Programme Handbook

BSc (Hons) Computing with Foundation Year

Introduction to the Programme

Welcome to the BSc (Hons) Computing with Foundation Year degree programme.

The programme is made up of the modules listed below which are studied across levels three, four, five and six.

Each 20-credit module is equivalent to 200 hours of self-guided learning.

Level 3		
Module Title	**Credits**	**Module Type (Core/Option)**
Academic Skills Practice	20	C
Introduction to Numeracy, Data & IT	20	C
Ethics, Working Collaboratively & Values	20	C
Introducing Research Skills	20	C
Structure of Business	20	C
Technology in Organisations	20	C

Level 4		
Module Title	**Credits**	**Module Type (Core/Option)**
Introduction to Academic Skills and Professional Development	20	Core
Introduction to Web Authoring	20	Core
Introduction to Databases	20	Core
Productivity and Collaboration Tools for Learning and Work	20	Core
Introduction to Computer Systems and Security	20	Core
Introduction to Programming	20	Core

Level 5		
Module Title	**Credits**	**Module Type (Core/Option)**
Human Computer Interaction	20	Core
Data Analysis and Visualisation	20	Core
IT Project Management	20	Core
Systems Analysis and Design	20	Core
Advanced Databases	20	Option
Ethics, Quality and Sustainability in Technological Environments	20	Option
Object-Oriented Programming	20	Option
Digital Business	20	Option

Level 6		
Module Title	**Credits**	**Module Type (Core/Option)**
Managing Innovation and Change	20	Core
Information Security Management	20	Option
Distributed and Cloud Computing	20	Option
Web Application Development	20	Option
Technology Entrepreneurship	20	Option
Data Mining	20	Core
Computing Project	40	Core

1.	Programme Code					
2.	Programme Title	BSc (Hons) Computing with Foundation Year				
3.	Target Award Title	BSc (Hons) Computing				
4.	Exit Award Title(s)	BSc Computing Diploma of Higher Education in Computing Certificate of Higher Education in Computing Foundation Certificate				
5.	Subject area	Computing				
6.	School	Computing				
7.	Programme Team Leader(s)					
8.	Programme Type					
9.	Delivery Model	DL F/T	✓	BL F/T	✓	Apprenticeship	
		DL P/T	✓	BL P/T	✓	Other	
	Where delivery model is identified as 'Other' please provide details					
10.	Location of delivery	Blended (study centres) and Online (Distance Learning)				
11.	Proposed Start date	Jan 2021				
12.	Reference points	*QAA Subject Benchmarks October 2019* **3.3 Computing-related cognitive skills:** i computational thinking, including its relevance to everyday life ii an understanding of the scientific method and its applications to problem-solving in this area iii knowledge and understanding: demonstrate knowledge and understanding of essential facts, concepts, principles and theories relating to computing and computer applications as appropriate to the course of study iv modelling: use such knowledge and understanding in the modelling and design of computer-based systems for the purposes of comprehension, communication, prediction and the understanding of trade-offs v requirements, practical constraints and computer-based systems (this includes computer systems, information, security, embedded, and distributed systems) in their context: recognise and analyse criteria and specifications appropriate to specific problems, and plan strategies for their solutions vi critical evaluation and testing: analyse the extent to which a computer-based system meets the criteria defined for its current use and future development vii methods and tools: deploy appropriate theory, practices and tools for the specification, design, implementation and evaluation of computer-based systems viii professional considerations: recognise the professional, economic, social, environmental, moral and ethical issues involved in the sustainable exploitation of computer technology and be guided by the adoption of appropriate professional, ethical and legal practices.				

3.4 Computing-related practical skills:
i the ability to specify, design and construct reliable, secure and usable computer-based systems
ii the ability to evaluate systems in terms of quality attributes and possible trade-offs presented within the given problem
iii the ability to plan and manage projects to deliver computing systems within constraints of requirements, timescale and budget
iv the ability to recognise any risks and safety aspects that may be involved in the deployment of computing systems within a given context
v the ability to deploy effectively the tools used for the construction and documentation of computer applications, with particular emphasis on understanding the whole process involved in the effective deployment of computers to solve practical problems
vi the ability to critically evaluate and analyse complex problems, including those with incomplete information, and devise appropriate solutions, within the constraints of a budget.

