

**Evolution of a Discipline: The History of the Formation
and Growth of the Information Systems Discipline in
Victorian Universities from 1960 to 2011**

Volume 2 - Appendices

by

**Martin Atchison
BEng(Melb), MUP(Melb)**

Thesis
submitted to Monash University
for the degree of

Doctor of Philosophy

Faculty of Information Technology

Monash University

March 2013

Table of Contents

Appendix A	Major studies of the nature of IS academic literature	A1
Appendix B	Outline of principal data sources used in the study	B1
Appendix C	Data relating to the development of applied computing and IS programs at Victorian tertiary institutions from 1960-1990	C1
Appendix D	Data relating to the development of applied computing and IS programs at Victorian tertiary institutions from 1990-1996	D1
Appendix E	Data relating to the development of applied computing and IT programs at Victorian tertiary institutions from 1997-2011	E1
Appendix F	Data relating to the development of IS programs at Monash University	F1

Appendix A: Examples of major studies of the nature of IS academic literature, 1981-2000

Reference	Time Period for Analysis	Publications Covered in Analysis	No of Articles Analysed	Basis for Article Selection for Analysis	Focus of Analysis
Hamilton & Ives (1982)	1970-79	MISQ; I&M; DB; CACM; CS; IBMSJ; TDBS; DS; MS; AR; JA; AMJ; AMR; HBR; SMR	532	All IS-related articles	Number, source and currency of references; Most often cited references; Reference disciplines
Culnan & Swanson (1986)	1980-84	MISQ; I&M; ICIS; CACM; ASQ; AMJ; AMR	271	All IS-related articles	Patterns of citations of IS articles to other IS articles and to articles from other reference disciplines
Culnan (1987)	1980-85	All journals covered by Social Science Citation Index	Not applicable	All articles which cite research work by selected key IS researchers	Major themes of IS research
Farhoomand (1987)	1977-1985	MISQ; I&M; SOS; CACM; HBR; MS	536	All IS-related articles	Topics in IS research; IS research methods; Trends in IS topics and research methods
Lyytinen (1987)	The years up to 1987	All published literature	Not given;	Selection of key articles seen as embodying different perspectives on IS	Perspectives of the IS discipline and its key components
Barki et al (1988) updated in Barki et al (1993)	1977-87 and 1987-92	I&M; MISQ; MS; CACM; DS	Not given	All IS-related articles	Keywords used to classify primary research themes
Grover & Sabherwal (1989)	1977-86	MISQ; I&M; ICIS; DB	523	Selected articles relating to key IS executive issues	Comparison between priority given to themes in published IS research and issues

					of concern to IS executives
Orlikowski & Baroudi (1991)	1983-88	MISQ; ICIS; CACM; MS	155	All research articles (ie excluding conceptual and framework articles)	Major research themes; Research methods; Philosophical orientation (epistemology) of research
Alavi & Carlson (1992)	1968-88	MISQ; DB; DS; SMR; CACM; HBR; MS; JMIS	908	All IS-related articles	Major research topics and themes; Research methods;
Cheon et al (1993)	1980-89	I&M; MISQ; JMIS; CACM; MS; DS	463	All articles reporting on empirical research	Trends in the choice of topics and research methods in empirical IS research
Grover et al (1993)	1980-89	MISQ; JMIS; I&M; ICIS; CACM; CS; MS; DS; AMJ	227	All articles describing results of survey-based research	Topics addressed by survey-based IS research; Methodological rigour of survey-based research on IS issues
Swanson & Ramiller (1993)	1987-92	ISR	397	All IS-related articles submitted to the ISR journal (ie not just those published)	Major research topics and themes
Holsapple et al (1993)	1987-91	I&M; MISQ; JMIS; CACM; DSS	Not given	All articles	Source journals of cited references
Palvia et al (1996)	1989-93	MISQ; JMIS; I&M; ISR; CACM; MS; DS; HBR; SMR	630	All IS-related articles	Main issues addressed in IS research; Comparison between themes in published IS research and issues of concern to IS executives
Claver et al (2000)	1981-97	MISQ; I&M	1121	All articles	Major research topics and themes; Research methods;

Appendix B: Outline of principal data sources used in the study

Contents

Table B1	Summary of key data sources	B2
B2	Description of VTAC Admissions processes and data	B4

Table B1: Summary of Key Data Sources

Data Source	Data Items	Description and comments on completeness and accuracy
University Course Guides published by the Victorian Universities Admissions Committee (VUAC) and its successor, the Victorian Tertiary Admissions Centre (VTAC)	<ul style="list-style-type: none"> • Academic programs in computing and IS offered by higher education institutions • Descriptions of academic program content and major study areas 	<ul style="list-style-type: none"> • These are the official guides which provide the main means for application for admission to places in undergraduate programs in higher education institutions. • The guides initially included coverage only of the programs offered at universities, but from 1972 began to extend this to include other higher education institutions. From 1975 the guides covered programs at virtually all higher education institutions. • The guides can be regarded as extremely reliable indicators of the undergraduate academic programs offered by each university. The guides' lists of programs and their outlines of their content are provided by the universities, and can therefore be taken as reliable indicators of program offerings and content.
	<ul style="list-style-type: none"> • Admission requirements and entry scores for program applicants • Student enrolments and entry cut-off scores 	<ul style="list-style-type: none"> • From the late 1990s onwards, the VTAC guides included data about the intakes for each degree program from the previous year's admissions records, and the clearly-in entry cut-off for each program. • Data on clearly-in entry cut-off were published from 1998; data on enrolment numbers available from 2001 • These data are generated from the official VTAC records of tertiary admissions, and can therefore be taken as extremely accurate.
Institutional handbooks published by universities and other higher education institutions	<ul style="list-style-type: none"> • University structures – faculties, schools, departments and staffing • Academic programs – objectives and structures • Academic curricula – units, topics and descriptions of nature of unit content 	<ul style="list-style-type: none"> • Institutional handbooks provide the official guide to the structure of the institution, its academic programs, their objectives, curriculum content, and requirements for entry. • Universities have a statutory responsibility to publish the basic facts of their course and unit offerings each year for the benefit of students, and the published handbook description constitutes a legally binding agreement between the university and student about the program of study. Therefore, at a broad level, handbook details about programs and curricula can be assumed to be accurate.

		<ul style="list-style-type: none"> • Although they can be depended on as reasonably accurate at the broad level, they suffer from two problems at the detailed level. Firstly, they sometime act for marketing as well as informational purposes, which means their descriptions may sometimes embellish what a program or unit really offers. Secondly, they are often vague or lacking in detail about what a course or unit offers. This was particularly the case in the early years of the study, especially in the small CAEs; their handbook descriptions were often very brief. This problem did create significant difficulties for the study in identifying differences in the emphasis of a unit's content • The time delays involved in collating, publishing and distributing printed university handbooks in the pre-web era meant that heir content were often out-of-date. These errors may affect the timing of program or unit commencements or closures by up to a year, but in the context of the study this was felt to be a relatively minor problem
VTAC statistical records of student applications for tertiary places and enrolments	<ul style="list-style-type: none"> • Applicants and preferences for academic programs • Enrolments in academic programs • Measures of previous academic performance of applicants and enrolled students in each program 	<ul style="list-style-type: none"> • Repository of data on applications for tertiary courses offered through VTAC for all domestic students and for international students who have completed their secondary schooling in Australia. Provides detailed data for each student, showing their previous academic record, the academic programs for which they expressed a preference in the application process, the program in which they were offered a place and their acceptance or rejection of that offered place. • Data are available through VTAC from 1991 to present day. • It is VTAC's statutory responsibility to collect and maintain these records on behalf of both government and the educational institutions, which means that they are extremely reliable and accurate. Its most significant shortcoming is that it is restricted to domestic students (and international students who do secondary schooling in Victoria) and does not include international student applicants whose previous studies were done outside Australia. • Comparison of student performances over time was made difficult by changes in the system of assessment for secondary school students in the

		<p>early 1990s. A conversion system was used to adjust the scores, but this may have introduced some minor inconsistencies when making comparisons of student performance across year levels. The level of error caused was felt to be minor in the context of the study.</p> <ul style="list-style-type: none"> • The most significant issue in regard to the use of VTAC data is that it imposes strict requirements for confidentiality in the publication of analyses of it. Nothing must be published at a level of disaggregation which enables identification of information about a specific institution or its programs. In accordance with these rules the study was required to use aggregate data for groups of institutions, and could not do direct comparisons between specific programs (except, of course where VTAC itself published data in the VTAC Guide, as indicated above).
Monash University archives	<ul style="list-style-type: none"> • Reports, correspondence and memos relating to the Monash case study 	<ul style="list-style-type: none"> • The Monash archives provided access to some internal documents, reports and memos which assisted with the Monash case study. These archival records are maintained and vetted by the Monash Archives Department, and considered to be a reliable guide to events at the university
Monash University committee minutes	<ul style="list-style-type: none"> • Records of meetings held by departments, university and faculty committees and Faculty Boards 	<ul style="list-style-type: none"> • These are the official Monash records of proceedings and outcome of official university-sanctioned meetings. At a basic level, they are believed to be a reliable source of information about the agendas and decisions which were made at these meetings

B2: Outline of VTAC Admissions Processes and Data

For the purposes of the study, three key measures were used for the assessment of levels of student demand for academic programs – the number of student who applied for places, the number who actually enrolled and the ‘quality’ of those students in terms of their demonstrated academic performance. The nature of the tertiary applications and admissions process in Victoria determined what data were available for this purpose. This section briefly outlines the admissions process, and the data which are used and generated by it.

Since the time of the Dawkins reforms, the Victorian Tertiary Admissions Centre (VTAC) has operated as the central ‘clearing house’ for applications and admissions for virtually all tertiary institutions. VTAC itself has no say in the admissions decisions made by any university, but simply provides the administrative infrastructure needed to support them. It has a large and sophisticated computer-based system to support the process, which includes all the data about applications and admissions which was needed for this study. VTAC regularly uses this data to publish its own summaries and analyses of applications and admissions across programs and institutions. It also allows the universities to have access to its raw data files of all applications and admissions, to enable them to carry out their own analyses, subject to a strict set of protocols to protect the privacy of data for individual applicants and institutions. This study has used a mixture of these two sources, using the VTAC-published data as the main source, but supplementing it with analysis of the raw data files to help confirm or refine the findings shown in the published data.

The VTAC-managed admissions system is simple in concept, but very complex in its details. The following description gives only a broad outline which omits many of the details, meaning that it is something of a simplification of the applications and admissions processes. More detailed explanation of some of the subtleties of these processes can be found on the VTAC web site at www.vtac.edu.au, or in James et al (2009). The description given below aims only to give an understanding of the system sufficient to explain the key measures of student demand which are used in the analysis in the study.

Under the VTAC system, the applications process begins with the annual publication of the VTAC guide, which includes details of the undergraduate academic programs offered by all tertiary institutions. Although VTAC takes responsibility for the publication of the guide and the format in which its information is presented, the institutions themselves provide the content in accordance with VTAC guidelines. Therefore the information in the guide comprises the institutions’ representations of their academic programs. For each program the guide provides a brief outline of its content and admission requirements, together with a list of key words to describe its major areas of study. These key words are used as an index to help students search for programs according to their areas of interest. VTAC assigns each degree program with a unique code, which acts as the main identifier which students use when making their applications. The guide is made available to all senior secondary school students and anyone else who wishes to apply for a university undergraduate place.

Applicants submit their applications for admission to university through VTAC, nominating the programs in which they want a place. Each applicant may apply for places in more than one program, but must rank these sequentially in order of preference.

Applicants were restricted to eight preferences in the early 1990s, but this was later increased to twelve and then thirteen. For the purposes of this study it was felt that each applicant's first four preferences would be a sufficient indicator of their main areas of interest; therefore the study confined its analysis to these preferences. The first important measure of the popularity of a program was calculated from the raw number of applicants who included it as one of their first four preferences.

The final list of applicants and their preferences is the key input to the allocation of places in programs. This is a competitive process in which the limited number of places available in each academic program are allocated among the applicants who have indicated a preference for that program. Where the number of eligible applicants for a program exceeds the number of available places, a ranking system is used to determine the order in which applicants are offered a place. The allocation process is designed to ensure that every applicant is offered admission to their highest possible preferred program for which a place is available (provided they meet the entry requirements for the program). That is, the system initially tries to allocate each applicant to their highest preference program, but if all places in that program have been allocated to higher-ranked applicants, it then goes to the applicant's second preference, and so on down through the applicant's preferences until a place can be found. Given that the number of eligible applicants for any program will almost always exceed the number of places available for admission to that program, the process by which its applicants are ranked in order for entry is a crucial component of the system.

In the first step in the ranking process, all applicants are divided into two broad categories, known as V-types and E-types. V-types are students who are applying for admission on the basis of their academic performance in Year 12, their final year of secondary school; they normally comprise the cast majority of applicants. E-types are applicants whose claims for admission are based on some other form of evidence of academic performance such as previous studies in another institution, such as a Tafe college or another university. (Both these categories are sub-divided further but these details are not important here). There is no difference between the two categories in terms of their eligibility for places in programs, but different methods are used for each category to determine the merits of the applicant's previous academic performance, and arrive at a single ranked list which includes both the V-type and E-type applicants.

For V-types, in all but a few cases the key measure of academic performance is a single number between 1 and 100, which is a student ranking calculated by VTAC for each V-type applicant. This ranking was initially called the TER (Tertiary Entrance Rank), and then changed to ENTER (Equivalent National Tertiary Entrance Rank). It is calculated for each student on the basis of their Year 12 results at secondary school. The formula from which it is derived is based on a process which weights, standardises and aggregates the results which a Year 12 student has achieved in all their studies in their final year of schooling (for a detailed description, see <http://www.vtac.edu.au/pdf/publications/enterbook.pdf>).

The effect of this formula is claimed to provide a standardised measure of each student's performance in relation to that of all other Year 12 students in that year. For example, a student with an ENTER of 85 is judged to have performed better than 85% of all other Year 12 students in that year. The ENTER provides a precise ranking for all V-type applicants. Additional criteria are used for ranking by some programs, but VTAC

estimates that about 75% of offers for places in Victorian universities are based mainly on the student's ENTER as the measure of their academic ability. Some universities also use the ENTER to set limits on the academic standards which a V-Type applicant must reach to be eligible for admission to that institution; any applicant whose ENTER falls below the specified level will not be granted admission to the institution, regardless of the availability of places in its programs.

There has been a good deal of debate and discussion in educational circles about the merits of the ENTER and its validity as an indicator of academic ability and likelihood of success in tertiary studies (see for example, Dobson & Skuja, 2005, James et al, 2009). Studies have indicated that ENTER is generally closely correlated with success in university studies for students at the high end of the ENTER range (above about 80), but is a much less reliable indicator for students with low or mid-range ENTERs (James et al (2009)). Whatever its deficiencies may be in terms of educational theory, student ENTER is clearly the primary measure of academic performance used in practice, and it has been used for this study as a key measure of the quality of the V-Type applicants for each academic program.

For E-type applicants the assessment of academic performance is more complicated, because there is no mechanism for standardising their performance in the way that the ENTER does for V-types. Instead, their ranking is done individually for each applicant by the universities. At each university the admissions staff assess the academic performance of the E-type applicants for each academic program, and decide where to rank them in relation to the V-type applicants for that program. It is entirely up to the institution to decide on the basis for this ranking, and it is usually done separately on a program-by-program basis; that is, an E-type applicant who has applied for several different programs within an institution may be ranked differently relative to V-type applicants in each program.

On the basis of the assessment of the relative merits of the V-type and E-type applicants, all the applicants for a program can be combined into a single list, ranked in order of priority for entry from first to last. This list is the basis for determining who is offered a place in the program. The institution decides how many places it wants to offer in each of its programs (a decision which may be affected by its perceptions of the quality of the applicant pool), and uses that number as an input to the VTAC system. The system then carries out a complex process, in which it compares the list of applicant preferences with the ranked lists of applicants for each program and the number of places in each program, to arrive at an allocation in which every applicant is given a place to their highest possible preferred program which has available places.

The way in which this process works is quite complicated, but from the point of view of this study its only important aspect is the outcome, which is that the system identifies how far down each program's ranked list of applicants it has to go in order to fill the number of places the institution has specified for that program. The process also identifies for each program a cut-off point called the 'Clearly-in ENTER', which indicates that all V-types applicants who had an ENTER equal to or higher than this rank were automatically offered a place; some applicants with a lower ENTER may also be admitted, but only on the basis of other criteria over and above their ENTER. The Clearly-in ENTER for a program is important, because is published by VTAC and included in the next year's VTAC Guide to give an indication to school students about the level of performance

required to automatically qualify for a place in that program. Therefore the published Clearly-in ENTER has become widely regarded as an important public indicator of the popularity of a program, as expressed by the academic performance required to gain entry.

It should be noted that the importance attached by universities to the Clearly-in ENTER means that it is commonplace for them to try to improve it by adjusting their inputs to the admissions process. For example, an institution may initially reduce the number of places it offers in a program (though this number can be subsequently increased i), or it may adjust its rankings of E-type applicants to place them higher in its ranked applicants list. Both these strategies can reduce the number of V-type applicants who are offered places, and therefore move the Clearly-in cut-off point higher in the ranked list of applicants. This means that Clearly-in ENTER must be treated with caution, but it remains a reliable enough guide to be used as a general indicator of the academic standard of the students offered places in a program.

The VTAC process described above is the main pathway for university entry for domestic students, and the only admissions process which provides published data about applications and admissions to individual undergraduate degree programs for all universities. It should be noted, however, that even for domestic students it is not the only source of university admissions. Some institutions permit students to apply directly to the university for entry outside the VTAC system, but this is allowed only after all VTAC entry rounds have been completed. Some institutions also have mid-year enrolments into some of their programs, and these are managed directly by the university. There are no published data about the levels of demand or the quality of these students, so the study relied entirely on the main VTAC admissions process.

References

Dobson I. & Skuja E (2005), 'Secondary schooling, tertiary entrance ranks and university performance', *People and Place*, Vol. 13 (1), p 53-62

James R, Bexley E & Shearer M (2009) *Improving Selection for Tertiary Education Places in Victoria*, Paper prepared for the Joint Policy Unit on Youth Transitions Centre for the Study of Higher Education, The University of Melbourne

Appendix C: Data relating to the development of applied computing and IS programs at Victorian tertiary institutions from 1960-1990

Contents

Table C1	IT and Information-related degree courses offered in Victorian..... C2 tertiary institutions in 1989/1990
	<ul style="list-style-type: none"> • Table C1(a): Courses offered at Victorian universities • Table C1(b): Courses offered at Victorian CAEs
Table C2	Timelines for formation and offerings of Applied Computing..... C6 programs
Table C3	Departmental status in 1989/1990 of academic groups responsible..... C7 for teaching applied computing programs
Table C4	Extent of usage of 'Information Systems' as a name for units in C8 applied computing programs in 1989/90
Table C5	Curricula of representative sample of Applied Computing C9 programs – 1989/90
Table C6	Curriculum of BA(Information Management) offered atC12 Melbourne CAE, 1989
Table C7	Curricula of Information Systems programs, 1989/90..... C13

Table C1(a) IT and Information-related courses offered at Victorian universities in 1989/1990

(Source: Institutional handbooks and VTAC Guides, 1989 and 1990)

University	Applied Computing courses		Computer Science Courses	Computer Engineering Courses	Other Information-related Courses
	Business-based	Science-based			
Deakin	<i>Faculty of Science</i> <i>School of Computing & Mathematics</i> BBus major in data processing		<i>Faculty of Science</i> <i>School of Computing & Mathematics:</i> BScience major in Computer Science		
La Trobe			<i>School of Physical Sciences</i> <i>Department of Computer Science:</i> BScience major in Computer Science	<i>School of Physical Sciences</i> <i>Department of Computer Science:</i> BComputer Systems Engineering	<i>School of Health Sciences</i> BApplied Science(Medical Records Administration)
Monash	<i>Faculty of Economics & Politics</i> <i>Dept of Information Systems:</i> BInformation Systems		<i>Faculty of Science</i> <i>Dept of Computer Science:</i> BScience major in Computer Science	<i>Faculty of Engineering</i> BComputer Systems Engineering	<i>Faculty of Arts</i> <i>Graduate School of Librarianship</i>
Melbourne			<i>Faculty of Engineering:</i> <i>School of Electrical Engineering and Computer Science:</i> BScience major in Computer Science	<i>Faculty of Engineering:</i> <i>School of Electrical Engineering and Computer Science:</i> BScience major in Computer Engineering	

Table C1(b) IT and Information-related courses offered at Victorian CAEs in 1989/1990

(Source: Institutional handbooks and VTAC Guides, 1989 and 1990)

Institution	Applied Computing Programs			Computer Engineering Programs	Other Information-related Programs
	Business-based Programs	Science-based programs			
		Computing	Computer Science		
Ballarat College of Advanced Education (BaCAE)	<i>Faculty of Business (no departments):</i> BBusiness(Accounting & IS)	<i>Faculty of Applied Sciences</i> <i>Dept of Mathematics</i> BApplied Science(Computing)	<i>Faculty of Applied Sciences</i> <i>Dept of Mathematics</i> BApplied Science major in Computer Science		<i>Faculty of Human Studies</i> <i>Department of Librarianship</i> BA(Librarianship)
Bendigo College of Advanced Education (BeCAE)	<i>Faculty of Business</i> <i>Dept of Computing & Information Science:</i> BBusiness(Data Processing)		 BApplied Science (Computing)		
Chisholm Institute of Technology (CIT)		<i>Faculty of Technology</i> <i>School of Computing & Information Systems</i> BApplied Science(Computing)		<i>School of Digital Technology</i> <i>Dept of Robotics & Digital Technology</i> BApplied Science (Digital Technology)	
Footscray Institute of Technology (FIT)	<i>Faculty of Business</i> <i>Dept of Applied Economics:</i> BBusiness (Information Technology) major in computing	<i>Faculty of Applied Science</i> <i>Dept of Maths, Computing & Operations Research:</i> BApplied Science (Maths & Computing)		<i>Faculty of Engineering</i> <i>Dept of Electrical & Electronic Engineering</i> BApplied Science (Computer Technology)	<i>Faculty of Business</i> <i>Dept of Applied Economics:</i> BBusiness (Information Technology) major in Information Management

