



BACHELOR OF INFORMATION TECHNOLOGY

MOBILE APPLICATION DEVELOPMENT SUBJECT LIST



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app active
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ratio = h/w
app activeDocument =
activeDocument active
var shapeRef =
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```

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YEAR 1			
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TRIMESTER 2	Programming I	Database Systems	Introduction to Software Engineering
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EXIT: DIPLOMA OF INFORMATION TECHNOLOGY			
YEAR 2			
TRIMESTER 4	Java	Digital Project Management	Systems Analysis and Design
TRIMESTER 5	Foundation Networks	Interface and Experience Design	Enterprise Systems
TRIMESTER 6	Mobile App Android	Advanced Web	
EXIT: ASSOCIATE DEGREE IN INFORMATION TECHNOLOGY (MOBILE APPLICATION DEVELOPMENT)			
YEAR 3			
TRIMESTER 7	Elective 1	Mobile App iOS	Cross-Platform Apps Development
TRIMESTER 8	Advanced Studio 1	Elective 2	Data-Driven Apps Development
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BACHELOR OF INFORMATION TECHNOLOGY (MOBILE APPLICATION DEVELOPMENT)			



YEAR 1

START DATES:
February, May, or September

TRIMESTER 1 – SUBJECTS

Introduction to Web (INT1012)

This subject introduces HTML markup language, which is the essential language used in web development. It will focus on HTML, CSS and introduction to web scripting language libraries as they relate to modern practices in web development. Students will actively learn how to use these languages to facilitate the building of modern, attractive and reliable websites. This subject underpins each student's practical knowledge, as they progress with confidence into more complex web development. They will learn to build simple and responsive web pages with HTML, including basic page content structure, applying formatting styles using CSS, and understanding how web scripting libraries is used for basic interactivity. Throughout the semester and by the end of the subject, students will be on their way to becoming front-end developers, helping to build portfolios with a skill-set needed for many positions in this fast-developing area of IT.

Information Systems (CMP1042)

The subject provides students with an overview of existing and emerging technologies that affect the operations and management of a business. Students will investigate the relationships businesses have with external entities, for example, customers, suppliers and regulators, and the products and services they offer. The first half of the subject is structured to help students understand why and how information systems are used by organisations. The subject covers how to develop the problem solving, interpersonal communication and analytical skills required for developing an information system for clients. Students learn the theories and applications of information systems. In the second half of the subject the focus is on the specific technologies comprising information systems and their development.

Student Work: Wisdom App by Phoumany Chanthachack

Foundation Programming (CMP1041)

This subject provides essential skills in the conceptualisation and techniques of programming and software design. It introduces techniques for designing algorithms and implementing them as computer programs using a high-level programming language. Emphasis is placed on real world processing tasks, involving students in interactive program development, execution and verification. Students will learn techniques such as debugging and testing. Major areas that are covered will include OOP, data and controlling flow, and arrays. Students will also learn the basic design elements of programming and how to construct solutions using specifications. This subject is a part of system development management and system design that is a fundamental element of all information technologies programs. It builds on developed skills in development tools used and software development to focus on the creation of software projects.



TRIMESTER 2 – SUBJECTS

Programming (PRG1002)

This subject contains the knowledge and skills required for understanding fundamental programming. During the subject, students will learn how to apply programming concepts, basic variables, constants and functions to build small programs. The information covered in this subject is essential for programmers at all levels.

Database Systems (PRG1048)

This subject introduces basic concepts and principles of database systems, especially relational databases, to emphasise the importance of a well-designed database in practice. Students will learn how data is structured and managed within a relational database. This subject is structured to walk students through the necessary steps to design conceptual and relational models, and implement these using basic DDL-SQL commands. Basic and advanced DML-SQL commands are also presented to enable retrieving accurate information from the database. Students are also encouraged to further explore other aspects of database systems, such as security and future databases.

Introduction to Software Engineering (CMP1043)

This subject provides students with the skills and knowledge to design sound structured computer programs and then moves into a detailed examination of object oriented analysis and design using the Unified Modelling Language (UML). Students will understand the concepts and application of UML to software development, and will have opportunities to use UML for software creation while developing further understanding of software concepts and problem solving approaches. The role of software engineer and the software development life cycle will also be covered.

TRIMESTER 3 – SUBJECTS

Discrete Mathematics (PRG1010)

Discrete Mathematics introduces students to a wide range of terminology and tools that have particular use in computer science. In this subject, emphasis is placed on mathematical and computational skills. Students will also focus on developing reasoned arguments and creating clarity through the exploration of number systems, matrix operations, algorithms, and discrete structures, such as sets, graphs, combinatorics and logic.

