Information Technology

Mobile App Development

Diploma
Associate Degree
Bachelor Degree

Term 1 Subjects

Introduction to Web (INT1012)

This course is an important introduction to the essential languages used in web development. It will focus on HTML, CSS and introduction to jQuery as they relate to modern practices in web development. Students will be engaged in answering basic questions like - What are the languages, when to use them, and why? 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 jQuery is used for basic interactivity. This course will start you on your way to becoming a front-end developer, and help you build your portfolio with a skill-set needed for many positions in this fast developing area of IT.

Intro to Programming I (PRG1060)

This practical subject complements the knowledge and skills obtained by students in their 'Foundation Programming' subject, or similar studies. Students will learn how to use C++ as the programming language to create variables, constants, and functions, to build small programs. This subject covers the fundamental concepts required by all programmers.

Foundation Programming (CMP1041)

This theory subject provides essential knowledge and understanding of the conceptualisation and techniques of programming and software design. It introduces techniques used in designing algorithms for later implementing as computer programs using a high-level, structured programming language. Emphasis is placed on real world processing concepts. Students will learn about the use of structured tools like pseudocodes and flowcharting, so they will learn how to make logical decisions, and understand loops and arrays. No initial knowledge of programming is required. In the latter part of the subject, students will get to understand the concepts of debugging and testing techniques, and object-oriented programming.

Information Systems (CMP1042)

In this subject, students will learn how organisations use information systems to operate in the fast-developing world. Students will learn the importance of information systems which now support all areas, such as marketing, operations, production, accounting and finance, and human resources. You will be expected to discover opportunities to use information systems and participate in the design of business solutions. Students will be challenged to identify and evaluate a range of information systems options. Students will learn to identify and address the ethical impact of information systems on clients, suppliers, business associates, and employees. A solid grounding in information systems is essential in today's high-tech world. Students will get to clearly understand what information systems can and cannot do, and use information systems to create value, clarity and productivity.

Term 2 Subjects

Database Systems (PRG1048)

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

Intro to Programming II (PRG1061)

This subject builds on the knowledge and skills students obtained in Programming I. Students will learn how to create and use classes to build object-oriented programs using C++ to implement real world entities. This subject covers objected-oriented programming concepts including: classes, objects, interfaces, encapsulation, inheritance, polymorphism, special member functions, declarations and statements, standard libraries, and exception handling.

Discrete Mathematics (PRG1010)

Discrete Mathematics is an important theory subject which will introduces you to a wide range of mathematical terminology and tools that have particular use in Computer Science. Emphasis is placed on reasoned argument and clarity of exposition as well as algebraic and computational skills. Topics covered include number systems, sets, bigO notation, propositional logic, graphs, sorting methods, matrices, and functions and relations.

Introduction to Software Engineering (CMP1043)

This subject provides students with the skills and knowledge to design soundly 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 in software design, and will have opportunities to use UML in designing software while developing further understanding of software process models. The role of a software engineer and the software development lifecycle will also be covered.

DIPLOMA EXIT – Students may graduate at this point with a Diploma of Information Technology (Mobile App Development)

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Term 3 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, like internet, 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. In tutorial/lab sessions, students will also be familiarised with network tools.

JAVA (PRG1049)

This subject continues the examination of object-oriented programming using Java. It introduces a graphical user interface development using this programming language.

Students learn the fundamental principles of interface development and learn to apply these in developing a program with a graphical interface. This course also examines database connectivity and network application development where Java is used.

Digital Project Management (INT1050)

This subject teaches 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 provides a detailed examination of the System Development Life Cycle (SDLC). It introduces the basic principles of software requirements, including analysis and design. Students will learn to establish a requirement analysis and to design templates into which more detailed material regarding specific aspects of requirements and design techniques and issues will fit. They will apply their skills and knowledge of understanding requirements, a range of modelling techniques, methodologies and approaches. Emphasis is placed on the tools and techniques that a systems analyst would use to analyse, design, and document an information system using traditional and object-oriented approaches. The importance of various skills which systems analysts need, including communication and problem solving, are emphasised.

Term 4 Subjects

Interface & Experience Design (UX/UI) (DES1060)

This subject teaches students how to design, implement and evaluate user interfaces to meet predefined quality characteristics of functionality. They 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 as required. Students apply all that they have learned to develop and implement a user interface for a business system. Students will be introduced to HTML and CMS.

