PROGRAMME SPECIFICATION

Awarding body/institution	Glyndŵr University
Teaching institution (if different from above)	
Details of accreditation by a professional, statutory or regulatory body (including link to relevant website)	None
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	FdSc Applied Computing Certificate HE (CertHE) Applied Computing
Award title	FdSc Applied Computing
JACS 2 code	G400
UCAS code (to be completed by admissions)	G492
Relevant QAA subject benchmark statement/s	Computing
Other external and internal reference points used to inform the programme outcomes	
Mode/s of study *(p/t, f/t, distance learning)*	Full Time and Part Time
Language of study	English
Date at which the programme specification was written or revised	May 2009 Updated September 2012

Criteria for admission to the programme

The general requirement for the foundation degree is 140 UCAS points at A level or equivalent. In addition applicants must have five GCSE passes at grades A, B or C including Mathematics and English or Welsh 1st Language.

Other learning and experience may be considered for entry to the programme. A student may be allowed entry to a course if he or she does not have the standard entry qualifications but can provide evidence of necessary knowledge and skills to successfully enter and complete the course.

International/EU Students

In addition to the academic entry requirements, overseas students require a TOEFL score of 511-529 (paper) or 181-185 (computer), or an IELTS score of 5.5 (with no sub-part less than 5.0): this should have been achieved within the two years prior to application. Good English is essential for success on the programme.

Accreditation of Prior Learning (APL) for this programme is in accordance with University policy.

Aims of the programme

The overall programme aims are to provide opportunities for all students to

- Follow a vocational course of study that develops the student's practical and cognitive skills to solve work related everyday problems by combining knowledge of information transfer, communications technology, software and business context relevant to the ICT industry;
- Develop professional-level industry related skills, learning, for example, how to build web-sites, design databases and build applications together with IT problem solving techniques.
- Equip students with the people skills necessary to be successful information systems professionals: how to determine user's needs; manage complex projects; successfully design appropriate user interfaces; and how to deal with the legal and ethical issues that using information systems provoke.
- Equip students with a broad range of key skills, technical skills and work related skills through effective education and professional work based learning
- Develop and encourage professional and personal development.

Distinctive features of the programme

This course is the most flexible foundation degree on offer in the department. The foundation degree provides the core modules expected of any Computing student; the rest can be selected from the specialist modules from the other two Foundation degrees as well as additional options in Software Development and Networking.

These foundation degrees cover a range of IT related topics including, networks and

internet working, programming, computer and operating systems, web technologies, multimedia and audio visual development, application use and configuration, database development and project management. Students will be working with the latest technologies to develop a sound theoretical understanding and in depth practical experience of the development, management and support of modern computer systems supporting key business functions.

A one-semester-long industrial work based project is included in the last semester of the final year. In the work based project students will gain valuable experience from working in the information and communications technology industry. Students will complete a project demonstrating their application of skills acquired in a real work context.

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

The structure of the course, the levels and credit ratings and the awards that can be gained are detailed below. Personal Development Planning is an integral part of the learning process of each element of the programme. The work-related learning aspect of the programme spans each level and is an integral component directly related to professional practice.

Module Title	**Core/ Optional**	**Level**	**Credit Value**
Interactive Media Development	O	5	20
Media Production & Innovation	O	5	20
Network Support	O	5	20
Managing Database Systems using SQL	O	5	20
Proj Mgt & Prof Dev	C	5	20
Web Application Development	C	5	20
Work Based Project	C	5	40
Software Development Object Oriented Design	O	5	20
Software Development Object Oriented Programming	O	5	20
LAN Switching & Wireless	O	5	20
Accessing the WAN	O	5	20
Routing Protocols and Concepts	O	4	20
Network Fundamentals	O	4	20
Interactive Media Authoring	O	4	20
Creative Media Principles	O	4	20
PC Hardware Support	O	4	20
Managing Applications	O	4	20
Software Dev Fundamentals	C	4	20
IS & Databases	C	4	20

Applied Professionalism	C	4	20
Web Design & Development	C	4	20
IT Skills	O	4	20
IT for Information Analysis	O	4	20
IT Business Graphics	O	4	20

All modules are 20 credits apart from the Level 5 Work Based Project module (40 credits).