Gippsland Institute of Advanced Education (GIAE)	<i>School of Applied Science (Mathematical Sciences Group):</i>				<i>Faculty of Education (no departments):</i> BEducation major in school librarianship
	BBusiness sub-major in computing	BApplied Science major in Computing			
Melbourne College of Advanced Education (MCAE)	<i>Faculty of Arts & Information Studies Dept of Business Studies:</i> BArts (Information Management)		<i>Faculty of Science Dept of Mathematics & Computer Science:</i> BEducation major in Computer Studies		<i>Faculty of Arts & Information Studies Dept of Business Studies:</i> BArts (Information Management) <i>Dept of Library & Information Studies:</i> BEducation major in Library and Information Studies
Phillip Institute of Technology (PIT)	<i>Faculty of Business Dept of Accounting & Business Computing:</i> BBusiness(Computing)		<i>Faculty of Applied Science Dept of Mathematics & Computing:</i> BApplied Science major in Computer Science		
Royal Melbourne Institute of Technology (RMIT)	<i>Faculty of Business Dept of Business Information Systems:</i> BBusiness Information Systems major in IS		<i>Faculty of Applied Science Dept of Mathematics & Computer Science:</i> BApplied Science major in Computer Science	<i>Faculty of Engineering Department of Communication & Electrical Engineering:</i> BDigital Systems and Computer Engineering	<i>Faculty of Applied Social Sciences and Communications Dept of Information Services</i> BSocial Sciences(Library & Information Services) <i>Faculty of Business Dept of Business Information Systems:</i> BBusiness Information Systems major in Information Management

Swinburne Institute of Technology (SIT)	<i>Faculty of Business</i> <i>Dept of Data Processing & Quantitative Methods:</i> BBusiness(Computing)				
	<i>Faculty of Business</i> <i>Dept of Data Processing & Quantitative Methods:</i> and <i>Faculty of Applied Science</i> <i>Dept of Mathematics & Computer Studies:</i> BInformation Technology (teaching shared between departments)		<i>Faculty of Applied Science</i> <i>Dept of Computer Science:</i> • BComputer Science & Software Engineering	<i>Faculty of Engineering</i> <i>Department of Electrical & Electronic Engineering:</i> BComputer Systems Engineering	
Victoria College (VC)	<i>Faculty of Business</i> <i>Dept of Computing:</i> BBusiness(Computing)	<i>Faculty of Applied Science</i> <i>Dept of Information & Numerical Sciences:</i> BApplied Science major in computing			<i>Faculty of Applied Science</i> <i>Dept of Information & Numerical Sciences:</i> BApplied Science major in Information Management
Warrnambool College of Advanced Education (WCAE)	<i>Faculty of Commerce</i> <i>(no departments):</i> BBusiness(Computing)				
Western Institute (WI)	<i>Faculty of Business</i> <i>Dept of Computing:</i> BBusiness (Computing)	BApplied Science major in computing			

Table C2: Timelines for formation and offerings of Applied Computing programs

(Source: VTAC Guides, 1972-1990)

Institutions	Faculty	1960	19 65	19 70	1975	1980	1985	1990	Name of degree/ major in 1990
Universities									
Deakin	Business					—————→			BCommerce: major in DP
	Science					—————→			BSci: major in IS or CS
La Trobe						————→			IS major (dormant from 1983-90)
Melbourne									
Monash								→	Bachelor of Information Systems
CAEs									
Ballarat CAE	Business					—————→			BBusiness(Information Systems)
	Science						————→		BApplied Science: major in CS
Bendigo CAE	Business					—————→			BBus(Data Processing)
	Science					—————→			BAppSci(Computing)
Chisholm IT	Science				—————→				BAppSci(Computing)
Footscray IT	Business						————→		BBus(Info Tech)
	Science						————→		BAppSci (Maths& Computing)
Gippsland CAE	Business							→	BBus: sub-major in computing
	Science							→	BAppSci – major in computing
Melbourne CAE	Business							→	BArts(Info Management)
	Science						————→		BEduc – major in Comp Studies
Phillip IT	Business							→	BBus(Computing)
	Science							→	BAppSci(Comp Sci)
Royal Melbourne IT	Business						————→		BBus(Business Info Systems)
	Science					————→			BAppSci(Comp Sci)
Swinburne IT	Business				————→				BBus(Computing)
	Science				————→				BAppSci(Comp Sci)
Victoria College	Business					————→			BBus(Computing)
	Science							→	BAppSci – major in CS
Warrnambool CAE	Business							→	BBus(Computing)
	Science							→	BAppSci (Computing)
Western Inst.	Business							→	BBus(Computing)

Table C3: Departmental status in 1989/1990 of academic groups responsible for teaching applied computing programs

(Source: Institutional handbooks)

	Business-based academic departments		Science-based academic departments	
Stage 1: No explicit recognition in structure	Ballarat CAE: Footscray IT: Melbourne CAE: Warrnambool CAE:	Faculty of Business (no departments) Dept of Applied Economics Dept of Business Studies Faculty of Commerce (no departments)	Ballarat CAE: Gippsland CAE:	Dept of Mathematics Mathematical Sciences group in School of Applied Science
Stage 2: Share in department name	Phillip IT: Swinburne IT:	Dept of Accounting & Business Computing Dept of Data Processing & Quantitative Methods	Deakin University: Footscray IT: Melbourne CAE: Phillip IT: Royal Melbourne IT: Swinburne IT: Victoria College:	Dept of Computing & Mathematical Sciences Dept of Mathematics, Computing & OR Dept of Mathematics and Computer Science Dept of Mathematics & Computing Dept of Mathematics & Computer Science Dept of Mathematics and Computer Studies Dept of Information & Numerical Sciences
Stage 3: Separate department	Bendigo CAE: Monash University: Royal Melbourne IT: Victoria College: Western Institute:	Dept of Computing & Information Science Dept of Information Systems Dept of Business Information Systems Dept of Computing Dept of Business Computing		
Stage 4: Computing as a school with specialist departments			Chisholm IT:	School of Computing & Info Systems: <ul style="list-style-type: none"> ○ Dept of Information Systems ○ Dept of Software Development ○ Dept of Computer Technology

Table C4: Extent of usage of 'Information Systems' as a name for units in applied computing programs in 1989/90

(Source: Institutional handbooks)

Program content specified as IS	In Business-based programs	In Science-based Programs
Set of units named as IS or equivalent (number of units shown in brackets)	<ul style="list-style-type: none"> • Bendigo CAE BBus(Data Processing) (3) • Deakin Uni BBus(Data Processing) (5) • Footscray IT BBus(IT) (2) • Gippsland IAE BBus (1) • Melbourne CAE BA(IM) (1) • Phillip IT BBus(Computing) (3) • Victoria College BBus(Computing) (3) • Warrnambool CAE BBus(Computing) (4) • Western Institute BBus(Computing) (3[*]) 	<ul style="list-style-type: none"> • Bendigo CAE BApp Sci (Computing) (6)[*] • Gippsland IAE BAppSci (Computing) (2) • Phillip IT BAppSci(CS) (2) • RMIT BAppSci(CS) (1) • Warrnambool CAE BAppSci (Comp) (4)
No specific mention of IS or equivalent in programs, majors or unit names	<ul style="list-style-type: none"> • Swinburne IT BBus(Comp) 	<ul style="list-style-type: none"> • Ballarat CAE BAppSci(CS) • Footscray IT BAppSci (Maths & Comp) • Melbourne CAE BEducation (Computer Studies) • Swinburne IT BAppSci (CS) • Victoria College BAppSci (CS)

^{*} The stream comprised 3 units each 2 semesters long, so it is treated as equivalent to a 6-unit sequence

Table C5: Curricula of representative sample of Applied Computing programs – 1989/90

(Source: Institutional Handbooks)

	Swinburne IT BBusiness (Computing)	Ballarat CAE IS major in BBusiness (Accounting & IS)	Deakin Major in Computer Science	Bendigo CAE BApplied Science (Computing)
Compulsory Non-computing Units	Accounting 1A Accounting 1C Economics 1 Economics 2 Organizations and Management Legal Environment of Business The Marketing Concept Quantitative Analysis	Basic Accounting Basic Accounting 2 Intro to Economics Macroeconomics Business Law Business Law 2 Quantitative Methods Quantitative Methods 2 Management & Organizations	Student choice of units in other areas of science including:	Finite Mathematics Elementary Functions Quantitative management techniques Plus A major or 2 minors in a business discipline or mathematics or electronics
Basic Concepts - Computers Information and Systems	Information Technology (2 units) General introduction to computer hardware and software – PCs, spreadsheets, database, programming with dBase, systems development and communications	Information Systems 1 & 2: General introduction to information, IT, hardware, software, MIS, social issues, business systems, managing data, computer software packages	Computer Science 1A: Number systems; logic theory, representation of computer instructions and data; programming principles	
Computer Systems	Systems Software: Comparative analysis of O/S across a range of hardware environments – PC, mini-computer and mainframe	Computer Systems: Introduction to O/S software and hardware (elective)	Computer Science 2A: Computer architecture and organization; types of computer architectures; assembler instruction sets and assembly level programming Computer Science 2B: Operating systems and a comparative study of algorithms for O/S functions and their implementation in C; Analysis of algorithm efficiency	Computing Machines (Part 1): Computer architecture and organization Computing Machines (Part 2): Assembly language programming of microprocessor systems

			Computer Science 3A: Real-time systems – definitions, types and characteristics; Hardware considerations for real-time systems; design of algorithms and software for real-time applications. Examples of real-time systems in Modula 2 and ADA	
Database	Database Management Systems: Design and implementation of relational database	Database Management: Introduction to database		Information Systems 3 (Part 1): Theory and practice of database; information retrieval and artificial intelligence.
Data Communications	Data Communications: Concepts of data communications, and design of data communications systems. Understanding organizational requirements for data communications systems.		Computer Science 3D: Introduction to data communications and networks. Network topology and design; Data communications and the ISO model – physical, data, network presentation and application layers	
Programming	Commercial Programming: Introduction to procedural programming in COBOL	<p>Commercial Programming 1: Commercial programming in COBOL</p> <p>Commercial Programming 2: Advanced programming in COBOL (elective)</p>	<p>Computer Science 1B: Data structures and algorithms; their implementation in Pascal</p> <p>Computer Science 3C Comparative study of programming languages, with emphasis on syntax, denotational semantics and data structuring. Examples drawn from a variety of languages, including APL, CLU, PL/1, LISP, Pascal and Prolog.</p> <p>Computer Science 3B: Introduction to language theory and automata, compiling techniques, assemblers, loaders, software tools</p>	<p>Computer Programming 1 (Part 1): Structured programming techniques and data structures Programming in PASCAL</p> <p>Computer Programming 1 (Part 2): Continuation of Part 1 – full Pascal language features</p> <p>Computer Programming 2 (Part 1): Application of programming to commercial applications in COBOL</p> <p>Computer Programming 2 (Part 2): Application of programming to scientific applications in FORTRAN, C or Assembler</p> <p>Computer Programming 3 (Part 1) Theory and practice of computer</p>

Programming (cont)				<p>languages, compilers, o/s and advanced programming</p> <p>Non-numeric processing and compilers</p> <p>Computer Programming 3 (Part 2) Theory and practice of computer languages, compilers, o/s and advanced programming. O/S internals, C and Unix</p>
Analysis & Design	<p>Information Analysis: Systems, data and models; Data and information analysis; data modelling</p> <p>Systems Development Strategies: Provides a broad overview of the various ways in which the total corporate computing environment can be designed to meet information needs and corporate goals</p>	Information Systems Design: Information systems design techniques and strategies		<p>Information Systems 1 (Part 2): Introduction to computer systems concepts by providing an overall view of the systems analysis function and tools and techniques</p> <p>Information Systems 2 (Part 2): Record and file design Systems methodology and MIS</p>
Project	Industrial Project: (2 units) Application of development skills on a realistic real-life project; Project management and control	IS Project: (elective)		Information Processing Project (2 units): System development project comprising one unit with a heavy emphasis on programming and one with a heavy emphasis on analysis and design
Specialist		Knowledge-based Systems: Introduction to nature and use of KBS		Information Systems 3 (Part 2) Current topics in computing and social implications; computer centre management

Table C6: Curriculum of BA(Information Management) at Melbourne CAE, 1989 <i>Source (MCAE Handbook, 1989)</i>	
Non-computing units within the IM major	Computing units within the IM major
<ul style="list-style-type: none"> • Business Statistics: Forms of data representation, analysis and presentation; statistical techniques and statistical packages; Bayesian decision-making, regression, correlation, time-series and forecasting; total quality control • Information Management Law: Legislation and case law relating to information management in organizations. Common legal problems, such as civil and criminal liability, contracts, privacy, copyright, public records and FOI • Business Communication Skills: Communication in business; communication theory; writing and presentation techniques; oral communication; tools and technologies to assist with communication • Organizational Behaviour: Human behaviour in organizations and its impact on management and administration; individual, group, organizational and inter-personal behaviour; case studies of organizational behaviour in practice • Human Resource Data Management: Management of human resources data within organizations; human resources processes for managing personnel; data management needs and technologies; field studies of HR management in practice 	<ul style="list-style-type: none"> • Introduction to Business and Computers (double unit): How organizations work; theories of organizational management; IS and the impact of IT on organizations; field study of organization in practice; common business computer applications and their uses. • Business Information Systems: Operation and management of organizational information systems; nature of information needs and resources; IS design; role of computer technologies in IS; management of IS and system development, implementation and operation; common information processing applications; case studies of IS in business organizations • Business Computing: Characteristics of business computer hardware; Database and database packages; case studies of database use in business; program design and development for DBMS • Advanced Business Computing: Expert and knowledge-based systems for information management in organizations; knowledge representation and knowledge engineering; expert systems shells and other technologies; impact of expert systems on information management • Systems Analysis and Design: The SDLC and management of the development process; information economics and benefit/cost analysis; analysis and design techniques
<ul style="list-style-type: none"> • Supervised Professional Practice: Industry placement with a suitable company, mentored by academic and employer representatives 	

Table C7: Curricula of Information Systems programs – 1989/90

(Source: Institutional Handbooks)

	Ballarat CAE IS major in BBusiness (Accounting & IS)	Monash BInformation Systems	RMIT IS major in BBusiness Information Systems	Deakin IS major in BScience	CIT IS stream in BComputing
Original disciplinary connections	Business: Accounting	Business: Operations Research and Econometrics	Business: Business Administration and Office Systems	Science: Mathematics, Operations Research and Computer Science	Mixed – originally with business, then with science
Associated compulsory units	Basic Accounting Basic Accounting 2 Intro to Economics Macroeconomics Business Law Business Law 2 Quantitative Methods Quantitative Methods 2 Management & Organizations	Quantitative Methods for Business Microeconomics Accounting Microeconomics Macroeconomics Accounting International Economics	Economic Analysis (2 units) General Accounting (2 units) Introduction to Organizational Behaviour Financial Management & Decision Making (2 units) Statistics Organizations & Their Environment Commercial Law A Business Decision Making	Student choice of units in other areas of science including: Computer Science Mathematics Operations Research	6 units in computer software development 6 units in computer technology
Basic Concepts - Computers Information and Systems	Information Systems 1 & 2: General introduction to information, IT, hardware, software, MIS, social issues, business systems, managing data, computer software packages		Computer Systems and Tools: Introduction to computers - basic hardware and software		IS1 Basic business systems and types/features of computerised systems. Introduction to systems design and implementation issues

Computer Hardware and Systems	Computer Systems: Introduction to O/S software and hardware (elective)	Computer Concepts and Software Systems: Computer organization, hardware and operating systems software	Information Systems 1: Computer hardware, computer architecture, operating systems, file storage/access, selection of computer equipment		
Database	Database Management: Introduction to database	Data Base Systems and Data Management: Introduction to theory and practice of database design. From information analysis and modelling to operational DBMS.	Database Systems: Introduction to the basic concepts of database Advanced Database Systems: Detailed database and DBMS selection and acquisition	Information Systems 2B: Introduction to database concepts, data modelling and relational database Information Systems 3D Advanced database; networks and data communications	
Data Communications		Data Communications: Concepts and principles of data communications and networks.	Information Systems 2: Introduction to data communications, distributed systems (elective)		
Programming	Commercial Programming 1: Commercial programming in COBOL Commercial Programming 2: Advanced programming in COBOL (elective)	Introduction to Business Computing: Introduces students to fundamentals of commercial programming environment. Focus on programming in COBOL	Commercial Programming 1A: Introduction to commercial programming using PICK Commercial Programming 2A: Advanced commercial programming for large systems; software engineering	Computer Science 1A: Number systems, logic theory, programming principles; introduction to Pascal Information Systems 1B: Introduction to programming in COBOL	

Programming (cont)		Introduction to Business Computing: Further commercial programming. Focus on programming in dBASE; relational database design and interface design	Commercial Programming 3A: (elective)	Information Systems 2A: Data and file structures and their implementation in COBOL Computer Science 3C: Comparative programming languages and their different approaches to syntax, semantics and data structuring	
Systems Development	Information Systems Design: Information systems design techniques and strategies	Information Systems in Organizations: Extends student's understanding of the analysis, design and programming methodologies for large-scale business systems. Data concepts and issues, record handling, data entry, audit, advanced programming, software project management	Systems Analysis: The SDLC, problem definition, structured analysis	IS3B Software design strategies and techniques, metrics, project management, facilities management Information Systems 3A: Structured systems analysis; systems design	IS2 SDLC; Requirements analysis; project planning/control/management IS3 Systems analysis and modelling techniques IS4 Systems design and implementation
IS Management		Computer Facilities Management: Specification, evaluation and acquisition of computer systems. Capacity planning, standards, security, reliability analysis	Management of Computing Resources: IS planning, project management, system evaluation, managing IS operations (elective)		IS5 Management of IS department and functions. Social impacts of IT

Project	IS Project: (elective)	IS200/IS300 Industry-based learning: Full-time supervised work experience	IS Project: Application of the knowledge and skills taught in the program in a real-world situation		Industrial Project
Specialist topics	Knowledge-based Systems: Introduction to nature and use of KBS	Quantitative Methods for Business: Introduction to quantitative techniques which can be used in business – linear functions, matrix techniques, Markov chains, etc	Expert Systems in Business: Expert Systems, knowledge representation and AI Computer Systems Security and Control: Systems security, fraud, privacy	Information Systems 3C: Computer graphics - hardware, software, techniques, systems and applications	IS6 Decision Support Systems and Knowledge-based Systems

Appendix D: Data relating to the development of applied computing and IS programs at Victorian tertiary institutions from 1990-1996

Contents

Table D1	IT and Information-related courses offered at Victorian D2 universities in 1996/97
Table D2	Location of IT-related Departments within the University..... D5 Academic Structure – 1996/97
Table D3	Analysis of market demand for a sample group of IT programs..... D6 <ul style="list-style-type: none"> • Table D3(a) The sample group of IT programs used in the analysis • Table D3(b) Measures of demand for the sample IT programs
Table D4	Curricula of Information Systems programs in 1996/97..... D8 <ul style="list-style-type: none"> • Table D4(a) Programs which originated in Business-based faculties • Table D4(b) Programs which originated in Science-based faculties
Table D5	Coverage of key basic IT themes in IS program curricula..... D20

Table D1: IT and Information-related courses offered at Victorian universities in 1996/97

(Source: Institutional handbooks)

University	Information Systems Programs	General Computing/IT Programs	Computer Science Programs	Computer Engineering Programs	Other Computing/IT Programs	Other Information-related Programs
Ballarat		<i>School of IT & Mathematical Sciences:</i> BComputing	<i>School of IT & Mathematical Sciences:</i> BScience major in Computer Science			
Deakin	<i>Faculty of Science & Technology</i> <i>School of Computing & Mathematics:</i> BScience major in Information Systems <i>Faculty of Management</i> <i>School of MIS:</i> BCommerce major in Business Computing	<i>Faculty of Science & Technology</i> <i>School of Computing & Mathematics:</i> BApp Science (Computing)	<i>Faculty of Science & Technology</i> <i>School of Computing & Mathematics:</i> BScience(Computer Science & Software Development	<i>Faculty of Science & Technology</i> <i>School of Engineering & Technology:</i> •BEngineering (Computronics) •BTechnology (Computronics)		<i>Faculty of Science & Technology</i> <i>School of Computing & Mathematics:</i> BApp Sci (Information Management)
La Trobe	<i>Faculty of Science & Technology:</i> <i>School of CS & CE:</i> BInformation Systems	<i>(Bendigo campus)</i> <i>School of Business:</i> <i>Dept of IT:</i> BComputing <i>(Albury/Shepparton)</i> <i>Faculty of Social Sciences:</i> <i>Dept of Business:</i> BBusiness Computing	<i>Faculty of Science & Technology:</i> <i>School of CS & CE:</i> •BComputer Science •BCognitive Science	<i>Faculty of Science & Technology:</i> <i>School of CS & CE:</i> •BComputer Systems Engineering •BTechnology (Computer Technology)		<i>Faculty of Health Sciences:</i> <i>School of Public Health:</i> BHealth (Information Management)

Melbourne	<i>Faculty of Science</i> <i>Dept of Information Systems</i> BInformation Systems		<i>Faculty of Engineering:</i> <i>Dept of Computer Science:</i> BComputer Science	<i>Faculty of Engineering:</i> <i>Dept of Electronic and Electrical Engineering:</i> BEng(Computer Engineering)	<i>Faculty of Engineering:</i> <i>Dept of Computer Science:</i> BEng(Software Engineering)	
Monash	<i>Faculty of Computing and IT</i> <i>Dept of Information Systems:</i> BInformation Systems <i>Dept of Business Systems:</i> BBusiness Systems	<i>Faculty of Computing and IT</i> <i>Dept of Software Development and</i> <i>Dept of Computer Technology</i> BComputing <i>Peninsula School of Computing & IT</i> BComputing (Applications Development) <i>Gippsland School of Computing & IT:</i> BComputing (Systems Development)	<i>Faculty of Computing and IT</i> <i>Dept of Computer Science:</i> BComputing (Computer Science)	<i>Faculty of Computing and IT</i> <i>Dept of Robotics & Digital Technology:</i> BDigital Systems <i>Dept of Computer Science and</i> <i>Faculty of Engineering:</i> BComputer Science & Engineering		<i>Faculty of Computing and IT</i> <i>Dept of Librarianship Archives and Records:</i> BInformation Management
RMIT	<i>Faculty of Business</i> <i>Dept of Business Computing:</i> BBusiness (Business Information Systems)		<i>Faculty of Applied Science</i> <i>Dept of Computer Science:</i> BApplied Science (Computer Science)	<i>Faculty of Engineering</i> <i>Department of Computer Systems Engineering:</i> <ul style="list-style-type: none"> • BEng(Computer Systems Engineering) • BEng(Software Systems Engineering) 	<i>Faculty of Applied Science</i> <i>Dept of Computer Science:</i> BApplied Science (Software Engineering)	<i>Faculty of Business</i> <i>Dept of Information Mgt & Library Studies:</i> BBusiness(Information & Library Management)

