



Diploma of Information Technology (Higher Education)

The Diploma of Information Technology aims to direct learners into IT professionals who are able to integrate both IT knowledge and business knowledge to service any areas of industry and be able to keep pace with the dynamic changes in IT technology and needs of the industry.

This course is based on first year of Bachelor of Information Technology of the University of Ballarat, and is designed to provide graduates with an alternative pathway as well as a recognised diploma and background in a dynamic and competitive Information Technology industry. The underlying focus is on the fundamental concepts of programming, database management, information systems and multimedia.

Entry requirements: successful completion of Year 12, or equivalent

English requirements: equivalent IELTS 5.5

Course fees: A\$6,000 per semester

Course duration: 2 semesters

Course outline:

Semester 1		Semester 2	
IT205	Multimedia Systems	IT305	The Internet and WWW
IT210	Business Information Systems	IT310	Database Fundamentals
IT220	Business Communication	IT315	Java Programming: OO concepts
IT225	Operating Systems	Elective (Business unit from Faculty of Business)	

Elective (one business unit chosen from the following)

- MIT501 Management Principles
- MIT502 Introduction to Human Resource Management
- MIT503 Accounting and Business Decisions
- MIT504 Introduction to Marketing
- MIT506 Foundations of Law
- MIT507 Business Macroeconomics
- MIT508 Business Microeconomics

Note:

- Not all electives will be offered each semester.
- All units are subject change as current technology evolves.
- Units are subject to change depending upon demand and number of students
- This information was correct at the time of printing – 10 May 2004.

Career opportunities:

Graduates would expect to work in any area of IT industry, commerce or government as programmer and/or developers of distributed systems and multimedia technology.

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Unit summaries:**IT205 Multimedia Systems**

Subject title	MULTIMEDIA SYSTEMS
Subject/ unit code	IT205
Statement of learning outcomes	This unit is designed to develop student's abilities to communicate effectively using appropriate technology and to solve problems related to information and communication technology, whilst providing an overview of the field of Interactive Multimedia as implemented via CD-ROM or Internet technologies.
Prerequisite subjects	Students are expected to have a basic working computing skill.
Co requisite subjects	Nil
Subject content	<p>Multimedia: What is multimedia? Uses and applications of multimedia. Multimedia and society. Review of a range of existing multimedia technologies, products and web sites. Hardware and software requirements. Delivery modes, bandwidth and issues of multimedia over the Internet. An overview of file formats and compression techniques for graphics, sound and video. Aspects of design – storyboarding and flowcharting, assessing the audience. Use of a presentation tool to create a small multimedia application. Use of a simple web-authoring tool to create a web page. Legal issues, censorship and copyright.</p> <p>Communication: Developing effective communication. The use of various modes of communication. Electronic communication (such as e-mail, interactive applications, multimedia applications, etc.), effectiveness of electronic communication (including advantages and disadvantages). Writing academic/scientific reports (including types of reports, plagiarism, citing and referencing). Oral presentation skills. Using multimedia to enhance communication.</p>

IT210 Business Information Systems

Subject title	BUSINESS INFORMATION SYSTEMS
Subject/ unit code	IT210
Statement of learning outcomes	<p>This unit provides an introduction to business information systems and explores database and spreadsheet skills in depth. It should thus provide significant support, in particular, for students studying accounting and other business subjects.</p> <p>After this unit students should have: Knowledge of the way in which Information Systems are analysed, designed and implemented; The ability to design a solution to particular information problems; The skills to implement this solution using software tools.</p>
Prerequisite subjects	Students are expected to have a basic working computing skill.
Co requisite subjects	Nil
Subject content	<p>The course will cover the following content:</p> <ul style="list-style-type: none"> • Business needs for information • Components of information systems • Problem Analysis • Designing solutions with software tools

	<ul style="list-style-type: none"> • Decision support modelling • Interface design • Controlling and automating • Software cycles and safeguards • Management support systems
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IT220 Business Communication

Subject title	BUSINESS COMMUNICATION
Subject/ unit code	IT220
Statement of learning outcomes	This unit introduces students to a range of technical communication concepts and techniques used in academic studies and professional contexts, in particular the information and communications technology sector.
Prerequisite subjects	Nil
Co requisite subjects	Nil
Subject content	Key concepts and techniques are covered systematically and the philosophy of communication of technical aspects is addressed. This includes topics such as communication context, conveying a message, editing skills, oral presentations, collaborative writing, academic writing, referencing, plagiarism, cultural considerations, different styles of writing, and ethical responsibility.