The FdSc programme is normally studied over two years full-time or three years part-time, and students may if they wish move between full and part-time modes of attendance. The academic year runs from September to June. The course is divided into study units called modules, each of 20 credits apart from the Work Based Project which is 40 credits. Students complete 120 credits at levels 4 and 5 (corresponding to years 1 and 2 of the full-time programme) and part time students study 80 credits per year. Each 20 credit module represents 200 hours of student learning and assessment.

Course structures and Indicative delivery schedules

FdSc Applied Computing (Full Time)

	Semester 1			**Semester 2**		
Level 5	Option 3	Option 4	Web App Dev	Proj Mgt & Prof Dev	Work Based Project	
Level 4	Option 1	Option 2	Web Design & Dev	Applied Professionalism	Software Dev Fund	IS & Databases

FdSc Applied Computing (Part Time)

	Semester 1		**Semester 2**	
Year 3	Option 4	Web App Dev	Work Based Project	
Year 2	Option 3	Web Design & Dev	IS & Databases	Proj Mgt & Prof Dev
Year 1	Option 1	Option 2	Applied Professionalism	Software Dev Fund

Intended learning outcomes of the programme

A. Knowledge and understanding

		Level 4 Cert He	Level 5 Dip He
A1	**Knowledge** (descriptions of facts; criteria; definitions; classifications; data organisations; principles; theories)	Demonstrates familiarity with the basic facts and principles of computing, networking and multimedia, with the concepts of information technology, business environment and communication skills as related to the IT profession, and with good and safe practice in laboratories and workshops.	Demonstrates a widening appreciation of the scope of the discipline, encompassing information technology and software development; maps existing and new knowledge into a coherent and comprehensive picture; demonstrates knowledge of the basic issues involved in applied computing.
A2	**Understanding** (interpretation and demonstration of understanding of knowledge in the various categories listed above)	Demonstrates a working understanding of the principles and practices of computing, networking and multimedia; 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 applied computing and explores its extent and boundaries through practical work, practical exercises and case studies.

B. Intellectual skills

		Level 4 Cert He	Level 5 Dip He
B1	**Application** (use of knowledge and understanding in actual situations)	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.

B2	**Analysis** (breaking down complex situations into component parts)	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.
B3	**Synthesis** (combining elements to form new, coherent systems)	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 software, with some guidance provided as appropriate.
B4	**Evaluation** (forming value judgements based on clear criteria)	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.

C. Subject specific skills

		Level 4 Cert He	**Level 5 Dip He**
C1	Students are required to develop technical skills. This involves the students engaging in practical and project work throughout the course. This work is actively integrated to ensure that students relate theory and analysis to the	On successful completion of this level, the student will be able to: Demonstrates basic skills that underpin good practice in the field of computers and networking, e.g. laboratory tasks involving the creation of simple programs and the use of operating systems. Demonstrates skills in IT (e.g. word processing, spreadsheets) and web techniques (e.g. web searching, web page creation). Demonstrates an understanding of hardware issues, including interfacing and data communications, and their impact on the overall design and performance of computer based	Students will deepen their knowledge of programming concepts and approaches as well as being introduced to systems development techniques, information structure, and web applications. At this level, students will also be introduced to professional, legal and ethical issues relevant to the computing and IT industry. On successful completion of this level, the student will be able to: Undertakes the requirement specification and design of a computing/I.T. system using a variety of tools and techniques. Design and implement object oriented software for interactive systems that require a windows or web-based graphical user interface.

