



**Apex  
Australia**  
Higher Education

# Bachelor of Information Systems (BIS) Course Guide

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## WHY STUDY AT APEX AUSTRALIA HIGHER EDUCATION (AHE)

Apex Australia Higher Education is an emerging, industry focused private provider of Higher Education for international and domestic students in Australia.

- Our students are our first priority, and the second and the third and the last priority!
- We aim to ensure that the student experience is of the highest quality, ensuring they are engaged, assisted and ultimately ready for the workforce.
- Academic progression is an essential part of the student experience, and we aim to support that with additional academic support.
- We also ensure that the students are supported from a health and well-being aspect via our student services.

## COURSE DESCRIPTION

The Bachelor of Information Systems (BIS) program is designed to provide students with comprehensive knowledge and applied hands-on skills across a broad range of key areas of information technology and business systems.

The course prepares graduates to enter the exciting and ever-evolving fields of information systems and information technology. The BIS features opportunities to study in contemporary and crucial areas of cyber security, artificial intelligence, and data analytics.

The course covers design thinking, agile systems development methodologies, and various aspects of enterprise system so that graduates enter the workforce ready to work in modern organisations.

The course is characterised by an end of program capstone unit that provides students with the valuable experience of working on a real-world project drawing together the knowledge and skills acquired over the entire BIS course.

Importantly, the course has been designed to meet the Australian Computer Society (ACS) requirements for graduate employment in areas of information technology and information systems.

## COURSE INTAKES

Apex Australia Higher Education (AHE) offers three (3) intakes per year into Semester 1, Semester 2, and Semester 3 (NB: Semester 3 is regarded as the Summer Semester).

For subsequent years of study (i.e., for continuing students), the Summer Semester will likely offer a very limited range of Year 2 and Year 3 units primarily directed at students remediating failures.

Students are not expected to fast track by taking additional units over Summer Semester. The three (3) intakes per year provides students with the flexibility of when they wish to start a new course at AHE. Full-time students take four (4) units of study per semester.

## COURSE DURATION

The Bachelor of Information System (BIS) is a 3-year full-time course comprising 16 core units and 8 elective units total 24 units (240 Credit Points) where a full-time student undertakes four (4) units (subjects) of study per semester, undertaking two (2) semesters of study per year.

Alternatively domestic students can study part-time up to a maximum duration of six (6) years.

## MODE OF STUDY AND STUDY WORKLOAD

Full-time students normally undertake four (4) units (subjects) of study during a semester. There are three (3) hours of face-to-face teaching and nine (9) hours of independent learning per unit, per week (total of twelve (12) hours face-to-face teaching per week, and thirty-six (36) hours of independent study per week).

## GRADUATE ATTRIBUTES (GAs)

At the end of their course, students who graduate with the AHE Bachelor of Information System course will have developed the following attributes:

**GA 1:** Knowledgeable and skilled in their chosen discipline

**GA 2:** Effective communicators and collaborators

**GA 3:** Critical, creative, and analytical professionals

**GA 4:** Responsible, ethically, and socially aware

Fulfilment of the above Graduate Attributes should enable AHE graduates to be life-long learners.

## COURSE LEARNING OUTCOMES (CLOs)

Graduates of the AHE Bachelor of Information System will have demonstrated achievement of the following Course Learning Outcomes and be able to:

**CLO 1:** Demonstrate a broad and coherent body of knowledge in Information technology and information systems.

**CLO 2:** Critically apply cognitive, analytical, and technical skills to design, implement, evaluate, and operate Information Systems to address organisations' problems.

**CLO 3:** Communicate effectively with technical and non-technical audiences within and across organisations, using written and oral communication tools.

**CLO 4:** Demonstrate the capacity to plan, problem solve and work on information systems individually and collaboratively in diverse teams, in a socially responsible manner.



## COURSE STRUCTURE AND SEQUENCE

The Bachelor of Information Systems consists of 24 units. In the course there are 16 core units and 8 unrestricted electives. For the electives students may select from any undergraduate unit offered by Apex Australia Higher Education or students may select specific groups of units from specific 'streams' that prepare them for a specific career with the broad field of information systems (IS).

See below for more information about the streams offered within the BIS.

The structure of the BIS is as follows:

