PROGRAMME SPECIFICATION

Awarding body/institution	Glyndŵr University
Teaching institution (if different from above)	N/A
Details of accreditation by a professional, statutory or regulatory body (including link to relevant website)	N/A
What type of accreditation does this programme lead to?	N/A
Is accreditation in some way dependent on choices made by students?	N/A
Final award/s available eg BSc/DipHe/CertHE	BSc (Hons), BSc (Ord), Dip HE, Cert HE
Award title	BSc (Hons) App Design BSc App Design Diploma of Higher Education in App Design Certificate of Higher Education in App Design
JACS 2 code	G450
UCAS code (available from Admissions)	I150
Relevant QAA subject benchmark statement/s	Business and Management (2007) Computing (2007)
Other external and internal reference points used to inform the programme outcomes	The following reference points were used in designing the programme: QAA Framework for Higher Education Qualifications in England, Wales and Northern Ireland QAA guidelines for programme specifications QAA Code of Practice for the assurance of academic quality and standards in HE University's Regulations
Mode/s of study *(p/t, f/t, distance learning)*	Full time & Part time
Language of study	English
Date at which the programme specification was written or revised	June 2013

Criteria for admission to the programme

Entry requirements are in accordance with the University regulations.

Entry requirements:

- GCSE passes at Grade C in English or Welsh and Mathematics, or key/essential skills in communication and application of number at level 2

In addition one of the following is normally required:

- A minimum of 240 UCAS points at A level or equivalent;
- Equivalent qualifications from an overseas country;

Applicants, who do not meet the criteria above, will be assessed on an individual basis by interview.

All applicants for the two year fast track delivery will be interviewed as part of the admissions process to ensure they understand the delivery model. Emphasis will be placed on the need to work intensively and consistently throughout the course with a commitment to high attendance and the meeting of all deadlines.

In addition to the academic entry requirements, overseas students require a TOEFL score of 550 (paper) or 213 (computer), or an IELTS score of 6.0 (with no sub-part less than 5.5): this should have been achieved within the two years prior to application.

Level 5 and Level 6 entry
Students may enter the programme at various levels with Accredited Prior Learning (APL) or Accredited Prior Experiential learning (APEL) in accordance with the University regulations.

Aims of the programme

The mobile application industry is currently worth circa £6bn annually. By 2015 this is projected to rise to £55bn. New product generation in this market therefore represents a significant growth opportunity, particularly in the current stagnant macroeconomic climate.

Mobile applications (apps) are extremely popular with youth culture. Many of these individuals use such functionality but perhaps do not recognise its potential as a future career path. Of those that do attempt to create new apps only a small minority ever realise commercial gain.

The App Design programme is specifically designed to integrate both the subject areas of Business and Computing. It provides a unique opportunity to promote this course to future students as a means to create commercially viable digital products. Failure is likely to be due to a lack of programming sophistication, commercial acumen, or both. This course addresses both of these shortcomings by providing a thorough understanding of mobile systems development while at the same time providing a sound knowledge of modern business operations.

Students will develop both the business skills and computing skills in order to understand the design and development of mobile software apps, and also appreciate how they can be

integrated into business environments to achieve competitive advantage and operational efficiency.

Students will gain knowledge of the technologies, techniques, tools, interface design and the emerging standards for developing mobile applications. However, developing an app requires the coming together of many disciplines: in the broad sense, the business and entrepreneurial approach offered by this programme will build on the strengths and aspirations of the student. Some will recognise that they themselves will not need to be expert developers but will fully appreciate and apply the solid business thinking required to integrate, exploit and monetise mobile devices in both corporate and commercial networks. Additionally, students will have the opportunity to research exciting areas of mobile technologies and techniques as the programme culminates in the development of a final project. The project focuses on the students chosen specialisation in areas such as mobile software design, development, entrepreneurship, merchandising and others.

The Department of Computing is seeking to develop provision with a number of other academic schools to meet the demands of the graduate marketplace and the demand from students both UK and internationally on both taught undergraduate and masters programmes. The proposed BSc (Hons) App Design is the first of these programmes, being in line with both the Computing and Business Departments' strategies in allowing an increase of undergraduate provision for contemporary degree programmes which meet the demands for job creation and employment in the area of software design and development and business management, providing an income stream for further academic and business development.

The overall aims of the programme are to provide a vehicle through which students will develop-

1. Knowledge and understanding of the main disciplines of computer software development, with a particular focus on creation of commercially viable software products. In particular development of mobile applications.
2. Understanding of the key skills required for managing software product development projects in a competitive market environment and development of key skills required for managing a business and also, managing software development within larger organisations: software engineering and design; developing innovative applications and software product solutions; entrepreneurship and enterprise management; strategic management and leadership; market research; project planning, management and risk; customer relationship management.

Distinctive features of the programme

Research of entrepreneurial firms and the software technology industry indicates that there is a skills gap for highly skilled software technicians. It is estimated that by 2015, mobile applications will outnumber those for static deployment by four to one (TechTarget SearchSOA, 2013). There is also a knowledge and skills gap and lack of business support for software technology entrepreneurs and a general lack of funding for technology businesses in North Wales (Jones and Parry, 2011). As the demand for technology for consumers increases (Mintel Market Research Reports, 2012) there is greater opportunity for new business start-ups and for mobile applications which meet the needs of the market.

This degree programme provides us with a great opportunity to offer a leading edge academic product that is likely to resonate with both potential students and their likely sponsors - parents/guardians. The degree programme will be largely practical in nature but

will provide the necessary rigour to be credible academically. As such the programme has great employability potential - either as entry level into software houses or as a means to empower students to progress entrepreneurially. It is anticipated that demand will be from both UK and international markets. The BSc (Hons) App Design is designed to provide students with current in-demand industry skills. The Departments of Computing and Business wish to deliver an up to date programme based on current industry needs underpinned by research and knowledge transfer activity.

The degree is delivered using modules from both the departments of Computing and Business. Both of these departments have close contacts with industry through research, knowledge transfer programmes and consultancy. In both departments, industry specialists and entrepreneurs are often invited to give guest lectures, conduct workshops and meet with students in order to impart their knowledge of real-life issues and opportunities. The App Design programme will benefit from these established links by setting real world problems and using real data in practical projects and coursework - both individually and in groups.

The programme was originally designed to be offered as a two-year degree programme as the delivery model would suit students wishing to accelerate their degree providing a quicker route into employment. Some of the key benefits of the two year route include:

- The opportunity to enter the job market earlier
- Reduced debt.
- Career change in a shorter period.
- Demonstrates a strong career commitment – Students completing a full Honours degree in two years will stand out from other applicants.

Although the two year route has clear benefits and the accelerated delivery will certainly prepare students for the workplace; it may not be the preferred route for every applicant. So the programme is validated for both two and three year delivery. We recognise that some students prefer to spend the more traditional three year route, obtaining their qualification and getting the 'total' student experience. Others prefer to forego the longer holidays and social side in order to gain their qualification in a shorter period of time. This programme is one of the first at Glyndwr University that gives students the choice.

In the first year the focus is initially on computing, giving a solid grounding in the practical elements of app design. As the programme progresses, the emphasis moves more towards the importance of business, management and marketing principles.

By the final semester of level five students will study essential business skills at an advanced level. At the same time it is expected that students will now be developing sophisticated apps with a commercially viable end-point. Level six will principally be project based. The project is a core component of the programme and is aligned to the students own goals. Students will study either a business project or a computing project. In either case, the student's idea is developed with a project supervisor. The remaining business, management and marketing modules will focus on successful delivery of that project within a viable business scenario.

The breakdown of modules between the two departments –

(Level 4) Computing 80 credits, Business 40 credits.
(Level 5) Computing 60 credits, Business 60 credits.
(Level 6) Computing 20-80 credits, Business 40-100 credits.

Programme structures and requirements, levels, modules, credits and awards

The following programme structure diagrams show the various delivery models for both fulltime and part-time study. Student progression will be closely monitored by the programme leader and the programme team. Following level four students, who find the workload too heavy, will not be able to continue on the fast track route but instead, will be offered the opportunity to transfer to the three-year degree. Consequently, students on the three year model who complete level four over two trimesters in line with the criteria detailed in the academic regulations may opt to transfer to level five of the accelerated route.

The five year part-time route allows students to study the full degree part-time during the day. Students will study alongside the full-time students but take fewer modules each year. The part-time route is aimed at those in employment who want to progress their professional and personal development and to gain formal qualifications without putting their careers on hold.