IT225 Operating Systems

Subject title	OPERATING SYSTEMS
Subject/ unit code	IT225
Statement of learning outcomes	This unit is intended to acquaint provides students with an understanding of basic computer hardware organisation, operating systems, and the Internet. Students will be provided with an appropriate set of skills and knowledge for use in their subsequent computing studies. The student is introduced to the basic features and uses of operating systems, to the properties of a typical graphical user interface (GUI), to basic uses of the Internet, and to the UNIX operating system. Common hardware configurations will also be discussed.
Prerequisite subjects	Students are expected to have a basic working computing skill.
Co requisite subjects	Nil
Subject content	<p>The course will cover the following content:</p> <p>Basic computer skills: Accessing a network, email, ftp, telnet, searching and retrieving using a web browser, basic Windows skills.</p> <p>Hardware: Components of a typical computer system; processing components of a computer (CPU, memory, buses); peripheral hardware (input, output, and storage devices); basics of the binary number system and its importance to computers.</p> <p>Operating Systems: What is an operating system? study of operating system services (command processing, scheduling, file management, memory management, resource allocation); booting up; history of operating systems; brief overview of mainframe, minicomputer and network operating systems; explanations of terms such as multi-user,</p>

	<p>multitasking, pre-emptive, batch, interactive.</p> <p>Operating system components: Memory manager, file manager, hierarchical file structure (files and directories); naming conventions; locations (paths); file types; storage on and retrieval from storage media, processor manager, device manager; interactions among the components and with the user interface.</p> <p>Graphical User Interface: A typical GUI system (such as Windows 95); navigating, using and configuring, a GUI system; system drivers; system registry; boot-up process; file system specifics; on-line help; features of the particular GUI system (such as Object Linking and Embedding in Windows 95 and other common utility programs).</p> <p>UNIX: Basic concepts of UNIX (multi-user, multitasking, pre-emptive); brief history; command line interface; common commands and utility programs (including a text editor such as vi or pico); file system; file structure (types of files, filenames, attributes, permissions, inodes, links); shells and common shell functionality (built-in commands, input/output redirection, piping, wildcards, local and environment variables, arguments, filtering, background processing); shell scripts.</p>
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IT305 The Internet and WWW

Subject title	THE INTERNET AND WWW
Subject/ unit code	IT305
Statement of learning outcomes	This unit provides focus on the WWW as a key technological platform and tries to understand its essential features and tools. Students will be exposed to languages such as HTML and JavaScript to discover the importance of standards and scripting languages on the web. They will also be using web development tools such as DreamWeaver and Fireworks to create innovative and compelling web sites. Students will be expected to study a variety of design techniques and software engineering principles that are required for good web site design.
Prerequisite subjects	IT205 Multimedia Systems
Co requisite subjects	Nil
Subject content	<p>Topics covered in this unit are</p> <ul style="list-style-type: none"> • The past, present and future of the Internet. • Introduction to HTML and scripting languages. • Cascading Stylesheets • Internet Service Providers, Internet Law and Regulation. • Site Design and Naming Conventions • Web site design techniques. • Web page layout – structured layout versus free form. • Evaluating your audience. • What to avoid on your web site. • Learning and using a Web Authoring Tool. • Brainstorming content. • Storyboarding and conception. • How to create a detailed planning document • Security issues. • Fonts and graphic appeal. • Test and Quality Assurance (QA) of your web site.