Swinburne	<p><i>Division of Business Humanities and Social Sciences:</i></p> <p><i>School of Information Systems:</i></p> <p>BIInformation Systems</p>	<p><i>School of Information Systems and</i></p> <p><i>School of CS & SE:</i></p> <p>BIInformation Technology</p> <p><i>Lilydale campus:</i></p> <p>BAApplied Science (Computing)</p>	<p><i>Division of Science Engineering & Design:</i></p> <p><i>School of Computer Science & Software Engineering:</i></p> <p>BApp Sci (CS & SE)</p>	<p><i>Division of Science Engineering & Design:</i></p> <p><i>School of Biophysical Sciences & Electrical Engineering:</i></p> <ul style="list-style-type: none"> •BEng(Robotics & Mechatronics) •BEng(Telecommunications & Networks) 	<p><i>Division of Science Engineering & Design:</i></p> <p><i>School of CS & SE:</i></p> <p>BSoftware Engineering</p> <p><i>School of Biophysical Sciences & Elec Eng and</i></p> <p><i>School of Design:</i></p> <p>BMultimedia Technology</p>	
Victoria	<p><i>Faculty of Business Dept of Information Systems:</i></p> <ul style="list-style-type: none"> •BBusiness (Info Systems) •BBusiness (Systems Support) 		<p><i>Faculty of Applied Science</i></p> <p><i>Dept of Computer & Mathematical Sciences:</i></p> <p>BSc (Computer & Mathematical Sciences)</p>	<p><i>Faculty of Engineering</i></p> <p><i>Dept of Electrical & Electronic Engineering:</i></p> <ul style="list-style-type: none"> • BApplied Science (Computer Technology) 	<p><i>Faculty of Engineering</i></p> <p><i>Dept of Electrical & Electronic Engineering</i></p> <p>BEngineering (Multimedia Telecommunication)</p>	

Table D2: Location of IT-related Departments Within the University Academic Structure – 1996/97

(Source: Institutional handbooks)

Institution	Faculty			
	Business	Science	Engineering/Technology	Computing
University of Ballarat				CS, IT
Deakin University	IS	IS, CS, IT, IM	CE	
La Trobe University	IT IT	CS, CE, IS		
Monash University				CS CE IT IT IT IS IS IM
RMIT University	IS	CS, SE	CE	
Swinburne University	IS, IT	CS, SE, IT	CE	
University of Melbourne		IS	CS, SE CE	
Victoria University	IS, IM	CS	CE	

Table D3 (a): Sample Group of IT Programs Used in Analysis of Student Demand for IT

University	VTAC Codes	Degree Program	Comments
Ballarat	BACO/37705	Bachelor of Computing	
Deakin	VBAC/DBAC/14383	Bachelor of Business (Computing)	For part of the period this program was offered under two separate codes for full-time and part-time students. For the sake of consistency, only the data for the full-time version are included in the analysis
La Trobe	LUEC/24041	Bachelor of Computer Systems Engineering	Offered at Bundoora campus
	BECS/21254	Bachelor of Computing	Offered at Clayton campus
Monash	CCCO/MCCO/27370	Bachelor of Computing (Caulfield campus only)	For part of the period this program was offered under two separate codes for full-time and part-time students. For the sake of consistency, only the data for the full-time version are included in the analysis
	MOCO/28237	Bachelor of Computer Science	Offered at Clayton campus
	MOAI/28224	Bachelor of Business Systems	Offered at Clayton campus
RMIT	RMCS/32835	Bachelor of Computer Science	The program was also offered the Preston campus for part of the period, but only the offering at the City campus is included in the analysis
	RMAB/32652	Bachelor of Business Information Systems	Program changed in content as discussed in Chapter 6, but retained name and code throughout the period
Swinburne	SWAI/SHAI/34315	Bachelor of Information Technology	
	SWCS/SHCS/34438	Bachelor of Computer Science and Software Engineering	
VUT	FOCS/VFCS/40830	Bachelor of Applied Science (Computer Technology)	

Table D3(b): Measures of Demand for Sample Set of IT Programs <i>(Source: VTAC admissions data)</i>							
Measure of Demand	1991	1992	1993	1994	1995	1996	1997
VTAC Preferences 1-4	5864	6830	7739	6141	4967	6800	5502
VTAC Enrolments	563	643	582	624	807	743	882
Weighted Average ENTER of Year 12 Student Enrolments	75.3	78.3	82.9	79.6	76.8	76.5	76.7

Table D4(a): Curricula of Information Systems programs which originated in Business-based faculties – 1996/97

(Source: Institutional Handbooks)

	Deakin MIS major in BCommerce	Monash BBusiness Systems	RMIT BBusiness Information Systems	Swinburne BIS	VUT BIS
Associated compulsory units	Accounting 1 Accounting 2 Business Statistics Microeconomics Macroeconomics Business Law Management	Introductory Economics	General Accounting Introduction to Organizational Behaviour Commercial Law Business Statistics Microeconomic Analysis or Macroeconomic Analysis	A major or minor in one of: Accounting Business Modelling International Studies Media Studies Marketing Manufacturing Management Organizational behaviour Sociology	Accounting for decision-making Microeconomic Principles Macroeconomic Principles Management and Organizational Behaviour Business Law Business Statistics
Basic Concepts: Computers, Information & Systems	Business Information Systems: The basic capabilities of IT; its role in business and society Business micro-computing: Knowledge and practical skills needed for the management of data processing in a small business (optional)	Introductory computing for business applications: Introduction to PC hardware and software for business applications Business Information systems: Introduction to basic business applications for computers – inventory, sales, purchasing, finance	Systems Foundations: Introduction to basic concepts in business and information systems	Introduction to Information Systems: Introduction to wide variety of aspects of computers and their use	Computer Applications: Introduction to computer hardware and software – word processing, spreadsheets, database, programming, data communications, business information systems
Computer Hardware and Systems		Computer concepts and software systems: Computer architecture and operating systems design	Information Technology 1: Computer hardware, computer architecture, operating systems, file structures, data communications	System Architecture 1: Hardware and O/S concepts; basic concepts of data communications	

Database	Database Management Systems: Introduction to all aspects of the theory and practice of database (optional)	Database systems and data management: Introduction to relational database theory and practice	Applications Development 2: Development of complex multi-user systems with database, 3GLs, 4GLs, client-server and graphical user interfaces	Data Analysis & Design: Introduction to data management through data modelling and construction of a simple data base system Database Management Systems 1: Relational database theory and practice; database administration	Database Systems: Introduction to database concepts, data modelling, database design, SQL, database administration
Data Communic'ns		Data communications: Introduction to computer networks and data communications	Information Technology 2: Architecture and technology of multi-user hardware and O/S, client-server, distributed systems and database		Networks and Data Communications: Concepts and principles of data communications and networks
Programming	Systems Implementation A: Techniques and tools for the development and implementation of software applications (optional) Object-Oriented Systems Design: Introduction to O-O concepts and basic techniques used in system development (optional) Systems Implementation B: Advanced techniques and tools for the development and implementation of software applications (optional)	Computer Programming for Business 1: Commercial programming with COBOL Computer Programming for Business 2: Advanced commercial programming with COBOL Programming for Business Applications: Advanced programming techniques and development of programming applications	Computer Foundations: Introduction to computers and procedural programming within the context of business information systems Applications Development 1: Further develop programming skills; commercial software design, implementation, documentation and testing	Business Programming 1: Introduction to basic programming concepts and structured programming Business Programming 2A: Introduction to procedural programming in COBOL	Introduction to Programming Concepts: Fundamentals of programming – algorithmic design, control structures, data types, modular design, testing and documentation

Systems Development	<p>Systems Analysis and Design: Fundamentals of system analysis, design and the system development life-cycle (optional)</p> <p>Advanced Systems Design: Advanced techniques for system design and development (optional)</p>	<p><i>Systems analysis and design: Introduction to basic principles and techniques for systems analysis and design; systems development process and methodologies (This unit taught by another department)</i></p>	<p>Systems Analysis and Design 1: Information gathering, process and data modelling, requirements specification, communication skills</p> <p>Systems Analysis and Design 2: Systems development methodologies, emphasising Information Engineering methods</p>	<p>Business Computing: Introduction to the development process and communication skills in systems studies</p> <p>Information Systems 1: Introduction to basic techniques for systems analysis, design and implementation</p>	<p>Systems Analysis: Introduction to system development techniques and methodologies</p> <p>Systems Design: Introduction to concepts of systems design and basic design techniques</p> <p>Systems Implementation: Concepts and techniques used in the implementation of computer-based IS</p>
IS Management	IS Management: Role of IT in organizations. Management of IS department and functions (optional)	Computer facilities management: Planning, evaluation, purchase, implementation and management of computer installations and networks			IT Management: Introduction to concepts of information management and management of IT; information resource management
Project	Information Systems Project: Industry-based project for an external client (optional)	Industry-based learning (2 sets of 3 units): Industry placement	<p>Systems Implementation 1: Methodologies and technologies used in the development of a major applications project</p> <p>Systems Implementation 2: Further methodologies and technologies used in the development of a major applications project</p>	Information Systems Project: Team-based development of an IS project	Computer Project: Small group project with content adapted to reflect students specialisation in their studies
Specialist topics	Introduction to Business Simulation: Use of simulation as a tool in business analysis.	Quantitative methods for business systems: Introduction to			Additional studies from the elective units listed below in either:

	<p>Techniques and technologies for business simulation (optional)</p> <p>Business Simulation Studies: Role of IS supporting management decision-making in various aspects of business and production processes (optional)</p> <p>Expert Systems: Concepts of expert systems; knowledge acquisition and representation, expert system shells and other technologies (optional)</p> <p>Electronic Data Interchange: Concepts of EDI; standards, tools and technologies (optional)</p> <p>Contemporary Developments in Computing: Emerging issues in information management and IT; topics vary to suit the times (optional)</p> <p>Managerial Decision Making: Application of decision-making techniques in business; focus on techniques for risk management, optimisation,</p>	<p>mathematical and statistical techniques used to support business processes</p> <p>Computer models for business decisions: Modelling business systems to support decision-making; simulation and forecasting</p> <p>Project management: Introduction to fundamentals of project management; project teams; project planning; budgeting, monitoring, control; auditing</p> <p>Operations management systems: The application of computers in industrial planning and control systems</p> <p>Business communications: Introduction to communication skills designed to prepare students for their work experience placements</p> <p>Business Case Development: Business analysis and</p>			<ul style="list-style-type: none"> • Systems technology • Systems development • Information management
--	--	--	--	--	---

	project management, inventory models, DSS, queuing, simulation (optional)	improvement; IT-business alignment; preparation of a business case for change Trading Systems and Electronic Commerce: Use of IT to facilitate inter-organizational trading and information exchange; e-commerce technologies Financial modelling: Financial modelling techniques used in business and the use of computer-based tools to carry them out			
Electives	<p>Only one of the 15 units listed above for the IS major was compulsory; all others were elective.</p> <p>Other units offered as major in Management Support Systems:</p> <ul style="list-style-type: none"> • Business Statistics: Introduction to basic statistical techniques • Total Quality Management Techniques: The use of TQM techniques in managerial decision-making • Quantitative Management: Mathematical techniques used in management decision-making 	<ul style="list-style-type: none"> • Advanced Programming for Database Applications: Advanced topics in programming in a database environment • Operations Research Methods 2: Introduces methods used in operations research and the way they are applied in a variety of business applications • Chinese Language IT: Techniques and systems used to support business applications in Chinese • Multimedia for Business: Introduces general concepts of multimedia 	<ul style="list-style-type: none"> • COBOL Programming: Programming in COBOL • GUI and Event-driven Programming: Introduction to techniques for modelling and programming event-driven systems • Operating System Programming: Introduction to Unix and shell programming in C • Object-oriented Business Applications: Theory and practice of OO systems analysis and design • Advanced Database: Technical issues in database design and 	<ul style="list-style-type: none"> • Business Computing Applications: Introduction to the nature and purpose of a variety of common business systems • Knowledge-based Systems: Introduction to KBS and their uses in business • Information Systems 2: Advanced topics in business information needs analysis and modelling • System Architecture 2: Study of Unix and the DOS/Windows operation system environments • Database Management Systems 2: Key issues in database design and 	<p>Units in three specialist areas as set out below:</p> <p>Systems Development:</p> <ul style="list-style-type: none"> • Applications Programming Techniques: Advanced topics in COBOL programming • OO Systems: Theoretical foundations of OO programming and design • Knowledge-based Systems: Introduction to AI concepts and their use in commercial KBS tools <p>Systems Technology:</p> <ul style="list-style-type: none"> • Computer Architecture: Internal computer

	<ul style="list-style-type: none"> • Research Issues and Methods: Application of research techniques to business problems 	<p>computing and their applicability in a business environment</p> <ul style="list-style-type: none"> • Business Process Design: Introduces the principles of design for managerial decision support systems and examines their application in decision support systems in business • COBOL Programming: Introduces the fundamentals of commercial programming in COBOL and modern programming methodologies • Tourism and Service Industry Systems: Examines the nature of systems used in tourism and selected service industries, their special requirements and support technologies 	<p>administration</p> <ul style="list-style-type: none"> • Computer-supported Co-operative Work: Groupware technologies; concepts, capabilities and use • Knowledge-based and Expert Systems: Introduction to KBS and their uses in business • Computer Modelling for Business Decisions: Mathematical and statistical techniques for managerial decision-making • Technical Writing: Writing technical documentation for business systems projects • Project Management for Systems Development: Systems development project management techniques, standards and methodologies • PCs and Local Area Networks: Types of PCs and LANs and their use in a business environment • Advanced Pick: Procedural programming techniques in a Pick development environment • Computer Security and Computer Systems Audit: 	<p>performance</p> <ul style="list-style-type: none"> • Database Management Systems 3: Advanced topics and future directions in database software • Business Programming 2B: Programming design principles for software engineering • Information Technology Strategies: Organizational context for IT; IT planning and strategy • Business Software Engineering: Software design concepts, principles and methods, with an emphasis on CASE 	<p>architecture and organization</p> <ul style="list-style-type: none"> • Operating Systems: Overview of O/S fundamentals and their impact on applications • Data Structures for Business Programming: Examines inter-relationship between data structures and algorithms <p>Information Management:</p> <ul style="list-style-type: none"> • Information Planning & Resources Management: Information architectures and information planning and delivery across an organization • The Information Professional: Examines the role of the information professional in managing information as a corporate resource • The Information Environment: Studies issues both internal and external to organizations which affect their information management needs and practices <p>In addition, the following specialist units were included in the core of the</p>
--	--	---	--	--	--

			<p>EDP auditing concepts; management and control of risks in EDP operations</p> <ul style="list-style-type: none"> • Decision Support Systems: Management decision making and the use of computers to support it 		<p>School's other IS degree in system support:</p> <ul style="list-style-type: none"> • Managing Network Integration: Analysis of organizational communication needs and design and implementation of network solutions • Managing the Computer Environment: Issues in the management and planning of organizational computer infrastructure • Managing Systems Development: Issues in the management and control of system development projects • Contemporary Developments in Information Systems: New and emerging technologies and topics of concern to IS professionals
--	--	--	---	--	--

Table D4(b): Curricula of Information Systems programs which originated in Science-based faculties – 1996/97

(Source: Institutional Handbooks)

	Deakin BComputing (IS)	La Trobe (Bundoora) BInformation Systems	Melbourne BInformation Systems	Monash Uni BInformation Systems
Associated compulsory units	Student choice of units in other areas of science including Computer Science, Mathematics and Operations Research	Professional Communication (2 units) Discrete Mathematics	Principles of Management Accounting & Finance for Decision-making Tools of Analysis (or Discrete Maths)	2 business units (unspecified) Minor in a non-computing discipline
Basic Concepts: Computers, Information & Systems	Introduction to IT: General basic introduction to IT and the use of a computer Information Systems in Organizations: Introduction to common types of IS including TPS, MIS, DSS and KBS	Information Systems: Broad introduction to all areas of computer networks, IS, IT and computing; focus on aspects of storage and use of information	IS in Organisations: Introduction to basic concepts in IS and the way IS are used in organizations.	Information systems 1: Introduces fundamental concepts of information and systems in organizations; systems analysis; modelling; the systems development process
Computer Hardware and Systems				<i>Computer Equipment: Computer hardware architecture; CPU design; introduction to computer networks and data communications</i> <i>Operating Systems: Introduction to computer O/S and resource management in a multi-user computer system</i> <i>These units were both taught by another department</i>
Database	Database and Information Retrieval: Introduction to database concepts, data modelling and relational database	Database Systems: Database and data modelling theory. Relational, network and hierarchical models; relational query languages	Concepts in Database and Telecommunications: Data modelling, database design and query languages; database administration. Data transmission and local and wide area	<i>Database Systems: Introduction to relational database; basic concepts; data modelling, database design; SQL; data retrieval</i> <i>This unit was taught by another</i>

			networks	department
Data Communic'ns	Data Networks: Computer network architecture; data communications concepts and protocols	Data Communications & Networks: Basic concepts of communications and network topologies	Advanced Concepts in Database and Telecommunications: Data transmission concepts; network connectivity and performance issues; Common network protocols; relational database, database optimisation, OO database	
Programming	<p>Basic Programming Concepts: Introduction to programming concepts and program development, algorithms and structured programming</p> <p>Data Structures and Algorithms: Comparison of algorithms, iteration and recursion, sorting and searching</p> <p>Object-oriented Programming: Principles of O-O; O-O analysis, design and programming in C++</p>	<p>Intro to Programming using C++: Introduces students to fundamental concepts of programming, using C++</p> <p>Algorithms Data Structures & Compilers: Developing algorithms in C++; basic structure of a compiler</p> <p>O-O Programming: Advanced programming in an O-O environment, using C++</p> <p>Workload Analysis and File Structures: Design and application of sequential, indexed sequential and random access files; retrieval techniques; file processing in COBOL</p> <p>Fourth Generation Languages: Introduction to 4GLs as a software development environment</p>	<p>Concepts in Software Development 1: Algorithmic approaches to problem-solving; use of a high-level programming language to build a software application</p> <p>Concepts in Software Development 2: Major programming paradigms; software development techniques and tools</p>	<p><i>Introduction to Software Development: Basic principles and concepts in programming and algorithm design</i></p> <p><i>Program Design and Data Structures: Program design for procedural of OO environments; introduction to data structures</i></p> <p><i>Commercial Programming in COBOL: Introduction to programming in COBOL</i></p> <p><i>These units were all taught by another department</i></p>
Systems Development	Concepts and Practices for Software Engineering: Concepts, tools and techniques for software	System Description Techniques: Data, process and object modelling techniques	Organizational Processes: Process view of organizations; tools and techniques for identifying and mapping processes	Information systems 2: Detailed description of systems development process and the role and tasks of the

	<p>engineering; project management and problem solving</p> <p>Systems Analysis and Design: Techniques for data gathering and structured analysis and design</p> <p>Software Engineering: Software development methodologies; working in development teams</p>	<p>Data Modelling & Engineering: Advanced concepts in modelling for software engineering. The O-O model and its use in data modelling</p> <p>User Interface Engineering: HCI principles, user interface specification and design, interface technologies and tools</p>	<p>Systems Analysis and Design: Requirements identification and specification and system design; tools and techniques for analysis and design</p>	<p>systems analyst</p> <p>Information systems 3: Analysis and design techniques used in system development</p> <p>Information Systems 4: Socio-technical systems and soft systems techniques in systems development</p>
IS Management			<p>Management of IS: Introduction to issues in managing IS I organizations; business impact of IS; strategic planning; managing the IS department</p>	<p>Information system strategy and management: Introduction to the key concepts and contemporary issues in information systems management</p>
Project	<p>Computing Project: Group-based development of a large project</p>	<p>Software Engineering Project: Planning and development of a medium-sized software project</p>	<p>Information Systems Project: Industry-based project for an external client</p>	<p>Industrial Project: Industry-based project for an external client</p>
Specialist topics	<p>Computers and Society and Professional Ethics: Impacts of IT on society; professional and ethical issues for IT professionals</p>	<p>Artificial Intelligence: Introduction to AI concepts, techniques, technologies and tools</p> <p>Management Information Systems: Classifications of IS, and introduction of different types of IS – distributed, intelligent, multimedia, etc and issues in IS – legacy systems, migration, planning, etc</p> <p>Multimedia Systems: Theory and practice of multimedia and web-based systems and technologies</p>	<p>The Economics of Information and IT: Theory of IS economics and the value of information; frameworks for evaluating IS and IT investments</p> <p>Case Studies in IS: Examples of organizational experiences in the development, implementation and use of IS</p> <p>Organizational Analysis and Change: The relationship between IS and organizational change, and the management of organizational change</p> <p>Legal and Ethical Framework: Legal and</p>	<p>Professional practice in information systems: Role and responsibilities of the systems analyst in professional practice; communication skills, team work, conflict management, and inter-personal negotiation</p> <p>Management support systems: Evolution and current state of the art of the theory and practice of management support systems</p> <p><i>Project Management: Introduction to fundamentals of project management; project teams; project planning; budgeting, monitoring,</i></p>

			<p>ethical issues associated with IS practice. Implications for IS development and use in organizations</p> <p>Project Management: Techniques of project management - evaluation, project planning and control; quality assurance, systems installation and training</p>	<p><i>control; auditing</i> <i>This unit was taught by another department</i></p>
Electives	<ul style="list-style-type: none"> • Advanced Database: Overview of the current state of the art in database and database research; emerging database technologies and applications • Office Automation: Introduction to office automation, office technologies, and their impacts on productivity • Data Processing languages: Issues in the structure and syntax of data processing languages and their impacts on applications • Computer Graphics and HCI: Graphics hardware, software and algorithms, the graphics user interface, computer games and virtual reality 	Any units from any school in the university for which the pre-requisites are met; the School of CS&CE offered no other specifically IS-oriented units	<ul style="list-style-type: none"> • Advanced Concepts in Software Development: Standards for software quality and documentation; development methodologies and tools; management of software development process • Human-Computer Interfaces: Theory and practice of interface design; testing of system usability • Current Issues in IS 1: Topics of concern to IS professionals; content will change from year to year • Current Issues in IS 2: Topics of concern to IS professionals; content will change from year to year • Distributed Systems: Issues in the design, construction and management of distributed systems in organizations 	<ul style="list-style-type: none"> • Systems Development Methodologies: Introduces a variety of methodologies used in system development practice • Human-computer Interaction: Fundamental principles of interface design; techniques for design, testing and evaluation of interfaces • Information Systems Security: Introduction to issues in security of information systems; developing and managing secure systems • Geographical Information Systems: Introduction to principles of GIS and the main techniques used in their design and development • Electronic Commerce Systems: Introduction to the theory and practice of electronic commerce; policy, management and implementation issues • Inter-organizational Systems: Introduction to basic concepts in inter-organizational systems and their strategic significance to organizations • Decision Aids: The role of decision

				support systems in helping management decision-making; techniques for DSS development <ul style="list-style-type: none"> • Intelligent decision aids: Models and techniques for intelligent decision support and their application to business decision-making situations
--	--	--	--	--