Year 1 Full Time two year structure (Level 4 / 5)

Tri 1	Information Engineering COM414 20 Credits - Core	Business context BUS407 20 Credits - Core	Software Development Fundamentals COM416 20 Credits - Core
Tri 2	Marketing Principles and Business Practice BUS408 20 Credits - Core	Mobile Systems and Network Technologies COM415 20 Credits - Core	Web Development COM412 20 Credits - Core
Tri 3	Marketing Management Planning and Control BUS553 20 Credits - Core	Internet and Mobile Application Development COM502 20 Credits - Core	Systems Development : Tools and Techniques COM513 20 Credits - Option **or** Human-Computer Interaction COM515 20 Credits - Option

Year 2 Full Time two year structure (Level 5)

Tri 1	Native App Design & development COM520 20 Credits - Core	Business Accounting & Finance BUS523 20 Credits - Core	Leading Entrepreneurial Teams (HRM & Business Strategy-for students planning to be employed) BUS522 20 Credits - Option **or** Business Feasibility Analysis (for students developing their own business) BUS521 20 Credits - Option
Tri 2	Advanced App Programming COM624 20 Credits - Core	Business Planning BUS616 20 Credits - Core	Project Dissertation COM611 40 Credits - Option **or**

Tri 3	Industry Networks, Partnerships & Core Alliances BUS617 20 Credits - Core	21st Century Computing COM623 20 Credits - Option **or** Global Marketing BUS603 20 Credits - Option **or** Entrepreneurial Marketing BUS618 20 Credits - Option	Project BUS602 40 Credits - Option

Year 1 Full Time three year structure (Level 4)

Tri 1	Information Engineering COM414 20 Credits - Core	Business context BUS407 20 Credits - Core	Software Development Fundamentals COM416 20 Credits - Core
Tri 2	Marketing Principles and Business Practice BUS408 20 Credits - Core	Mobile Systems and Network Technologies COM415 20 Credits - Core	Web Development COM412 20 Credits - Core
Tri 3			

Year 2 Full Time three year structure (Level 5)

Tri 1	Marketing Management Planning and Control BUS553 20 Credits - Core	Internet and Mobile Application Development COM502 20 Credits - Core	Systems Development : Tools and Techniques COM513 20 Credits - Option **or** Human-Computer Interaction COM515 20 Credits - Option
Tri 2	Native App Design & development COM520 20 Credits - Core	Business Accounting & Finance BUS523 20 Credits - Core	Leading Entrepreneurial Teams (HRM & Business Strategy-for students planning to be employed) BUS522 20 Credits - Option **or** Business Feasibility Analysis (for students developing their own business) BUS521 20 Credits - Option
Tri 3			

Year 3 Full Time three year structure (Level 6)

Tri 1	Advanced App Programming COM624 20 Credits - Core	Business Planning BUS616 20 Credits - Core	Project Dissertation COM611 40 Credits Option **or** Project BUS602 40 Credits Option
Tri 2	Industry Networks, Partnerships & Core Alliances BUS617 20 Credits - Core	21st Century Computing COM623 20 Credits - Option **or** Global Marketing BUS603 20 Credits - Option **or** Entrepreneurial Marketing BUS618 20 Credits - Option	
Tri 3			

The following part-time programme structures are designed for efficient module delivery to coincide with the fulltime structure where possible. However, this means that the route contains mixed level study.

Glyndŵr University regulations permit mixed level study but students still need to progress formally at the end of each level, they are allowed to study modules at the higher level at their own risk until they complete the previous level and progress.

Year 1 Part Time five year structure (Level 4)

Tri 1	Information Engineering COM414 20 Credits - Core	Business context BUS407 20 Credits - Core
Tri 2	Marketing Principles and Business Practice BUS408 20 Credits - Core	Mobile Systems and Network Technologies COM415 20 Credits - Core
Tri 3		

Year 2 Part Time five year structure (Level 4/5)

Tri 1	Software Development Fundamentals COM416 20 Credits - Core	Marketing Management Planning and Control BUS553 20 Credits - Core
Tri 2	Business Accounting & Finance BUS523 20 Credits - Core	Web Development COM412 20 Credits - Core
Tri 3		

Year 3 Part Time five year structure (Level 5)

Tri 1	Internet and Mobile Application Development	Systems Development : Tools and Techniques

	COM502 20 Credits - Core	COM513 20 Credits - Option **or** Human-Computer Interaction COM515 20 Credits - Option
Tri 2	Native App Design & development COM520 20 Credits - Core	Leading Entrepreneurial Teams (HRM & Business Strategy-for students planning to be employed) BUS522 20 Credits - Option **or** Business Feasibility Analysis (for students developing their own business) BUS521 20 Credits - Option
Tri 3		

Year 4 Part Time five year structure (Level 6)

Tri 1	Advanced App Programming COM624 20 Credits - Core	Business Planning BUS616 20 Credits - Core
Tri 2	Industry Networks, Partnerships & Core Alliances BUS617 20 Credits - Core	21st Century Computing COM623 20 Credits - Option **or** Global Marketing BUS603 20 Credits - Option **or** Entrepreneurial Marketing BUS618 20 Credits - Option
Tri 3		

Year 5 Part Time five year structure (Level 6)

Tri 1	Project Dissertation COM611 40 Credits - Option **or** Project BUS602 40 Credits - Option	
Tri 2		
Tri 3		

Composition of Awards

The Certificate of Higher Education in App Design is an exit award available for a student who has completed 120 credits at level 4 or above and who is unable or chooses not to continue on the programme.

The Diploma of Higher Education in App Design is an exit award available for a student who has completed 240 credits of which 120 credits were studied at level 5 or above and who is unable or chooses not to continue on the programme.

The Ordinary Degree in App Design is an exit award available for a student who has completed 300 credits, of which 120 credits were studied at level 5 or above and 60 credits at level 6, including the modules 'Advanced App Programming', 'Business Planning' and 'Industry Networks, Partnerships & Core Alliances'.

The Honours Degree in App Design is awarded to a student who has completed 360 credits, of which normally 120 were studied at level 4, 120 at level 5 and 120 at level 6.

Module tutors

Module Title	Level	Module Leader
Information Engineering	4	Denise Oram
Business context	4	Jan Green
Software Development Fundamentals	4	Renaldo Amorim
Marketing Principles and Business Practice	4	Gareth Harvey
Mobile Systems and Network Technologies	4	Nigel Houlden / Jason Matthews
Web Development	4	John Worden
Marketing Management Planning and Control	5	Brian Jones
Internet and Mobile Application Development	5	John Worden
Systems Development : Tools and Techniques	5	Denise Oram
Human-Computer Interaction	5	Rich Picking
Native App Design & development	5	John Worden
Business Accounting and Finance	5	Bethan Lloyd Jones
Leading Entrepreneurial Teams	5	Mike Green
Business Feasibility Analysis	5	Leslie Davies
Advanced App Programming	6	John Worden
Industry Networks, Partnerships & Core Alliances	6	Leslie Davies
21st Century Computing	6	Vic Grout
Global Marketing	6	Ben Binsardi
Entrepreneurial Marketing	6	Gareth Harvey
Business Planning	6	Jan Green
Project Dissertation	6	Vic Grout
Project	6	Sandra King

There may be additional deliverers but those individuals listed above are identified as the Module leaders.

Intended learning outcomes of the programme

The BSc (Hons) App Design degree programme provides opportunities for students to develop through the levels of the programme and demonstrate knowledge and understanding, qualities and skills. The following outcomes that are fully compatible with the benchmark statements of both Computing and Business and are met through the overall design and selection of modules.

Graduates will be able to demonstrate the following:

A. Knowledge and understanding	
A1	A critical appreciation of the skills needed to develop software including the necessary backgrounds in computational thinking, design and analysis
A2	The range of tools necessary to develop computational solution
A3	Industry standards for software confirmation, operation and testing
A4	How to create a software product which meets the demands of a given market.
A5	Develop a feasibility study for market launch of the new software product and, for development of a new entrepreneurial business venture
A6	Understanding customer expectations, needs and requirements
A7	Working in collaborative teams, partnerships and industry networks

B. Intellectual skills	
B1	Identify and select appropriate computational tools in the development and creation of a software product
B2	Select and apply suitable software development models and processes
B3	Apply industrial standards to software performance, interoperability and evaluation
B4	Develop entrepreneurial thinking and understanding of enterprise management using theoretical underpinning.
B5	Critically appraise the industry marketplace, identifying opportunities and threats using and analysing qualitative and quantitative data sources
B6	Critically examine and evaluate the requirements of customers and products users through intensive market and industry research.
B7	Reason critically the principles and procedures for business start-up using theoretical and practical application.
B8	Demonstrate independence of thought in relation to new product ideas, innovation techniques and market opportunities locally and internationally.

C. Subject specific skills	
C1	Recognise and apply the relevance of a variety of disciplines including computer science and software development, entrepreneurship, creative innovation, business management, marketing and internationalization.
C2	Understand and apply appropriate tools and industrial standards for software development
C3	Utilise appropriate research methods, together with required statistical methods for basic presentation, analysis and interpretation of both qualitative and quantitative data, relevant to software development and developing new business.
C4	Assess market potential based on research and analysis of the industry markets
C5	Work collaboratively in teams and with potential partners in industry.
C6	Develop, design and undertake independent research for development of the software product that is relevant to the market and to potential customers.
C7	Understand and integrate the learning gained through the programme and develop a software product of their choosing, demonstrate ability to develop the product and research demand for this product, plan and deliver the software project ready for a defined, thoroughly researched, marketplace. Undertake data analysis and interpretation and engage in critical scientific development and project planning.
C8	Demonstrate practical skills for managing a project, networking and partnering to obtaining

	additional business resources (for example start-up investment).
C9	Develop leadership and business management skills for working in large commercial software business environments.