AHE Unit Code	AHE Unit Title	AHE Prerequisites
BIS101	Business Information Systems	Nil
BIS102	Programming Fundamentals	Nil
BIS103	IS Networking Essentials	Nil
<b>Elective 1</b>	NB: BUS102 is compulsory for all students who receive less than 8 units of RPL (credit) in the BIS when entering the course.	
BIS104	Operations and Technology Management	Nil
BUS107	Applied Statistics	Nil
BIS105	Database Management Systems	Nil
<b>Elective 2</b>		
BIS201	Systems Analysis and Design	A minimum of 60 credit points and ideally after BIS102
BIS202	Cloud Computing	BIS101 and BIS103
BIS205	Project Management and Agile Systems Development	BIS101
<b>Elective 3</b>		
BUS206	Data Analytics	BUS107
BIS206	IS Ethics and Professional Practice	A minimum of 60 credit points including BIS101
BIS208	Cyber Security and Information Security	BIS103
<b>Elective 4</b>		
BIS303	Enterprise Systems	A minimum of 120 credit points and ideally after BIS202
BIS311	Design Thinking for IS Projects	BIS105 and BIS201
<b>Elective 5</b>		
<b>Elective 6</b>		
BIS305	Capstone Project	Completion 180 credit points and ideally after completion of BIS311. This unit is to be completed in the final year of studies
BIS304	Information System Strategy	A minimum of 160 credit points including BIS104
<b>Elective 7</b>		
<b>Elective 8</b>		

### Notes:

- All listed units are required for completion of the Bachelor of Information System course.

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2. The above represents the standard course structure, which may vary depending on the commencement date of the semester and the outcome of one's prior learning assessments (credit recognitions).

## ELECTIVES AND STREAMS

Students may select their eight (8) electives from a wide variety of units offered by the institute. Students may wish to select specific groups of units that prepare them for a specific career with the broad field of information systems (IS).

The following provides a description of three (3) different specific IS areas that students may be interested in. It highlights how specific sets of units combined to form a coherent stream of units targeting a specific area of IS.

Undertaking electives from one (1) stream provides students with the opportunity to develop specialised skills, targeting specific occupational outcomes as graduates after they complete their degree at AHE.

### Business Analysis (BA) Stream

The focus of the Business Analysis stream is to equip students with the appropriate knowledge and skills to work in the field of ICT Business Analysis. This requires a comprehensive understanding of business information systems and the optimal use of these systems within organisations. Those working in business analysis formulate system requirements, identify, and develop system plans, and facilitate changes to meet modern business needs. In Australia, the occupation of '**261111 ICT Business Analyst**'<sup>1</sup> has become one of the most in-demand occupations in recent years.

The unit **BUS102 Business Communication**, and many other units in the core and BA stream, ensure students can create alignment between business operations and technological systems possibilities. This is achieved by identifying, investigating, analysing, and documenting business processes and work practices to understand how information systems can be used to solve business problems or enhance productivity.

The units **BIS203 eBusiness Development**, **BIS204 Business Process Management**, **BUS204 Technology in Business** all combine with core units, such as **BIS201 Systems Analysis and Design** and **BIS205 Project Management and Agile Systems Development**, to empower students to bridge the gap between business opportunities and technological solutions. The students learn about project management principles that cover a range of approaches, methodologies, and techniques, so they can develop project plans, as well as to cost, resource and manage IS projects.

**BIS302 Data Mining and Business Intelligence**, builds upon the core units of **BIS105 Database Management Systems**, **BUS206 Data Analytics**, and **BUS107 Applied Statistics**, to build students' understanding of data storage, processing, and modelling techniques and modern systems that facilitate business intelligence systems (BI). Such systems are the next step for business as they strive to create value through modern data-driven decision-based approaches. These systems not only improve organisational operations, but they can also increase revenue, drive growth, reduce risks, aid in fraud detection, and minimise data error and inconsistencies.

**BIS308 Cyber Security Risks and Control Strategies**, combined with the core unit **BIS208 Cyber Security and Information Security**, ensures that students are trained in the importance of securing critical business data, as well as the methods used to secure stakeholders' privacy.

For those students who have an objective to become genuine specialists in business analysis, this BA stream offers a route to develop the diverse skillset required by a well-rounded professional working in this field. Those with professional expertise in business analysis are highly regarded by employers across any industry.

Possible career opportunities that correspond to this stream include:

- Business Analyst/ICT Business Analyst
- Cyber Security Analyst/Cyber Security Technician

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<sup>1</sup> Refer to: [Unit Group 261111 ICT Business and Systems Analysts | Australian Bureau of Statistics \(abs.gov.au\)](https://www.abs.gov.au/units/261111)



- IS Infrastructure Engineer
- Systems Analyst
- Technical Support Officer

### Data Analytics (DA) Stream

The Data Analytics stream within the Bachelor of Information Systems is a dynamic and comprehensive program, designed to equip students with a solid foundation in both technical and business-oriented aspects of data analysis.

Through a diverse curriculum, students delve into essential subjects such as **BUS102 Business Communication**, honing their ability to effectively convey complex technical insights to non-technical stakeholders. **BUS203 Research Methods** empower them to conduct systematic investigations, while **BIS204 Business Process Management** provides a framework for understanding and optimising organisational workflows.

The integration of **BUS305 Digital Business**, ensures students grasp the transformative impact of technology on contemporary business environments. The unit, **BIS302 Data Mining and Business Intelligence**, builds upon the core units of **BIS105 Database Management Systems**, **BUS206 Data Analytics**, and **BUS107 Applied Statistics**, and delves into advanced analytics techniques, enabling students to extract valuable insights from vast datasets.