Table D5: Coverage of key basic IT themes in IS program curricula <i>(Source: Institutional Handbooks)</i>									
University	IS Program	Key Themes							
		Basic concepts	Hardware & O/S	Networks & Data Comms	Database	Programming	Systems Development	IS Management	Project
Deakin (Business)	Major in Management Information Systems	2 units			1 unit	3 units	2 units	1 unit	1 unit
Deakin (Science)	Major in Information Systems	2 units		1 unit	1 unit	3 units	3 units		1 unit
La Trobe	BInformation Systems	1 unit		1 unit	1 unit	5 units	3 units		1 unit
Monash (Caulfield)	BInformation Systems	1 unit	2 units		1 unit	3 units	3 units	1 unit	1 unit
Monash (Clayton)	BBusiness Systems	2 units	1 unit	1 unit	1 unit	3 units	1 unit	1 unit	Work experience
Swinburne	BInformation Systems	1 unit	1 unit		2 units	2 units	2 units		1 unit
RMIT	BBusiness Information Systems	1 unit	1 unit	1 unit	1 unit	2 units	4 units		2 units
Melbourne	BInformation Systems	1 unit		1 unit	1 unit	2 units	2 units	1 unit	1 unit
Victoria	BInformation Systems	1 unit		1 unit	1 unit	1 unit	3 units	1 unit	1 unit

Appendix E: Data relating to the development of applied computing and IT programs at Victorian tertiary institutions from 1997-2011

Contents

Table E1:	IT and Information-related courses offered at Victorian universities	E3 in 2011
Table E2:	Table E2: Gains and Losses in IT and Information-related courses	E6 offered at Victorian universities, 1997-2011
Table E3:	IT-related programs which were created and then closed down within.....	E8 the period 1997-2011
Table E4	Enrolments in Year 12 Specialist IT Units in Victorian Secondary.....	E9 Schools, 1992-2011
Table E5	Measures of Domestic Student demand for Programs classified as IT.....	E10 in ASCED, 1997-2011
Table E6	Sample Group of IT Programs used to Measure Trends in Student.....	E11 Demand, 1997-2011
	<ul style="list-style-type: none"> • Table E6(a) Single Degree Programs • Table E6(b) Associated Double degree programs 	
Table E7	Aggregate of VTAC Preferences 1-4 for the Sample Group of	E14 IT programs, 1997-2011
Table E8	Number of VTAC Year 12 Students Offered Places in the Sample.....	E15 Group of IT programs, 1997-2011:
	<ul style="list-style-type: none"> • Table E8(a) In Single Degree Programs • Table E8(b) In Associated Double Degree Programs 	
Table E9	Published Clearly-in ENTERs for the Sample Group of IT.....	E17 Single Degree Programs, 1997-2011
Table E10	All IS Degree Programs offered at Victorian Universities from.....	E18 1997-2011, and their associated double degrees:
	<ul style="list-style-type: none"> • Table E10(a) Single IS Degree Programs • Table E10(b) Associated Double degree programs with IS 	
Table E11	Aggregate of VTAC Preferences 1-4 in IS programs, 1997-2011:.....	E20
	<ul style="list-style-type: none"> • Table E11(a) Preferences for Single Degrees • Table E11(b) Preferences for associated Double Degrees 	

Table E12	Number of VTAC Year 12 Students Offered Places in IS programs,E21 1997-2011:	
	• Table E12(a) Enrolments in Single Degrees	
	• Table E12(b) Enrolments in associated Double Degrees	
Table E13	Published Clearly-in ENTERs for IS programs, 1997-2011.....	E23
Table E14	Examples of disciplinary/structural change involving the formation.....	E24
	or enhancement of IS programs and organizational, 1997-2011	
Table E15	Examples of disciplinary/structural change involving diversification and...	E25
	expansion of scope of IS, 1997-2011	
Table E16	Examples of disciplinary/structural change involving merger of IS.....	E26
	with another discipline, 1997-2011	
Table E17	Examples of disciplinary/structural change involving closure of IS.....	E27
	departments or programs	
Table E18	Table E18: 2011 Curricula of IS Programs with Stable Curricula,	E28
	1997-2011	
Table E19	2011 Curricula of IS Programs with Substantially Changed Curricula,.....	E34
	1997-2011	
Table E20	2011 Curricula of New IS Programs Created During the Period,	E39
	1997-2011	
Table E21`	Table E21: Popular Themes in IS Elective Units.....	E42

Table E1: IT and Information-related courses offered at Victorian universities in 2011

(Source: Institutional handbooks)

University	Information Systems Programs	General Computing/IT programs	Computer Science Programs	Computer Engineering Programs	Software Engineering Programs	Other IT Programs
Ballarat	<i>School of Science Information Technology & Engineering: Dept of IT & Mathematics: BInformation Technology (Business Systems)</i>	<i>School of Science Information Technology & Engineering: Dept of IT & Mathematics: • BInformation Technology • BIT(Professional Practice)</i>			<i>School of Science Information Technology & Engineering: Dept of IT & Mathematics: • BIT (Software Engineering)</i>	<i>School of Science Information Technology & Engineering: Dept of IT & Mathematics: • BIT (Computer Games)</i>
Deakin	<i>Faculty of Business & Law School of Information Systems: BBusiness Information Systems</i>	<i>Faculty of Science & Technology School of Information Technology: • BInformation Technology • BIT(Professional Practice)</i>	<i>Faculty of Science & Technology School of Information Technology: BIT(Computer Science & Software Development)</i>			<i>Faculty of Science & Technology School of Information Technology: • BIT (IT Security) • BIT(Multimedia Technology) • BIT(Games Design & Development)</i>
La Trobe	<i>Faculty of Science, Technology & Eng: School of Eng & Mathematical Sciences Dept of CS & CE: B Information Systems</i>	<i>Faculty of Science, Technology & Eng: School of Eng & Mathematical Sciences Dept of CS & CE: • BInformation Technology • BIT(Professional)</i>	<i>Faculty of Science, Technology & Eng: School of Eng & Mathematical Sciences Dept of CS & CE: BComputer Science</i>	<i>Faculty of Science, Technology & Eng: School of Eng & Mathematical Sciences Dept of CS & CE: BComputer Systems Engineering</i>		<i>Faculty of Science, Technology & Eng: School of Eng & Mathematical Sciences Dept of CS & CE: BComputer Science in Games Technology</i>

Melbourne*	No specialist IT Programs offered following introduction of Melbourne Model for undergraduate teaching in 2009. Last offerings of IT programs in 2008 are as shown below:					
	<i>Faculty of Science: Dept of Information Systems: BInformation Systems *</i>		<i>Faculty of Engineering: School of Electrical Engineering & CS: Dept of CS: BComputer Science*</i>	<i>Faculty of Engineering: School of Elec Eng & CS: Dept of Electronic and Electrical Engineering: BEng(Computer Engineering)*</i>	<i>Faculty of Engineering: School of Elec Eng & CS: Dept of CS: BEng(Software Engineering)*</i>	
Monash	<i>Faculty of Information Technology: BBusiness Information Systems</i>	<i>Faculty of Information Technology: BInformation Technology & Systems</i>	<i>Faculty of Information Technology: BComputer Science</i>	<i>Faculty of Engineering: Dept of Electrical & Comp Systems Eng: BComputer Systems Engineering</i>	<i>Faculty of Information Technology: BSoftware Engineering</i>	
Royal Melbourne Institute of Technology	<i>College of Business: School of Business IT and Logistics: BBusiness (Business Information Systems)</i>	<i>College of Science Engineering & Health: School of Computer Science & IT: • BInformation Technology • BTechnology (Computing Studies)</i>	<i>College of Science Engineering & Health: School of Computer Science & IT: • BComputer Science • BComputer Science(Network Computing) • BComputer Science(Database Systems)</i>	<i>College of Science Engineering & Health: School of Electrical & Computer Engineering: BEngineering (Computer & Network Engineering)</i>	<i>College of Science Engineering & Health: School of Computer Science & IT: • BSoftware Engineering</i>	<i>College of Science Engineering & Health: School of Computer Science & IT: • BDesign (Multimedia Systems) And offered jointly with College of Design & Social Context: School of Media & Communication: • BIT(Games & Graphics Programming) • BA(Games Graphics Design)</i>

Swinburne	<p><i>Faculty of Information & Communication Technologies:</i> <i>Information Systems Academic Group:</i> BBusiness Information Systems</p>	<p><i>Faculty of Information & Communication Technologies:</i> <i>Information Systems Academic Group and Computer Science & Software Engineering Academic Groups:</i> BInformation Technology</p> <p><i>Computer Science & Software Engineering Academic Group</i> BInformation and Communication Technology</p>	<p><i>Faculty of Information & Communication Technologies:</i> <i>Computer Science & Software Engineering Academic Group:</i> BScience(Computer Science)</p>	<p><i>Faculty of Engineering & Industrial Sciences:</i> <i>Electrical Eng:</i> <i>Electrical, Electronics & Comp Systems Academic Group</i></p> <ul style="list-style-type: none"> • BEngineering (Electronics & Computer Systems) • BEngineering (Telecommunications & Network Eng) • BEngineering (Robotics & Mechatronics) 	<p><i>Faculty of Information & Communication Technologies:</i> <i>Computer Science & Software Engineering Academic Group:</i> <ul style="list-style-type: none"> • BScience (Prof Software Developm't) </p>	<p><i>Faculty of Information & Communication Technologies:</i> <i>Computer Science & Software Engineering Academic Group:</i> <ul style="list-style-type: none"> • BICT(Network Design & Security) • BICT(Games Development) <i>Faculty of Life & Social Sciences:</i> <ul style="list-style-type: none"> • BA(Games & Interactivity) • BA(Digital Media) & BA(Digital Media & Mktg) <p><i>Faculty of Design:</i> <i>Digital Media Design Group:</i> BDesign(Digital Media Design)</p> </p>
Victoria	<p><i>Faculty of Business and Law:</i> <i>Dept of Management & Info Systems:</i> <ul style="list-style-type: none"> • BBusiness (Info Systems) • BBusiness (Computer Systems Management) </p>					<p><i>Faculty of Health Engineering & Science:</i> <i>School of Eng & Science:</i> BInformation Technology(Network & Systems Computing)</p>

Table E2: Gains and Losses in IT and Information-related courses offered at Victorian universities, 1997-2011

(Source: Institutional handbooks and VTAC Guides, 1997-2011)

University	1997 programs which survived throughout the period (program names had changed in some cases)	1997 programs which were closed during the period (last year of offering shown in brackets)	2011 programs which were created during the period (first year of offering shown in brackets)
<ul style="list-style-type: none"> Melbourne University programs as at 2008 as explained in the text Programs offered by non-IT departments are shown in italics 			
Ballarat	<ul style="list-style-type: none"> BComputing as BInfo Technology (1998) & BInfo Tech (Prof Practice) (2003) 		<ul style="list-style-type: none"> BInfo Tech (Business Systems) (2005) BInfo Tech (Computer Games) (2006) BInfo Tech (Software Eng) (2011)
Deakin	<ul style="list-style-type: none"> BCommerce (Business Computing) as BBusiness Information Systems BApplied Science (Computing) as BInformation Technology BScience (CS & S'ware Development) as BInfo Tech (CS & S'ware Dev't) 	<ul style="list-style-type: none"> BApp Sci (Information Management) (1997) BScience (Information Systems) (2004) BEngineering (Computronics) (2004) BTechnology (Computronics) (2004) 	<ul style="list-style-type: none"> BInfo Tech (Multimedia Technology) (1998) BInfo Tech (Games Design & Development) (2005) BInfo Tech (IT Security) (2006)
La Trobe	<ul style="list-style-type: none"> BInformation Systems BComputing as BInformation Technology BComputer Science BComputer Systems Engineering 	<ul style="list-style-type: none"> BBusiness (Computing) (1998) BTech (CompTechnology) (2007) BCognitive Science (2007) <i>BHealth Information Management (converted to Masters degree) (2009)</i> 	<ul style="list-style-type: none"> BComputer Science in Games Technology (2005)
Melbourne		<ul style="list-style-type: none"> BEng(Computer Engineering)* BInformation Systems* BComputer Science* BEng(Software Engineering)* 	

Monash	<ul style="list-style-type: none"> • BBusiness Systems as BBusiness Information Systems • BComputing as BInformation Technology & Systems • BComputing(Computer Science) as BComputer Science • BComputer Science & Engineering as BComputer Systems Engineering 	<ul style="list-style-type: none"> • BDigital Systems (2004) • BInformation Systems (2005) • BInformation Management (1998) 	<ul style="list-style-type: none"> • BSoftware Engineering (1999)
RMIT	<ul style="list-style-type: none"> • BBusiness (Business Info Systems) • BApp Science (Computer Science) as BComputer Science • BApp Science (Software Engineering) as BSoftware Engineering • BEng(Computer Systems Engineering) as BEng(Computer & Network Eng) 	<ul style="list-style-type: none"> • BEng(Software Systems Engineering) (2006) • BBusiness(Information & Library Management) (2009) 	<ul style="list-style-type: none"> • BInformation Technology (2002) • BDesign (Multimedia Systems) (2002) • BIT (Games & Graphics Prog) (2005) • BA(Games Graphics Design) (2005) • BTechnology (Computing Studies) (2007) • BComp Sci(Network Computing) (2011) • BCompSci(Database Systems) (2011)
Swinburne	<ul style="list-style-type: none"> • BInformation Systems as BBusiness Information Systems • BInformation Technology • BSoftware Engineering as BSc(Professional S'ware Development) • BEng(Robotics & Mechatronics) • BEng (Telecommunications & Networks) • BApp Sc(Computer Science & SE) as BSc(Computer Science) 	<ul style="list-style-type: none"> • BApp Sc(Computing) (1998) • BAppSc(Multimedia Technology) (1999) 	<ul style="list-style-type: none"> • BEngineering (Electronics & Computer Systems) (2001) • <i>BA (Digital Media & Marketing) (2000)</i> • <i>BDesign(Digital Media Design) (2000)</i> • <i>BA(Games & Interactivity) (2006)</i> • BInformation & Communication Technology (2006) • BICT(Nwk Design & Security) (2007) • BICT (Games Development) (2010)
VU	<ul style="list-style-type: none"> • BBusiness (Information Systems) • BBusiness (Systems Support) as BBusiness (Computer Systems Mgt) 	<ul style="list-style-type: none"> • BApp Science (Computer Technology) (2005) • BScience (Computer Science) (2009) • BEng (M'media Telecommunication) (2005) 	<ul style="list-style-type: none"> • BInfo Tech (Network & Systems Computing) (2011)

Table E3: IT-related programs which were created and then closed down within the period 1997-2011

(Source: Institutional handbooks and VTAC Guides, 1997-2011)

University	Name of Degree Program	First offered	Last offered
Ballarat	BApplied Computing	2006	2008
Deakin	BInfoTech (Information Modelling)	2004	2005
	BInteractive Media	2006	2008
	BInfo Tech(Web & Mobile Technologies)	2007	2008
La Trobe	BComp Sys Engineering(Comp Networks)	2000	2008
	BComp Sys Engineering (S'ware Eng)	2000	2010
	BEng(Internet Telecommunications)	2001	2002
	BIT(Computer Networks)	2001	2007
	BIT (Software Development)	2001	2007
	BIT (Information Systems)	2001	2007
Melbourne	BEngineering(IT)	2003	2005
	BGeographic Information Technology	2003	2006
Monash	BMultimedia	1998	2005
	BNetwork Computing	1999	2005
	BElectronic Commerce	1999	2001
	BInformation Management & Systems	1999	2005
	BMultimedia Computing	2001	2003
	BMultimedia Business & Computing	2003	2003
	BMultimedia (Games Development)	2004	2005
	BInternet Systems & Commerce	2005	2006
RMIT	BIT(Computing & Internet Technology)	1999	2010
	BApp Sci (Computing & Digital Tech)	1999	2005
	BComputational Science	2002	2005
Swinburne	BApp Sc(Computing & Applied Statistics)	2000	2001
	BMultimedia Networks & Computing	2000	2006
	BMultimedia Software Development	2000	2006
	BTechnology(Info Systems)	2003	2006
	BTechnology(IT &S'ware Engineering)	2003	2006
	BTechnology (Interactive Multimedia)	2003	2006
	BBusiness(Business Systems Design)	2007	2008
VU	BComputer Science & Aviation	1998	2009
	BEng(ComputerEngineering)	2000	2005
	BBusiness(Electronic Commerce)	2000	2009
	BBusiness (Accounting/ECommerce)	2000	2002
	BBusiness(Marketing/Ecommerce)	2001	2009
	BBusiness (ECommerce/Int'nal Trade)	2001	2009
	BBusiness(Fin Risk Mgt/ECommerce)	2002	2003
	BBusiness(Tourism Management/IS)	2001	2003
	BSc(Computational & Financial Maths)	2005	2008
	BSc(Internet Tech & Applications)	2005	2009
	BSc(Information Technology)	2005	2009
	BEngineering(Software Engineering)	2005	2006

Table E4: Enrolments in Year 12 Specialist IT Units in Victorian Secondary Schools, 1992-2011

(Source: VCAA, 2012)

Year	Info Systems (1992-2006) Software Development (2007-2011)			Info Processing & Mgt (1992-2006) IT Applications (2007-2011)		
	Unit 3	Unit 4	Total	Unit 3	Unit 4	Total
1992	1693	1613	3306	9119	8518	17637
1993	1548	1468	3016	9784	9169	18953
1994	1333	1282	2615	11136	10460	21596
1995	1661	1588	3249	12112	11512	23624
1996	1789	1716	3505	12254	11684	23938
1997	1993	1909	3902	12410	11846	24256
1998	2093	1997	4090	13288	12632	25920
1999	2324	2219	4543	13684	13043	26727
2000	2886	2791	5677	14005	13572	27577
2001	3491	3373	6864	13777	13356	27133
2002	3194	3079	6273	12113	11713	23826
2003	2956	2861	5817	10093	9748	19841
2004	2538	2458	4996	7857	7526	15383
2005	2037	1983	4020	6583	6325	12908
2006	1884	1824	3708	5361	5203	10564
2007	1564	1502	3066	4749	4526	9275
2008	1432	1384	2816	4147	3978	8125
2009	1353	1293	2646	4286	4082	8368
2010	1257	1217	2474	3649	3489	7138
2011	1349	1303	2652	3247	3102	6349

Table E5: Measures of Domestic Student Demand for Programs Classified as IT under ASCED <i>(Source:VTAC, 2012)</i>		
Year	First Preferences	Enrolments
1996-97	5817	3977
1997-98	6001	4025
1998-99	6513	4171
1999-00	7610	4477
2000-01	8285	4688
2001-02	7721	4495
2002-03	6016	4170
2003-04	4763	3568
2004-05	3826	2726
2005-06	3079	2338
2006-07	2948	2223
2007-08	2758	2219
2008-09	3102	2351
2009-10	3190	2422
2010-11	2971	2265

Table E6(a) Sample Group of Single Degree IT Programs used to Measure Trends in Student Demand, 1997-2011*(Source: VTAC Guides, 1997-2012)*

University	Course	VTAC Code(s)	Comments
Deakin	BInformation Technology (Multimedia Technology)	16671	Underwent several name changes: BComputing (Information Management) from 1998-99; BComputing (Multimedia Technology) from 2000-04; BIT(Multimedia Technology) from 2005
	BInformation Technology (CS & Software Development)	14241	Name was BComputing (Computer Science & Software Development) from 2002-04
La Trobe	BComputer Science	21941	
	BComputer Systems Engineering	21251	
Melbourne	BComputer Science	38021	Program not offered after 2008, following organizational changes to structure of undergraduate teaching programs
Monash	BComputer Science	28231	
	<ul style="list-style-type: none"> • BComputing • BInfo Technology & Systems 	27371 27011	BComputing closed in 2004 and replaced by the BInformation Technology and Systems.
RMIT	BComputer Science	32831	
	BComputing & Internet Technology	31221	Offered for the first time in 1999
Swinburne	BInformation Technology	34311	
	<ul style="list-style-type: none"> • BComputer Science & Software Engineering • BSoftware Development 	34431 34001	BComputer Science and Software Engineering was closed down in 2006 and replaced by BSoftware Development

VU	BComputer Science	40561/ 41031	Coded as 40561 from 1998-2000 and as 41031 from 2002 until 2009, after which it was closed down. Combined with several other programs under another code in 2001
	BComputer Technology	40831	Closed down from 2006

Table E6(b): Double Degrees Associated with Sample Group of IT Programs used to Measure Trends in Student Demand, 1997-2011

(Source: VTAC Guides, 1998-2012)

University	Degree Name	VTAC Code
Deakin	BInformation Technology/BInformation Systems	14221
	BEngineering/BInformation Technology	14591
La Trobe	BCognitive Science/BComputer Science	21111
	BComputer Science/BScience	21121
	BComputer Science/BEngineering (Elec)	21236
	BComputer Science/BCommerce	21411
Monash	BBus(Accounting)/BComputing	27011
	BBusiness/BInformation Technology & Systems	27121
	BArts/ BInformation Technology & Systems	27171
	BBus(Banking & Finance)/BComputing	27671
	BArts/BComputer Science	28081
	BComputer Science/BLaw	28581
	BComputer Science/BEducation (Secondary)	28591
	BScience/BComputer Science	28641

RMIT	BEngineering-Mechanical/BComputer Science	31061
	BEngineering- manufacturing & Management/BComputer Science	31651
	BLand Information/BComputer Science	32301
	BComputer Systems Engineering/BComputer Science	32901
	BEngineering - Communications&Electronics/BComputer Science	33101
	BEngineering-Electronics /BComuter Science	33381
Swinburne	BEngineering -Telecomm & Network/BCS & SE	34191
	BEngineering –Electrical &Computer Systems/BCS & SE	34231
	BMultimedia- Games & Interactivity/BCS & SE	34721
	BEngineering –Telecommunications & Internet Technologies/BCS & SE	34791
	BEngineering –Robotics & Mechatronics/BCS & SE	34991
UniMelb	BComputer Science/BLaw	38041
	BEngineering (Mechatronics)/BComputer Science	38221