D. Practical, Professional and Employability skills	
D1	Written communication skills: Research, analyse and interpret information from a variety of sources and synthesise and communicate ideas effectively both orally and in writing
D2	Multidisciplinary teamwork skills: actively participate in groups and also be capable of independent work
D3	Information and communications technology skills: Identify and find appropriate sources of information using IT effectively
D4	Cognitive skills: Critically assess the relevance and importance of ideas of others
D5	Managing own learning: evaluate own performance and working standards and manage own learning and continuing professional development and develop lifelong learning skills

A. Knowledge and understanding

		Level 4 Cert He	Level 5 Dip He	Level 6 Degree	Level 6 Honours Degree
A1	A critical appreciation of the skills needed to develop software including the necessary backgrounds in computational thinking, design and analysis	Demonstrates a working understanding of the principles and practices of mobile computing; shows competence in basic IT and communication skills, workshop practice and laboratory investigations	Demonstrates a widening appreciation of the significance of central and peripheral areas of the discipline and explores its extent and boundaries through practical work, design exercises and case studies.	Shows confident familiarity with the broad areas of the knowledge bases of the discipline, including the management and an appreciation of the principles of an IT strategy. Reveals a working understanding of current technology and of its limits	Reveals a clear understanding of the boundaries of existing and emerging technology and the limits of its application, and of the range of conventional design methods and the types of judgement employed by App Design professionals.
A2	The range of tools necessary to develop computational solution	Evaluate the appropriateness of a range of development tools for the creation of software applications and Websites.	Demonstrate an ability to apply a range of programming tools and techniques in new contexts from that in which they were first studied at level 4, in the design of mobile applications.	Select and deploy accurately established techniques and tools to develop mobile applications for selected business problems, and choose appropriate theory for analysis, with only general guidance.	Increasingly independent, confident and flexible in applying a range of programming tools for the creation of mobile applications for selected business problems, and in the application of knowledge and skills appropriate to their solution.
A3	Industry standards for software confirmation, operation and testing	Demonstrate a working knowledge of the software development cycle, its phases, and the purposes and activities of each; a basic understand of the general rules and best practices adopted by software development; understand the risks of software implementation	Demonstrates a widening appreciation of each stage of the software development cycle, its phases, and the purposes and activities of each; understand the risks of software implementation, Demonstrate a working of the general rules and best practices adopted by software development and knowledge of software testing techniques	Select and deploy accurately established techniques and tools for software development and testing to recognised standards; understand the risks of software implementation and apply risk-based test strategies and policies for software testing.	Increasingly independent, confident and flexible in applying a range of tools for software development and testing to recognised industry standards; apply risk-based test strategies and policies for software testing and the management of testing projects, test environment set-up and maintenance, test execution and reporting.
A4	How to create a software product which meets the demands of a given market.	Based on classifications presented by tutors, demonstrates some ability to analyse case study examples with the help of detailed guidance from Tutors.	Demonstrates increasing ability to apply classifications and analyse relatively simple situations, still with some guidance provided.	Recognises familiar ideas or principles in new contexts or situations; analyses systematically and effectively with minimal guidance.	Identifies and classifies principles and ideas in new contexts and situations; analyses systematically, effectively and critically, working autonomously.

A5	Develops relevant knowledge and understanding of organisations and the external environment in which they operate. Demonstrated by development of a feasibility study for market launch of the new software product and, for development and planning of a new entrepreneurial business venture.	Develops an ability to present, evaluate and interpret qualitative and quantitative data, in order to develop lines of argument and make sound judgements in accordance with a business feasibility analysis.	Develops wider understanding of the feasibility of the business idea; develops knowledge and critical understanding of business and market research which supports development of technology new product developments (NPDs).	Shows confident familiarity with technology industry markets; is able to select and deploy business and marketing strategies via effective, business planning; acknowledging responsiveness to change and the future of the organisation and the future environment in which they operate. Developing a sound awareness of the entrepreneurial business planning process.	Demonstrates clearly defined business and marketing competencies and managing business through change and anticipating change in the marketplace. Developing deeper knowledge understanding of entrepreneurial processes and behaviours through critical reflection.
A6	Understanding customer expectations, needs and requirements.	Able to demonstrate the principles of understanding and assessing markets and customers; and demonstrate an ability to evaluate these aspects in the technology industry context.	Develops wider knowledge of marketing techniques and develops business acumen. Able to evaluate and analyse the appropriateness of different approaches to solving problems.	Select and deploys tools and models for developing technology products/services which accurately meet the needs and requirements of customers, with minimal guidance and using critical analysis. Management of customer expectations, service and orientation.	Increasingly independent and confident in identifying new business and market opportunities in technology sectors both locally and internationally. Understands the impact of effective customer and market orientation. Gathers, analyses and forcasts using market and industry data which informs NPD and technology innovation.
A7	Working in collaborative teams, partnerships and industry networks	The ability to work effectively with tutors and fellow students; participates in clearly defined group situations.	Demonstrates more advanced interactive and group skills, including effective participation with others on a common task or group project.	The ability to work effectively with others on a common task; demonstrates basic negotiating skills in line with team objectives.	The ability to work effectively with others on a common task; taking actions which respect the needs and contributions of others; contributing to and accepting the consensus; negotiating to achieve the

					objectives of the team

B. Intellectual skills

		Level 4 Cert He	Level 5 Dip He	Level 6 Degree	Level 6 Honours Degree
B1	Identify and select appropriate computational tools in the development and creation of a software product	Based on classifications presented by tutors, demonstrates some ability to analyse case study examples with the help of detailed guidance from Tutors.	Demonstrates increasing ability to apply classifications and analyse relatively simple situations, still with some guidance provided.	Recognises familiar ideas or principles in new contexts or situations; analyses systematically and effectively with minimal guidance.	Identifies and classifies principles and ideas in new contexts and situations; analyses systematically, effectively and critically, working autonomously.
B2	Select and apply suitable software development models and processes	Carries out rote application of basic computing principles and procedures to standard, simple situations, with considerable guidance provided by tutors.	Applies standard computing principles and procedures to somewhat more demanding situations, still with some guidance provided.	Demonstrates ability to select and use principles and procedures appropriate to the situation or problem in hand, with minimal guidance provided.	Carries out confident and accurate selection and application of principles and procedures to the solution of a range of mobile computing situations and problems, working autonomously.
B3	Apply industrial standards to software performance, interoperability and evaluation	Starts to form own value judgements of software development etc., based on criteria provided, albeit very reliant on tutors' evaluative opinions.	Starts to develop own criteria and develops ability to form independent judgements, although still dependent on guidance from tutors.	Identifies a range of valid alternative solutions; begins to discriminate and evaluate in a reasoned, systematic and increasingly independent way.	Integrates theory with good computing practice; autonomously evaluates theory, process, solutions related to mobile computing and outcomes critically and effectively.
B4	Develop cognitive skills of critical thinking, analysis and synthesis. Demonstrated by entrepreneurial thinking and understanding of enterprise management using theoretical underpinning and practical business experience.	Using the tutor as a facilitator, the student begins to evaluate and carry out reflective practice using case studies and, to develop entrepreneurial thinking, assessment of opportunities, management of risk etc.	Starts to develop an understanding of the limits of their knowledge, and how this influences analysis and interpretations based on that knowledge.	Develops entrepreneurial competencies through experience; develops self-reliance, leading and managing and working with teams.	Integrates learned theory and techniques with practical experience to maximise business potential. Carefully assesses opportunities and evaluates business and marketing outcomes with informed understanding.