Additionally, the stream incorporates **BIS306 Artificial Intelligence and Machine Learning**, that teaches students cutting-edge technologies that underpin modern data-driven decision-making. This holistic approach equips graduates with a well-rounded skill set, positioning them to thrive in the evolving landscape of information systems and data analytics.

In Australia, and around the world, the area of Data Analytics has become a rapidly evolving field. In 2022, Australia recognised two (2) new occupations in this the field, namely of 224114 Data Analyst and 224999 Data Scientist<sup>2</sup>. However, in late 2023 the Australian Computer Society (ACS) released a new interim code of ‘**224999 - Information and Organisation Professionals nec (Data Scientist)**’ and has released the associated skills for this occupation when they undertake skills assessment for migration purposes.<sup>3</sup> This DA stream provides students with the essential skills and knowledge for them to have an opportunity to enter dynamic field of Data Analytics.

Possible career opportunities that correspond to this stream include:

- Business Data Analysts/Data Analyst
- Database Administrator

### Software Development (SD) Stream

Software Development is a continuously advancing area of Information Systems focusing on the design, development, testing, maintenance, and documentation of software systems. The units within the Software Development stream of the Bachelor of Information Systems (BIS) adds to several units from the core units within the BIS to build the skills students require to become software developers.

In Australia, there are several different occupations under the broader area of ‘**2613 Software and Applications Programmers**’<sup>4</sup>, and these have become areas of significant skills shortage in recent years both in Australia and globally.

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<sup>2</sup> Refer to: [Unit Group 2241 Mathematical Science Professionals | Australian Bureau of Statistics \(abs.gov.au\)](https://abs.gov.au)

<sup>3</sup> Refer to: [ACS Migration Skills Assessment Criteria](https://acs.org.au)

<sup>4</sup> Refer to: [Unit Group 2613 Software and Applications Programmers | Australian Bureau of Statistics \(abs.gov.au\)](https://abs.gov.au)

**BIS304 eBusiness Development, BIS307 Mobile Application Development, BIS309 Developing Secure Software, and BIS310 Software Development and DevOps** build upon the core skills and knowledge that students develop in the core units such as **BIS102 Programming Fundamentals, BIS201 Systems Analysis and Design, and BIS205 Project Management and Agile Systems Development**. The units within this stream ensure students build the essential software development skills to enter the ever-expanding field of software development.

**BIS306 Artificial Intelligence and Machine Learning** educates students to innovative technologies that will impact future software development methodologies. **BUS203 Research Methods** equip students with the skills to understand how to undertake investigations and utilise techniques for the collection of data and information aimed at a particular problem. **BIS309 Developing Secure Software** empowers students so that they can create, deploy, and support secure software systems.

The SD stream focuses on key concepts and topics that students require when researching, analysing, and evaluating system program development needs. This involves identifying technology limitation, testing, debugging, correcting errors, developing continuous improvements, identify and mitigate the risks that can affect the performance of software systems.

Possible career opportunities that correspond to this stream include:

- Cloud Engineer/Cloud Computing Engineer
- DevOps Engineer
- Software Developer/Software Engineer
- Software Tester
- Systems Analyst
- Technical Support Officer
- User Experience Analysts/Designer (UX Designer)
- Database Administrator

## Suggested Stream Units

Business Analysis Stream	Data Analytics Stream	Software Development Stream
<ul style="list-style-type: none"> <li>• BUS102 Business Communication</li> <li>• BIS203 eBusiness Development</li> <li>• BIS204 Business process Management</li> <li>• BUS204 Technology in Business</li> <li>• BIS302 Data Mining and Business Intelligence</li> <li>• BIS308 Cyber Security Risks and Control Strategies</li> </ul>	<ul style="list-style-type: none"> <li>• BUS102 Business Communication</li> <li>• BUS203 Research Methods</li> <li>• BIS204 Business process Management</li> <li>• BUS305 Digital Business</li> <li>• BIS302 Data Mining and Business Intelligence</li> <li>• BIS306 Artificial Intelligence and Machine Learning</li> </ul>	<ul style="list-style-type: none"> <li>• BIS203 eBusiness Development</li> <li>• BUS203 Research Methods</li> <li>• BIS306 Artificial Intelligence and Machine Learning</li> <li>• BIS307 Mobile Application Development</li> <li>• BIS309 Developing Secure Software</li> <li>• BIS310 Software Development and DevOps</li> </ul>
<p>Units from the BIS core that also align with this stream:</p> <ul style="list-style-type: none"> <li>• BIS101 Business Information Systems</li> <li>• BIS104 Operations and Technology Management</li> <li>• BIS105 Database Management Systems</li> <li>• BIS201 Systems Analysis and Design</li> <li>• BIS202 Cloud Computing</li> <li>• BIS205 Project Management and Agile Systems Development</li> <li>• BIS208 Cyber Security and Information Security</li> <li>• BIS303 Enterprise Systems</li> <li>• BIS311 Design Thinking for IS Projects</li> </ul>	<p>Units from the BIS core that also align with this stream:</p> <ul style="list-style-type: none"> <li>• BIS101 Business Information Systems</li> <li>• BIS102 Programming Fundamentals</li> <li>• BUS107 Applied Statistics</li> <li>• BIS105 Database Management Systems</li> <li>• BUS206 Data Analytics</li> </ul>	<p>Units from the BIS core that also align with this stream:</p> <ul style="list-style-type: none"> <li>• BIS101 Business Information Systems</li> <li>• BIS102 Programming Fundamentals</li> <li>• BIS105 Database Management Systems</li> <li>• BIS205 Project Management and Agile Systems Development</li> <li>• BIS208 Cyber Security and Information Security</li> </ul>