3.5 Generic skills for employability:
i Students are expected to develop a wide range of generic skills to ensure they become effective in the workplace, to the benefit of themselves, their employer and the wider economy. Students who develop generic skills, and are able to evidence and demonstrate such skills, will gain significant advantage when seeking employment. It is the responsibility of higher education providers to provide every student the opportunity to acquire and evidence generic skills; it is the responsibility of the student to make the most of that opportunity.
ii Intellectual skills: critical thinking; making a case; numeracy and literacy; information literacy. The ability to construct well-argued and grammatically correct documents. The ability to locate and retrieve relevant ideas and ensure these are correctly and accurately referenced and attributed.
iii Self-management: self-awareness and reflection; goal setting and action planning; independence and adaptability; acting on initiative; innovation and creativity. The ability to work unsupervised, plan effectively and meet deadlines, and respond readily to changing situations and priorities.
iv Interaction: reflection and communication; the ability to succinctly present rational and reasoned arguments that address a given problem or opportunity, to a range of audiences (orally, electronically or in writing).
v Team working and management: the ability to recognise and make best use of the skills and knowledge of individuals to collaborate. To be able to identify problems and desired outcomes and negotiate to mutually acceptable conclusions. To understand the role of a leader in setting direction and taking responsibility for actions and decisions.
vi Contextual awareness: the ability to understand and meet the needs of individuals, business and the community, and to understand how workplaces and organisations are governed.
vii Sustainability: recognising factors in environmental and societal

	contexts relating to the opportunities and challenges created by computing systems across a range of human activities.
13. Professional, Statutory & Regulatory Bodies (PSRB)	*NONE*

14. Programme aims	

The BSc Computing programme has been designed to enable students to undertake and achieve an undergraduate degree in Computing that prepares them to pursue related careers or pursue further study. The programme focuses on theories, techniques and practical skills related to the Computing subject area and industry, as well as the ethical and professional issues facing those working in the sector.

More broadly, the programme aims to achieve the following:

1. Develop students' academic skills in order to enhance and their ability to engage in lifelong learning.
2. Develop highly employable Computing graduates that can demonstrate proficiency in a variety of platforms and tools and can add value to an organisation.
3. Provide access to industry standard tools enabling students to develop the practical skills that are in demand in the industry.
4. Develop an understanding of the importance of computer-based systems and how they are designed and developed.
5. Provide students with the knowledge and skills they need to be able to undertake requirements analysis and design and develop and test computer-based systems and software in a systematic, ethical and professional manner.
6. Examine the legal, regulatory, technological and ethical issues that impact on Computing professionals.
7. Develop students' critical thinking, problem solving and research skills
8. Develop students' interpersonal and communication skills, including formal report writing, academic writing and presentations.
9. Develop students' project management skills, enabling them to work effectively as Computing practitioners.

15. Programme Entry Requirements	

- Two Subjects at GCE A level or equivalent, plus passes at grade C or above in three subjects at GCSE level or equivalent; or
Completion of a recognised Access Programme or equivalent.
- IELTS 6.0 (no less than 5.5 in any element) or equivalent for those students whose medium of prior learning was not English.
- Candidates who demonstrate an ability to study the programme as evidenced through a personal statement (of between 350-500 words) that addresses their motivation for undertaking the programme; including their references, relevant prior experience and qualifications.
- Exemptions may be granted in respect of other qualifications subject to Arden's APCL regulations.