Programming II (PRG1006)

This subject builds on the knowledge and skills students obtain in an intermediate programming subject. Students learn how to create and use classes to build object-oriented programs. This subject covers the fundamental programming concepts that all object-oriented programmers require including object-orientation; classes, objects and interfaces; basic structures; special member functions; declarations and statements; standard libraries; and exception handling.



YEAR 2

START DATES:

February, May, or September

TRIMESTER 4 – SUBJECTS

Java (PRG1049)

This subject continues the examination of object-oriented programming using Java. It also introduces graphical user interface development using Java. Students learn the fundamental principles of interface development and are then required to apply these in the development of a program with a graphical interface. Students also examine database connectivity and network application development using Java.

Digital Project Management (INT1050)

This subject covers the basic principles of project management. Students will learn the essential theory of managing projects and will work in small teams to produce proper and complete documentation for a small project of their choice. The emphasis is on the project management of typical tasks and on providing a thorough understanding of how formal project management can be vital for the successful completion of major tasks which may require many resources. The project management skills gained can be applied to a wide range of project types and contexts.

Systems Analysis and Design (CMP3045)

This subject introduces basic principles of software requirements, analysis and design. The objectives are to establish a requirement analysis and design templates for where more detailed material regarding specific aspects of requirements and design techniques and issues fit. In doing so students will apply their skills and knowledge of understanding requirements, a range of modelling techniques, methodologies and approaches.

TRIMESTER 5 – SUBJECTS

Foundation Networks (CMP3044)

This introductory networking subject is designed to orient students in the basics of how data is exchanged and how small networks are designed and implemented. It will give students an understanding of the basic concepts and operations of networks, such as the internet and data networks (LANs and WANs). Topics will include TCP/ IP and OSI network layers, transmission, error detection and correction, and an overview of network security and management.

Interface & Experience Design (DES1060)

This subject teaches students how to design, implement and evaluate user interfaces to meet predefined quality characteristics of functionality. Students will also learn to create a user centric experience for web and application design. Concepts, theories and technologies underlying the methods and techniques are introduced and explained. Students will apply all that they have learned to develop and implement interactive user interfaces for systems, applications, products or services.

Enterprise Systems (CMP1046)

This subject introduces current enterprise computing concepts, challenges and opportunities. Students will learn the main components of the enterprise computing environment and its component-based and service-based oriented architectures, and will develop an understanding of the differences between various cloud platforms. Students will study the complexity of enterprise computing environments and their new evolving technologies, and will learn development techniques for implementing enterprise applications. The subject focuses on basic standards, architectures and technologies used in enterprise computing, the key components of enterprise applications and their implementation in .NET technology.

TRIMESTER 6 – SUBJECTS

Mobile App Android (PRG1050)

Learn basic theory, technologies and design principles for mobile application development. Topics include introduction to android programming, android development tools (android studio) and basic layout and interface for mobile and tablet.

Advanced Web (INT1059)

In this subject, students advance their skills in web design. Drawing on theories and research on advanced web development, students engage with complex information and complete practical tasks, including developing dynamic web pages. Using JavaScript and PHP together, students create functions for e-commerce and content management. Methods for ensuring web security comprise an important topic in this subject, and successful students will obtain a strong theoretical and practical foundation before moving onto more advanced web projects.



YEAR 3

START DATES:

February, May, or September

TRIMESTER 7 – SUBJECTS

Elective 1

Students may choose an elective from the approved elective subject list.

Mobile App iOS (PRG3051)

Learn advanced technologies, application and effective user interface for iOS mobile. Topics include, Mobile Application Framework, Pattern and Human Interface Design and App Design and Store.

Cross-Platform Apps Development (INT3052)

The field of mobile development is divided into a range of different programming languages, frameworks and environments. In this subject, students learn to identify the options that are available for developers and will develop a cross platform application of their own. Students will draw on skills and knowledge from previous subjects and apply them to the development of an application that can be deployed on a range of devices and platforms.

TRIMESTER 8 – SUBJECTS

Advanced Studio 1 (INT3506)

This subject is the first part of a two term project. This project aims to prepare students for career roles in a particular ICT discipline or focus area. Students will select a topic of interest and work closely with a supervisor throughout the project. Students can select to work individually (recommended) or within a team of two or three at most.