## List of BIS Elective Units

**NB: Not all electives may be offered.**

Unit Code	Unit Name	Prerequisites	Credit Points
<b>BUS101</b>	Fundamentals of Accounting	Nil	10
<b>BUS102</b>	Business Communication	Nil	10
<b>BUS103</b>	Introduction to Marketing	Nil	10
<b>BUS104</b>	Fundamentals of Business Law	Nil	10
<b>BUS106</b>	Fundamentals of Management	Nil	10
<b>BUS108</b>	Economics for Business	Nil	10
<b>BIS203</b>	eBusiness Development	BIS105 Database Management Systems	10
<b>BIS204</b>	Business Process Management	BIS101 Business Information Systems and BIS104 Operations and Technology Management	10
<b>BUS201</b>	Accounting and Business Reporting	BUS101 Fundamentals of Accounting	10
<b>BUS202</b>	Models for Business	BUS106 Fundamentals of Management	10
<b>BUS203</b>	Research Methods	BUS107 Applied Statistics	10
<b>BUS204</b>	Technology in Business	BUS105 Business Information Systems	10
<b>BUS205</b>	Operations Management	BUS106 Fundamentals of Management	10
<b>BUS208</b>	Applied Business Finance	BUS101 Fundamentals of Accounting	10
<b>BIS302</b>	Data Mining and Business Intelligence	BUS206 Data Analytics	10
<b>BIS306</b>	Artificial Intelligence and Machine Learning	BIS102 Programming Fundamentals and BUS107 Applied Statistics	10
<b>BIS307</b>	Mobile Applications	BIS102 Programming Fundamentals and BIS105 Database Management Systems	10
<b>BIS308</b>	Cyber Security Risks and Control Strategies	BIS208 Cyber Security and Information Security	10
<b>BIS309</b>	Developing Secure Software	BIS102 Programming Fundamentals	10
<b>BIS310</b>	Software Development and DevOps	BIS102 Programming Fundamentals and ICT202 Cloud Computing	10
<b>BUS301</b>	Strategic Management	A minimum of 140 credit points and BUS106 Fundamentals of Management	10
<b>BUS303</b>	Performance and Risk Management	BUS104 Fundamentals of Business Law	10
<b>BUS304</b>	Ethics and Corporate Governance	BUS104 Fundamentals of Business Law	10
<b>BUS305</b>	Digital Business	A minimum of 140 credit points and BUS105 Business Information Systems and BUS106 Fundamentals of Management	10
<b>BUS306</b>	International Business	A minimum of 140 credit points and BUS106 Fundamentals of Management	10
<b>BUS307</b>	Disruption and Innovation	A minimum of 140 credit points including BUS105 Business Information Systems, and BUS106 Fundamentals of Management	10
<b>BUS309</b>	Entrepreneurship	BUS202 Models for Business	10

Further electives may be offered as new courses are developed.

## ADMISSION CRITERIA

### General Academic Admission Criteria

To satisfy the general academic requirements for admission to a course at AHE, applicants must meet at least one (1) of the following entry requirements:

- Successful completion of Year 12 or equivalent with a minimum ATAR of 50; or
- Successful completion of an equivalent secondary qualification either interstate or overseas; or
- Satisfactory completion of an accredited Tertiary Preparation Program or a Business Foundation Year Program offered by an Australian Higher Education Provider (HEP) that would enable students to gain entry to an AQF Level 7 Business course an Australian HEP; or
- Admission to an undergraduate degree at an Australian University

Alternative Academic Admission Criteria for applicants who do not meet the General Academic Admission Applicants who are twenty-one (21) years of age or over who have not completed Year 12, or its equivalent may fulfil the academic admission criteria through one of the following entry requirements:

- Successful completion of a Special Tertiary Admissions Test administered by a tertiary admissions centre; or

Submission of a portfolio of prior and current academic and/or professional work of a satisfactory level to the AHE Course Coordinator.

### General English Language Requirements for Admission

- International (overseas) students whose first language is not English must demonstrate competency in the English Language.
- English Language competency for admission to AHE is 6.0 overall (minimum 5.5 in each section).
- **Additional Specific Course Admission Criteria for the Bachelor of Information System:** None

## POLICIES

For further information on the below policies and procedures or to download, please refer to the Apex Australia Higher Education [Website](#).