16. Intended programme learning outcomes and the means by which they are achieved and demonstrated

16a. Knowledge and understanding	The means by which these outcomes are achieved	The means by which these outcomes are assessed
At Level 3, With due regard to the QAA Recognition Scheme for Access to HE: The Access to Higher Education Diploma specification 2018, the intended programme learning outcomes are for students at Level 3 are to: **A1/3** Use factual, procedural and theoretical understanding to complete tasks. On completion of this programme the successful student will have knowledge and understanding of: **A1** the essential facts, concepts, principles and theories relating to the field of Computing. **A2** the appropriate theory, practices, languages and tools that may be deployed for the specification, design, implementation and evaluation of computer-based systems and artefacts. **A3** A systematic understanding of the professional, moral and ethical issues involved in the exploitation of computer technology, and the associated professional, ethical and legal practices.	Students will gain knowledge and understanding through: - Lectures and tutorials - Guided research - Supervised lab work - Case studies Lectures are supported by web-based materials and audio-visual content. These materials cover concepts, theories and methods. Guidance on further work and reading is also provided. Lectures also provide students with opportunities for questioning and interaction. Tutorials and seminars provide students with opportunities to undertake activities and workshops that facilitate the development of subject knowledge and understanding through peer support and discussion and sharing of ideas and experiences. Subject specialists will engage with the course as guest speakers, contextualising the concepts covered in modules. Case studies will provide further opportunities to contextualise learning.	Students' knowledge and understanding is assessed by the following coursework types: - Practical demonstrations - Reports and essays - Presentations Programme learning outcomes and module learning outcomes will be assessed through a variety of methods. These assessments will link theory and practice through essays, presentations case studies, reports and practical artefacts. Authentic assessments will ensure students use the same competencies that they will be asked to demonstrate as graduates. Formative feedback on tasks and drafts will be provided throughout the modules.
16b. Intellectual (thinking) skills	**The means by which these outcomes are achieved**	**The means by which these outcomes are assessed**

At Level 3:	Students will gain intellectual and thinking skills through:	Students' intellectual skills will be assessed by the following coursework types:
B1/3 Apply knowledge and understanding to basic, non-complex situations to solve problems. On completion of this programme the successful student will be able to: **B1** Identify and critically analyse criteria and specifications appropriate to problems to be solved by computers and software and plan innovative strategies for their solution. **B2** Critically evaluate computer-based solutions using a range of techniques. **B3** Construct abstract representations through the use of appropriate analysis and modelling techniques. **B4** Synthesise and apply methodologies, principles, techniques, tools and technologies from a range of fields within Computing to provide complete solutions to novel or complex problems.	• Discussions (online/face to face) • Group/individual activities • Simulations • Laboratory work • Case studies Thinking skills will be developed through case studies, further reading and analysis of primary and secondary data and sources, as well as problem solving exercises that promote and facilitate the development of intellectual skills. Students will be facilitated in developing as independent learners, through tutorial support and seminars. Students will develop skills of reflective practice throughout modules, applying this to their studies as well as considering how to increase their employability.	• Reports and essays • Presentations Students will develop their critical thinking, skills in persuasive arguments and reflective skills through reports, essays and presentations. Formative feedback on tasks and drafts will be provided throughout the modules.
16c. Practical skills	**The means by which these outcomes are achieved**	**The means by which these outcomes are assessed**
At Level 3: **C1/3** Demonstrate a range of core academic skills to support study at undergraduate level. **C2/3** Identify, access and evaluate a range of	Students will gain practical skills through: • Group/individual activities • Laboratory work • Simulations	Students' practical skills will be assessed by the following coursework types: • Practical artefacts/demonstrations. • Presentations. • Portfolios

information sources for currency, scope and credibility. **C3/3** Use effective written communication skills in a variety of tasks which are suitable for a specified audience. On completion of this programme the successful student will be able to: **C1** Critically evaluate and analyse computer-based systems in terms of general quality attributes, risks or safety aspects that may be involved in their operation, and professional, ethical and legal issues. **C2** Utilise computer systems and software for the construction and documentation of computer-based systems and software solutions, with practical emphasis on understanding the whole process involved in the effective deployment of computers to solve practical problems. **C3** plan, manage and control a project, taking account of professional and ethical issues. **C4** Formulate research questions, deploy appropriate research methodologies and data collection methods and evaluate research findings examining practical, ethical and theoretical constraints.	• Guided walkthroughs • Case studies Teaching and learning will encompass those strategies outlined above as well as laboratory work and associated activities and exercises which will allow students to develop their practical skills, using strategies such as code walkthroughs, team coding, peer mentoring, scaffolding and authentic learning activities.	• Reports (e.g. project initiation documents, proposals) Students will be given opportunities to demonstrate their proficiency in tools and techniques related to planning, developing and implementing computer systems and software solutions as well as gathering data and presenting results. Formative feedback on tasks and drafts will be provided throughout the modules.