B5	Critically appraise the external environment, and specifically, the industry marketplace, identifying opportunities and threats using and analysing qualitative and quantitative data sources	Carries out market research and analysis and realises potential in understanding the appropriateness of different approaches to solving problems related to the technology industry marketplace.	Uses a range of established techniques within tutorials, for example, using experiential learning exercises, to initiate and undertake critical analysis of information, and to propose solutions to business problems arising from that analysis	Demonstrates technology industry acumen, with minimum supervision, clearly identifies, formulates and solves business problems; developing suitable markets to launch new products and issues for technology firms. Assesses and mitigates for business and project risk. Demonstrates market research capabilities through competent use of a range of data sources.	Effective self-management in terms of time; ability to conduct research independently or as a team, into business and marketing issues. Familiarity with business and marketing data. Demonstrates an ability to carry out research and critical thinking.
B6	Critically examine and evaluate the requirements of customers and products users through intensive market and industry research.	Develops an ability to explore and assess the met and unmet demands of customers (business and consumers) and to communicate the results of their study/work accurately and reliably, and with structured and coherent arguments.	The student's ability to evaluate is enhanced; producing effective communication and information, reasoned arguments and analysis in a variety of forms to specialist and non-specialist audiences, and deploying key techniques of technology marketing effectively.	Effective problem solving and decision making. The ability to create, evaluate and assess a range of familiar options together with a capacity to apply ideas and knowledge to a range of situations.	Applies developed knowledge of the technology industry, it's markets and customers, to satisfy requirements and also anticipate customer demand for NPDs. Identifies local and international market opportunities.
B7	Reason critically the principles and procedures for business start-up using theoretical and practical application.	Using problem –based learning and case studies, the student is introduced to theoretical and practical issues related to business start-up and, the external environment (technology markets).	Begins to develop financial acumen and capability and understanding of financial accounting for small businesses; understands business and legal aspects of financial reporting, taxation and audit. Venture	Ability to synthesise a range of business and marketing ideas related to developing a new technology business start-up and/or work in a large technology driven organisation.	Effectively communicates, orally and in writing, using a range of media to communicate a business plan/ or develop and lead on an entrepreneurial team project. Focussing on developing new

			capital, seed corn funding and other sources of funding and investment for small business are introduced.	Ability to plan and manage projects, develop relationships and networks and to resolve identified business challenges.	markets in competitive technology environments.
B8	Demonstrate independence of thought in relation to new product ideas, innovation techniques and market opportunities locally and internationally.	Develops intellectual capabilities in terms of using and applying basic business and marketing tools for assessing new product ideas, and for assessing local market demand.	Begins development and new thought on tangible business concepts and ideas for NPDs. Ability to analyse and interpret data using a more advanced level of marketing tools and concepts. Ability to assess and analyse the potential of the business idea and assess personal and business needs, to include further training, developing existing skills and acquiring new competences that will enable the student to assume significant responsibility within organisations or to create a business start-up company.	Integrates new technology competencies and technology product knowledge with marketing and business competencies to produce a sound new product and/or project concept. Acknowledges and applies innovative techniques in business to overcome potential barriers in the wider industry marketplace.	Ability to evaluate more complex issues in the market to inform new product ideas in the context of technology markets, ability to recognise and seek new business opportunities and evaluate associated risks from product development through to market launch.

C. Subject specific skills

		Level 4 Cert He	**Level 5 Dip He**	**Level 6 Degree**	**Level 6 Honours Degree**
C1	Recognise and apply the relevance of a variety of disciplines including computer science and software development, entrepreneurship, creative innovation, business	Demonstrates familiarity with the basic facts and principles of computing with the concepts of information technology, business environment and communication skills as	Demonstrates a widening appreciation of the scope of the discipline, encompassing computer and communications technology, mobile and web software development;	Shows confident familiarity with the broad areas of the knowledge bases of the discipline, including advanced mobile application development, new	Shows confident familiarity with the defining concepts and features of the discipline, based on further study of key specialist areas, and with the concepts of the science of

	management, marketing and internationalization.	related to the IT profession, and with good and safe practice in laboratories and workshops	maps existing and new knowledge into a coherent and comprehensive picture; demonstrates knowledge of the basic issues involved in mobile computing.	technologies and other key specialist areas; shows an appreciation of the principles of project management and IT strategy.	management associated with the development of mobile applications.
C2	Understand and apply appropriate tools and industrial standards for software development	Apply object oriented software development methods and make an informed selection of algorithms and/or data representatives for solving a range of standard problems.	Display knowledge and understanding of a mobile aspect of computing, focusing on in mobile programming. Display knowledge and understanding of programming and professional issues.	Facilitate the application of the programming skills gained at the previous stages and to enhance the knowledge and understanding of Mobile Device APIs and mobile design patterns. Demonstrate technical and learning skills in developing applications for mobile devices	Demonstrate a knowledge and understanding in the specific area of mobile computing. Demonstrate a further depth of expertise and knowledge in mobile programming for Web, Hybrid and Native applications.
C3	Utilise appropriate research methods, together with required statistical methods for basic presentation, analysis and interpretation of both qualitative and quantitative data, relevant to software development and developing new business.	Systematically relates a limited number of facts/ideas/elements in an imitative manner, with considerable guidance provided by tutors.	Demonstrates appreciation of need for the relating and collecting of a range of facts/ideas/elements in an argued case; produces new ideas in closely-defined situations, such as the development of mobile software, with some guidance provided as appropriate.	The ability to apply research methods and statistical methods to relate and collect facts/ ideas/ elements in an argued case; produces new ideas in a wider range of situations, with minimal guidance.	The ability to apply appropriate research and statistical methods to collate facts/ ideas/ elements in support of a well-structured argument; design solutions to management problems and evolve new concepts, working autonomously.
C4	Assess market potential based on research and analysis of the industry markets	Demonstrates knowledge and understanding of recent new technology businesses and their products (software applications) to market and their success and/or	Develops skills for effective marketing management and control of the business idea delivery. Aspects such as assessing market opportunities and threats; profit potential in markets	Ability to conduct business and market research in global contexts and understand the entry modes for operating in global technology markets. Able	Establishes familiarity with new and existing market opportunities; understands and uses methods of frequent scanning for changes in the marketplace using

		failure.	and managing/mitigating risk are addressed in marketing and business lectures and tutorials.	to deploy entrepreneurial marketing strategies (cost effective, innovative approaches to marketing) to target these markets.	independent thought and critical thinking.
C5	Work collaboratively in teams and with potential partners in industry.	The ability to work effectively with tutors and fellow students; participates in clearly defined group situations.	Demonstrates more advanced interactive and group skills, including effective participation with others on a common task or group project.	The ability to work effectively with others on a common task; demonstrates basic negotiating skills in line with team objectives.	The ability to work effectively with others on a common task; taking actions which respect the needs and contributions of others; contributing to and accepting the consensus; negotiating to achieve the objectives of the team
C6	Develop, design and undertake independent research for development of the software product that is relevant to the market and to potential customers.	Applies basic tools/methods to simple, standard computing/ software problems, with the help of detailed guidance from Tutors.	Applies given tools/methods accurately and carefully to more demanding problems, e.g. the development of software in a mobile environment for a specific market, still with some guidance.	Begins to self-direct, identify key elements or problems associated with selected design, and choose appropriate methods to construct their resolution, with only general guidance.	Is increasingly independent, confident and flexible in identifying and defining complex mobile application problems and in the application of knowledge and skills appropriate to their solution, at the threshold of professional competence.
C7	Understand and integrate the learning gained through the programme and develop a software product of their choosing, demonstrate ability to develop the product and research demand for this product, plan and deliver the software project ready for a defined, thoroughly researched, marketplace. Undertake data analysis and interpretation and engage in	Based on their developing knowledge of the principle s of marketing and entrepreneurial business, students commence with the formulation of an innovative business concept; using tools and models with guidance from tutors.	Information, knowledge and skills developed across the program inform development of the business feasibility study. Students are able to undertake detailed assessments of their proposed NPD project and, with consultation with tutors and based on the student's research, make necessary adjustments.	Develops critical thinking, analysis and synthesis in relation to project planning and delivery. Demonstrates effective managerial competencies which acknowledge project delivery risk, assesses impact on project costs and on project delivery times.	Develops capabilities in handling complex data; develops knowledge of numeracy and quantitative skills including data analysis, interpretation and extrapolation of the key facts. Becomes competent and self-reliant in the use of models and tools to enable audit of markets.

	critical scientific development and project planning.				
C8	Demonstrate practical skills for managing a project, networking and partnering to obtaining additional business resources (for example start-up investment).	The basic principles of business and marketing are introduced; students develop skills in the early stages of business marketing formulation. Group work and drafting coursework and projects develop student's business acumen and business competencies.	Students develop a range of wider practical business and marketing skills; working towards formations of entrepreneurial teams, obtaining financial backing, working on team projects and producing detailed and accurate group work to meet coursework objectives.	Develops knowledge and skills in business-to-business relationship building and developing additional business capabilities through networks and alliances. Ability to search for sources of business support and investment opportunities.	Integrates practical experiences gained, with developing business and marketing knowledge; interpersonal skills of effective listening, negotiation, persuasion and presentation. Activating business resources or start-up ventures or within large business projects.
C9	Develop leadership and business management skills for working in large commercial software business environments.	Develops effective working relationships through team work and negotiation and discussion in lectures and tutorials.	Demonstrates wider leadership and managerial skills in the design and development of new and incremental innovative technology projects, services and systems.	Effective performance within a team environment, including leadership, team building, influencing and project management skills.	Exhibits leadership skills, delivering either individually or as part of a team, projects, dissertations and presentations.