Table E7: Total of VTAC Preference 1-4 for Sample Group of IT Degrees and Their Associated Double Degrees

(Source: VTAC Admissions data)

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Single Degrees	4547	4037	4839	5049	4448	4849	3347	2422	1855	1704	1855	1791	1912	1524	1296
Double Degrees	991	1451	1738	2045	1725	1384	1238	1081	1112	940	890	730	798	660	739

Table E8(a): Number of VTAC Year 12 Students Offered Places in Sample Group of IT Degree Programs

(Source: VTAC Guides, 1998-2012)

Institution	Course	VTAC Course Code(s)	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Deakin	Multimedia Technology	16671	n/a	n/a	n/a	42	39	33	17	35	31	38	16	15	15	13
	Info Tech (CS & S'ware Dev'mnt)	14241	n/a	n/a	n/a	n/o	53	37	19	50	43	47	41	31	21	21
La Trobe	Computer Science	21941	n/a	n/a	n/a	24	20	20	19	7	8	5	8	9	12	11
	Computer Systems Engineering	21251	n/a	n/a	n/a	5	10	10	10	10	3	2	6	3	4	8
Melbourne	Computer Science	38021	n/a	n/a	n/a	50	39	43	27	14	8	10	18	n/o	n/o	n/o
Monash	Computer Science	28231	n/a	n/a	n/a	78	53	49	44	22	21	26	24	24	22	34
	Computing/Info Tech & Systems	27371 /27011	n/a	n/a	n/a	97	71	61	39	26	37	62	70	76	41	n/a
RMIT	Computer Science	32831	n/a	n/a	n/a	12	35	41	33	44	32	36	33	40	26	16
	Computing & Internet Technology	31221	n/a	n/a	n/a	12	10	20	23	16	11	35	42	23	n/a	n/o
Swinburne	Information Technology	34311	n/a	n/a	n/a	37	35	34	23	29	28	33	26	33	22	30
	CS & S'ware Engineering/ Software Development	34431 /34001	n/a	n/a	n/a	40	24	14	6	10	13	11	10	16	10	18
VU	Computer Science	41031 /41031	n/a	n/a	n/a	n/a	40	28	6	1	4	5	3	3	n/o	n/o
	Computer Technology	40831	n/a	n/a	n/a	30	51	18	0	1	n/o	n/o	n/o	n/o	n/o	n/o
TOTAL			n/a	n/a	n/a	427	480	408	266	265	239	310	297	273	173	151

n/o means program, not offered; n/a means data not available; - means data not published for that year

Table E8(b): Number of VTAC Year 12 Students Offered Places in Double Degrees Associated with Sample Group of IT Degrees

(Source: VTAC Guides, 1998-2012)

Uni	Name	Code	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Deakin	BIT/BIS	14221										8	14	5	6	13	14
Deakin	BEngineering/BIT	14591													6	0	1
La Trobe	BCognitive Science/BCS	21111					8	6	4	5	2	5	2				
La Trobe	BCS/BScience	21121					4	3	1	2	1	2	2				
La Trobe	BCS/BEngineering (Elec)	21236															
La Trobe	BCS/BCommerce	21411					9	14	16	6	7	4	7	0	2	5	0
Monash	BBus(Accounting)/BComputing	27011					26	21	18	10	6						
Monash	BBusiness/BInfo Tech & Systems	27121										8	7	2			
Monash	BArts/BInfo Tech & Systems	27171										7	3	4	5	4	
Monash	BBus(Banking & Finance)/BComputing	27671					11	8	4	5	2						
Monash	BArts/BCS	28081					24	27	11	6	4	5	4	3	1	2	
Monash	BCS/BLaw	28581						2	0								
Monash	BCS/BEducation(Secondary)	28591											3	0			
Monash	BScience/BCS	28641							34	26	11	24	15	7	19	21	22
RMIT	BEng(Mech)/BCS	31061					4	2									
RMIT	BEng(M'fac & Mgt)/BCS	31651					0	1									
RMIT	BLand Information/BCS	32301					5	0	1	2	3	1	0	0			
RMIT	BComputer Systems Engineering/BCS	32901					37	32	25	6	19	19	8	15	9	8	13
RMIT	BEng - Comm,Electronic /BCS	33101					24	40	22	5	5	3	3	0	2		
RMIT	BEngineering-Electronic/BCS	33381								3	4	10	14	11	7	7	7
Swinburne	BEng-Telecomm & Nwk Eng/BCS&SE	34191											4	4	5		
Swinburne	BEng-Elec & Comp Sys/BCS&SE	34231											9	8	n/a	n/a	n/a
Swinburne	BM'media- Games & I'activity/BCS&SE	34721									44	32	33	18	30	15	30
Swinburne	BEng -Telecomm & I'net Tech/BCS&SE	34791					34	21	13	9	8						
Swinburne	BEng-Robotics & Mechatronics/BCS&SE	34991					18	13	20	22	19	19	12	10	22	29	30
UniMelb	BCS/BLaw	38041					13	11	3	2	4	0	0				
UniMelb	BEng - Mechatronics/BCS	38221					n/o	96	70	69	60	49	36				

Table E9: Published Clearly-in ENTERs for the Sample Group of IT Single Degree Programs, 1997-2011

(Source: VTAC Guides, 1998-2012)

Institution	Course	VTAC Course Code(s)	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Deakin	Multimedia Technology	16671	65.45	72.75	75.9	72.7	76.95	67.3	70.4	57.1	56.35	60.9	56.2	61.45	62.35	55.85
	Info Tech (CS & S'ware Dev'mnt)	14241	n/o	n/o	n/o	n/o	79.2	73.1	72.1	58.6	54.4	54.7	58.15	60.85	61.55	56.0
La Trobe	Computer Science	21941	73.25	72.35	80	82.05	80.85	79.05	68.15	69.5	63.65	61.5	61.95	59.75	50.4	62.25
	Computer Systems Engineering	21251	74.3	74.45	80.25	84	77	77.95	67.25	71.7	66.15	64.45	63.65	66.65	-	63.3
Melbourne	Computer Science	38021	88.35	92	93.15	93.25	93.2	91.2	89.25	86.25	-	87.35	85.1	n/o	n/o	n/o
Monash	Computer Science	28231	81.9	85.55	87.35	86.9	87.7	77.9	73.45	77.15	75.25	70.5	71.2	70	71.4	82.1
	Computing/IT & Systems	27371/ 27011	76.25	78.65	85.15	82.5	81	71.85	70.35	70	70.1	70.3	70.2	70.3	70	-
RMIT	Computer Science	32831	85.25	91	90.2	91.85	90	82.6	70.15	74.8	68.35	64.85	70.3	70.2	75.6	82.5
	Computing & Internet Technology	31221	n/o	80.1	80.55	84.3	82.5	80.25	65.1	-	65.6	58.35	59.45	60.9	-	-
Swinburne	Information Technology	34311	-	97.25	98.1	96.25	96.8	-	-	80.4	83.65	81.5	81.15	76.2	76.75	76.6
	CS & S'ware Engineering/ Software Development ⁽³⁾	34431/ 34001	78.15	77.25	80.9	85.35	86.05	81.65	82.55	72	70.25	71.4	70.5	70.05	77.05	70.35
VU	Computer Science	41031/ 41031	60.3	60.15	-	n/a	65.05	65.15	67.7	-	61.75	-	-	65.3	n/o	n/o
	Computer Technology	40831	54.15	64.05	59.8	59.8	60.1	65.05	-	65.05	n/o	n/o	n/o	n/o	n/o	n/o
Average Clearly-in ENTER			73.7	78.8	82.9	83.5	81.3	76.1	72.4	71.1	66.9	67.8	68.0	66.5	68.1	68.9
n/o means program, not offered; n/a means data not available; - means data not published for that year																

Table E10(a) All IS Degree Programs offered at Victorian Universities,1997-2011 <i>(Source: VTAC Guides, 1997-2011)</i>		
University	Program	Course Code
Deakin	BManagement Information Systems/BBIS	14211
La Trobe	BInformation Systems/BBusiness Information Systems	21041
Monash	BInformation Systems/BIS major	28181/27151
Monash	BBusiness Systems/BBIS	28221/28421
RMIT	BBusiness Information Systems	32651
Swinburne	BInformation Systems/BBIS	34641
Melbourne	BInformation Systems	38691
VU	BInformation Systems	40221

Table E10(b): Double Degree Programs Associated with IS programs offered at Victorian Universities, 1997-2011 <i>(Source: VTAC Guides, 1997-2011)</i>		
University		Code
Deakin	BBusiness Information Systems/BInformation Technology	14221
La Trobe	BIS/BBusiness	21175/21171
La Trobe	BIS/BArts-Information Science	21271
La Trobe	BLaw/BIS	21701
La Trobe	BIS/BHealth Information Management	21701
Monash	BArts (Policy Studies)/BIS	27181
Monash	BArts/BIS	27271
Monash	BCommerce/BBusiness Systems	28268/28261
Monash	BCommerce/BBIS	28531
Monash	BIS/BEducation (Secondary)	28541
Monash	BArts/BBIS	28791
Monash	BBusiness Systems/BLaw	28844/28841

Monash	BIS/BEducation (Primary)	29041
Swinburne	BIS/BBusiness	34561
UniMelb	BGeomatics/BIS	38461
UniMelb	BScience/BIS	38655/38651
UniMelb	BCommerce/BIS	38747/38741
VUT	BIS/BArts	43488/43481
VUT	BAccounting/BIS	43549/43171
VUT	BAccounting/BIS	40211

Table E11: Total of VTAC Preferences 1-4 for IS Degrees and Their Associated Double Degrees*(Source: VTAC Admissions data)*

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Single Degrees	6545	6443	6486	6954	6972	5800	4110	3407	3057	2410	2421	2162	2045	2039	1679
Double Degrees	1159	1267	1849	1844	2110	1770	1155	857	600	627	544	457	420	383	386

Table E12(a): Number of VTAC Year 12 Students Offered Places in IS Degrees, 1997-2011*(Source: VTAC Guides, 1997-2011)*

University	Program	Course Code	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Deakin	Information Systems	14211	n/a	n/a	n/a	28	29	18	12	29	18	30	39	28	22	36
La Trobe	Information Systems	21041	n/a	n/a	n/a	8	4	2	7	9	8	19	8	17	15	n/a
Monash	Information Systems/ BITS(IS major)	28181/ 27151	n/a	n/a	n/a	45	36	40	50	21	n/o	5	15	9	0	n/o
Monash	Business Systems/ Bus Info Systems	28221/ 28421	n/a	n/a	n/a	79	73	51	50	34	32	37	40	43	37	55
RMIT	Business Information Systems	32651	n/a	n/a	n/a	56	65	30	53	77	87	56	67	68	77	78
Swinburne	Information Systems	34641	n/a	n/a	n/a	23	13	12	5	21	11	13	9	7	9	9
Melbourne	Information Systems	38691	n/a	n/a	n/a	78	85	68	51	37	41	26	14	n/o	n/o	n/o
VU	Information Systems	40221	n/a	n/a	n/a	62	46	37	2	4	3	8	5	16	10	4
TOTAL			n/a	n/a	n/a	379	351	258	230	232	200	194	197	188	170	182

Table E12(b): Number of VTAC Year 12 Students Offered Places in IS Associated Double Degrees

(Source: VTAC Guides, 1997-2011)

Uni		1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Deakin	BIS/BIT	n/a	n/a	n/a	n/a						8	14	5	6	13	14
La Trobe	BIS/BBusiness	n/a	n/a	n/a	n/a	5	13	17	10	5	6	4	4	5	5	2
	BIS/BArts-Info Sci	n/a	n/a	n/a	n/a	22	13									
	BLaw/BIS	n/a	n/a	n/a	n/a		1	2	0	1	0					
	BIS/BHealth Info Mgt	n/a	n/a	n/a	n/a										0	0
Monash	BArts (Policy Studies)/BIS	n/a	n/a	n/a	n/a											
	BArts/BIS	n/a	n/a	n/a	n/a	12	19	10	6	5						
	BCommerce/BBusiness Systems	n/a	n/a	n/a	n/a	30	18	25	28	16						
	BCommerce/BBIS	n/a	n/a	n/a	n/a						22	17	14	21	15	19
	BIS/BEducation(Secondary)	n/a	n/a	n/a	n/a	9	3	2	1	2						
	BArts/BBIS	n/a	n/a	n/a	n/a						7	5	5	3	5	2
	BBusiness Systems/BLaw	n/a	n/a	n/a	n/a	6	5	2	1	1						
	BIS/BEducation(Primary)	n/a	n/a	n/a	n/a	2	0	0	1	0						
Swinburne	BIS/BBusiness	n/a	n/a	n/a	n/a	27	22	13			24	33	28	28	23	23
Melbourne	BGeomatics/BIS	n/a	n/a	n/a	n/a	10	11	9	3	2	6	4				
	BScience/BIS	n/a	n/a	n/a	n/a	59	59	28	33	15	14	6				
	BCommerce/BIS	n/a	n/a	n/a	n/a	165	142	122	48	39	20	23				
VUT	BIS/BArts	n/a	n/a	n/a	n/a	n/a										
	BAccounting/BIS	n/a	n/a	n/a	n/a	n/a	n/a									
	BAccounting/BIS	n/a	n/a	n/a	n/a	17	3	9	2	8	4	8	0			
TOTAL						364	309	239	133	94	111	114	56	63	61	60

Table E13: Published Clearly-in ENTERs for IS programs, 1997-2011

(Source: VTAC Guides, 1998-2011)

University	Program	Course Code	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Deakin	Information Systems	14211	n/o	n/o	n/o	78.95	78.55	75.45	67.85	64.35	62.1	68.4	69.25	70.35	72.4	55.2
La Trobe	Information Systems	21041	74.15	75.75	81	85.85	84.75	80.05	70	68.45	62.8	59.85	60.2	55.55	51.95	n/a
Monash	Information Systems/ BITS(IS major)	28181/ 27151	88.55	80.6	85.1	84.55	83.65	75.35	70.55	71.45	n/o	71	71.65	70	n/o	n/o
Monash	Business Systems/ Bus Info Systems	28221/ 28421	89.6	91.05	93.05	92	92.3	88.25	82	88.85	87.35	86.15	87	78.35	79.6	85.8
RMIT	Bus Info Systems	32651	81.75	85.05	89.6	89.05	86.6	85.95	66.6	66.25	65.6	70.4	67.05	70.15	67.05	67.3
Swinburne	Information Systems	34641	77.6	79.15	82.75	82.5	84.35	81.25	82.65	71	71.7	70.65	-	-	73.95	65.15
Melbourne	Information Systems	38691	89.7	91.7	91.45	89.65	86.6	79.3	76.95	77.3	77.05	77	86.4	n/o	n/o	n/o
VU	Information Systems	40221	65.95	63	60	64.5	66.55	65	70.15	75.65	61.95	-	-	50.35	50	51.1
Average Clearly-in ENTER			81.0	80.9	83.3	83.4	82.9	78.8	73.3	72.9	69.8	71.9	73.6	65.8	65.8	64.91

Table E14: Examples of disciplinary/structural change involving the formation or enhancement of IS programs and organizational units		
University	Year	Change
Ballarat	2005	Creation of new specialist IS degree program called BInformation Systems, offered by School of Mathematical and Computer Sciences. The program was initially built largely around units which the School had offered as a major in business computing into the degree programs run by the Faculty of Business, and its content overlapped with the School's existing BInformation Technology. It was subsequently re-named to BBusiness Information Systems in 2007 and then to BInformation Technology (Information Systems) in 2008 and BInformation Technology (Business Systems) in 2009.
Deakin (Science faculty)	1998	Up-grading of IS major taught by the School of Computing and Mathematics to an independent degree called the BComputing(IS) as part of its suite of BComputing degrees
Deakin (Business faculty)	2001	Up-grading of IS major taught into the BCommerce by the School of Information Systems to the status of an independent degree called the Bachelor of Management Information Systems. The degree was subsequently re-named to BInformation Systems in 2004.
La Trobe (Bendigo campus)	2001	Formation of a new independent IS degree program called the BInformation Technology(Information Systems) offered alongside a BIT(Computer Networks) and BIT(Software Development). These three degrees were created by partitioning the long-running generalist BIT program.
La Trobe (Bundoora campus)	2009	Creation of new major in Management Information Systems offered into the BBusiness, by an MIS group which had been formed within the Department of Management in the Faculty of Business and Law. The major was subsequently re-named without any change in content to a major in Business Information Systems.
Melbourne	1999-2003	Creation in 1999 of an Accounting Information Systems group in the Dept of Accounting in the Faculty of Commerce, which offered several specialist streams in IS within the BCommerce. These streams included (at different times) Business Analysis & Systems, Business Systems, E-commerce, and Enterprise Information Systems. In 2003, the Department of Accounting was re-named to become the Department of Accounting and Business Information Systems.

Table E15: Examples of disciplinary/structural change involving disciplinary diversification and expansion of scope of IS

University	Year	Change
Deakin (business faculty)	2001-2002	Expansion of the range of majors offered into the BCommerce by the School of Information Systems. Having previously offered only a single major in MIS, the school added new majors in business systems implementation, business systems management, information business systems, e-commerce implementation and e-commerce management
	2001	Creation of BIT offered jointly by School of Information Systems and School of Computing & Mathematics. Renamed to BBusiness IT in 2005; replaced by double degree program combining IS with IT in 2006
	2005-2011	Introduction of a range of new majors, which were taught jointly by the School of Information Systems and other Business schools into the BCommerce and BManagement degrees. These new majors included Health Informatics, Supply Chain Management, Business Security Management, Accounting Information Systems, Quantitative Business Analysis, Interactive Marketing and E-Business
La Trobe	1997-02	Creation of double degree programs combining studies in IS with Business (1997), Arts (1998) and Law (2002)
Melbourne	1997-98	Creation of double degree programs combining studies in IS with studies in Science (1997), Commerce (1997) and Geomatics (1998)
Monash	1998-99	Creation of new degree programs in Multimedia and Electronic Commerce. The BMultimedia was offered jointly by the School of Information Management & Systems (SIMS) and the Faculty of Art & Design, while the BElectronic Commerce which was taught jointly by the Faculty of IT and Faculty of Business and Economics included units from both SIMS and the School of Business Systems
	1997-01	Creation of double degree programs combining studies in Business Systems with studies in Law (1997), and studies in Information Management and Systems with Arts (2000), Education (2001) and Policy Studies (2000)
Swinburne	1998	Creation of double degree program combining IS with Business (1998)
VUT	2000	Creation of joint degree and double degree programs combining studies in IS with studies in Accounting (1997) and Tourism Management (2001), and studies in Electronic Commerce with studies in Law (2001), Multimedia (2001), Science (2003), Engineering (2003), and a variety of business disciplines, including Accounting (2000), Marketing (2001) International trade (2001), Retail management (2001), Financial risk (2002), Transport and Logistics (2001), and Music Industry (2001)

Table E16: Examples of disciplinary/structural change involving merger of IS with another discipline		
University	Year	Change
La Trobe (Bendigo campus)	2005	Completion of full integration of Bendigo campus with Bundoora campus. IT group in Bendigo campus's School of Business and Technology becomes the Bendigo section of the Department of Computer Science and Computer Engineering in the Faculty of Science Technology and Engineering. IS units previously taught at Bendigo campus replaced by CS-oriented IS units from Bundoora campus
Melbourne	2011	Re-location of Dept of IS from the Faculty of Science to join with the Dept of Computer Science & Software Engineering in the Faculty of Engineering
Monash	1998	Merger of Dept of IS and its BIS degree program at Caulfield campus with the Dept of Librarianship Archives and Records and its BIM degree program into a new School of Information Management & Systems (SIMS); creation of new Bachelor of Information Management and Systems degree, combining IS and IM components (later re-named to BIS in 2003)
	2005	Merger of Dept of IS at Caulfield and Dept of Business Systems at Clayton with the other computing departments on each campus to create campus-based schools
RMIT	2000	Merger of Dept of Information Management & Library Studies with Dept of Business Information Systems to form a School of Business Information Technology
	2010	Merger of staff from supply chain and logistics management in the Department of Management with the School of Business IT to form the School of Business IT & Logistics
Swinburne	1998	Merger of School of Information Systems in Faculty of Business with other IT-related departments into a new broadly-based School of Information Technology (later re-named to School of Information Communication and Technology and then to Faculty of Information Communication and Technology). There were no departments in the new multi-disciplinary school/faculty, but explicit recognition continued to be given to IS as one of its specialist academic groups.
VU	2010	Merger of Dept of IS with Dept of Management into a new Dept of Management and Information Systems

Table E17: Examples of disciplinary/structural change involving closure of IS departments or programs		
University	Year	Change
Deakin	2004	Closure of BComputing(IS) which had been previously offered by the School of Computing and Mathematics
	2006	Closure of BIT which had been offered jointly by the School of Management Information Systems and the School of Computing and Mathematics
La Trobe (Bendigo campus)	2008	Closure of BInformation Technology(IS) and other specialist programs and reversion to a single generalist BIT degree.
Melbourne	2009	Closure of BInformation Systems program as part of the re-structure of all undergraduate teaching
	2009	Closure of IS-related majors taught by Dept of Accounting Information Systems as part of the re-structure of all undergraduate teaching.
Monash	2001	Termination of the involvement (and part ownership) of the Caulfield School of Information Management and Systems in the BMultimedia and BElectronic Commerce. Transfer of these programs and their units to a newly-established School of Multimedia Systems
	2005	Closure of the specialist BIS degree program at Caulfield, to be replaced by separate IS and IM majors within a generalist applied computing program called the BInformation Technology & Systems (BITS)
	2011	Closure of independent IS and IM majors and their replacement by a broadly-based major in Enterprise Information management within the BITS
RMIT	2010	Closure of BInformation & Knowledge Management
Swinburne	2006	Closure of Information Systems major(s) within the Faculty of Business, leaving undergraduate IS confined to the Faculty of ICT
VUT	2008	Closure of BBusiness(Electronic Commerce) and its associated combined and double degrees, which had been created, managed and run by the School of Information Systems
		Closure of double degree of IS with and of all double degrees associated with the BElectronic Commerce

Table E18: 2011 Curricula of IS Programs with Stable Curricula, 1997-2011

(Source: Institutional Handbooks, 1997-2011)

Units in normal typeface appear to have remained largely unchanged in the curriculum since 1997 (old name given in parentheses after description)

Units in bold typeface are units with substantially new content, added to the curriculum since 1997

Units in italics are units which have been removed from the curriculum since 1997