IT310 Database Fundamentals

Subject title	DATABASE FUNDAMENTALS
Subject/ unit code	IT310
Statement of learning outcomes	This unit introduces students to the capabilities and advantages of database management systems. It involves learning the general features of such software and using an actual system for a practical application.
Prerequisite subjects	IT210 Business Information System or IT225 Operating System or equivalent
Co requisite subjects	Nil
Subject content	<p>Database: Introduction to database management systems, advantages and disadvantages of the database approach. Object oriented, relational, network and hierarchical databases.</p> <p>Data modelling: Modelling concepts, Entity-relation model, Conversion of Entity-relation model to relational model.</p> <p>Information systems: Database systems in the context of information systems. Types of information systems. Organisation and management theories.</p> <p>Relational model: Primary keys, Foreign keys, Referential integrity, Relational algebra, Structured query language, Normalisation.</p> <p>Visual design: Human computer interaction fundamentals, visual design standards.</p> <p>Transaction processing: Concurrency control, locking and deadlocks, time stamping, backup and recovery.</p>

IT315 Java Programming: OO Concepts

Subject title	JAVA PROGRAMMING: OO CONCEPTS
Subject/ unit code	IT315
Statement of learning outcomes	The unit introduces students to the fundamental techniques involved in programming using an object-oriented language. An introduction to general object oriented concepts is given; including how object oriented techniques may help in program development and software reuse. Specifically covered are classes and objects, inheritance and encapsulation. The different roles and responsibilities of the class user and the class designer are clearly identified. The characteristics of the language are identified, in particular identifying the language constructs that are commonly available. Approaches for identifying and removing programming errors are covered. An object-oriented programming interface (including object testing facilities, editor, inspector and debugger) is covered in detail.
Prerequisite subjects	IT225 Operating Systems
Co requisite subjects	Nil
Subject content	<p>The course will cover the following contents:</p> <ul style="list-style-type: none"> • Introduction to classes and objects. • Application development environment. • Class user vs class designer/developer. • Understanding classes as class user. Using application development environment to investigate classes. Objects and memory. Get and set methods. Non-object data types.

	<ul style="list-style-type: none"> • Application programming interface (API). • More complex classes. Introduction to inheritance. Class hierarchy. • Test class. Developing test code. Declarations. Breakpoints. Debugger. Inspector. Array class. Control structures: sequence, repetition and selection. • Language operators. Operator precedence. Evaluating a class. Algorithm development. • Class designer/developer. Class diagrams. Developing classes. Iterative development style. Class constants. Logical operators. • Further iterative class development. Applications utilising classes. • Executable file. Parameter passing.
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MIT501 Management Principles

Subject title:	MANAGEMENT PRINCIPLES
Subject/ unit code:	MIT501
Statement of learning outcomes	<p>At the end of the unit students will be able to understand and apply basic principles and theories relating to management and organisations. This unit explores the process of management and the role of the manager in contributing to the long-term performance and viability of organisations.</p> <p>Completing this unit will enable students to develop sound skills in research and information gathering as well as a range of strategies for learning about management.</p>
Prerequisite subjects:	Nil
Co requisite subjects:	Nil
Subject content:	<p>The content of this unit will address the following questions:</p> <ul style="list-style-type: none"> • What is management? • What are organisations? • What do managers do? • planning • organising • leading • controlling • How do organisations function? • What are the challenges for management now and what will they be in the future?

MIT502 Introduction to Human Resource Management

Subject title:	INTRODUCTION TO HUMAN RESOURCE MANAGEMENT
Subject/ unit code:	MIT502
Statement of learning outcomes	<p>This unit is designed to enable students to examine the role of Human Resource Management (HRM) in contributing to the long term performance and viability of organisations. Students will be provided with an understanding of the functions of HRM and how HRM integrates and interrelates with other functions of management. The unit content will establish a structured framework for further specialist study in HRM.</p>
Prerequisite subjects:	Nil
Co requisite subjects:	Nil
Subject content:	<p>The content of this unit will include the following topics:</p> <ul style="list-style-type: none"> • HRM policy, objectives, strategy and activities • Job design and job analysis

	<ul style="list-style-type: none"> • Human Resource Planning • Recruitment and selection • Performance appraisal and performance management • Human Resource Development • Compensation, incentives and benefits systems • Industrial Relations • Health, Safety, EEO and HR equity • HRM in a changing world
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MIT503 Accounting & Business Decisions