D. Practical, Professional and Employability skills

		Level 4 Cert He	**Level 5 Dip He**	**Level 6 Degree**	**Level 6 Honours Degree**
D1	Written communication skills: Research, analyse and interpret information from a variety of sources and synthesise and communicate ideas effectively both orally and in writing	Communicates in a clear and concise way, in writing and orally, in relatively informal and limited-length pieces of work. In particular written communication demonstrates competence in technical and business reporting.	Communicates in a clear, systematic and concise way, in writing and orally, in more formal academic and professional styles, and in longer pieces of work of a technical nature.	Engages effectively in a variety of roles; debates; produces clear, well-structured technical reports and other extended pieces of work; gives clear, subject-specific presentations in a variety of contexts.	Engages effectively in independent roles; debates in a professional manner; produces detailed critiques and coherent technical and project reports; gives confident oral and other presentations in a wide range of contexts.
D2	Multidisciplinary teamwork skills: actively participate in groups and also be capable of	Interacts effectively with tutors and fellow students; participates in clearly	Demonstrates more advanced interactive and group skills, including	Interacts effectively within a learning or subject-specific group, including	Interacts effectively within learning or professional groups; demonstrates

	independent work	defined group situations	effective participation in more demanding group tasks, including a group project.	a work-experience group; demonstrates basic negotiating, role, leadership and group-support skills.	appropriate negotiating, role, leadership and group-support skills to an advanced level.
D3	Information and communications technology skills: Identify and find appropriate sources of information using IT effectively	Demonstrates basic 'load', 'use' and 'retrieve' IT skills, as appropriate to computer and mobile computing. Demonstrates basic skills in using the Internet and designing web pages. Accesses data and information from University and World-Wide-Web resources.	Demonstrates more advanced 'use' and 'search' IT skills; Demonstrates competent use and application of word processing, the integration of text and image in specific contexts and produces technical reports and case studies.	Demonstrates, uses and accesses a limited selection of more specialist IT skills related to mobile application development; produces detailed technical reports. Conducts effective searches for data related to mobile computing problems.	Practises a wide range of specialist IT skills, optimising as appropriate to the context of the solution of complex mobile application problems where a wide range of factors and constraints must be considered simultaneously
D4	Cognitive skills: Critically assess the relevance and importance of ideas of others	Shows an understanding of the opinions of other people; flexibility in considering alternatives and opinions	Demonstrates the ability to take the perspective of others; identifying the similarities and differences between two approaches to the solution of a given problem	Demonstrates the ability to take the perspective of others; comparing the strengths and weaknesses of alternative interpretations determining the credibility of a source of information.	Demonstrates the ability to take the perspective of others; articulate the strengths and weaknesses of the suggestions of arguments posed; recognize the underlying agendas and motivations of individuals and groups involved in a given situation
D5	Managing own learning: evaluate own performance and working standards and manage own learning and continuing professional development and develop lifelong learning skills	Studies in a systematic, directed way with the aid of appropriate Tutor guidance.	Learns in an increasingly effective and purposeful way, with beginnings of development as an autonomous learner.	Adopts a broad-ranging and flexible approach to study; identifies learning needs; pursues activities designed to meet these needs in increasingly autonomous ways.	With minimal guidance, manages own learning using a wide range of resources appropriate to the IT profession; seeks and makes effective use of feedback. Self-reflection and criticality including self

				-awareness, openness and sensitivity to diversity in terms of people, cultures, business, management and marketing issues.

CURRICULUM MATRIX demonstrating how the overall programme outcomes are achieved and where skills are developed and assessed within individual modules. *(matrix to be amended as appropriate)*

			Knowledge and understanding, intellectual skills, subject skills, and practical, professional and employability skills																											
	Module Title	Core / Opt	**A 1**	**A 2**	**A 3**	**A 4**	**A 5**	**A 6**	**A 7**	**B 1**	**B 2**	**B 3**	**B 4**	**B 5**	**B 6**	**B 7**	**B 8**	**C 1**	**C 2**	**C 3**	**C 4**	**C 5**	**C 6**	**C 7**	**C 8**	**C 9**	**D 1**	**D 2**	**D 3**	**D 4**	**D 5**
L 4	Information Engineering	C	✓	✓	✓			✓	✓	✓	✓	✓						✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
	Business context	C				✓	✓						✓	✓	✓									✓			✓	✓	✓	✓	✓
	Software Development Fundamentals	C	✓	✓	✓	✓		✓		✓	✓	✓						✓	✓				✓				✓	✓	✓		✓
	Marketing Principles and Business Practice	C				✓	✓	✓										✓			✓	✓					✓	✓	✓	✓	✓
	Mobile Systems and Network Technologies	C	✓	✓	✓			✓		✓	✓	✓						✓		✓							✓		✓	✓	✓
	Web Development	C	✓	✓	✓	✓		✓	✓	✓	✓	✓						✓	✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
	Module Title	Core / Opt	**A 1**	**A 2**	**A 3**	**A 4**	**A 5**	**A 6**	**A 7**	**B 1**	**B 2**	**B 3**	**B 4**	**B 5**	**B 6**	**B 7**	**B 8**	**C 1**	**C 2**	**C 3**	**C 4**	**C 5**	**C 6**	**C 7**	**C 8**	**C 9**	**D 1**	**D 2**	**D 3**	**D 4**	**D 5**
L 5	Marketing Management Planning and Control	C				✓	✓	✓					✓	✓	✓		✓	✓			✓		✓	✓		✓	✓	✓	✓	✓	✓
	Internet and Mobile Application Development	C	✓	✓	✓	✓		✓	✓	✓	✓	✓						✓	✓			✓	✓	✓	✓		✓	✓	✓	✓	✓

	Systems Development : Tools and Techniques	O	✓	✓		✓		✓	✓	✓	✓	✓						✓	✓			✓	✓		✓		✓	✓	✓	✓	✓
	Human-Computer Interaction	O	✓	✓	✓	✓		✓	✓	✓	✓	✓						✓	✓	✓	✓	✓	✓		✓		✓	✓	✓	✓	✓
	Native App Design & development	C	✓	✓	✓	✓		✓	✓	✓	✓	✓						✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Business Accounting and Finance	C					✓	✓					✓	✓		✓		✓		✓		✓			✓		✓	✓	✓	✓	✓
	Leading Entrepreneurial Teams	O							✓				✓				✓	✓				✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Business Feasibility Analysis	O	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
L 6	Module Title	Core / Opt	**A 1**	**A 2**	**A 3**	**A 4**	**A 5**	**A 6**	**A 7**	**B 1**	**B 2**	**B 3**	**B 4**	**B 5**	**B 6**	**B 7**	**B 8**	**C 1**	**C 2**	**C 3**	**C 4**	**C 5**	**C 6**	**C 7**	**C 8**	**C 9**	**D 1**	**D 2**	**D 3**	**D 4**	**D 5**
	Advanced App Programming	C	✓	✓	✓	✓		✓	✓	✓	✓	✓						✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Industry Networks, Partnerships & Core Alliances	C				✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	21st Century Computing	O	✓						✓	✓	✓			✓			✓	✓		✓		✓			✓		✓	✓	✓	✓	✓
	Global Marketing	O				✓	✓	✓	✓			✓	✓	✓	✓		✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
	Entrepreneurial Marketing	O				✓	✓	✓	✓				✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓
	Business Planning	C	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
	Project Dissertation Or Project	O	✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Learning and teaching strategy used to enable outcomes to be achieved and demonstrated

The departments of Computing and Business recognise the need to develop more flexible programmes that meet the needs of a more diverse student body. In order to offer a wider variety of provision for students with different demands and commitments the App Design programme is designed and structured as both a traditional three-year degree programme and as a two year Fast-Track degree programme.

There are two new joint programmes between Computing and Business, and within these a number of modules offered are common to both programmes and there is a possibility that shared delivery may take place. The teams on both programmes will ensure if shared delivery takes place, that there will be a clear student identity for students on these programmes. Both teams are experienced in shared delivery across programmes, and will ensure that the delivery would be contextualised to each programme and that there would be opportunities for the groups to meet individually; for example through the provision of separate tutorial groups.

Fast-Track degrees offer undergraduate students an opportunity to complete an honours degree in two years rather than three. Students study three, rather than two semesters a year (trimester). Instead of taking a long summer break, Fast-Track students complete modules that traditional students will be studying in the following year. Consequently, there are substantial financial benefits for students: one less year out of the full-time job market and one less year of tuition fees.

The Department of Computing is known for its flexible approach with a Learning, Teaching and Assessment implementation plan aligned to wider University developments. However, the core of our strategy seeks to assist the student to become an independent learner whilst still supporting the students in their transition to higher education. The curriculum is designed to encourage an appreciation for learning. Learning is enriched by appropriate underpinning, current research, industrial applications and the development of transferable skills.

This flexible programme structure approach offers the potential for switching students between two and three year programmes after level four if necessary. For example, under achieving students on the Fast-track route could be counselled to switch to level five of the traditional three year route; whereas advanced students on the three year degree meeting the progression criteria could opt to join level five of the Fast-Track.