	RMIT Business Information Systems	VUT Business Information Systems	Swinburne Business Information Systems	Melbourne Business Information Systems (2008 curriculum – last year offered)
Associated compulsory units	Introductory Accounting Microeconomic Analysis Macroeconomic Analysis Introduction to Organizational Behaviour Commercial Law Business Statistics Marketing Principles	Accounting for decision-making Economic Principles Management and Organization Behaviour Business Law Business Statistics Introduction to Marketing (Macroeconomic Principles) Professional Development 1, 2 &3	Accounting Organization and Management Fundamentals of Marketing Organizational behaviour	Quantitative Methods 1 Critical Thinking with Data One business unit from a list of 8 units taught by the Faculty of Commerce
Basic Concepts: Computers, Information & Systems	Business Computing 1: Introduction to basic concepts in business and information systems; analysis and modelling of business needs and use of ICT to address them (Systems Foundations)	IS for Business: Introduction to nature and types of information system and their role in business processes; introduction to IT as a part of business systems; principles of development process (Computer Applications)	ICT Environments: Introduction to a variety of desktop IT hardware and networking technologies; Internet and web technologies; installation and configuration of a PC and basic network Introduction to Business Information Systems: Role and purpose of IS in organizations; overview of issues involved in the organizational development and implementation of IT and IS (Introduction to IS)	Foundations of IS: Introduction to basic concepts in IS and the way IS are used in organizations. (IS in Organisations)

Computer Hardware and Systems	Business Information Technology: Computer hardware, computer architecture, operating systems, file structures, data communications (Information Technology 1)	Computer Systems: Computer hardware architecture and operating systems; file systems and file management; network topologies	<i>[System Architecture 1: Hardware and O/S concepts; basic concepts of data communications]</i> <i>[System Architecture 2: Advanced topics in O/S and networking; Unix]</i>	Technologies for IS 1: Introduction to key components of modern technological infrastructures for IS, including hardware, software, data structures, networks and the internet
Database	Business Database Fundamentals: Key concepts in database within the context of business information systems (Applications Development 2)	Database Systems: Introduction to database concepts, data modelling, database design, SQL, database administration; security; distributed database; data warehousing	Database Analysis & Design: Relational database concepts, database design, data modelling, SQL; construction of a simple data base system Database Systems (optional specialist elective): Database design, administration and performance management; distributed database; data warehousing, data mining and OLAP; security (Data Analysis & Design) (Database M'gement Systems 1)	Database Concepts: Data modelling, database design and query languages; database administration.; distributed database; data warehousing (Concepts in Database and Telecommunications)
Data Communications	Networks & Operating Systems: Introduction to the architecture and technology of computer hardware and O/S and theory and practice of local and wide area networking (Information Technology 2)	<i>(Networks and Data Communications: Concepts and principles of data communications and networks)</i>	Mobile Business & Connectivity (optional specialist elective): Technology, business economics and public policy issues in networks and distributed applications	Telecommunications Concepts: Introduction to key concepts in data communications and networks; network protocols; network and organizational security; emerging technologies (Advanced Concepts in Database and Telecommunications)

Programming	<p>Introduction to business information systems development: Introduction to programming design and construction within the context of business information systems</p> <p>Business Information Systems Development 2: Further develop programming skills; commercial software design, implementation, documentation and testing; incorporating database access and GUI design (Applications Development 1) (Applications Development 2)</p>	<p>Introduction to Programming Concepts: Fundamentals of programming – algorithmic design, control structures, data types, modular design, testing and documentation</p>	<p>Introduction to Programming in .NET: Introduction to basic programming concepts and structured programming; principles of modular design; testing and de-bugging; integrated development environments</p> <p>(Business Programming 1) (Business Programming 2A)</p>	<p>Concepts in Software Development 1: Algorithmic approaches to problem-solving; use of a high-level programming language to build a software application</p> <p>Concepts in Software Development 2: Introduction to O-O design and programming; software development life-cycle; tools for software development</p>
Systems Development	<p>Business Analysis and Design 1: Information gathering, process and data modelling, requirements specification, communication skills, development life-cycle and methodologies</p> <p>Business Analysis and Design 2: Advanced systems development techniques, methods and methodologies, emphasising O-O and agile methods</p> <p>(Systems Analysis and Design 1) (Systems Analysis and Design 2) (Systems Implementation 1) (Systems Implementation 2)</p>	<p>Systems Analysis: Introduction to system development techniques and methodologies; systems modelling (process and information), structured analysis; user requirements definition</p> <p>Systems Design: Introduction to concepts of systems design and basic design techniques; structured design; interface design; prototyping; quality assurance; testing</p> <p>Systems Implementation: Concepts and techniques used in the implementation of computer-based IS; project management; version control; change management; training and testing</p>	<p>Requirements Analysis & Modelling: Introduction to techniques for systems analysis and design; systems development process; structured and O-O approaches to analysis</p> <p>Business Process Modelling: Introduction to business process and process management concepts; principles of business process design; tools and techniques for process modelling and design; impact of process design on organizations</p> <p>Systems Acquisition & Implementation Management: basic concepts of systems acquisition approaches; package</p>	<p>Systems Analysis and Design: Requirements identification and specification and system design; data and process modelling; tools and techniques for analysis and design</p>

			<p>selection and implementation; vendor relationship management; change management</p> <p>Business Information Systems Analysis (optional specialist elective): Alternative approaches and techniques and methodologies for systems analysis; analysis of socio-technical problems; the value of critical thinking and multiple perspectives in problem-solving</p> <p>(Business Computing) (Information Systems 1) (Information Systems 2 as an elective) (Business Software Engineering as an elective)</p>	
IS Management	Business Information Systems Strategy and Governance: Role of IT and IS in business; principles of corporate governance and their application to IT and IS in enterprises	<i>Information Technology Management</i>	<p>IS Management: Organizational context for IT and IS; strategic alignment; architectures and frameworks; strategic planning to integrate business and IT; IT governance</p> <p>(Information Technology Strategies as an elective)</p>	
Project	Supervised Professional Practice: 12 months supervised work experience in an approved organization OR Industrial project	<i>Computer Project</i>	Industry Project (Analytical): A team-based project unit based around the analysis and requirements definition stage of the development of an IS	Information Systems Project: Group-based industry project for an external client

			Configuring BIS Solutions: A team-based project unit based around the development and implementation of an IS (Information Systems Project)	
Specialist topics	E-business Systems 1: Introduction to e-business concepts and technologies. Use of tools and technologies as basis for e-commerce systems	Web-enabled Business Systems: Role of IT in business – IT infrastructure, transactional systems, strategic systems and informational systems; use and management of information for web-enabled businesses	Enterprise Systems: Basic concepts and principles of enterprise systems; BPR; application of enterprise systems in organizations and their impact IS Project Management: PM principles and PMBOK; PM techniques, tools, methods and methodologies IS Risk & Security: Basic concepts and issues in security and risk management; IS failure and risk assessment; human and organizational factors Professional Issues in IT: Impact of ICT; role of IT professional; ethics and professional responsibilities <i>[Knowledge-based systems: Introduction to basic concepts, techniques and tools in AI, KBS and expert systems]</i>	Organizational Processes: Process view of organizations; intra- and inter-organizational process management; tools and techniques for identifying and mapping processes Organizational Analysis and Change: The relationship between IS and organizational change, and the management and facilitation of organizational change Project Management: Techniques of project management - evaluation, project planning and control; quality assurance, systems installation and training IS Architecture: Principles of high-level design and architecture of distributed IS; focus on XML, web services and their use in e-commerce Professional Issues in IS: Legal and ethical issues associated with the use of IS; their implications for IS professional practice

				<p>(Legal & Ethical Framework)</p> <p>Electronic Commerce: Introduction to e-commerce, focussing on managerial rather than technical aspects; deals with issues in B2B and B2C e- commerce</p>
--	--	--	--	--

Table E19: 2011 Curricula of IS Programs with Substantially Changed Curricula, 1997-2011

(Source: Institutional Handbooks, 1997-2011)

Units in normal typeface appear to have remained largely unchanged in the curriculum since 1997 (old name given in parentheses after description)

Units in bold typeface are units with substantially new content, added to the curriculum since 1997

Units in italics are units which have been removed from the curriculum since 1997

	Deakin BBusiness Information Systems	La Trobe (Bundoora campus) BInformation Systems	Monash Caulfield Enterprise Information Management major	Monash Clayton BBusiness Information Systems
Associated compulsory units	Accounting for Decision Making Communication for Academic Studies Business Law Business Communication Management <i>(Accounting 2)</i> <i>Business Statistics)</i> <i>(Microeconomics)</i> <i>(Macroeconomics)</i>	Discrete Maths <i>(Professional Communication (2 units))</i>		
Basic Concepts: Computers, Information & Systems	Business Information Systems: Introduces basic concepts in IS and information management in organizations; applications of IT in organizations; current trends in IS and their applications in business (Business micro-computing) Managing Data and Information: Issues in managing data and information in organizations; principles for data storage and access; social context; security and risk issues; adapting management approaches to organizational needs	CSEIITF IT Fundamentals: Broad introduction to IT; hardware, software, communications, networks, standard PC software (Information Systems)	Enterprises and information: Introduction to organizational information needs and the use of technologies to meet them (Information systems 1)	IT for business: Introduction to basic computing concepts and business applications tools (Introductory computing for business applications) Introduction to business information systems: Introduction to the operations of business; structures and business processes; common business systems; business management (Business information systems)

Computer Hardware and Systems			Computers and networks: Introduction to fundamentals in computer organization, and architecture, O/S, networks and data communications (Faculty-wide unit) (Computer equipment) (<i>Operating systems</i>)	Computers and networks: Introduction to fundamentals in computer organization, and architecture, O/S, networks and data communications (Faculty-wide unit) (Computer concepts and software systems)
Database	(<i>Database Management Systems</i>)	CSE2DBF Database Fundamentals: Introduction to database and data modelling; relational database design; SQL; security and data integrity (Database Systems) CSE3DMS Database Management Systems: Advanced database design, database administration and performance management; advanced database programming	Data management: Introduction to theory and practice of database and database design (Faculty-wide unit) (Database systems)	Data management: Introduction to theory and practice of database and database design (Faculty-wide unit) (Database systems and data management)
Data Communications		<i>Data Communications & Networks</i>		<i>Data Communications</i>
Programming	Introduction to Programming: Principles of programming; implications of programming capabilities for software systems	CSE1OOF O-O Programming Fundamentals: Introduces students to fundamental concepts of O-O programming, using Java CSE1IOO Intermediate O-O Programming: Advanced Java programming; principles of software engineering; quality; (<i>Advanced O-O Programming</i>) (<i>Workload Analysis and File Structures</i>) (<i>Fourth Generation Languages</i>)	Computer programming: Introduction to programming concepts and programming in Java (Faculty-wide unit) (Introduction to software development) (<i>Program design and data structures</i>) (<i>Commercial programming in COBOL</i>)	Computer programming: Introduction to programming concepts and programming in Java (Faculty-wide unit) (Computer programming for business 1) (<i>Computer programming for business 2</i>) (<i>Programming for business applications</i>)

Systems Development	Business Requirements Analysis: Techniques for business analysis and problem-solving; brainstorming; mind-mapping; conflict resolution; viewpoint analysis; creative problem solving; negotiation <i>(Systems Analysis and Design)</i> <i>(Systems Implementation)</i> <i>(Object-Oriented Systems Design)</i> <i>(Advanced Systems Design)</i>	Information Systems: Introduction to basic IS concepts; development life cycle; fact finding; data and process modelling; user involvement in development; introduction to design (System Description Techniques) IS Development: Further development of tools and techniques in development; database design; HCI; project management <i>(Data Modelling & Engineering)</i> <i>(User Interface Engineering)</i>	Systems development: Introduction to system development methods; analysis, modelling, agile methods and UML (Faculty-wide unit) (Information systems 2) Information strategies and systems development: Organizational strategies and techniques for the management of information assets and the acquisition and development of systems to support them (Information systems 4) <i>(Information systems 3)</i>	Systems development: Introduction to system development methods; analysis, modelling, agile methods and UML (Faculty-wide unit) (Systems analysis and design) Business process modelling and workflow: Introduction to analytical tools for modelling, analysing, understanding and designing business processes (Business process design)
IS Management	<i>(IS Management)</i>		<i>(Information system strategy and management)</i>	
Project	Capstone Project: Group-based industry project	CSE3ISA and ISB IS Project A and B: Group-based industry project (Software Engineering Project)	Capstone Project: Group-based industry project	Industry-based learning (2 triple units)
Specialist topics	Business Analytics: Techniques for data collection and analysis; sampling, statistical analysis, data interpretation; probability; regression; inferential statistics IS Services, Infrastructure and the Cloud: IS services and service management in organizations; internal , outsourced and hybrid models of service management; social, organizational and technological issues	CSE2ICE Internet Client Engineering: Web page programming and development; web development technologies – HTML, XML, AJAX, XSLT, Javascript; usability design and testing CSE3WAE Web applications engineering: Introduction to servlets and Java servlets; servlet architecture, JSP, Java Beans; web application architecture and	Project Management: Theoretical and practical overview of project management concepts and techniques (Faculty-wide unit) IT Professional Practice: Introduction to issues in professional practice; teamwork; communication skills; ethics (Faculty-wide unit) (Professional practice in IS)	Project Management: Theoretical and practical overview of project management concepts and techniques (Faculty-wide unit) IT Professional Practice: Introduction to issues in professional practice; teamwork; communication skills; ethics (Faculty-wide unit) (Business communications) Business information analysis:

	<p>Professional Ethics in the Digital Age: Legal, ethical and social responsibilities of IS professionals</p>	<p>development</p> <p>CSE3ISP Information Systems Practices: Enterprise integration systems using web services and web technologies – WSDL, UDDI, SOAP, BPEL; information retrieval and search engines</p> <p>BUS3EBS E-Business systems: Introduction to e-business concepts and e-business intelligence systems; analysis and design of e-business systems on the web</p> <p>CSE3PE Professional Environment: Ethical and legal issues for IS practitioners; social impacts of IS work</p> <p><i>(Artificial Intelligence)</i> <i>(Management Information Systems)</i> <i>(Multimedia Systems)</i></p>	<p>Information management: Introduction to basic concepts in information and their implications of the use of technologies in systems that manage information</p> <p>Technology, information and organisations: Examination of impacts of technologies on structures and operations of organizations and their approach to the management and use of information</p> <p>Introduction to information technology: Introduction to information technologies and architectures; capabilities and characteristics of devices and their impact on IT-based applications</p> <p>Four units chosen from the following:</p> <p>Information architecture: Introduction to information architecture; organizational needs for IA; key concepts and techniques in IA design</p> <p>Human-computer interaction: Introduction to theories, principles and practice in interface design for computer-based systems</p> <p>Social informatics: Analysis of the</p>	<p>Introduction to statistical and quantitative techniques in business (Quantitative methods for business systems)</p> <p>E-business technologies: Introduction to the technologies used in e-business systems; issues in their application and management (Trading systems and electronic commerce)</p> <p>E-business systems: Organizational, inter-organizational, and foundational technology issues in e-business; e-business models, planning and strategy (optional)</p> <p>Computer models for business decision-making: Introduction to quantitative modelling techniques used in management decision-making</p> <p>Business intelligence and data warehousing: Use of data warehouses as data repositories; BI concepts, techniques, technologies and applications</p> <p>Real-time enterprise systems: Overview of enterprise systems in theory and practice; design, implementation and configuration</p>
--	--	--	--	--

			<p>impact of information technologies on social relations; community informatics</p> <p>Knowledge management systems: Introduction to KM concepts, development and process and implementation issues for KM systems</p> <p>E-business systems: Organizational, inter-organizational, and foundational technology issues in e-business; e-business models, planning and strategy (Electronic commerce systems)</p> <p>Real-time enterprise systems: Overview of enterprise systems in theory and practice; design, implementation and configuration issues</p> <p>Managing data: Tasks and main issues involved in the management of data and digital records in organizations</p> <p>Cases in information and technology: Organizational experiences in the application of ICT and IT-based systems in organizations</p> <p><i>(Management support systems)</i></p>	<p>issues (optional)</p> <p><i>(Operations management systems)</i> <i>(Business case development)</i></p>
--	--	--	--	--

Table E20: 2011 Curricula of New IS Programs Created During the Period, 1997-2011

(Source: Institutional Handbooks, 1997-2011)

	Melbourne Specialisation in Business Analysis and Systems (2008 curriculum – last year offered)	La Trobe Major in Business information Systems	Ballarat BIT(Business Systems)
Associated compulsory units	Offered as optional specialisation within BCommerce	Offered as optional major within BBusiness	Management Skills Business Statistics Management Principles
Basic Concepts: Computers, Information & Systems	Business Computing: Introduction to basic technologies and uses of computers in business; computer hardware, software, networks, operating systems; types of business applications; PC tools	Management Information Systems: Introduction to the MIS discipline; business uses of systems; common applications – data warehouses, CRM, SCM, ERP	Business Information Systems: Introduction to business information systems and the use of ICT in business
Computer Hardware and Systems			
Database			Database management systems: Introduction to database theory and applications
Data Communic'ns			
Programming			Programming 1: Introduction to basic programming concepts
Systems Development	Enterprise Process Analysis: Common business processes; process analysis and modelling with DFDs, ER diagrams, flowcharts, etc Enterprise Information Systems: Advanced business process modelling and relational database models; design and implementation of enterprise systems Business Systems Development: main	Business Applications Analysis and Design: Introduction to systems development, the development lifecycle and database design	

	types of organizational IS; understanding and specifying information needs; modelling and development techniques; development methodologies		
IS Management	Strategic Enterprise Systems: Aligning business visions with IT capabilities; IT architectures; governance and management of technological change	IS Management: Aligning business with IT/IS strategies; IS service delivery; security; SWOT analysis for IS	
Project			<p>Project 1: First unit in two-stage project; focus on requirements specification and design</p> <p>Project 2: Second unit in two-stage project; focus on implementation</p>
Specialist topics	<p>Management Information Systems: Importance of IS to business success; issues in IS usage; socio-technical perspectives of IS</p> <p>Electronic Commerce: Basic concepts, theories and models of e-commerce; technologies; issues in design and implementation; case studies</p> <p>ERP systems: basic concepts of ERP; tools and techniques for ERP development; issues in ERP implementation</p> <p>Knowledge Management Systems: basic concepts in KM and KM technologies; case studies and issues in KM</p> <p>Business Modelling: Use of DSS and intelligent decision aids for managerial decision-making; neural networks and KBS</p>	<p>Enterprise Information Systems: Concepts and technologies of ERP and CRM systems; techniques and strategies for their design and implementation</p> <p>Managing Multimedia in Business & Events: Introduction to theories of multimedia for human-computer interaction; use and management of multimedia in business</p> <p>Professional Issues in Business Systems: Ethical and legal issues for IS practitioners; social impacts of IS work</p> <p>E-Business systems: Introduction to e-business concepts and e-business intelligence systems; analysis and design of e-business systems on the web</p> <p>Managing IT projects: Theory, practice and techniques of project management</p>	<p>Communications & Technology: Teaches skills in communication, time management, problem solving, use of ICT</p> <p>Emerging Technologies in Business: Introduction to emerging technologies and their applications in business</p> <p>Network Operating Systems: Introduction to security models provided by major operating systems</p> <p>Introduction to Multimedia: Introduction to multimedia and overview of multimedia technologies</p> <p>Web Page & Multimedia Design: Introduction to the web technologies, design and applications</p> <p>Electronic Commerce 1: Introduction to electronic commerce; concepts and</p>

	<p>Management Control Systems: Nature of management control systems; role of managerial accounting information in the design of management control system; managerial rather than technical focus</p>	<p>– problem definition, evaluation, project planning and control; project team management</p>	<p>applications</p> <p>Electronic Commerce 2: E-commerce technologies, standards; management of e-commerce systems</p> <p>Introduction to IT Project Management: Introduction to the project lifecycle; project management concepts and techniques</p> <p>Professional Development: Project management principles; social and ethical issues in computing</p> <p>Information Security: Introduction to information security, risk identification and management</p>
--	---	--	---

Table E21: Popular Themes in IS Elective Units*(Source: Institutional Handbooks, 1997-2011)*

Popularity	Theme	Content
Most popular themes – covered by at least one elective unit in almost every university	Technology	Specialist technology units which extended the coverage of basic technology concepts which was included in the core curriculum. Varying levels of emphasis on programming, database, networks, data communications and computer hardware
	Development process	Specialist units which extended the coverage of the system development process which was included in the core curriculum. Varying levels of emphasis on specific phases of the system development life-cycle, with analysis and design as the most common themes
	Applications	Units which focused on the characteristics of specific types of application of IT, usually in organizational settings; finance-based applications were the most popular category. Units addressed a variety of issues about these applications, such as their purpose, specialist technologies, special features of their development process, and the like
	Electronic Commerce	Applications-based units, which focused on the use of e-commerce and the special characteristics of e-commerce systems
	Enterprise Systems and ERP	Applications-based units which focused on Enterprise Systems and ERP as a specialist area of organizational application of IT.
	IS management	Units which focused on aspects of the management of IS in organizations. Included topics such as strategic planning, risk management, project management, operations management and issues in organizational governance of IT
Popular themes – covered by at least in elective unit in a number of universities	Internet and web	Units which focused on the special features of the internet and the web as supporting infrastructure for IS systems and their implications for system development and use
	Business Intelligence/Decision Support Systems	Applications-based units which focused on the use of IT and IT-based systems to support managerial decision-making
	Professional	Units which addressed aspects of the professional

	Issues	role and responsibilities of IS professionals. Units varied in the extent to which they addressed these issues in terms of skill acquisition in areas such as professional communication, team work and the like, or
	Security	Units which addressed issues relating to systems security. Varying focus on hardware, software and systems aspects of IT security
	Knowledge Management	Units relating to fundamental concepts in knowledge management, KM applications and their associated technologies and development processes
	'Soft' issues	Units which focused on the social and societal impacts of IT and IS.