Subject title:	ACCOUNTING & BUSINESS DECISIONS
Subject/ unit code:	MIT503
Statement of learning outcomes	<p>MIT503 is an introductory unit that focuses on the use of accounting information in making business decisions. The unit assumes no prior knowledge of accounting and it is designed to meet the needs of two broad categories of students. For students intending to pursue a career in accounting the unit will provide them with fundamental accounting knowledge and skills which, as well as being of use in their own right, will provide a foundation for more advanced accounting studies. For students intending to pursue a career in a field other than accounting (for example, in Business Computing, Economics, Management, Tourism, Marketing or Science) the unit will provide them with fundamental accounting knowledge and skills, which will be of value in a wide variety of professional roles.</p> <p>This unit is designed to introduce students to the nature and function of accounting, provide an understanding of basic accounting processes and develop skill in using accounting information in business decision making.</p>
Prerequisite subjects:	Nil
Co requisite subjects:	Nil
Subject content:	<p>The following topics will be included in this subject:</p> <ul style="list-style-type: none"> • an introduction to the nature and function of accounting • forms of business organisation and sources of finance • transaction analysis and financial reports; recognising, measuring, recording and reporting accounting events • regulation of financial reports • analysis of financial reports; profitability, liquidity and long-term solvency • accounting events and management decision making; cost-volume-profit analysis, identifying relevant data, long-term decisions using net present value techniques

MIT504 Introduction to Marketing

Subject title:	INTRODUCTION TO MARKETING
Subject/ unit code:	MIT504
Statement of learning outcomes	<p>The objective of this unit is to introduce the student to the fundamental principles and practices of marketing and to develop the student's ability in understanding and using marketing processes and techniques. The development of the student's research, analytical, writing and presentation skills will also be emphasised in this unit.</p>
Prerequisite subjects:	Nil
Co requisite subjects:	Nil

Subject content:	<p>This unit will consist of five general topics:</p> <p>An understanding of the marketing concept and its evolution including the notion of customer satisfaction and societal marketing</p> <p>An analysis of marketing opportunities, methods and techniques in market research and an overview of consumer buyer behaviour.</p> <p>The selection of target markets: including the measurement and forecast of demand, principles of market segmentation, targeting and market positioning.</p> <p>Development of the marketing mix: a review of the various components of the marketing mix and their role in the development of a marketing plan.</p> <p>The design, implementation and control of marketing strategies in order to achieve a competitive market advantage.</p>
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MIT506 Fundamentals of Law

Subject title:	FUNDAMENTALS OF LAW
Subject/ unit code:	MIT506
Statement of learning outcomes	The Fundamentals of Law unit has been designed to help students appreciate the importance and relevance of law to the business environment; to explore the principles of contract and negligence which underpin business activity; and to enhance students' analytical and problem-solving skills, which are essential skills in any undertaking.
Prerequisite subjects:	Nil
Co requisite subjects:	Nil
Subject content:	<p>The course will cover the following content:</p> <ul style="list-style-type: none"> • Introduction to law and the legal framework • Tort and Negligence • Property • Business structure • Contract law • The Trade Practices Act • Intellectual Property and Copyright

MIT507 Business Macroeconomics

Subject title:	BUSINESS MACROECONOMICS
Subject/ unit code:	MIT507
Statement of Learning outcomes	This unit is a prerequisite for most second and third year Economics units. The unit aims to provide students with the foundations for greater understanding of economic issues and problems, and for further studies in economics.
Prerequisite subjects:	Nil
Co requisite subjects:	Nil
Subject content:	<p>The course will cover the following content:</p> <ul style="list-style-type: none"> • foundations of economics and economics thinking • economic problem of scarcity, choice and opportunity cost • economic indicators, national accounts, circular flows

	<ul style="list-style-type: none"> • business cycle and the unemployment-inflation trade-off • role of government in economic stabilisation • theories of income determination • money and banking; role of the Reserve Bank of Australia, money creation • economic policies and policy mix
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MIT508 Business Microeconomics

Subject title:	BUSINESS MICROECONOMICS
Subject/ unit code:	MIT508
Statement of learning outcomes	This unit is a prerequisite for most second and third year Economics units. The unit aims to provide students with the foundations for greater understanding of economic issues and problems, and for further studies in economics.
Prerequisite subjects:	Nil
Co requisite subjects:	Nil
Subject content:	<p>The course will cover the following content:</p> <ul style="list-style-type: none"> • the conceptual framework of economics as an area of knowledge • microeconomic methods for understanding business decisions and economic policy • the formation of microeconomic policies • applying microeconomics to understand the choices that are made in markets and the implication of these choices for resource allocation and income distribution • government policy as a means for overcoming inefficiencies and market failure • case studies in microeconomics policy