Regardless of duration, the learning and teaching strategy deployed will be suitable to maximise opportunities for attainment of the programme aims. The strategy aims to:

1. have a continued emphasis on student-centred learning;
2. employ teaching methods that promote effective student learning, self-development and reflection;
3. promote active learning throughout the course, e.g. theoretical concepts being delivered in a framework of lectures, practical demonstrations and workshops applying theory to practice using activity based assignments;
4. deploy a variety of learning and teaching methods including:
    - Lectures - This is usually a formal discourse for the purposes of dissemination of information, the demonstration of techniques and the discussion of supporting ideas and consequences. The lecture is supported by a full range of equipment including blackboard, whiteboard, video and computer projection facilities where

appropriate. Although this type of presentation is suitable for a one-sided discourse ample opportunity exists for questions, interaction and discussion.

- Seminar and Tutorials - These activities encompass a wide range of activities, each suited to the particular module. On the one hand, some tutorials will consist of the staff supporting students engaged in problem solving. On the other hand a tutorial may involve group exercises where each group is encouraged to allocate responsibilities, allocate tasks, etc. Generally, this type of teaching is used to support the lecture, clarify the material and experiment with the techniques and skills required.

- Laboratory – The nature of the computing elements of all courses requires students to gain practical skills in the use of a personal computer. This activity takes place in one of the Computing Department's four computer laboratories and consists of the student, supported by a staff member, practising skills in the use of sophisticated software applications and including software development and systems analysis and design tools.

- Group Work - On some modules, students are encouraged to work in groups to achieve set objectives. Assessment of these activities includes both group and individual elements. In this way, students learn to work as a team to achieve a common goal whilst at the same time individual contribution is recognised and evaluated.

- Project - All students complete a 40 credit individual project at level 6. This project will include practical as well as academic components enabling students to further improve their employability as well as academic writing.

  The project is designed to enable students to demonstrate their ability to present sustained rational arguments and independent conclusions based on a body of personal research. The Project serves the primary purpose of integrating technological and research strands, which are developed throughout the programme, and does so in the context of a research or computer systems development project. Where possible, students are encouraged to complete the project for a real client.

  The computing department has both experience and expertise in providing academic supervision on live computing projects using current students as part of their degree. The department is regularly contacted for potential project work and where this occurs, the potential business contacts are developed and maintained through the ILG (Industrial Liaison Group) within the computing department. The nature of this degree is ideally placed to provide students to support local businesses through the development of web and mobile apps.

  The project is a core component of the programme and is aligned to the students own goals. Students will study either a business project or a computing project. In either case, the student's idea is developed with a project supervisor

  The Computing project (COM611) typically involves the development and evaluation of the solution to a problem, which occurs within a relatively unstructured domain. The problem is original to the student and its solution therefore requires the application of knowledge and techniques either studied in the programme or acquired through independent research of recent and relevant literature. The Project provides a vehicle for integrating specialist knowledge with

analytic, problem solving, managerial and communication skills. All of these are exercised and evidenced through the execution and outcomes of the project.

The Business project (BUS602) option will focus on research in the technology business context and involves the framing of a research problem, such as an under researched area or contemporary topic of business research. This project will support student learning in terms of developing a literature review and research framework, developing knowledge and understanding of both qualitative and quantitative methodologies and, the gathering of primary and secondary data and subsequent analysis of this data. The business Project provides an option for those students who wish to work in technology business environments to research and study in large or small technology companies, but not continue with the Advanced Programming route.

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This approach is intended to:

1. strike a balance between 'class' activity and directed study 'out of class';
2. provide sound feedback to students and attempt to involve them in identifying their own learning needs;
3. use directed and supported group work for sharing experience and knowledge and developing interpersonal skills;
4. provide realistic and relevant learning activities;
5. make use of a variety of assessment methods to allow students the opportunity to demonstrate their own particular capabilities.

Full use of Moodle will be made as a way of helping to manage teaching and learning, and to keep in contact with students. Each programme and module within a programme has its own space on Moodle. A wide range of information is placed within each of these areas for students to access. General information such as the module handbook will be placed into the programme area, and lecture notes together with activities for completion such as directed reading and worksheets will be placed into module spaces. Lecture notes will be either posted 24hours prior to the lecture or immediately after, dependent on the preference of the member of staff. Moodle will be also an effective way of keeping in contact with students by posting messages, for example informing students on arrangements for guest speaker visits.

Trimester Delivery Schedule

2013-14 Academic Year Calendar -approved framework						
Timetable week number	*Date*	*trimester teaching weeks*	*single intake programmes - students*	*single intake programmes - staff**	*Trimester teaching weeks*	*3 intakes*
1	29-Jul-13					
2	05-Aug-13					
3	12-Aug-13					
4	19-Aug-13					
5	26-Aug-13					
6	02-Sep-13					
7	09-Sep-13					
8	16-Sep-13					
9	23-Sep-13	1	Teaching/induction	Teaching/induction	*0*	*induction - new intake only*
10	30-Sep-13	2	Teaching	Teaching	*1*	*teaching*
11	07-Oct-13	3	Teaching	Teaching	*2*	*Teaching*
12	14-Oct-13	4	Teaching	Teaching	*3*	*Teaching*
13	21-Oct-13	5	Teaching	Teaching	*4*	*Teaching*
14	28-Oct-13	6	Teaching	Teaching	*5*	*Teaching*
15	04-Nov-13	7	Teaching	Teaching	*6*	*Teaching*
16	11-Nov-13	8	Teaching	Teaching	*7*	*Teaching*
17	18-Nov-13	9	Teaching	Teaching	*8*	*Teaching*
18	25-Nov-13	10	Teaching	Teaching	*9*	*Teaching*
19	02-Dec-13	11	Teaching	Teaching	*10*	*Teaching*
20	09-Dec-13	12	Teaching	Teaching	*11*	*Teaching*
21	16-Dec-13	13	Teaching	Teaching	*12*	*Teaching**
22	23-Dec-13		Christmas vacation	Christmas		
23	30-Dec-13		Christmas vacation	Christmas		
24	06-Jan-14	1	Teaching	Teaching		*Marking/Pre board*
25	13-Jan-14		University Exams	University Exams		*Module board*
26	20-Jan-14	2	Teaching	Teaching	*0*	*Progression & Award Board & induction for new intake only*
27	27-Jan-14	3	Teaching	Teaching	*1*	*Teaching*
28	03-Feb-14	4	Teaching	Teaching	*2*	*Teaching*
29	10-Feb-14	5	Teaching	Teaching	*3*	*Teaching*
30	17-Feb-14	6	Teaching	Teaching	*4*	*Teaching*
31	24-Feb-14	7	Teaching	Teaching	*5*	*Teaching*
32	03-Mar-14	8	Teaching	Teaching	*6*	*Teaching*
33	10-Mar-14	9	Teaching	Teaching	*7*	*Teaching*
34	17-Mar-14	10	Teaching	Teaching	*8*	*Teaching*
35	24-Mar-14	11	Teaching	Teaching	*9*	*Teaching*
36	31-Mar-14	12	Teaching	Teaching	*10*	*Teaching*
37	07-Apr-14	13	Teaching	Teaching	*11*	*Teaching*
38	14-Apr-14		Spring Vacation	Easter		
39	21-Apr-14		Spring Vacation	Easter		
40	28-Apr-14		University Exams inc Saturday	University Exams inc Saturday	*12*	*Teaching**
41	05-May-14		University Exams Mon/Tues Marking Wed/Thur/Fri	University Exams Mon/Tues Marking Wed/Thur/Fri		*Marking*
42	12-May-14		Additional Study weeks*	*Marking /Pre board*		*Marking /Pre board*
43	19-May-14		Additional Study weeks*	*Module board*		*Module board*
44	26-May-14		Additional Study weeks*	*Progression & Award Board*	*0*	*Progression & Award Board & induction for new intake only*
45	02-Jun-14	1	Teaching /resits/holiday	Teaching	1	*Teaching*
46	09-Jun-14	2	Teaching /resits/holiday	Teaching	2	*Teaching*
47	16-Jun-14	3	Teaching /resits/holiday	Teaching	3	*Teaching*
48	23-Jun-14	4	Teaching /resits/holiday	Teaching	4	*Teaching*
49	30-Jun-14	5	Teaching /resits/holiday	Teaching	5	*Teaching*
50	07-Jul-14	6	Teaching /resits/holiday	Teaching	6	*Teaching*
51	14-Jul-14	7	Teaching /resits/holiday	Teaching	7	*Teaching*
52	21-Jul-14	8	Teaching /resits/holiday	Teaching	8	*Teaching*
1	28-Jul-14	9	Teaching /resits/holiday	Teaching	9	*Teaching*
2	04-Aug-14	10	Teaching /resits/holiday	Teaching	10	*Teaching*
3	11-Aug-14	11	Teaching /resits/holiday	Teaching	11	*Teaching*
4	18-Aug-14	12	University Exams	University Exams	12	*Teaching**
5	25-Aug-14		Additional Study weeks*	*Marking*		*Marking*
6	01-Sep-14		Additional Study weeks*	*Marking /Pre board*		*Marking /Pre board*
7	08-Sep-14		summer vacation	*Module board*		*Module board*
8	15-Sep-14		summer vacation	*Progression & Award Board*		*Progression & Award Board & induction for new intake only*
9	22-Sep-14	1	Teaching/induction	Teaching/induction		*teaching*

Additional Study weeks* - students are expected to be available/on campus during these weeks and may be required to attend programme specific activities.

