at specific real-world examples. We put particular emphasis on the structure, design and operation of modern CPUs, how CPUs differ in design and operation from GPUs, and how memory hierarchies are used to improve performance. The second half of this subject examines how operating systems bring all of these computer system components together in a cohesive way, to allow user programs to interact with these components without needing to know about the low-level details. Students will learn about the structure of a modern operating system, with particular emphasis on processes & threads, memory management, file systems and I/O.
ITP122- Introduction to Programming In this subject, students will be introduced to the fundamental concepts and methodologies utilised in programming. Students will develop problem solving skills in order to identify appropriate tools and methodologies to address software requirements. Decision logics and iterative programming will be explored and applied through software coding, debugging and testing on various platforms. Lastly, students will produce and present verified and validated software solutions and documentation to meet project goals.
MIS102- Data and Networking The management of data underpins most aspects of information system at both theoretical and practical levels. Data is often stored in a distributed environment and management requires students to build an understanding of data networking, data communication, MS windows and network administration. This subject sets the foundations for many subsequent subjects in this course.
MIS100 - Foundations of Information Systems

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This subject is designed to prepare students for a career in a business information systems field as a Business Analyst (BA). They will gain insight into organisation and functions of a modern computer and communication and software components that support it. Through awareness of potential and limitations of systems and technologies students will work with testing and verifying data, develop confidence and competence in ability to understand, analyse, and apply information technology. The principles and importance of the agile methodology will be applied to the BA space.
ISE102 - Introduction to Software Engineering This subject provides an introduction to the ideas and skills foundational to software engineering and will cover the fundamental concepts of programming with a particular focus on learning to use the C++ programming language. Students will gain an understanding of the basic ideas underlying programming and experience developing applications using an integrated development environment (IDE).
ICC104- Introduction to Cloud Computing In this subject, students learn the fundamental elements of Cloud Computing. They identify the building blocks of Cloud Computing including essential characteristics, different service models and how these models differ from each other. In addition, students also develop an understanding of resource pooling and virtualisation in Cloud. They learn about various deployment models in cloud computing and how these deployment models differ from traditional IT deployment models.
DIG103A- Interaction Design This subject explores the groundwork theory and practice of user experience (UX), user interface (UI) and front-end web development and design. The subject initially covers fundamental concepts in UX and UI design. It then transitions to the fundamentals of front-end development and design by teaching students how to code webpages using HTML and CSS. Students will code their own visual designs using a knowledge base of the fundamentals within these two markup languages. In addition to this, students will learn the basic principles of responsive design, and how web pages need to be designed for a variety of screen-based media including phones, tablets, laptops and televisions. This subject gives students a foundation of web based digital skills that are required in a variety of design related career opportunities.
LEVEL 200
NDS203 – Networking and Database Systems This subject introduces students to core concepts of Networking and Database Systems. Students will explore fundamentals of Database Management Systems and networking communication including peer-to-peer and client-server typologies, various protocols and networking architectures. They are introduced to database models and apply fundamentals of querying and mutation of databases. Students will implement these concepts through completing multiple software engineering projects.
HCD206 – Human Centred Design for Software Engineering This subject explores the importance of understanding drivers of human behaviour throughout the software development process. The subject covers broad themes such as: the theory of knowledge, human cognition, ethical and moral values, analysis of human history, critical analysis, appreciation of literature and arts and social interaction among human beings through a technological context. Human Centred Design provides students the opportunity to recognise the factors that influence human behaviour and interactions so that they can apply specialised skills to solve problems that affect diverse societies.
IPP221- IT Professional practices Ethical practice, teamwork and professional communication skills are the key concepts that students will explore and apply in IT Professional Practice. Industry focused learning activities and assessment tasks allow