Appendix F: Data relating to the development of IS programs at Monash University

Contents

Table F1	Preferences for Monash FIT programs, 1991-97.....	F3
	• Table F1(a) Single degrees	
	• Table F1(b) Double degrees	
Table F2	Enrolments in Monash FIT programs, 1991-97	F5
	• Table F2(a) Single degrees	
	• Table F2(b) Double degrees	
Table F3	Weighted average ENTER for Monash FIT single degrees at Clayton and Caulfield campuses, 1991-1997	F7
	• Table F3(a): Average ENTERs	
	• Table F3(b): Number of Year 12 student enrolments	
	• Table F3(c): Weighted Average ENTER	
Table F4	Trends in Monash student load, 1991-2003.....	F8
Table F5	Preferences for Monash FIT programs, 1997-2003	F9
	• Table F5(a) Single degrees	
	• Table F5(b) Double degrees	
Table F6	Enrolments in Monash FIT programs, 1997-2003.....	F11
	• Table F6(a) Single degrees	
	• Table F6(b) Double degrees	
Table F7	ENTER and weighted average ENTER for Monash FIT single degrees,.... 1997-2003	F13
Table F8	Transition in Curriculum of IS Program at Monash Clayton campus,..... 1990-2011	F14
Table F9	Curriculum of BInformation Systems at Monash Clayton campus,1990....	F17
Table F10	Curriculum of BBusiness Systems at Monash Clayton campus,1992	F18
Table F11	Electives Introduced into the BBusiness Systems at Monash Clayton campus,1992-2004	F20
Table F12	Curriculum of BBusiness Information Systems at Monash Clayton,..... campus 2006	F22

Table F13	Transition in Curriculum of IS Program at Monash Caulfield campus,.....	F24
	1990-2011	
Table F14	Curriculum of BInformation Systems at Monash Caulfield campus,.....	F27
	1997	
Table F15	Curriculum of BInformation Management & Systems at Monash	F29
	Caulfield campus, 2002	
Table F16	Curriculum of BInformation Systems at Monash Caulfield campus,	F30
	2004	
Table F17:	Curriculum of Information Systems Major at Monash Caulfield	F32
	campus, 2007	
Table F18	Curriculum of Enterprise Information Management Major at Monash	F33
	Caulfield campus, 2011	

Table F1(a): Total of VTAC preferences 1-4 for Monash IT single degree programs, 1991-97*(Source: VTAC Admissions Data)*

Degree Program	Campus	VTAC Codes	1991	1992	1993	1994	1995	1996	1997
BComputing	Caulfield	27370	1110	1103	1261	1075	1023	1106	855
BComputing (p/t)	Caulfield	27397		145	169	195	100	231	192
BInformation Systems	Caulfield	27864							405
BComputer Science & Engineering	Clayton	28071	401	421	329	263	195	327	269
BDigital Systems	Clayton	28159	245	241	347	307	257	389	259
BBusiness Systems	Clayton	28224	297	382	649	394	428	557	365
BComputer Science	Clayton	28237	774	826	803	788	520	873	685
BInformation Management	Clayton	28333						315	351
BSc(Advanced Maths & Computing)	Clayton	28438					59	75	70
BComputing	Peninsula	29500	415	490	623	382	286	333	226
BComputing (p/t)	Peninsula	29392		32	36	46	18	38	37
BComputing	Gippsland	30320	187	278	162	149	125	121	106
TOTAL			3429	3918	4379	3599	3011	4365	3820

Table F1(b): Total of VTAC Preferences 1-4 for Monash IT Double Degree Programs, 1991-97*(Source: VTAC Admissions Data)*

Double Degree Program	Campus	VTAC Codes	1991	1992	1993	1994	1995	1996	1997
BBus(Accounting)/BComputing	Caulfield	27012	725	498	725	472	289	357	239
BBus(Accounting)/BComputing (p/t)	Caulfield	27121			120	142	32	126	74
BBus(Banking & Finance)/BComputing	Caulfield	27676						216	148
BCommerce/BBusiness Systems	Clayton	28268						286	220
BArts/BInformation Management	Clayton	28534						141	203
BBusiness Systems/BLaw	Clayton	28844							68
BBus(Accounting)/BComputing	Peninsula	29016	213	207	325	183	82	97	91
BComputing/BEducation	Peninsula	29071							44
BArts/BComputing	Peninsula	29745						54	89
BBusiness/BComputing	Gippsland	30531						97	92
BArts(Communication)/BComputing	Gippsland	30561						20	27
BApplied Science/BComputing	Gippsland	30931							16
TOTAL			938	705	1207	797	403	1394	1311

Table F2(a): VTAC Enrolments* for Monash IT Single Degree Programs, 1991-97*(Source: VTAC Admissions Data)*

Degree Program	Campus	VTAC Codes	1991	1992	1993	1994	1995	1996	1997
BComputing	Caulfield	27370	74	100	147	165	155	216	118
BComputing (p/t)	Caulfield	27397		39	61	59	19	59	36
BInformation Systems	Caulfield	27864							27
BComputer Science & Engineering	Clayton	28071	39	41	39	31	36	39	35
BDigital Systems	Clayton	28159	42	52	65	69	52	65	43
BBusiness Systems	Clayton	28224	49	41	56	81	91	74	81
BComputer Science	Clayton	28237	110	104	77	91	99	108	89
BInformation Management	Clayton	28333						38	44
BSc(Advanced Maths & Computing)	Clayton	28438					9	10	12
BComputing	Peninsula	29500	40	43	58	90	61	43	38
BComputing (p/t)	Peninsula	29392		2	2	3		6	4
BComputing	Gippsland	30320	70	44	38	41	16	22	27
TOTAL			424	466	543	630	538	680	554
*Figures are total of full-time, part-time and deferred enrolments									

Table F2(b): VTAC Enrolments for Monash IT Double Degree Programs, 1991-97

(Source: VTAC Admissions Data)

Double Degree Program	Campus	VTAC Codes	1991	1992	1993	1994	1995	1996	1997
BBus(Accounting)/BComputing	Caulfield	27012	27	38	28	52	39	67	39
BBus(Accounting)/BComputing (p/t)	Caulfield	27121			3	5	1	19	8
BBus(Banking & Finance)/BComputing	Caulfield	27676						20	18
BCommerce/BBusiness Systems	Clayton	28268						23	33
BArts/BInformation Management	Clayton	28534						31	33
BBusiness Systems/BLaw	Clayton	28844						4	3
BBus(Accounting)/BComputing	Peninsula	29016	17	21	19	20	5	20	20
BComputing/BEducation	Peninsula	29078							10
BArts/BComputing	Peninsula	29745						14	22
BBusiness/BComputing	Gippsland	30539						7	6
BArts(Communication)/BComputing	Gippsland	30565							1
BApplied Science/BComputing	Gippsland	30936							
TOTAL			44	59	53	77	45	205	193
*Figures are total of full-time, part-time and deferred enrolments									

Table F3(a): Average ENTER of Year 12 Students admitted to Monash Single Degrees, 1991-1997 (Source: VTAC Admissions Data)								
	VTAC Codes	1991	1992	1993	1994	1995	1996	1997
BComputing	27370	74.1	78.8	81.7	76.0	74.0	75.0	75.8
BComputer Science	28237	74.6	79.6	88.6	88.6	82.1	83.0	84.4
BBusiness Systems	28224	87.7	90.6	95.7	95.3	87.8	89.0	89.9
BDigital Systems	28159	75.4	76.0	77.4	82.0	76.4	75.6	77.6

Table F3(b): Number of Year 12 Students enrolling in Monash Single Degrees, 1991-1997 (Source: VTAC Admissions Data)								
	VTAC Codes	1991	1992	1993	1994	1995	1996	1997
BComputing	27370	42	71	90	130	132	144	80
BComputer Science	28237	85	77	62	81	88	68	59
BBusiness Systems	28224	48	27	49	75	87	47	57
BDigital Systems	28159	20	17	51	43	47	50	29

Table F3(c): Weighted Average ENTER for all Monash Single Degrees, 1991-1997 (Derived From Tables Above)								
		1991	1992	1993	1994	1995	1996	1997
All Degrees		77.8	80.5	85.2	84.3	79.7	79.0	81.8

Table F4: Monash FCIT/FIT Student loads and Staffing levels at Victorian campuses, 1991-2011 <i>(Sources: Monash FIT Strategic Review, 2009 and Monash Statistical Services)</i>				
Year	Commencing student load (eftsu*)	Total student load (eftsu*)	FTE* Academic Staff	FTE* General/ Technical Staff
1991	n/a	1964	111	44
1992	n/a	1797	126	47
1993	862	2020	130	55
1994	1182	2631	133	54
1995	1358	3017	142	56
1996	1383	3224	158	66
1997	1313	3204	158	64
1998	1365	3344	163	71
1999	1868	3764	155	69
2000	2058	4445	166	81
2001	2469	5228	177	107
2002	2406	5762	201	126
2003	2047	5496	220	154
2004	1798	4829	224	135
2005	1135	3816	202	126
2006	926	2905	181	105
2007	784	2358	112	84
2008	814	2181	110	86
2009	964	2343	108	74
2010	886	2382	104	73
2011	879	2332	98	49
*eftsu = equivalent full-time student units *FTE = Full-time Equivalent				

Table F5(a): Total of VTAC Preferences 1-4 for Monash IT Single Degree Programs, 1997-2003

(Source: VTAC Admissions Data)

Degree Program	Campus	VTAC Code(s)	1997	1998	1999	2000	2001	2002	2003
BElectronic Commerce	Berwick	26021				134	177	13	
BMultimedia Computing	Berwick	26071					308	229	239
BMultimedia Business & Computing	Berwick	26141							179
BMultimedia	Berwick	26981			327	314	339	298	268
BComputing	Caulfield	27371	855	592	667	662	548	566	364
BComputing (p/t)	Caulfield	27391	192	96	107	90	92	96	47
BInformation Systems	Caulfield	27861	405	342					
BInformation Mgt & Systems	Caulfield	28181			273	491	491	365	279
BComputer Science & Engineering	Clayton	28071	269	224	183	189	197	160	158
BDigital Systems	Clayton	28151	259	262	216	253	160	150	88
BBusiness Systems	Clayton	28221	365	302	352	408	371	350	222
BComputer Science	Clayton	28231	685	524	627	579	545	553	388
BInformation Management	Clayton	28331	351	228					
BSc(Advanced Maths & Computing)	Clayton	28438	70						
BSoftware Engineering	Clayton	28551			157	195	289	330	185
Deans Scholar	Cross-campus	28591		102	92	71	97	69	68
BComputing (p/t)	Peninsula	29391	37	18					
BComputing	Peninsula	29501	226	160					
BNetwork Computing (p/t)	Peninsula	29621			23	26	38	45	32
BNetwork Computing	Peninsula	29761			284	214	240	207	156
BComputing	Gippsland	30321	106	101	85	93	71	97	73
BBusiness & Electronic Commerce	Gippsland	30551		21	18	36	48	20	
TOTAL			3820	2972	3411	3755	4011	3548	2746

Table F5(b): Total of VTAC Preferences 1-4 for Monash IT Double Degree Programs, 1997-2003

(Source: VTAC Admissions Data)

Double Degree Program	Campus	VTAC Code(s)	1997	1998	1999	2000	2001	2002	2003
BArts(Communication)/BMultimedia Systems	Berwick	26121						212	92
BBus(Accounting)/BComputing	Caulfield	27011	239	181	198	233	232	166	105
BBus(Accounting)/BComputing (p/t)	Caulfield	27121	74	61					
BArts - Policy Studies/BInfo Mgt & Systems	Caulfield	27181				35	3		
BArts/BInformation Management & Systems	Caulfield	27271					81	86	59
BBus(Banking & Finance/BComputing	Caulfield	27671	148	141	144	150	177	111	90
BArts/BComputer Science	Clayton	28081				131	110	86	56
BCommerce/BBusiness Systems	Clayton	28261	220	30	269	220	306	213	149
BArts/BInformation Management	Clayton	28531	203	124					
BInfo Mgt & Systems/BEducation (Secondary)	Clayton	28541					56	57	51
BComputer Science/BLaw	Clayton	28581						57	20
BScience/BComputer Science	Clayton	28641							133
BBusiness Systems/BLaw	Clayton	28841	68	55	46	51	59	47	26
BBus(Accounting)/BComputing	Peninsula	29011	91	60	81	72			
BInformation Mgt & Systems/BEducation (Primary)	Caul/Pen	29041					53	40	52
BBusiness and Commerce/BNetwork Computing	Peninsula	29051						73	55
BComputing/BEducation	Peninsula	29071	44	38					
BArts/BNetwork Computing	Peninsula	29081						18	18
BArts/BComputing	Peninsula	29741	89	49					
BBusiness/BComputing	Gippsland	30531	92	59	63	59	57	52	29
BArts(Communication)/BComputing	Gippsland	30561	27	11	12	9	10	21	9
BApplied Science/BComputing	Gippsland	30931	16	11	29	31	28	18	10
TOTAL			1311	820	842	991	1172	1257	954

Table F6(a): VTAC Enrolments* for Monash IT Single Degree Programs, 1997-2003

(Source: VTAC Admissions Data)

Degree Program	Campus	VTAC Code(s)	1997	1998	1999	2000	2001	2002	2003
BElectronic Commerce	Berwick	26021				38	18	0	
BMultimedia Computing	Berwick	26071					36	30	43
BMultimedia Business & Computing	Berwick	26141							23
BMultimedia	Berwick	26981			59	47	59	57	62
BComputing	Caulfield	27371	118	112	106	103	109	116	78
BComputing (p/t)	Caulfield	27391	36	33	15	40	35	2	2
BInformation Systems	Caulfield	27861	27	42					
BInformation Mgt & Systems	Caulfield	28181			48	54	60	36	56
BComputer Science & Engineering	Clayton	28071	35	37	33	27	24	23	17
BDigital Systems	Clayton	28151	43	31	42	41	35	30	25
BBusiness Systems	Clayton	28221	81	62	71	80	72	68	60
BComputer Science	Clayton	28231	89	104	79	79	86	36	77
BInformation Management	Clayton	28331	44	42					
BSc(Advanced Maths & Computing)	Clayton	28438	12						
BSoftware Engineering	Clayton	28551			19	15	46	34	39
Deans Scholar	Cross-campus	28591		4	0	7	1	1	0
BComputing (p/t)	Peninsula	29392	4	0					
BComputing	Peninsula	29501	38	29					
BNetwork Computing (p/t)	Peninsula	29621			0	2	1	4	3
BNetwork Computing	Peninsula	29761			54	45	65	51	51
BComputing	Gippsland	30321	27	17			30	22	20
BBusiness & Electronic Commerce	Gippsland	30551		11	8	14	23	7	
TOTAL			554	524	534	592	700	517	556
*Figures are total of full-time, part-time and deferred enrolments									

Table F6(b): VTAC Enrolments* for Monash IT Double Degree Programs, 1997-2003

(Source: VTAC Admissions Data)

Double Degree Program	Campus	VTAC Code(s)	1997	1998	1999	2000	2001	2002	2003
BArts(Communication)/BMultimedia Systems	Berwick	26121						23	5
BBus(Accounting)/BComputing	Caulfield	27011	40	33	42	63	36	28	26
BBus(Accounting)/BComputing (p/t)	Caulfield	27121	8	3					
BArts - Policy Studies/BInfo Mgt & Systems	Caulfield	27181				5	0		
BArts/BInformation Management & Systems	Caulfield	27271					14	19	9
BBus(Banking & Finance/BComputing	Caulfield	27671	18	19	16	17	14	10	5
BArts/BComputer Science	Clayton	28081				25	34	25	10
BCommerce/BBusiness Systems	Clayton	28261	33	n/a	13	19	33	14	25
BArts/BInformation Management	Clayton	28531	33	23					
BInfo Mgt & Systems/BEducation (Secondary)	Clayton	28541					13	6	8
BComputer Science/BLaw	Clayton	28581						2	0
BScience/BComputer Science	Clayton	28641							32
BBusiness Systems/BLaw	Clayton	28841	3	4	4	3	5	5	2
BBus(Accounting)/BComputing	Peninsula	29011	20	24	12	13			
BInformation Mgt & Systems/BEducation (Primary)	Caul/Pen	29041					4	4	3
BBusiness and Commerce/BNetwork Computing	Peninsula	29051						10	8
BComputing/BEducation	Peninsula	29071	10	6					
BArts/BNetwork Computing	Peninsula	29081						4	0
BArts/BComputing	Peninsula	29741	22	13					
BBusiness/BComputing	Gippsland	30531	6	7	4	5	3	6	1
BArts(Communication)/BComputing	Gippsland	30561	1	0	1	2	0	2	0
BApplied Science/BComputing	Gippsland	30931	0	0	0	1	2	0	2
TOTAL			194	132	92	153	158	158	136

*Figures are total of full-time, part-time and deferred enrolments

Table F7(a): Average ENTER of Year 12 Students admitted to Monash Single Degrees, 1997-2003*(Source: VTAC Admissions Data)*

Course Code	1997	1998	1999	2000	2001	2002	2003
27371	75.7	77.0	79.2	80.4	83.1	82.4	77.9
27861	79.7	86.4					
28071	89.6	90.5	91.5	90.4	91.6	86.2	86.7
28151	77.6	80.3	81.8	84.8	83.3	83.1	79.2
28221	89.9	90.5	93.3	94.3	94.2	94.4	92.5
28231	84.4	84.8	89.4	89.9	89.9	91.2	84.8
28551			92.0	85.5	88.2	91.8	86.5
28438	91.4						

Table F7(b): Number of Year 12 Students admitted to Monash Single Degrees, 1997-2003*(Source: VTAC Admissions Data)*

Course Code	1997	1998	1999	2000	2001	2002	2003
27371	91	92	74	57	77	60	46
27861	12	20					
28071	31	29	25	24	22	17	16
28151	35	30	40	38	27	24	19
28221	61	54	57	67	69	64	45
28231	63	87	62	56	62	37	42
28551			14	33	46	24	33
28438	11						

Table F7(c) Weighted Average ENTER for all Degrees*Derived From Tables Above*

	1997	1998	1999	2000	2001	2002	2003
All Courses	82.5	83.2	86.6	85.9	87.6	88.5	84.9

Table F8: Transition in Curriculum of IS Program at Monash Clayton Campus

(Source: Monash Handbooks)

Type of units	1990 BIS	1992 BBusiness Systems (IBL)	2004 BBusiness Systems (IBL)	2006 BBIS (IBL)	2011 BBIS (IBL)
Compulsory Associated Units	AF102 Accounting AF103 Accounting EC104 Microeconomics EC106 Microeconomics EC107 Macroeconomics EC305 International economics EO108 Quantitative methods for business 8 elective units taken from units offered in the BEconomics	1 economics unit	1 economics unit 1 other unit from the Faculty of Business & Economics		
Core units	IS104 Introduction to business computing IS106 Introduction to business computing IS108 Quantitative methods for business IS200 Industry-based learning (triple unit) IS206 Information systems in organizations IS211 Data base systems and data management IS212 Computer concepts and software systems IS300 Industry-based learning (triple unit) IS306 Data communications IS315 Computer facilities management	BUS1010 Introductory computing for business applications BUS1021 Business information systems BUS1042 Computer programming for business 1 BUS1060 Computer programming for business 2 BUS1100 Quantitative methods for business systems BUS1110 Computer models for business decisions BUS2000 Industry-based learning (triple unit) BUS2030 Business communications BUS2062 Data communications	BUS1010 Introductory computing for business applications BUS1021 Business information systems BUS1042 Computer programming for business B BUS1060 Computer programming for business A BUS1100 Quantitative methods for business systems BUS1110 Computer models for business systems BUS2000 Industry-based learning (triple unit) BUS2011 Programming for business applications BUS2021 Advanced business information systems	FIT1001 Computer systems FIT1002 Computer programming FIT1003 IT in organizations FIT1004 Database FIT1005 Networks and data communications FIT1006 Business information analysis FIT1013 IT for business FIT2001 Systems analysis and design FIT2002 Project management FIT2006 Business process modelling and workflow FIT2011 Decision support system fundamentals FIT2013 E-business technologies	FIT1031 Computers and networks FIT1002 Computer programming FIT1004 Data management FIT1006 Business information analysis FIT1013 IT for business FIT1030 Introduction to business information systems FIT2001 Systems development FIT2002 Project management FIT2003 IT professional practice FIT2006 Business process modelling and workflow FIT2013 E-business technologies FIT2017 Computer models for

		BUS2071 Systems analysis and design BUS2112 Database systems and data management BUS2120 Computer concepts and software systems BUS3000 Industry-based learning (triple unit) BUS3150 Computer facilities management BUS3530 Operations management systems 1 level 3 BUS elective	BUS2030 Business communication BUS2120 Computer concepts and software systems BUS2176 Project management BUS3000 Industry-based learning (triple unit) BUS3112 Database systems and data management BUS3150 Computer facilities and network management BUS3600 Business case development A unit in e-commerce or business analysis	FIT2017 Computer models for business decision-making FIT2032 Industry-based learning (triple unit) FIT2035 Professional communications for IBL FIT3045 Industry-based learning (triple unit) One of: <ul style="list-style-type: none"> • FIT3003 Business intelligence and data warehousing or • FIT3022 Intelligent decision support systems One of: <ul style="list-style-type: none"> • FIT3009 E-business systems or • FIT3012 Enterprise systems 1 BBIS elective	business decision-making FIT2032 Industry-based learning (triple unit) FIT2035 Professional communications for IBL FIT3045 Industry-based learning (triple unit) FIT3003 Business intelligence and data warehousing One of: <ul style="list-style-type: none"> • FIT3009 E-business systems or • FIT3138 Real-time enterprise systems
Elective Units		BUS3010 Advanced programming in dBase BUS3020 Trading and financial systems BUS3030 Financial modelling BUS3502 Decision support and expert systems	BUS2020 Logistics and simulation BUS2040 Business systems for multimedia and the entertainment industries BUS2050 Information Technology law and security BUS2700 Integrated systems – SAP R/3 BUS2710 Applied e-business – B2B BUS3010 Advanced programming for database applications BUS3020 Trading systems and electronic commerce BUS3030 Financial modelling BUS3200 Chinese language	FIT2037 Virtual collaboration and groupware FIT2056 Business communications FIT2057 Integrated business systems – SAP R/3 FIT3051 Decision support systems for finance FIT3101 B2C internet commerce FIT3102 Operations management systems FIT3104 Chinese language IT	FIT3022 Intelligent decision support systems FIT3051 Decision support systems for finance FIT3107 Advanced programming for database applications FIT3136 IT governance and strategy for business FIT3104 Chinese language IT FIT3107 Advanced programming for database applications

			information technology BUS3502 Business process design BUS3522 COBOL programming BUS3530 Operations management systems BUS3650 Business applications of neural networks BUS3720 Corporate groupware BUS3750 Introductory intelligent techniques for business modelling BUS3800 Risk analysis models for business BUS3900 Computational finance BUS3950 Business modelling for strategic planning 3 BUS3960 B2C internet commerce		
--	--	--	--	--	--