** exam dates to be set locally -see note below on University Exams*

staff* - this is a framework only - individual staff will not be expected to teach in all weeks

University Exam Weeks - most centrally organised formal examinations will take place during these weeks, but other forms of assessment will take place throughout the year.

Welsh Medium Provision

All students have the opportunity to submit assessment in Welsh, in line the University's Welsh Language Policy. Currently, 0% of the programme can be delivered in Welsh.

Assessment strategy used to enable outcomes to be achieved and demonstrated

The approach to assessment has been guided by the QAA Code of Practice for the assurance of academic quality and standards in Higher Education (2006) (Section 6: Assessment of students) and Glyndŵr University Assessment Guidelines.

Students will be bound by the general assessment regulations of the University. The University regulations provide a framework for the assessment of students' competence, knowledge and understanding, and the grading of students for progression and the conferring of awards. It allows staff to give feedback to students and to evaluate the effectiveness of their own teaching.

Students will receive formative assessment, particularly during the practical and self-study elements of the programme to ensure they can keep track of their progress and development. This will also be a key factor in ensuring student engagement and retention on the programme of study. In the case of practical assessment, this may be a final summative assessment, so more frequent formative assessment provides academic rigour and increases student awareness and confidence in the subject.

The practical nature of the programme is reinforced through the importance of coursework as part of the learning process and assessment. Despite the importance of their theoretical basis, many of the concepts can often best be grasped by practical exercises and assignments. The coursework of a module typically carries 50% weight of the assessment, although this varies with modules assessed entirely by coursework.

Practical coursework includes:

- exercises for private study or in practical/tutorial classes
- exercises in computing laboratories
- programming exercises and projects
- team and individual projects

There will be emphasis placed upon students to undertake independent study and research activities, in particular when completing the Project element of the course. This Project will be facilitated by a traditional summative assessment approach at the culmination of the work, however, there will be extensive use of formative feedback, milestones, and guidance from staff during this, and other, independent-study and research-based assessment undertaken by students.

The curriculum will be driven by the principles and practices of effective communication, employability and research. Learning and teaching practices which action and enable the curriculum will develop students as researchers and co-producers of knowledge and make full and appropriate use of digital technology for learning, teaching and research.

How research, communication and employability skills are assessed

Employability Skills

Team Working: The ability to work effectively in teams, often more than one team at once, and to be able to re-adjust roles from one project situation to another in an ever-shifting work situation.
Leadership: The ability to take control of a situation and to lead by empowering others to follow.
Initiative, proactivity, self motivation: being a self starter, resilient, tenacious and determined.
Willingness to learn: the ability to learn and continue learning throughout life.
Action Planning/target setting and Self Regulatory Skills: self discipline, time-keeping, the ability to deal with stress, to plan and prioritise your workload and to "juggle" several tasks at once.
Problem-solving / intellectual skills: the ability to analyse, critique and synthesise information in order to solve problems.
Commitment: Showing an interest and dedication to a topic, subject, value or activity etc.

Course Integration	Assessment
Setting of group projects and tasks, analysis of team dynamics and roles taken in team exercises. For example, examination of nature of team roles through Belbin and other models.	Assessment of group work to include analysis of how the group worked together e.g. management of conflict. Presentation by group on how they worked together.
Recognition of importance of work in skills development. For example using work examples when trying to get students to relate to new concepts.	Depth of reflection in portfolio/diary/log
Incorporation of team or group working as part of teaching and learning styles, groups not to be static but fluid to encourage development and recognition of relationship building process	Peer review of roles in the team. Self assessment of own contribution and strengths in the different team roles and action plan for future improvements.
Chairing course / group / simulated business meetings.	Tutor feedback on team observed. Reflective diary to include account of team working practice. For example, self assessment of own contribution and strengths in the different team roles and action plan for future improvements.
Leading a group seminar on a course project.	Presentation by individual / group on team roles / skills on placement. Assessment includes not only content but also: appropriateness of agenda,

		observation of correct protocol for the meeting and behaviour of chair, conflict resolution, goal setting, effective recording.	
	Group project/ assignments.	Evaluation by peer assessment Evaluation from all concerned. Assessment to include not only content but also: management of time and behaviour of team members, effective planning (aims/objectives), allocation of tasks and deadlines, progress checks. Peer and tutor review. Peer review of leadership skills displayed in meetings.	
	On course feedback where student receives feedback on their performance • Tutorials • Reflective assignments • End of module reviews • Action plans	Tutor feedback on performance. Self assessment on performance.	
	Problem based learning scenarios.	Peer and tutor assessment on participation in discussion or tutor assessment of written report.	
	Any research content on the course. The extent to which the student does the minimum or exhibits real interest.	Assessment of depth and extent of research. For example, number and variety of sources cited. Evidence of reading/learning discussed in portfolio/diary/log.	
	Dissertation work, Final Year Project or similar major piece of work (proposal, managing the work, tutorials, evaluating progress).	Assessment to include evidence of time and resource management; planning, prioritising and problem solving (therefore stress management). Self, peer and tutor evaluation of demonstrated self regulatory skills via learning diary / logs/action plans.	
	Project / assignment management: a learning log or reflective diary of the process of the project.	Learning log or reflective diary of the process of the project e.g. attitude to problems, evidence of planning and preparation and depth of research Project supervisor assessment of evidence of commitment	

Research Skills:

Course Integration	Assessment
How students approach potential sources of research information e.g. questionnaire and letter design.	Assessment of quality of research / investigation methods.
Depth of research in any / all aspects of course;	Depth / extent of information and understanding gained, e.g. more than one source cited, proactive research undertaken; Personal portfolio/journal/log/diary
Dissertation / final year project.	Tutor feedback and assessment, e.g. evidence of independence of study – not reliant upon continuous tutor support, evidence of appropriate time management and problem solving
Case studies – opportunities to analyse and critique “relevant” issues.	Normal assignment assessment.
Research methodology - all use of research methods as part of the course – again explicit use of the intellectual skills.	Normal assignment assessment.
Development of Project Management Skills Project management – particularly final year project / thesis. Dealing with difficulties as they arise in assignments.	Final Year Project to include reflection on methodology and progress of the project therefore self assessment of ability to solve problems as project progressed: assessment of project management skills by tutor.

Oral/Written Communication: The ability to communicate, formally and informally, verbal and in written form, with a wide range of people

Course Integration	Assessment
On course presentations on any topic.	Assessment to include: clarity of communication, usefulness of handouts, appropriateness of information/ visual aids, structure, judgement.

Practical aspects of the course which call for the use of communication skills. All essays and assignments set during the course of study. Tutorials or participative learning	Tutor assessment of clarity of communication within log. Assessed for clarity, structure and relevance. Self assessment of communication skills against criteria. Tutor assesses strength of case. Criteria assessed; eg appropriateness, clarity, presentation, structure etc.

Feedback is provided continuously to students through informal contact with subject lecturers and tutors in the seminar/tutorial and laboratory settings. In accordance with University Guidance, feedback is provided on assessed practical work normally within three weeks of submission of the work.

An overview of the assessment details will be provided in the Student Handbook and full details of the assessment criteria for each module is provided in the module descriptor which forms part of the module pack available to students.