16d. Graduate Attributes	The means by which these outcomes are achieved and demonstrated	The means by which these outcomes are assessed
D1 Lifelong Learning: Manage employability, utilising the skills of personal development and planning in different contexts to contribute to society and the workplace. **D2** Reflective Practitioner: Undertake critical analysis and reach reasoned and evidenced decisions, contribute problem-solving skills to find and innovate in solutions **D3** Professional Skills: Perform effectively within the professional environment. Demonstrate interpersonal skills such as effective listening, negotiating, persuading and presentation. Be flexible and adaptable to changes within the professional environment **D4** Discipline Expertise: Knowledge and understanding of chosen field. Possess a range of skills to operate within this sector, have a keen awareness of current developments in working practice being well positioned to respond to change. **D5** Responsible Global Citizenship: Understand global issues and their place in a globalised economy, ethical decision-making and accountability. Adopt self-awareness, openness and sensitivity to diversity in culture. **D6** Effective Communication: Communicate	Students will develop graduate attributes through: • Group/individual activities • Laboratory work • Simulations • Guided walkthroughs • Case studies As well as the strategies outlined above students will develop skills of reflective practice throughout their course, applying this to their studies as well as considering how to increase their employability. Students will examine the ethical and legal frameworks that will impact on their academic and professional practice through case studies and simulations. An awareness of the global context in which they will operate will be presented through a variety of activities, discussions and reflective exercises. Students will develop their communication and interpersonal skills throughout the course by engaging with tools and platforms that facilitate communication and collaboration.	Students' graduate attributes will be assessed through: • Practical artefacts/demonstrations • Reports and essays • Presentations • Reports and essays Students will be given opportunities to demonstrate employability skills such as communication and presentation, reflection and professionalism through authentic assessments that map to real world contexts. Formative feedback on tasks and drafts will be provided throughout the modules.

		effectively both, verbally and in writing, using a range of media widely used in relevant professional context. Be IT, digitally and information literate.		

17. Summary of Intended Programme Learning Outcomes and Modules

	Modules	Compulsory or Option	A1/3	B1/3	C1/3	C2/3	C3/3
Level 0	Academic Skills Practice	C	X		X	X	X
	Introduction to Numeracy, Data & IT	C			X		
	Ethics, Working Collaboratively & Values	C	X	X			X
	Introducing Research Skills	C	X		X	X	X
	Structure of Business	C	X	X		X	X
	Technology in Organisations	C	X	X		X	X

Modules		Compulsory or Option	A1	A2	A3	B1	B2	B3	B4	C1	C2	C3	C4	D1	D2	D3	D4	D5	D6
Level 4	Introduction to Academic Skills and Professional Development	C			X									X					
	Introduction to Web Authoring	C	X	X		X		X	X		X	X							X
	Introduction to Databases	C	X	X	X	X		X	X		X		X				X		
	Productivity Tools for Computing	C			X	X				X	X					X			
	Introduction to Computer Systems and Security	C	X	X		X	X			X							X		
	Introduction to Programming	C	X	X		X					X						X		
Level 5	Human Computer Interaction	C	X	X	X	X	X	X	X	X	X	X	X		X				
	Introduction to Data Analysis and Visualisation	C		X	X	X					X		X						X
	IT Project Management	C		X	X	X			X	X	X	X						X	
	Systems Analysis and Design	C		X	X	X	X	X	X	X		X				X			
	Advanced Databases	O		X		X		X			X						X		
	Ethics, Quality and Sustainability in Technological Environments	O			X	X				X		X						X	
	Object-Oriented Programming	O	X	X		X		X	X		X				X				
	Digital Business	O		X	X	X	X			X		X						X	
Level 6	Managing Innovation and Change	C			X	X	X		X	X					X				
	Technology Entrepreneurship	C			X	X						X	X	X						
	Data Mining	C		X					X		X	X					X		
	Cyber Security Management	O		X	X				X	X		X					X		
	Distributed and Cloud Computing	O		X	X	X			X		X	X						X	
	Web Application Development	O		X		X			X		X							X	
	Computing Project	C	X	X	X	X	X	X	X	X	X	X	X		X				