design, operation and maintenance of computer networks.	systems. Undertakes the conceptual design of a database system using an established data modeling technique and demonstrate critical judgement in selecting a proprietary database management system for any given application. Apply object oriented software development methods and make an informed selection of algorithms and/or data representatives for solving a range of standard problems. Demonstrate an awareness and understanding of the concepts, techniques, design process and context of computer graphics	Co-operates in an effective manner with colleagues and other professionals through the development of interpersonal and communication skills, within in a project and business context. Displays knowledge and understanding of programming and professional issues. Demonstrates the fundamental interpersonal, organisational and study skills needed for undergraduate study and for lifelong learning in a career as a professional IT practitioner.

D. Practical, Professional and Employability skills

		Level 4 Cert He	**Level 5 Dip He**
D1	**Communication and Presentation Skills**	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 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.
D2	**Numeracy**	Demonstrates basic numeracy and algebraic competence; ability to manipulate data related to simple computer computing systems.	Demonstrates more advanced standard numerical/ mathematical skills as appropriate to their chosen specialist subject.
D3	**IT Skills**	Demonstrates basic ‘load’, ‘use’ and ‘retrieve’ IT skills, as appropriate to computer and network computing. Demonstrates basic skill in using the Internet and designing web pages.	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.

		Accesses data and information from University and World-Wide-Web resources.	
D4	**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.
D5	**Interactive and Group Skills**	Interacts effectively with tutors and fellow students; participates in clearly defined group situations.	Demonstrates more advanced interactive and group skills, including effective participation in more demanding group tasks, including a group project.
D6	**Problem-Solving**	Applies basic tools/methods to simple, standard computing/ networking 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, still with some guidance.

CURRICULUM MATRIX demonstrating how the overall programme outcomes are achieved and where skills are developed and assessed within individual modules.

			Knowledge and understanding, intellectual skills, subject skills, and practical, professional and employability skills												
	Module Title	*Core/ Opt*	***A1***	***A2***	***B1***	***B2***	***B3***	***B4***	***C1***	***D1***	***D2***	***D3***	***D4***	***D5***	***D6***
LEVEL 4	*Web Design & Development*	*C*	*	*	*	*	*	*	*	*	*	*	*		*
	Applied Professionalism	*C*	*	*	*	*	*	*	*	*	*	*	*	*	*
	IS & Databases	*C*	*	*	*	*	*	*	*	*	*	*	*	*	*
	Managing Applications	*O*	**	*	*	*	*	*	*	*	*	*	*	*	*
	PC Hardware Support	*O*	*	*	*	*	*	*	*	*	*	*	*	*	*
	Entrepreneurship	*O*	*	*	*	*	*	*	*	*		*	*		*
	Routing Protocols and Concepts	*O*	*	*	*	*	*	*	*	*	*	*	*	*	*
	Network Fundamentals	*O*	*	*	*	*	*	*	*	*	*	*	*	*	*
	Creative Media Principles	*O*	*	*	*	*	*	*	*	*		*	*		*
	Interactive Media Authoring	*O*	*	*	*	*	*	*	*	*		*	*		*
	IT Skills	*O*	*	*	*	*	*	*	*	*		*	*		*
	IT Business Graphics	*O*	*	*	*	*	*	*	*	*		*	*		*
	IT for Information Analysis	*O*	*	*	*	*	*	*	*	*		*	*		*
LEVEL 5	*Interactive Media Development*	*O*	*	*	*	*	*	*	*	*		*	*		*
	Media Production & Innovation	*O*	*	*	*	*	*	*	*	*	*	*	*		*
	Web Application Development	*C*	*	*	*	*	*	*	*	*		*	*	*	*
	LAN Switching & Wireless	*O*	*	*	*	*	*	*	*	*	*	*	*	*	*
	Accessing the WAN	*O*	*	*	*	*	*	*	*	*	*	*	*	*	*
	Software Dev OO Programming	*O*	*	*	*	*	*	*	*	*	*	*	*	*	*
	Software Dev OO Design	*O*	*	*	*	*	*	*	*	*	*	*	*	*	*
	Network Support	*O*	*	*	*	*	*	*	*	*	*	*	*	*	*
	Managing Database Systems	*O*	*	*	*	*	*	*	*	*	*	*	*	*	*
	Proj Mgt & Prof Dev	*C*	*	*	*	*	*	*	*	*		*	*	*	*
	Work Based Project	*C*	*	*	*	*	*	*	*	*		*	*	*	*