- Student Admission Policy and Procedure
- English Language Requirements for Admission
- Student Application for Admission Form

## FEES

### Standard Fees

- **Tuition Fee:** AUD \$49,440
- **Annual Indicative Fee:** AUD \$16,480
- **Semester Indicative Fee:** AUD \$8,240
- **Enrolment Fee:** AUD \$250

## CAREER OUTCOMES

AHE Bachelor of Information System graduates are expected to find employment in IS/IT-related areas including:

- Business Analyst / ICT Business Analyst
- Business Data Analysts / Data Analyst
- Cyber Security Analyst / Cyber Security Technician
- Cloud Engineer / Cloud Computing Engineer
- Database Administrator
- DevOps Engineer
- IS Infrastructure Engineer
- Software Developer / Software Engineer
- Software Tester
- Systems Analyst
- Technical Support Officer
- User Experience Analysts / Designer (UX Designer)

Graduates of the Bachelor of Information System course, at AQF Level 7, will be eligible to progress to post graduate studies in several cognate areas of IT.



## UNIT DESCRIPTIONS

Listed below is a typical sequence of units throughout the BIS. However, unit sequencing may vary for different students depending on your starting semester, whether it is credits or RPL/CRPL have been approved, and the units offered in specific semesters.

### FIRST STUDY PERIOD

#### BIS101 Business Information Systems

This unit provides an overview of Information Systems (IS) and its role in organisations and contribution to business decision-making processes. The unit explains how technology is used to develop systems that effectively support, enable, and add value to business processes. An understanding of IS is important to the work of managers because it serves as a bridge between management and technology in business operations.

Mastering both business and technology skills and knowledge, creates job opportunities as individuals with these abilities can better contribute to shaping a company's strategy and value operations. Upon completion of this unit, students will be able to understand IS concepts, analyse and evaluate issues contained in BIS case studies, appreciate, and analyse the impact of IS on business decision-making, and utilise IS in creating business value and competitive advantages.

#### BIS102 Programming Fundamentals

This unit introduces students to the basics of programming. Students will learn the basics of programming using Python including procedural and object-oriented programming approaches.

This will include designing and creating programmes in a high-level language; using data structures and algorithms; using libraries; coding style; debugging; and testing. They will also be able to adapt relevant programming styles, standards, and practices in a problem-solving context.

#### BIS103 IS Networking Essentials

In this unit, students will learn about fundamental networking topologies and protocols and understand the importance of the Open Systems Interconnection (OSI) and Transport Control Protocol/Internet Protocol (TCP/IP) models, protocol stacks and their operation in computer networks.

As part of the practical activity, students will employ a range of network tools to test, map and configure a typical network. By the end of this unit of study the student will be able to identify and understand how to address network infrastructure requirements in a business environment.

#### Elective 1

### SECOND STUDY PERIOD

#### BIS104 Operations and Technology Management

Managing operations and technology is critical for every business that is concerned with delivering value to its customers. This unit introduces students to the principles, tools, quantitative models, and strategies used in the management of operations and technology and examines key issues facing both service and manufacturing organisations.

In this unit, students develop basic understanding of product and service design, technology-enabled innovations, process design, operations planning and control, quality, performance, and IT service delivery. It equips students with the basic skills and techniques to analyse operations in a digitalised world and improve them.

In addition, it explores the concepts of information technology enabled innovations and IT services and equips students with an ability to evaluate, implement and manage enabling technologies in business operations.

### BUS107 Applied Statistics

This unit aims to provide students with a basic understanding of the principles and practical skills necessary for the application of statistics in the business context. The unit emphasises the use of statistical methods to draw inferences from sample data to inform decision-making across business generally and more particularly in the areas of economics, accountancy, finance, and marketing.

Topics covered in the unit include descriptive statistics, random variables and their distributions, sampling distributions, point and interval estimation of parameters, hypothesis testing, and regression models.

Students are also introduced to the ever-increasing importance of Big Data for the operation and decision-making purposes of businesses as well ethical and social implications of Big Data. Students learn to organise and present data as well as solve statistical problems using Excel.

This unit complements the study of other units and provides a foundation for further study of statistical methods.

### BIS105 Database Management Systems

Digital information systems produce vast amounts of data, and appropriate management of this data is essential for decision making and value-adding. This unit introduces the fundamental concepts in database design and development, covering the conceptual level and physical level of database management systems (DBMS).

It will cover different categories of DBMS, data modelling and design, query languages, and practical challenges involved with deploying database management systems such as database performance tuning, transaction management, internet connectivity, and security.

### Elective 2

## THIRD STUDY PERIOD

### BIS201 Systems Analysis and Design

In this unit, students develop skills in systems analysis and design. The unit will provide an overview of the Systems Development Lifecycle (SDLC), associated techniques and methodologies. SDLC is the process applied by organisations when designing and developing information systems.