Table F9: Curriculum of BInformation Systems at Monash Clayton Campus, 1990 <i>(Source: Monash Handbooks)</i>		
Theme	Units	Unit Outline
Supporting compulsory units	AF102 Accounting AF103 Accounting EC104 Microeconomics EC106 Microeconomics EC107 Macroeconomics EC305 International economics EO108 Quantitative methods for business	
Computer systems	IS212 Computer concepts and software systems	Computer organization, hardware and operating systems structures
Database	IS211 Data base systems and data management	Introduction to theory and practice of database design; analysis and design techniques; network and relational database models
Data communications	IS306 Data communications	Introduction to data communications and networks; basic concepts; network components; principles of network design
Programming	IS104 Introduction to business computing	Introduction to programming in COBOL in a commercial environment; emphasis on commercial batch processing
	IS106 Introduction to business computing	Further studies in programming in a commercial environment; emphasis on development of PC-based systems in dBase; introduction to relational database, screen design and data processing techniques
System development	IS206 Information systems in organizations	System development for large-scale business systems; analysis, design and programming methodologies and techniques
IS management	IS315 Computer facilities management	Specification, evaluation and acquisition of computer systems; feasibility study; requirements specification; tender evaluation; selection; capacity planning
Project/Work experience	IS200 Industry-based learning (triple unit) IS300 Industry-based learning (triple unit)	Industry placements with sponsoring organizations
Specialist Units	IS108 Quantitative methods for business	Introduction to quantitative techniques used in business applications; linear functions; matrix techniques; Markov chains; game theory
Electives	8 elective units taken from units offered in the BEconomics	

Table F10: Curriculum of BBusiness Systems at Monash Clayton Campus, 1992 <i>(Source: Monash Handbooks)</i>		
Theme	Units	Unit Outline
Other compulsory units	1 economics unit	
Basic concepts in computers, information & systems	BUS1010 Introductory computing for business applications	Introduction to PC hardware and software for business applications
	BUS1021 Business information systems	Introduction to basic business applications for computers – inventory, sales, purchasing, finance, etc; introduction to techniques for system description and modelling
Computer Systems	BUS2120 Computer concepts and software systems	Computer architecture and operating systems design
Database	BUS2112 Database systems and data management	Introduction to relational database theory and practice
Data communications	BUS2062 Data communications	Introduction to computer networks and data communications
Programming	BUS1042 Computer programming for business 1	Commercial programming with COBOL
	BUS1060 Computer programming for business 2	Advanced commercial programming with COBOL
System development	BUS2071 Systems analysis and design	
IS management	BUS3150 Computer facilities management	Planning, evaluation, purchase, implementation and management of computer installations and networks
Work experience	BUS2030 Business communications	Introduction to communication skills designed to prepare students for their work experience placements
	BUS2000 Industry-based learning (triple unit)	Industry placement
	BUS3000 Industry-based learning (triple unit)	Industry placement
Specialist Units	BUS1100 Quantitative methods for business systems	Introduction to mathematical and statistical techniques used to support business processes
	BUS1110 Computer models for business decisions	Modelling business systems to support decision-making – simulation, etc
	BUS3530 Operations management systems	The application of computers in industrial planning and control systems

Electives	BUS3010 Advanced programming in dBase	Advanced topics in programming in a database environment
	BUS3020 Trading and financial systems	Applications of computer-based systems to common management problems
	BUS3030 Financial modelling	Financial modelling techniques used in business; use of computer-based tools to carry them out

Table F11: Electives Introduced into the BBusiness Systems at Monash Clayton Campus, 1992-2004 <i>(Source: Monash Handbooks)</i>		
Year introduced	Unit	Unit outline
1993	BUS2020 Operations Research Methods 2	Introduces a range of methods used in operations research and the way they are applied in a variety of business applications
1993	BUS3522 COBOL programming	Introduces the fundamentals of commercial programming in COBOL and modern programming methodologies
1994	BUS3502 Decision support systems and computer simulation (subsequently re-named to Business Process Design 3)	Introduces the principles of design for managerial decision support systems and examines their application in decision support systems in business
1995	BUS3200 Chinese language IT	Introduces the principles and skills used in Chinese business computing through the practical use of popular Chinese software systems and application packages
1996 (dis-established in 2003)	BUS3400 Multimedia for business	Introduces the general concepts of multimedia computing and examines its applicability in a business environment; teaches the use of state of the art tools and techniques for creating multimedia applications in business
1997 (dis-established in 2002)	BUS3640 Tourism and service industry systems	Examines the nature of systems used in tourism and selected service industries, their special requirements and support technologies; special emphasis on expert systems and neural networks
1998	BUS2700 Integrated systems – SAP R/3	Introduction to the functionality and operation of the SAP R/3 Enterprise-Wide System
1999	BUS3650 Business applications of neural networks	Introduces intelligent techniques such as neural networks and data mining for finding information and patterns buried in data, and demonstrates their application in business
1999	BUS3800 Risk analysis models for business	Introduces methods, techniques and tools for spreadsheet-based risk management analysis and modelling, scenario analysis and simulation.
1999	BUS3900 Computational finance	Examines the application of computing technology to the solution of practical problems in the investment./finance industry
1999	BUS3950 Business modelling for strategic planning	Examines the use of quantitative modelling and decision-making techniques for creating and testing business models, with particular emphasis on the health care industry
2000	BUS2040 Business systems for multimedia and the entertainment industries	Introduction to the knowledge and skills needed to create a commercial multimedia product
2001	BUS3750 Introductory intelligent techniques for business modelling	Introduces several main branches of intelligent techniques for business modelling and examines their applications for solving business problems

2002	BUS2710 Applied e-business – B2B	Uses practical examples of the implementation of B2B applications as the basis for examining the key aspects of this form of e-commerce. Includes the study of key enabling technologies and B2B architectures
2002	BUS3720 Corporate groupware	Examines the collaboration, co-ordination and communication business processes in corporations, and the use of corporate groupware to support them
2003	BUS3960 B2C internet commerce	Provides an overview of infrastructure, strategy, software and hardware systems for commercial applications of the Internet
2004	BUS2050 Information Technology law and security	

Table F12: Curriculum of BBusiness Information Systems at Monash Clayton, 2006 <i>(Source: Monash Handbooks)</i>		
*Units in italics were part of the 'common core' taught by the faculty and common to all FIT degrees		
Theme	Units	Unit Outline
Basic concepts in computers, information & systems	<i>FIT1003 IT in organizations*</i>	<i>Introduction and overview of the application of IT in the management and use of information in organizations, and the role of the IT professional</i>
	FIT1013 IT for business	Introduction to basic computing concepts and the use of computer-based tools to support business-related tasks
Computer hardware and systems	<i>FIT1001 Computer systems*</i>	<i>Fundamental concepts of computer hardware and architecture and operating systems software;</i>
Database	<i>FIT1004 Database*</i>	<i>Introduction to theory and practice of database and database design</i>
Data communications	<i>FIT1005 Networks and data communications*</i>	<i>Introduction to fundamental concepts in data communications and networks and their application in practice in organizations</i>
Programming	<i>FIT1002 Computer programming*</i>	<i>Introduction to fundamental programming concepts and object-oriented programming in Java</i>
System development	<i>FIT2001 Systems analysis and design*</i>	<i>Introduction to system development methods and systems analysis and design; system modelling and UML</i>
	FIT2006 Business process modelling and workflow	Introduction to analytical tools for modelling, analysing, understanding and designing business processes
Work experience	FIT2032 Industry-based learning (triple unit)	Industry placement
	FIT3045 Industry-based learning (triple unit)	Industry placement
Specialist units: Business process analysis	FIT1006 Business information analysis	Introduction to mathematical and statistical techniques used to support business processes
Specialist Units: Decision support	FIT2011 Decision support system fundamentals	Introduction to decision-making and the development and use of systems to support it. Emphasis on modelling for decision support and development approaches for DSS development
	FIT2017 Computer models for decision-making	Introduction to the quantitative modelling techniques commonly used in decision-making and the use of IT tools to support decision-making needs
	FIT3003 Business	Key concepts in BI, the use of data warehousing and a

	intelligence and data warehousing	variety of analytical techniques to support BI needs
	FIT3022 Intelligent decision support systems	Role and purpose of intelligent decision support in organizations and the application of techniques in this area to help with decision-making problems
Specialist Units: e-commerce	FIT2013 E-business technologies	Introduction to the technologies used in the development and implementation of e-business systems
	FIT3009 E-business systems	Examines the nature of e-business systems and issues surrounding their design and implementation.
Specialist Units: Other	<i>FIT2002 Project management*</i>	<i>Theoretical and practical overview of project management concepts and techniques</i>
	FIT2035 Professional communications for IBL	Theoretical and practical overview of personal and professional communication in the workplace; professional ethics and codes of practice
	FIT3012 Enterprise systems	Theory and practice of ERP systems and the integration of information and information-based processes in organizations
Electives	FIT2037 Virtual collaboration and groupware	Introduction to groupware and its use to support communication and collaboration in virtual teams
	FIT2056 Business communications	General introduction to the nature of personal and professional communications in a business environments
	FIT2057 Integrated business systems – SAP R/3	Introduction to the key concepts in integrated business systems and demonstration of their implementation through SAP R/3
	FIT3051 Decision support systems for finance	Introduction to the use of computer-based tools in decision support systems for financial applications
	FIT3101 B2C internet commerce	Introduction to the deployment of business systems for internet-based business-to-customer transactions
	FIT3102 Operations management systems	Introduction to the use of operations management systems in manufacturing and service organizations
	FIT3104 Chinese language IT	Introduction to computing techniques and computing systems used to support business applications systems in the Chinese language

Table F13: Transition in Curriculum of IS Program at Monash Caulfield Campus

(Source: Monash Handbooks)

	1991 Information Systems major	1997 BInformation Systems	2002 BInformation Management & Systems	2004 BInformation Systems	2007 IS major	2011 Enterprise Information Management major
IS Core Units	SYS1001 Information systems SYS1252 Systems analysis SYS2161 Systems design and implementation SYS2170 Project management for IS SYS3030 Industrial project <ul style="list-style-type: none"> • 1 IS level 2 elective • 2 IS level 3 electives 	SYS1001 Information systems 1 SYS1002 Information systems 2 SYS2001 Information systems 3 SYS2002 Information systems 4 SYS2003 Professional practice in Information Systems SYS3001 Management support systems SYS3002 Information systems strategy and management SYS3550 IS project	IMS1001 Information systems IMS1002 Systems analysis and design IMS1401 Web-based information systems IMS1102 Information management IMS1000 IMS studio (double unit) IMS2001 Enterprise systems IMS2112 Business information management IMS2102 Information management 3 BUS2176 Project management IMS2000 IMS studio (double unit) IMS 3000 IMS studio (double unit) <ul style="list-style-type: none"> • 4 IMS level 3 electives 	IMS1603 Information use and management IMS1704 Organizations and processes IMS1805 Systems analysis IMS1906 Business software fundamentals IMS1907 Database systems IMS1501 Studio 1 – IS foundations 1 IMS1502 Studio 2 - IS foundations 2 IMS2603 Information management in organizations IMS2704 E-business IMS2805 Systems design and implementation IMS2906 Business applications programming IMS2501 Studio 3 –	FIT1020 Foundation of IS FIT2051 Analysis and design methods FIT2052 E-business FIT2053 Web-based information systems FIT2027 Systems design and implementation FIT3063 Human-computer interaction FIT3066 IT strategy and management FIT3068 Systems integration	

				Systems development 1 IMS2502 Studio 4 - Systems development 2 IMS3603 Building knowledge assets IMS3704 Enterprise integration IMS3805 Object- oriented development IMS3501 Studio 5 – Professional practice 1 IMS3502 Studio 6 - Professional practice 2		
Co-requisite units	<ul style="list-style-type: none"> • A computer programming unit • A database unit 	SFT1101 Introduction to software development SFT1102 Program design and data structures COT1130 Computer equipment COT1140 Operating systems SFT2305 Commercial programming in COBOL COT2132 Relational database BUS2176 Project management <ul style="list-style-type: none"> • Two business units • Non-computing minor 	None	None	FIT1001 Computer systems FIT1002 Computer programming FIT1003 IT in organizations FIT1004 Database FIT1005 Networks and data communications FIT2001 Systems development FIT2002 Project management	
IS Elective units	SYS2180 IS Theory SYS2500 IS Project SYS3040 CASE-based planning and analysis	SYS3110 Information systems security SYS3134 Geographical information systems	IMS2401 Developing multimedia systems IMS3001 Management support	IMS2401 Developing multimedia systems IMS3001 Business intelligence systems		

	SYS3050 Decision support systems SYS3060 Knowledge-based systems SYS3070 Organizational issues in IS SYS3080 Cognitive aspects of interface design	SYS3160 Decision aids SYS3230 Systems development methodologies SYS3280 Electronic commerce systems SYS3290 Inter-organizational systems SYS3470 Human-computer interaction SYS3540 Intelligent decision aids	systems IMS3002 Information systems strategy and management IMS3007 Managing business records IMS3010 Information enterprise management and marketing IMS3012 Knowledge management IMS3110 Information systems security IMS3230 Information systems development practices IMS3280 Electronic commerce IMS3470 Human-computer interaction IMS3801 Information science	IMS3002 Information systems strategy and management IMS3007 Managing business records IMS3010 Information enterprise management and marketing IMS3012 Knowledge management IMS3110 Information systems security IMS3230 Information systems development practices IMS3280 Electronic commerce IMS3470 Human-computer interaction IMS3610 Evidence and metadata IMS3611 Record-keeping, archiving and the internet IMS3615 Professional practice IMS3616 Information access IMS3617 Information organization IMS3801 Information science		
--	---	--	---	--	--	--

Table F14: Curriculum of BInformation Systems at Monash Caulfield Campus, 1996
(Source: Monash Handbooks)

Unit	Content
Core units taught by Department of IS	
SYS1001 Information systems 1	Introduces students to the fundamental concepts underlying the study and practice of systems analysis and the management of information systems development
SYS1002 Information systems 2	Provide students with a detailed understanding of the information systems development process and the part which the systems analyst plays in it
SYS2001 Information systems 3	Provides students with a detailed understanding of some of the mainstream techniques of systems analysis and design
SYS2002 Information systems 4	Introduces advanced concepts in systems analysis and design techniques. Extended the basic techniques studied in SYS2001 to include complex systems and socio-technical issues in systems analysis and design
SYS2003 Professional practice in information systems	Provides students with a detailed understanding of the role and responsibilities of the systems analyst in professional practice in modern organizations. Teaches skills in a range of areas integral to that role, including communication skills, team work, conflict management, and inter-personal negotiation
SYS3001 Management support systems	Describes the evolution and current state of the art of the theory and practice of management support systems
SYS3002 Information system strategy and management	Provides students with an introduction to the key concepts and contemporary issues in information systems management, and the tasks involved in overseeing the development and application of information systems in modern organizations
Core units taught by other departments	
<ul style="list-style-type: none"> • SFT1101 Introduction to software development • SFT1102 Program design and data structures • SFT2305 Commercial programming in COBOL 	Three units covering introductory and advanced programming

<ul style="list-style-type: none"> • COT1130 Computer equipment • COT1140 Operating systems • COT2132 Relational database 	Three units covering computer hardware and operating systems
BUS2176 Project management	A unit introducing fundamental concepts in the theory and practice of project management

Table F15: Curriculum of BInformation Management & Systems at Monash Caulfield Campus, 2002 <i>(Source: Monash Handbooks)</i>	
Unit	Content
IMS1001 Information systems	Introduces students to the fundamental concepts of systems and the process of system development, with a particular focus on systems analysis and the skills needed by the systems analyst
IMS1002 Systems analysis and design	Provides students with a detailed understanding of system development and some of the mainstream techniques of systems analysis and design
IMS1401 Web-based information Systems	Introduces the basic technologies of the internet, the world-wide web and multimedia systems, examines the way in which these technologies have been applied in practice to date, and the development processes required to build systems which make use of them
IMS1102 Information management	Introduction to the nature of recorded information and the impact of technologies on the form it takes, with a special emphasis on digital information in the internet environment
IMS1000 IMS studio (double unit)	A full year project-based unit which provides students with practical experience of systems development and information management. Students work on projects which give them experience in identifying information problems and opportunities and specifying and developing system components
IMS2001 Enterprise systems	Introduces the key concepts and principles of enterprise-wide systems and issues in the development and implementation of ERP systems in organizations
IMS2112 Business information management	Introduces key concepts in data and information management in organizations, and the principles and practice of database design and implementation
IMS2102 Information management 3	Introduces the principles, processes and tools for the creation, organisation, categorisation, storage, retrieval and dissemination of a range of information types to meet organizational needs
BUS2176 Project management	Introduction to a broad cross-section of issues and techniques associated with the management of large-scale development projects
IMS2000 IMS studio (double unit)	A full year project-based unit which extends students' knowledge and understanding of information management and system development practice
IMS 3000 IMS studio (double unit)	A full year project-based unit which extends students' knowledge and understanding of information management and system development practice. Projects are chosen and specified to suit the specialist interests of the student

Table F16: Curriculum of BInformation Systems at Monash Caulfield Campus, 2004*(Source: Monash Handbooks)*

Unit	Content
IMS1501 Studio 1: Information Systems Foundations 1	First of two units which cover the full year. This unit aims to extend students' core computing skills and knowledge, and expose them to a range of introductory productivity applications. Discusses the role of information in society and the social elements of IS
IMS1502 Studio 2: Information Systems Foundations 2	Second of two studio units which cover the full year. This unit aims to extends students' skills with productivity applications such as modelling tools and HTML authoring; introduction to network fundamentals
IMS1603 Information Use & Management	Introduction to the nature of information and the way it is used by individuals, organizations, groups and societies; the role of information management and the use of IT to support it
IMS1704 Organisations & Processes	Introduction to the processes, documents and structures around which organizational activities are based. Introduction to typical organizational business processes and the role of IT in supporting them; introduction to tools for analysing, mapping and documenting processes
IMS1805 Systems Analysis	Introduction to systems analysis and basic techniques for carrying it out; analysis as a problem-solving activity in the context of the system development lifecycle
IMS1906 Business Software Fundamentals	Introduction to programming ; object-oriented and structured concepts and design techniques
IMS1907 Database Systems	Introduces key concepts in the design and use of database systems; information resource management; database administration; database modelling; database development; SQL
IMS2501 Studio 3:Systems Development 1	First of two studio units which cover the full year. This unit aims to introduce practical aspects of systems development and development environments. Case study in development of a web-based application
IMS2502 Studio 4:Systems Development 2	Second of two studio units which cover the full year. This unit aims to extend students' knowledge of the practical aspects of systems development and development environments. Further extension and implementation of case study in development of a web-based application
IMS2603 Information Management in Organisations	Fundamental concepts in information management in organizations. Matching IM services, solutions and tools to organizational needs. Theories of classification and metadata schema; the role and nature of records; developing information

	products
IMS2704 e-Business	Introduction to the ways in which organizations and businesses use the internet to conduct their activities. E-business concepts and design of e-business solutions
IMS2805 Systems Design & Implementation	Introduction to systems design and implementation in the context of the system development life-cycle. Principles of design and implementation; structured techniques for systems design
IMS2906 Business Applications Programming	Advanced programming. Object-oriented program design and implementation. Introduction to software engineering, database programming and web development for business applications
IMS3501 Studio 5: Professional practice 1	First of two units which cover the full year. This unit aims to introduce key concepts in the relationship between the IS professional and their client in the context of the system development lifecycle. Focus on team development, feasibility study, analysis, design and project management
IMS3501 Studio 5: Professional practice 2	Second of two units which cover the full year, examining key concepts in the relationship between the IS professional and their client in the context of the system development lifecycle. This unit focuses on the development and implementation phases of the development lifecycle.
IMS3603 Building knowledge assets	This unit's content was never defined officially. The degree was closed down before the unit was taught
IMS3704 Enterprise integration	This unit's content was never defined officially. The degree was closed down before the unit was taught
IMS3805 Object-oriented development	This unit's content was never defined officially. The degree was closed down before the unit was taught

Table F17: Curriculum of Information Systems Major at Monash Caulfield Campus, 2007 <i>(Source: Monash Handbooks)</i>	
Unit name	Unit Content
FIT1020 Foundation of IS	The unit describes the nature of the information systems discipline and the key areas of interest and expertise of IS professionals.
FIT2051 Analysis and design methods	The unit examines the process of information system development and the key tasks in systems analysis and design from a problem-solving perspective.
FIT2052 E-business	Introduces students to the ways organisations and businesses use the internet and related technologies to securely conduct business activities.
FIT2053 Web-based information systems	Provides an introduction to a wide range of technologies, tools, and design issues for web-based systems.
FIT2027 Systems design and implementation	Provides students with the knowledge and skills required to conduct the design and implementation phases in systems development.
FIT3063 Human-computer interaction	Introduction to the underpinning theories, principles and practices of interface design for computer-based systems
FIT3066 IT strategy and management	Introduces key topics in information systems strategy and management, and teaches students the skills and capacity to critically analyze IS management issues
FIT3068 Systems integration	Provides an understanding of the portfolio of information systems needed to support a large organisation, based on ERP packages as the principal business information system in large organisations.

Table F18: Curriculum of Enterprise Information Management Major at Monash Caulfield campus, 2011

(Source: Monash Handbooks)

Core Units	Unit Description
FIT1036 Enterprises and information	Examines the nature of the information needs of organisations, groups and individuals, and the ways in which IT-based systems support them.
FIT1037 Information management	Introduces fundamental concepts in information, and examines their implications for the use of IT-based systems that manage information.
FIT2074 Technology, information and organisations	Examines the way in which information technology influences the structures and operations of organisations and organisational approaches to the management and use of information.
FIT2075 Information strategies and systems development	Introduces key concepts and principles involved in the management of information assets as a key organisational resource.
Elective units	Unit Description
FIT1038 Introduction to information technology	Unit gives broad coverage of a range of different devices used to build an IT infrastructure for an organisation.
FIT2080 Information architecture	Introduction to information technology architecture. And to the nature and purpose of IA as a field of study.
FIT3063 Human-computer interaction	Introduction to the underpinning theories, principles and practices of interface design for computer-based systems
FIT3099 Knowledge management systems	Introduces techniques for utilising personal and organisational knowledge to increase organisational efficiency, and topics relating to initiating and implementing knowledge management (KM) initiatives
FIT3148 Cases in information and technology	Uses case studies of organizational experiences with the application of technologies and IT-based applications to provide students with insights into key areas of current interest and concern confronting practising IT professionals
FIT3147 Managing data	Provides students with an understanding of the tasks and the main issues associated with the management of data and electronic records in modern organizations.
FIT3098 Social informatics	Introduces students to a critical understanding of the impact of information and communications technology (ICT) within contemporary social relations