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students to examine authentic case studies to identify compliance issues that compromise the safeguarding of IT governance. Working with peers, students will develop their interpersonal and problem-solving skills as they collaboratively design and develop an IT security solution. The learning journey concludes with students presenting their final solution, demonstrating the ability to professionally articulate their ideas to an audience.
IDS201 – Introduction to Data Science The aim of this subject is to provide students with fundamental knowledge of data, questions, and tools that a data scientist deals with. Students will not only be introduced to the ideas behind turning data into information but will also be introduced to the data scientist's toolbox. Topics include: data scientist skills and responsibilities in a business including planning, performing and presenting projects; data science code of ethics; data manipulation tools and techniques.
PBT205 - Project Based Learning Studio: Technology This subject provides students with an opportunity to work collaboratively on a series of projects, enhancing skills in a project-based environment such as time management, prioritisation, resilience and working within a team of people across multiple specialisations. Additionally, students will be challenged to find creative solutions to product development and small-scale rapid prototypes in the context of software engineering. Students will engage in peer learning through agile development and processes. This learning experience provides an opportunity to enhance self-development and promote continuous learning.
CEN207 – Creative Enterprise This subject introduces students to the fundamentals of entrepreneurship in the technology sector. It stimulates new ways of thinking about entrepreneurial behaviour in a multi-disciplinary environment. Students have the opportunity to identify market gaps and opportunities, creatively solve problems, network, communicate persuasively and work effectively in a team. In addition, this subject promotes the creation of ventures that focus on positive social impact.
LEVEL 300
CLA321 - Cloud Architecture In Cloud Architecture, students will explore and examine the interwoven elements of cloud computing architecture that comprises of hardware, software, and networking. Building upon their database and networking design skills, students will gain significant knowledge on the design, construction, system, and testing of cloud architecture, with explicit consideration of relevant governance, cybersecurity, system acquisition, and ICT service requirements. Through collaborative project-based learning, students will construct and present schematics and simulated prototypes to communicate IT solutions which are scalable, efficient, dependable and cost effective.
SBD303- Secure by Design The intended aim of this subject is to equip students with fundamentals of Secure by Design and enable abstraction of its underlying key principles. The course content is oriented towards the core pillars of Information Security: Confidentiality, Integrity and Availability. The subject is structured around the main Secure Development Lifecycle (SDLC) Models, Security by Design principles, appropriate SDLC model selection, application of secure development techniques, vulnerabilities and techniques to tackle, secure design and development best practices, introduction to encryption, introduction to the classification of security flaws and application security.
SIA322- Smart Industry Applications

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Smart Industry Applications focusses on students synthesizing existing knowledge and skills in contemporary ICT technologies. This includes Artificial Intelligence (AI), Internet of Things (IoT) and cloud computing. Building upon their knowledge of cloud architecture and creative design methodology, students will collaboratively develop and propose inventive smart industry 4.0 applications with consideration of end-user social impact and ethical practice which will support them when they undertake their work integrated learning project.
ECS323 - Enterprise Computing Systems Through the exploration and critical analysis of ICT tools and technologies, students will further advance their industry skills and knowledge in enterprise computing. With consideration of Human Centered Design Principles, user-factors and cybersecurity, students gain further insight into enterprise computing models and applications including data and information management systems, and contemporary emerging technologies. Through the synthesis of skills and knowledge gained throughout the course, students will collaborate with peers to design, produce and present a viable large-scale enterprise computing solution to meet complex and conflicting industry requirements. The skills and experiences gained from Enterprise Computing Systems will prepare students for their work integrated learning project.
ATW306 - Advanced Tech: Work Integrated Learning This subject is designed to provide students with the experience in a professional environment in an area related to their specialisation. The aim of providing industry-specific opportunities is to enable students to develop skills to enhance their prospects of gaining meaningful employment and building their career as software engineers in the future. Much of the benefit of work integrated learning comes from observation, practicing under supervision and reflection. Work Integrated Learning is an excellent way to broaden the student's learning environment while they are studying. It allows them to see first-hand how what they are learning in their degree, translates into practice, as well as how 'real world' practice relates to what they are learning at university. This subject is designed to develop work ready skills to boost students' employability while they are studying. There are two work integrated learning options available to students: **Option 1: Industry Placement** Students are offered the opportunity to work within a technology company as an intern or volunteer at a technology non-profit organisation. It encourages students to build long-term relationships with the tech industry and provides an opportunity for them to work with and learn from people who may end up becoming colleagues, bosses or mentors. It also provides a context to enhance their communication skills and work collaboratively in a professional arena. Students will undertake a series of industry-led tasks that are relevant to software engineering in order to understand the key concepts of working within a professional technology team with emphasis placed on the operation of the environment. **Option 2: Industry Live Brief** This subject requires students to respond to criteria set within the context of an Industry Project. An understanding of research methodologies appropriate to professional practice and the documentation of personal creative investigation will be explored. Students will also further investigate and examine entrepreneurial and commercial opportunities through collaborative work practice. The subject is delivered from a cross specialisation perspective and draws on both specialised and common software engineering practices.