The unit will look at two types of SDLC, specifically waterfall and iterative (agile). The unit explains how to develop system requirements (elicitation and specification), using techniques, tools, and perspectives essential for information systems analysts.

The unit will require students to apply the tools and techniques of system analysis and design to solve a real industry business problem.



## BIS202 Cloud Computing

Cloud computing allows the provision of computing services such as software, storage, analytics, and intelligence over the internet. It enables service users to trade fixed computing expenses for usage-based variable expenditures, to benefit from reduced service costs due to economies of scale, increase agility and flexibility, and to reduce maintenance costs.

This unit starts by discussing the business case of cloud computing, including benefits, challenges, business models, and types. Thereafter, it dives deep into the underlying technology of cloud computing systems and covers an overview of virtualisation, containers, and virtual networks. It also covers selected topics in automation and orchestration, which are essential for cloud computing systems. Students experience implementing and deploying basic cloud applications and learn about cloud computing programming paradigms.

This unit also introduces emerging technologies closely connected to cloud computing, including Edge Computing, Industrial Internet of Things (IIoT), and Software Defined Networks (SDN), and discusses the opportunities and challenges for cloud providers and customers.

## BIS205 Project Management and Agile Systems Development

This unit provides an introduction to managing information systems projects. The unit will provide an overview of the project management process. It will explain how project management techniques, tools and processes are used by organisations to ensure projects can be delivered to stakeholders within the agreed scope, cost, and time (the Iron Triangle).

The unit will also provide an overview of agile project management (but this will not be a complete agile course). The unit will require students to apply the tools and techniques of project management to solve a real industry project management problem.

## Elective 3

# FOURTH STUDY PERIOD

## BUS206 Data Analytics

This unit deals with understanding data and how to analyse and present data in real-world scenarios. The unit gives students the opportunity to investigate and reflect on the data held about consumers and businesses by big data companies of the world such as Facebook and Google. Students also learn to assess datasets which have been collected by governments, including the purpose and quality of data.

Data is not objective and neutral; students will learn to evaluate the integrity of datasets, understanding that this is the basis for good practice in data analytics. Students will also learn to use and critically assess a range of data analytics and visualisation tools to collaboratively interpret and articulate data including assessing the ethical and social dimensions of data collected by companies.

## BIS206 IS Ethics and Professional Practice

This unit focuses on the ethical considerations in the field of Information & Communications Technology (ICT). It covers various philosophical theories of ethics and their relationship with current ethical and legal issues in information and communication technology. The unit also explores professional ethics in the IS field, including ethical issues in professional practice and their implications.

Finally, students will learn how to critically evaluate solutions to IS ethical problems and apply ethical theories and the Australian Computing Society (ACS) code of ethics to these problems. By the end of this unit, students will have a comprehensive understanding of ethical considerations in Information Systems and be equipped to navigate complex ethical scenarios in their professional careers.

## BIS208 Cyber Security and Information Security

This unit provides a broad understanding of information systems security principles and practices in today's modern enterprises. It enables students to develop insights into cyber security attacks and the available security tools and defences to protect systems and users.

This unit also covers foundational concepts on how to devise cyber security plans as well as considerations for implementing them. Notably, students are introduced to the multidisciplinary challenges involved in cyber security, including technical, legal, organisational, and human aspects. Recent technological advances in enterprises and their potential impact on cyber security are also highlighted.

## Elective 4

# FIFTH STUDY PERIOD

## BIS303 Enterprise Systems

Enterprise systems, pervasive today in all types of firms (large, small, and medium sized), have a strategic role in supporting the key business processes and decision making. Building on the basic knowledge of information systems, business processes and data bases, this unit introduces the concepts, features and technologies of integrated enterprise systems including cloud-based enterprise systems and their extensions and equips students with the knowledge and skills required to evaluate their adoption and implementation.

It equips students with skills in the configuration of a simple enterprise system and demonstrate ability to perform transactions and reports relevant to key business processes such as order to cash, procure to pay and hire to fire through hands-on exploration of a packaged software tool.

It analyses the characteristic features, benefits, and challenges in the adoption of various extensions to enterprise systems – such as supply chain management, customer relationship management and business intelligence.

## BIS311 Design Thinking for IS Projects

Information Systems (IS) professionals are expected to develop Information Technology (IT) solutions to real-life problems and require the knowledge they gained in different aspects of a course in information systems (e.g., systems analysis and design, databases, eBusiness technologies, programming etc.).

Design thinking helps IS professionals to think of an IS/IT solution from the perspectives of end users (e.g., marketing assistants, production clerk, store clerk, payroll officer, mentally or physically disadvantaged users etc.).

On completion of this unit, students will learn how to develop an information system as a real business project involving design thinking, UML (Unified Modelling Language) use cases, sequence diagrams, object diagrams etc.

Students will be able to apply all the relevant knowledge gained throughout the first one and half years of the BIS (Business Information Systems) course. They will learn the importance of practical business skills, such as interpersonal communication, negotiations, conflict resolution and teamwork in the context of information systems development.