Module Assessment

Level	Module Title	HE Credit	Assessment Type	Weighting	2 year fulltime Submission	3 year fulltime Submission
4	Information Engineering	20 Core	Coursework	100%	Trimester 1	Trimester 1
4	Business context	20 Core	Group Project Case Study law	50% 50%	Trimester 1 (Mid) Trimester 1 (End)	Trimester 1 (Mid) Trimester 1 (End)
4	Software Development Fundamentals	20 Core	Coursework Coursework	50% 50%	Trimester 1 (Mid) Trimester 1 (End)	Trimester 1 (Mid) Trimester 1 (End)
4	Marketing Principles and Business Practice	20 Core	Coursework Coursework	50% 50%	Trimester 2 (Mid) Trimester 2 (End)	Trimester 2 (Mid) Trimester 2 (End)
4	Mobile Systems and Network Technologies	20 Core	Report In-class test	50% 50%	Trimester 2 (Mid) Trimester 2 (End)	Trimester 2 (Mid) Trimester 2 (End)
4	Web Development	20 Core	Coursework Coursework	50% 50%	Trimester 2 (Mid) Trimester 2 (End)	Trimester 2 (Mid) Trimester 2 (End)
5	Marketing Management Planning and Control	20 Core	Coursework Exam	50% 50%	Trimester 3 (Mid) Trimester 3 (End)	Trimester 1 (Mid) Trimester 1 (End)
5	Internet and Mobile Application Development	20 Core	Portfolio Practical	50% 50%	Trimester 3 (End) Trimester 3 (Mid)	Trimester 1 (End) Trimester 1 (Mid)
5	Systems Development : Tools and Techniques	20 Option	Coursework Coursework	50% 50%	Trimester 3 (Mid) Trimester 3 (End)	Trimester 1 (Mid) Trimester 1 (End)
5	Human-Computer Interaction	20 Option	Coursework	100%	Trimester 3 (End)	Trimester 1 (End)
5	Native App Design & Development	20 Core	Practical Practical	50% 50%	Trimester 1 (Mid) Trimester 1 (End)	Trimester 2 (Mid) Trimester 2 (End)
5	Business Accounting and Finance	20 Core	Essay Exam	50% 50%	Trimester 1 (Mid) Trimester 1 (End)	Trimester 2 (Mid) Trimester 2 (End)
5	Leading Entrepreneurial Teams	20 Option	Presentation Report	30% 70%	Trimester 1 (Mid) Trimester 1 (End)	Trimester 2 (Mid) Trimester 2 (End)
5	Business Feasibility Analysis	20 Option	Coursework	100%	Trimester 1 (End)	Trimester 2 (End)
6	Advanced App Programming	20 Core	Coursework Report	60% 40%	Trimester 2 (Mid) Trimester 2 (End)	Trimester 1 (Mid) Trimester 1 (End)
6	Business Planning	20 Core	Report Presentation	50% 50%	Trimester 2 (Mid) Trimester 2 (End)	Trimester 1 (Mid) Trimester 1 (End)
6	Industry Networks,	20 Core	Group Project	40%	Trimester 3 (Mid)	Trimester 2 (Mid)

	Partnerships & Core Alliances		Report	60%	Trimester 3 (End)	Trimester 2 (End)
6	21st Century Computing	20 Option	Presentation Report	30% 70%	Trimester 3 (End) Trimester 3 (Mid)	Trimester 2 (End) Trimester 2 (Mid)
6	Global Marketing	20 Option	Coursework Project	25% 75%	Trimester 3 (Mid) Trimester 3 (End)	Trimester 2 (Mid) Trimester 2 (End)
6	Entrepreneurial Marketing	20 Option	Group Project Essay	40% 60%	Trimester 3 (Mid) Trimester 3 (End)	Trimester 2 (Mid) Trimester 2 (End)
6	Project Dissertation	40 Option	Project	100%	Trimester 2/3 (End)	Trimester 1/2 (End)
6	Project	40 Option	Research Proposal Project Report	20% 80%	Trimester 2/3 Trimester 2/3 (End)	Trimester 1/2 Trimester 1/2 (End)

Assessment regulations that apply to the programme

Academic Regulations for Bachelor Degrees, Diplomas and Certificates apply to this programme.

In considering borderline cases the Assessment Board shall raise the classification to the next level if all of the following criteria are met:

- At least 50% of the credits at level 6 fall within the higher classification;
- All level 6 modules must have been passed at the first attempt;
- The mark achieved for the 40 credit Project or Project Dissertation module is within the higher classification.

Programme Management

The programme contains modules from both the Computing and Business Departments within the Institute for Arts, Science and Technology.

The overall programme will be managed by the Programme Leader within the Computing department. The Computing department will be the students' base and will be responsible for providing the Programme Leader, the personal tutor and student support. The programme Leader and the Programme Coordinator will liaise when allocating personal tutors. Module tutors from both departments and the Undergraduate School Office will provide additional support.

A Programme Coordinator for the Business department has been identified below.

Joint department student performance and monitoring meetings will take place where required and the entire programme team will be invited to attend the appropriate programme board meetings scheduled during each semester.

Programme team:
Prof Vic Grout – Head of Computing
Prof Chris Jones
John Worden - Programme Leader
Dr Gareth Harvey – Programme Coordinator for the Business Department
Nigel Houlden
Dr Rich Picking
Dr Renato Cordeiro de Amorim
Jason Matthews
Denise Oram
Dr Jan Green
Brian Jones
Sandra King

Dr Bethan Lloyd-Jones
Mike Green
Leslie Davies
Ben Binsardi

Supporting team
John Davies
Rich Hebblewhite

Nathan Roberts
Bindu Jose
Stephen Caulder
Clive Buckley
Bo Liu
Neil Pritchard

The Programme Leader will have overall responsibility for the operation and development of the course. They will work closely with the Business Coordinator, Module Leaders, Module Tutors, Personal Tutors and Administrative Support personnel to provide the day to day general academic support to students. The Programme Leader will also meet regularly with the Academic Head of Computing.

The Programme Leader will be responsible for the day-to-day running of the programme, including the following:

- The management and development of curriculum and the course portfolio
- Student tracking and student records
- Collation of assessment data, presentation of data at assessment boards
- Management/co-ordination of overall assessment activities across the programme
- Liaison with external bodies and agencies
- Quality assurance and annual monitoring, including compilation of the Annual Monitoring Report
- Co-ordination of admissions activities and other recruitment activities, including relevant publicity activities

At module level there is devolved responsibility for the following:

- The maintenance and development of teaching and learning materials for all students enrolled on the module,
- The publishing and updating of module timetables, which shall include a weekly schedule of module sessions and required reading, to be distributed to students at the start of all modules
- The setting, marking and collation of marks for all module assessments and examination papers, including resit assessments, and submission of student results to the Programme Leader
- Tutorial support for students taking the module which they are responsible
- Quality monitoring, including processing of annual student feedback questionnaires and, where appropriate, student feedback for individual modules
- Liaison with part-time members of staff involved in module teaching

The control of quality will conform to the procedures set out by Glyndŵr University's requirements for academic quality assurance, monitoring and review. The primary indicators of quality come through regular student feedback, module reviews, external examiners' reports, annual and periodic programme reviews and student surveys.

Methods for evaluating and enhancing the quality of learning opportunities

- Subject / Programme committees with student representation
- Module evaluations by students
- Students surveys, e.g. National Student Survey (NSS)
- Annual quality monitoring and action planning through the AMR process
- Peer review/observation of teaching
- The moderation of assessed coursework

- Student Representatives and Staff Student Consultative Committees
- Module, Progression and Award Boards
- External Examiners - External examiners are appointed for all programmes of study. They oversee the assessment process and their duties include: approving assessment tasks, reviewing assessment marks, attending assessment boards and reporting to the University on the assessment process.

Mechanisms for gaining student feedback

- Student Representation on Subject Board
- Staff Student Consultative Committees
- Module and Programme level student questionnaires

Staff Development Priorities

- Academic staff undertake activities related to research, scholarship, teaching and learning and student support and guidance
- Annual staff appraisals match development to needs
- New academic staff required to undertake PGC Professional Development in HE
- All academic staff are encouraged to seek Higher Education Academy membership

The Department believes that students learn best in a research oriented environment taught by people working at the forefront of their disciplines. The skills and expertise in the Computing Department are augmented by the presence of the Creative and Applied Research for the Digital Society (CARDS), where staff are researching in the areas of Computer Programming and Software Engineering, Networking and Internet Technologies, Mobile Communications, Web systems, Security and Computer Forensics, Computer Graphics, Media Technologies, E-Commerce and business impact.

The Business and Management Department have research acumen, skills and expertise in entrepreneurship, new business creation, innovative business techniques and marketing products and services in technology industries.

Knowledge and expertise gained through research and scholarship activity as described above informs the learning and teaching of the programme and is disseminated through seminars and teaching. This ensures that the programme content remains current which benefits students.

Particular support for learning

Support and guidance is available to students throughout the programme. Students have access to a great deal of guidance for students through the virtual learning environment (Moodle). In addition, they can also get help and guidance from their Programme Leader, Personal Tutor and Year Tutor. They can also get module specific advice from the Module Leader and any of the staff teaching on the relevant module.
Additional support mechanisms include:

- Extensive induction programme introduces the student to the University and their course. The programme will include course related issues, student support, library induction, study skills, career development etc.
- Each student has a personal tutor, responsible for pastoral support and guidance.
- University support services include - careers, financial advice, housing, study skills, counselling etc.
- Excellent library and Internet facilities.
- Student handbook provides information about course structures, University

regulations etc.

- Transferable skills / Key Skills are usually incorporated into all modules.
- Written feedback is provided for all assessments usually within three weeks of the hand-in date.
- Open door policy throughout the departments.

Equality and Diversity

Glyndŵr University is committed to providing access to all students and promotes an equal opportunities statement including equal treatment for all applicants and students. This programme fully complies with the university's policy on Equality and Diversity.