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

The Department has a Learning, Teaching and Assessment implementation plan as part of wider University developments. This 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

The broad nature of the programme including common and specialist elements necessitates the use of a broad range of teaching techniques. Lectures are used as the main delivery mechanism, typically supplemented by supervised problem and lab classes, and group discussion. Some modules include group and small-scale project work, with student-led seminars and presentations. The University virtual learning environment (VLE) (Moodle) and a range of other online tools are used to support teaching. The Department also operates a number of specialist computer labs, with teaching based around the lab facilities.

(i) Lecture

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 the University VLE, 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.

(ii) 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.

(iii) 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 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.

(iv) 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.

(v) Work Based Project

All students complete a work based project whose aim is to provide an opportunity for students to apply the knowledge and skills that they gained during the first year of the course in the work place. It enables students to undertake work-based tasks and related activities in the field of computing, and produce agreed project deliverables

within deadlines. This module is designed to promote personal development and a range of interpersonal, intellectual and practical (functional) skills based around and demonstrated through an individually negotiated work-based project/work package. It seeks to raise the student's awareness of the workplace as a learning environment and extend their capability and enhance their individual effectiveness, employability and business competitiveness. It will seek to develop skills in the diagnosis of problems, research and analysis, development of strategies to address problems and techniques of presentation.

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.

Welsh Medium

At present, the Department does not have enough bilingual tutors or full-time academic staff who are able to deliver the programme in Welsh. However, all students have the opportunity to submit assessments in Welsh. Where a need for Welsh language assessment has been identified and no appropriate Welsh speaking tutor/assessor is available, the written assessment will be translated into English. This translation will be conducted by University qualified translators.

Additionally the programme team would wish to develop the language skills of students taking this programme. The University already offers modules in Welsh as a second language at HE level to students studying degrees which involve working with the public e.g. social work, nursing, youth and community work. It is anticipated that the BSc students whose first language is not Welsh, or who wish to improve their Welsh skills (either an improver or a new learner) would be offered these sessions as an extra module outside the programme. The University's investment in its Second Language Learning Centre ensures that this aspiration can be delivered from within existing arrangements.

Assessment strategy used to enable outcomes to be achieved and demonstrated

The Department has an agreed Assessment Strategy for all computing programmes which provides 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. This strategy will be closely adhered to in the delivery of the programme and is guided by QAA Code of Practice- Section 6: Assessment of Students, National Qualifications Framework, and Glyndŵr University Assessment Guidelines.

Learning and assessment activity is centred around resolving authentic problems found in the workplace. Authentic learning will typically focus on real-world, complex problems and their solutions, using role-playing exercises, problem-based activities, case studies. Students on the programme will experience authentic learning activities that match the real-world tasks of professionals in practice as nearly as possible. Authentic activities will provide the opportunity for students to examine tasks from a variety of theoretical and practical perspectives, using a variety of resources, and require students to distinguish relevant from irrelevant information in the process. Authentic activities will enable learners to make choices and reflect on their learning, both individually and as a team. Success is not always achievable by an individual learner working alone and many of the activities will make

collaboration integral to the task, which students will experience both within the programme and in the real world.