Elective 5

Elective 6

## SIXTH STUDY PERIOD

### BIS305 Capstone Project

On completion of this unit, students will be able to develop an information system as a real business project involving IT project management techniques and tools (e.g. Jira), use cases for requirement analysis, agile development methodology, real development platforms (e.g., for Android App Development) and software development/version control (e.g. GitHub). Students will be able to apply all the relevant knowledge gained throughout the BIS (Business Information Systems) course to develop a real information system.

Students will use various IS analysis and design artefacts (e.g., IT project management techniques, Git, and scrum) to communicate and iterate their design in collaboration with real business users and IT professionals. They will learn the importance of practical business skills, such as interpersonal communication, contracts, and negotiation (learned in the previous years on this course) in the context of information systems development and delivery for a business.

Project sponsors (business organisations or academic staff) play an important role at all stages of the project. Each group project has a sponsor to specify the requirements, participate in various stages of the agile development, testing and acceptance of the information system developed as part of this capstone project.

Students will have regular access to the representative of the sponsor to obtain feedback on their understanding of the project functional and non-functional (e.g., security) requirements (and the context including all stakeholders), design approach, implementation, testing and evaluation.

### BIS304 Information Systems Strategy

Information Systems (IS) Strategy focuses on the issues, concepts, and practical application of IS strategy management. The strategic value is first examined and where IS strategic management fits within a 4<sup>th</sup> Industrial Revolution world, with the opportunities and challenges it brings.

The unit then introduces analytical frameworks and tools to evaluate these opportunities and challenges to assist in IS decision-making processes. Key issues in IS decision making include planned and emergent strategies, cyber security management and mitigation, privacy issues and IS governance.

Finally, the unit addresses the role of IS leadership and communication in developing and deploying technology projects and portfolio management. Current trends and innovations in IS are also considered.

Elective 7

Elective 8

## Electives

Suggested electives:

### BUS101 Fundamentals of Accounting

Accounting is the process of identifying, measuring, and communicating information about business activity for decision-making. This introductory unit provides an overview of business and the business environment and introduces the principles supporting the use of an accounting information system for business decision making in a socially responsible manner.

The unit covers the relevance and significance of fundamental accounting conventions and addresses applications of the accounting information system from the perspective of a user. On completion of this unit, students should have a clear understanding of the role of financial accounting within a business organisation and how financial accounting helps managers meet business objectives.

Students will be able to communicate with accounting professionals, understand the relevance of accounting information for informed decision-making by a wide range of potential users, and have the ability to analyse and interpret accounting information, including to analyse ethical and socially responsible business activity.

### BUS102 Business Communication

This unit equips students with basic business and academic writing and presentation skills necessary for completing their course of study and for entry-level work-ready business positions. The ability to develop documents relevant for business studies and write well-researched and solidly structured arguments in a clear, concise, and factual manner is emphasised.

Additionally, this unit explores the types of interpersonal and group communication skills relevant to the business workplace. This includes developing in students an understanding of and ability to utilise fundamentals of negotiation, including evidence-based arguments and utilise these skills for professional communication, presentations and well-written business relevant documents.

Ethical and socially responsible considerations in negotiation, business communication, and academic writing, including avoiding plagiarism and ensuring academic integrity such as correct citing and referencing practices, are threaded throughout the unit.

### BIS204 Business Process Management

In today's digital world, managing business processes is critical for improving performance, costs, decision making and customer orientation. This unit provides an in-depth understanding of the role of business process management in organisations and equip students with the skills required to manage the entire business process management life cycle from both the business as well as technology perspectives.

This unit helps students develop an ability and skills in process modelling, analysis, and improvement and a sound understanding of the implications, associated risks and change in the process redesign and improvements. Students develop hands-skills in using a popular industry-standard process management software tool.

## BIS302 Data Mining and Business Intelligence

This unit provides a broad overview of the data mining and business intelligence techniques used by organisations to gain insights into their customers and competitors. By doing so it may enable organisations to achieve a competitive advantage or improve their operations and better meet customer needs.

Students will be introduced to the tools and techniques of data mining and business intelligence thus enabling students to manipulate data and to view data in new ways. An important technique in data mining is presentation of the findings of data mining to stakeholders, so students will also learn the fundamentals of data visualisation and presentation.

This unit is a practical application of the tools, Python programming for developing new models and create visual dashboards for the users. Students will be acquainted with the knowledge of exploring the Weka machine learning open-source software and its associated libraries to discover patterns and develop expertise in machine learning. Probabilistic modelling, decision trees, classification, clustering, linear modelling, instance-based learning, and emerging topics in data mining are included in this subject. This subject also discusses the ethical conduct of data mining-related analyses and appraise the associated ethical, and social concerns.

## BIS310 Software Development and DevOps

DevOps has emerged as a new paradigm since most modern enterprise systems run continuously while they also require patching/updates and new features.