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Students are required to work both independently or as part of a collaborative team in order to conduct research, analyse and define project parameters and deliver innovative solutions that expand the notion of an Industry Project.

Locations

The Bachelor of Information Technology can be studied fully online or at the below Torrens University Campuses:

- Sydney: 46-52 Mountain Street, Ultimo NSW Australia 2007
- Sydney: 1–37 Fouveaux Street Surry Hills, NSW 2010
- Melbourne: 196 Flinders St, Melbourne, VIC 3000
- Adelaide: 82-98 Wakefield Street, Adelaide, SA, 5000
- Brisbane: 90 Bowen Terrace, Fortitude Valley, QLD 4006
- Online

Campus Facilities and Services

All campuses are designed to provide students with professional spaces in which to learn and work. They have been planned with student study needs in mind with well-equipped accessible learning spaces as well as student breakout areas for group work and spending time with friends.

Facilities and Services include:

- The Customer Service Hub – our friendly and experienced staff can give help and advice about courses, your enrolment and campus life, including all services and activities on campus.
- Counsellors are available for students to consult with on a range of personal issues
- Student wireless access throughout the Campus
- Student break-out and relaxed study spaces for group work
- Student lounge areas – most with microwaves, kitchenette facilities and vending machines
- The Learning Hub, home to the Learning Support Team, encompasses Learning Skills Advisors, Learning Technology Advisors, and Library & Learning Skills Officers. It provides an integrated, holistic support program for students throughout the study lifecycle within a library/collaborative study environment.
  The service includes:
  - Support and workshops with highly qualified staff in the areas of Academic skills, Library skills, and Technology skills, both on campus and online.
  - Physical and digital resources relevant to studies, such as books, journals, multimedia, databases
  - Self-check kiosks for library loans and print and copy facilities

A positive student experience

Torrens University Australia values the importance of a positive student experience, and therefore has robust processes to resolve student complaints. The Student Complaints Policy, and associated procedures, can be accessed from the website (https://www.torrens.edu.au/policies-and-forms).

Paying for your qualification

We offer two payment options for this course:

- **Upfront payment**
  If you want to complete your qualification debt-free you can choose to pay as you go. This means tuition fees will be invoiced each semester and payment is required on or before the due date using EFTPOS, credit card or direct transfer.
- **FEE-HELP**

FEE-HELP is Australian Government's loan scheme for higher education degree courses. It can assist you in paying for all, or part of, your course fees. Repayments commence via the tax system once your income rises above a minimum threshold ($45, 881 in 2019-20). Just like with any other debt,
a FEE-HELP debt is a real debt that impacts your credit rating.

Further information about FEE-HELP, including eligibility, is available at:

- FEE-HELP website: http://studyassist.gov.au/sites/studyassist/helppayingmyfees/fee-help/pages/fee-help-
- FEE-HELP booklets: http://studyassist.gov.au/sites/studyassist/helpfulresources/pages/publications

Austudy and Abstudy

Students enrolled in this course may be eligible for government assistance, such as Austudy or Abstudy.