Authentic assessment, in contrast to more traditional assessment, encourages the integration of teaching, learning and assessing. In the "traditional assessment" model, teaching and learning are often separated from assessment, i.e., a test is administered after knowledge or skills have been acquired. In the authentic assessment model, the same authentic task used to measure the students' ability to apply the knowledge or skills is used as a vehicle for student learning. For example, when presented with a real-world problem to solve, students are learning in the process of developing a solution, lecturers are facilitating the process, and the students' solutions to the problem becomes an assessment of how well the students can meaningfully apply the concepts.

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.

There will be emphasis placed upon students to undertake independent study and research activities, in particular when completing the Work Based Project module.

Assessment regulations that apply to the programme

Glyndŵr University Regulations for Bachelor Degrees, Diplomas, Certificates and Foundation Degrees apply to this programme.

Programme Management

The programme will be managed under the auspices of the Department of Computing and the programme will develop and operate within the terms of the overall management of curriculum within the Department.

However, there will be a designated Programme Leader for the Foundation degree programme who 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
- Collation of assessment data, presentation of data at assessment boards, and preparation of student transcripts
- 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

Research and Scholarship underpinning the curriculum

The strategy of the University is to encourage all staff to engage with research and use it to underpin the taught curriculum: the strategy of the Department of Computing will likewise be to use all of the enthusiasms, abilities and experience of all of the staff in ways that can be channelled towards research achievements (outputs and income generation), interpreted in a relatively wide sense.

The skills and expertise in the Department are augmented by the presence of the Centre for Applied Internet Computing, 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.

Particular support for learning

Students on the programme will receive the following forms of student support and guidance:

- **Admissions**. All students on the programme will have the opportunity to discuss their application with staff, and receive appropriate advice and guidance prior to admission. This will include review of expectations of the course and clarification of workload and requirements.
- **Induction**. New students on the programme will undergo an induction programme which will provide them with a full introduction to the course, and will include elements of work on study skills and professional development.
- **Student Handbook**. All students on the programme will receive a Student Handbook which will contain details and guidance on all aspects of the course and forms of student support and guidance.
- **Progress Review and Attendance Monitoring**. Student attendance will be subject to regular monitoring through registers, and this will be a means of addressing issues of student support. There will also be regular reviews for each student with personal tutors.

Student Support

The Department provides pastoral and academic support to all students enrolled on the programme. In the week prior to the start of classes, an induction programme is provided for all first year entrants. This includes an introduction to the University, to the ethos of the Department, the staff and timetables, as well as the facilities offered by the Department and University.

Every student is allocated a personal tutor in the first weeks of the programme. The personal

tutor is someone students can contact to discuss any problems of a non-academic nature. These may relate to special needs or personal problems that may affect the student's academic performance.

Academic problems should first be addressed to the lecturer concerned. If the problem is not resolved or it does not relate to a specific module, then the Programme Leader should be contacted. A more detailed complaints procedure is given in the Student Handbook

Additional support for International students

There is network of support that is available at many different levels within the University and these combine to provide a supportive framework for the international students. Specifically, this includes three main activities:

- Language provision designed to ensure that the international students have achieved a minimum level of language skills before they embark on their chosen degree programme. This is a six-week pre-sessional intensive English Language for Academic Study course that aims to bring students to an IELTS (International English Language Testing System) level of 6.5 – the standard demanded for entry into masters degree programmes.
- Glyndŵr University offers English language classes alongside studies that improve not only spoken and written English but also academic English. Classes take place weekly and are delivered by the University's English language tutors who also help students to integrate into the life of the local community as well as helping them develop transferable skills such as practical, research and report-writing skills.
- An induction / orientation course that precedes the start of formal teaching and that allows the international students to become familiar with the University and studying at the University whilst at the same time outlining some of the cultural differences that exist between their country of origin and the UK.

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, in compliance with the SENDA legislation. The University warmly welcomes and supports students with disabilities.

Careful consideration has been given to issues surrounding curriculum accessibility and SENDA compliance. Curriculum accessibility forms an essential part of programme and module design, and review.