This project is strongly recommended to be taken only in final year, because students will be required to apply knowledge obtained from subjects delivered in the first two years in order to deliver satisfactory outcomes for this final Advanced Studio project. In Advanced Studio 1, students will consult with their supervisor to finalise their topics, develop a methodology, plan their milestones for both trimesters, and complete their research, literature review, analysis, and high level design phases of the project.

Elective 2

Students may choose an elective from the approved elective subject list.

Data-Driven Apps Development (INT3053)

In this subject, students will expand on the backend development that has been gained in previous subjects, and extend and apply these skills. Students will develop the ability to create and maintain systems that collect and utilise information. A key learning outcome will be the ability for students to create a simple API and a data-driven mobile application.



TRIMESTER 9 – SUBJECTS

External Project (SPC3039)

In this subject, students develop and apply a solution to a real business problem and to gain practical hands-on experience, and insight into a typical client software development cycle. Students will work on a product to gain experience of a typical workplace environment, teamwork and workplace roles in a typical business environment.

Advanced Studio 2 (INT3516)

This subject is the second part of a two term project. Students must successfully complete Advanced Studio 1 in order to enrol in this subject. In Advanced Studio 1, students would have already selected their topics, completed the research and analysis parts of the project. In Advanced Studio 2, students will continue their projects from Advanced Studio 1, and complete their projects with low level design, implementation, prototype and final presentation according to a timeline and plan as set in Advanced Studio 1. The whole project encourages students to properly complete a project of their own, following industry processes, standards and disciplines in order to prepare students for career roles in their focus area.



ELECTIVES

Electives are subject to availability and certain electives have prerequisites.

PROGRAMMING RELATED

Augmented Reality PRG3220

In this subject, students will be introduced to the theory and practice of Augmented Reality (AR). Students will study the history of Augmented Reality technology and consider its practical applications in a contemporary context. The subject will cover processes for Augmented Reality development for games programming and students will engage in practical exercises for developing their own working Augmented Reality applications.

Artificial Intelligence PRG2006

This subject will introduce students to the concept of Artificial Intelligence (AI), one of the critical components in a contemporary game development project.

Students will develop a solid grasp on what the term "artificial" means. Artificial Intelligence will be used to produce gaming problems and solutions and to construct player challenges. Through a personal research project, students will engage in scientific writing and experimental analysis investigating Artificial Intelligence both theoretically and technically.

DESIGN RELATED

Digital Images DES1013

In this subject, students will learn the basic skills and knowledge needed to create digital graphics. They will learn to use industry-standard pixel, vector and layout-based tools, and also learn how these tools are integrated into wider digital practice. Students apply theory and evidence-based practice when creating and enhancing images.

GAMES RELATED

Game Development INT1029

This subject introduces students to using an industry standard 3D game engine. Students will use this software for developing future games and major projects. The subject involves learning object oriented programming to design and develop

interactive games. Upon successful completion of this subject, students will be able to operate a game engine proficiently to develop simple 3D games, become familiar with programming fundamentals and most importantly develop their problem solving skills.

Basic Game Engine Programming INT2001

In this subject, students will complete their coverage of the programming language C++ by examining templates, error handling, the standard template library and bitwise operations. Students will investigate and apply several useful STL data structures and algorithms and their underpinning concepts. The subject introduces Windows programming, animation and the rendering of 2D sprite images.

Advanced Game Engine Programming INT2007

This subject will introduce students to OpenGL and DirectX, a collection of application programming interfaces (APIs) for handling tasks related to multimedia, namely game programming and video. Students will learn elementary 3D techniques, including lighting, texturing, alpha blending and stencilling. Finally, students will learn how to use a graphic framework and the High-Level Shading Language, commonly used in 3D game programming for simple 3D games, become familiar with programming fundamentals and most importantly develop their problem solving skills.

INDUSTRY PREPARATION

Professional Internship Program SPC3038

AIT's Professional Internship Program (PIP) aligns students with professional industry organisations where they will work to develop relevant skills oriented to their chosen Careers.

The program aims to enhance the contextual capabilities, skills and knowledge students have developed throughout their course. It will provide an opportunity for students to apply what they know, be mentored, receive feedback and seek opportunities for development in a real-world setting, as well as be exposed to emerging trends and technology that impact their industry. This program can only be undertaken in the final term of the associated qualification. Prior to commencement, AIT will determine a suitable placement company based on the student's individual needs, to ensure their supervision, safety and wellbeing are adequate.



ACADEMIC CALENDAR



VISIT OUR WEBSITE

Student Work: Burn the Village,
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