Enterprise Systems (CMP1046)

This subject introduces current enterprise computing concepts, including challenges and opportunities. It describes the main components of the enterprise computing environment and its component-based and service-based oriented architectures. It also enables students to appreciate and understand the differences between the various cloud platforms. This subject focuses on the key components of enterprise applications and their implementation in .NET. Topics include enterprise application design and implementation as well as services architecture. Students will study the complexity of enterprise computing environments and their new evolving technologies, and will learn development techniques for implementing enterprise applications. This subject focuses on basic standards, architectures and technologies used in enterprise computing, the key components of enterprise applications and their implementation in .NET technology. The language used is this subject is C#.

Mobile Apps Android (PRG1050)

This subject extends knowledge on mobile device application development. It covers advanced technologies for the mobile devices application. This subject addresses Android for mobile devices and how to implement an effective user interface for a mobile application by applying software engineering techniques and an advanced software development methodology in practice. Topics include the mobile application framework, Pattern and Human Interface design, as well as App Design and Store.

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.

ASSOCIATE DEGREE EXIT – Students may graduate at this point with an Associate Degree in Information Technology (Mobile App Development)

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Term 5 Subjects

Mobile Apps iOS PRG3051

This subject extends knowledge on mobile device application development. It covers advanced technologies for mobile device applications. This subject addresses iOS for mobile devices. Students will learn how to implement an effective user interface for mobile applications by applying a software engineering technique and advanced software development methodology in practice. Topics include mobile application framework, Pattern and Human Interface design, as well at the App Design and Store.

Cross-Platform Apps (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.

Advanced Studio 1 (INT3506)

This subject is the first part of a two term project. The 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. Students, in consultation with the Dean of Studies, may form a cross-disciplinary team with students enrolled in Advanced Studio in the Bachelor of Interactive Media. It is strongly recommended that this project is only taken in the 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 1

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

Term 6 Subjects

Data-Driven Apps (INT3053)

In an age where data is a valuable commodity, the ability to create and maintain systems that collect and utilise information is an important skill. This subject will expand on the backend development skills that students have gained in previous subjects, and extend and apply these skills. In this subject students will create a simple API and a data-driven mobile application.

External Project SPC3039 or MAD Project (PRO3055)

External Project allows students to 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 have successfully completed Advanced Studio 1 to enrol in this subject. In Advanced Studio 1, students select topics and complete the research and analysis components of the project. In Advanced Studio 2, students continue with their projects from Advanced Studio 1, and complete their projects with low level design, implementation, prototype and a final presentation adhering to a timeline and plan set out in Advanced Studio 1. To prepare students for career roles in their focus area, the whole project encourages students to successfully complete a project of their own, following industry processes and standards.

Elective 2

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

BACHELOR OF INFORMATION TECHNOLOGY– Students will graduate at this point with a Bachelor Degree in Information Technology (Mobile App Development)

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Bachelor of Information Technology (Mobile App Design)

Course Structure

T1	Introduction to Web INT1012	Intro to Programming I PRG1060	Foundation Programming CMP1041	Information Systems CMP1042
T2	Database Systems PRG1048	Intro to Programming II PRG1061	Discrete Mathematics PRG1010	Introduction to Software Engineering CMP1043

Diploma Exit

T3	Foundation networks CMP3044	JAVA PRG1049	Digital Project Management INT1050	Systems Analysis and Design CMP3045
T4	Interface & Experience Design (UX/UI) DES1060	Enterprise Systems CMP1046	Mobile Apps Android PRG1050	Advanced Web INT1059

Associate Degree Exit

T5	Elective 1	Mobile Apps iOS PRG3051	Cross-Platform apps INT3052	Advanced Studio 1 INT3506
T6	Elective 2	Data-Driven Apps INT3053	External Project SPC3039 or MAD Project PRO3055	Advanced Studio 2 INT3516

Bachelor Degree Completion

Electives:

Electives are subject to availability and certain electives have pre-requisites.

Miscellaneous
Internship SPC3038

Programming Related

Game Related
Game dev INT1029
Adv.game dev INT3030

Comp Sci Related
Design Related Digital Images DES1013