This unit introduces students to the concepts, practices, and technologies: Infrastructure as Code techniques, Infrastructure as a Service, Continuous Integration and Continuous Deployment (CI/CD) pipeline to deliver a new version of the software, how to use containers and container orchestration tools, open-source tools for automating deployment and containerised applications, and Microservices. Students will learn about DevOps best practices through case studies.

## BIS306 Artificial Intelligence and Machine Learning

This unit introduces students to the fundamentals of artificial intelligence with an emphasis on machine learning and its applications in business. Several statistical algorithms for supervised and unsupervised learning such as regression, classification, decision trees, support vector machines, ensemble methods, clustering, and dimension reduction are covered in this course.

Students will build models capable of learning from data and apply them to recommender systems, Forecasting and other business applications.

## BIS307 Mobile Applications

This unit provides a practical introduction to mobile application development. It will discuss the various challenges and opportunities brought forward by mobile applications.

After that, students learn about mobile application design requirements, workflow basics, different development frameworks, and the required tools for developing, testing, and publishing Android applications.

## BIS308 Cyber Security Risks and Control Strategies

This Cyber Security Risks and Control Strategies unit first discusses the fundamentals of cyber risk assessment and management techniques. The course then covers how to do a cyber security risk analysis of the specific assets and resources as well as the system. Upon completion of this subject, students will learn about the various risk assessment techniques and risk governance framework, as well as how to use them in real-world scenarios.

## BIS309 Developing Secure Software

This unit, Developing Secure Software, covers the entire Safe Software Lifecycle by focusing on core ideas including trust, risks, mitigation, secure design patterns, and cryptography. Giving an overview of the process of designing secure software, outlining the coding procedures for putting secure software into practice from software design through its execution in actual situations.

The most prevalent coding errors that lead to vulnerabilities are discussed making extensive use of code snippets written in Python to demonstrate implementation issues.

## BUS103 Introduction to Marketing

This unit presents the foundations and core principles of marketing for businesses including an appreciation of marketing concepts utilised by businesses in Australian and globally. Emphasis is placed on creating customer value through different marketing activities and strategies, understanding the marketing mix within an environment of change, maximising utility of limited resources amidst industries in constant flux, and exploring new methodologies used by marketing practices.

Responsible and ethical marketing is crucial to sustainable and productive, long-term relationships between organisations, their customers, and stakeholders. This unit includes careful consideration of ethical and socially responsible practices within marketing activities. In addition, students will be introduced to current topics including the marketing process in an increasingly digital and global environment.

## BUS106 Fundamentals of Management

The unit equips students with the basic principles, fundamental practices and techniques required for effective organisational management. The principles of management presented are premised on four basic functions: planning, organising, influencing / leading and controlling. The unit overviews topics such as organisational culture, decision-making, motivation, managing diversity, and styles of personal management.

The topics are then expanded to include human behaviour in organisations with a specific focus on the workplace. The unit examines the ways in which an understanding of organisational behaviour is necessary to, and facilitates the management of, people at work.

Emphasis is placed on identifying internal and external environmental influences on organisational and individual performance and the role of the manager as well as developing an ethical and socially responsible managerial philosophy.

## BUS203 Research Methods

This unit introduces students to business research problems and the ways business research is conducted. Emphasis is placed on providing students with an understanding of the research process and a working knowledge of the methods and issues involved in conducting business research that allows better decision-making, both quantitative and qualitative.

Students will gain an understanding of relevant approaches and factors to consider when undertaking research to provide insights to solving a relevant business problem. Students should develop critical core competencies and skills required to undertake this research, including: defining research questions; setting appropriate research objectives; design that incorporates research objectives and budgetary constraints; secondary and primary data collection and instruments; sampling and analysis methods; and effective reporting of results; as well as the importance of ethical conduct in conducting research in business contexts.

The unit culminates in students writing a Research Proposal that requires students to identify, discuss and formulate a research problem, select and apply appropriate research approaches and methods of inquiry (both quantitative or qualitative).

### BUS204 Technology in Business

The increasing dominance of technology companies in the Fortune 500 warrants critical analysis and dissection of “technology” and “tech” businesses. This unit examines the full scope of technology’s role and meaning in business contexts, from low-tech to high-tech, legacy to emerging, front-end to back-end, process innovation to intellectual property. Students will audit the range of technology used in a real-world business and assess its “digital maturity” according to different criteria.

This Unit will allow students to compare and contrast a variety of digital maturity models, as well as applications of technology in business to demonstrate the spectrum of digital maturity, as well as ethical and social implications across organisations and communities. This unit seeks to develop students’ organisational technology literacies and their capacity to work effectively and add value to businesses using digital transformation.

Please visit the Apex Australia Higher Education [Website](#) for following units’ description –

BUS104	Fundamentals of Business Law
BUS108	Economics for Business
BUS201	Accounting and Business Reporting
BUS202	Models for Business

## ACADEMIC CONTACT DETAILS

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