Aston University
BIRMINGHAM UK

PROGRAMME SPECIFICATION, UNDERGRADUATE BACHELOR AND LLB

<table>
<tr><td>Programme Title</td><td colspan="3">Computer Science</td></tr>
<tr><td>HECOS Code</td><td colspan="3">100366</td></tr>
<tr><td>School/Subject Area</td><td colspan="3">School of Engineering and Applied Science</td></tr>
<tr><td>Final Award</td><td colspan="3">Bachelor of Science (BSc)</td></tr>
<tr><td>Interim Awards</td><td colspan="3">• Certificate of Higher Education (CertHE) 120 Credits
• Diploma of Higher Education (DipHE) 240 Credits</td></tr>
<tr><td rowspan="2">Attendance Pattern</td><td>Full Time</td><td colspan="2">Part time</td></tr>
<tr><td>X</td><td colspan="2"></td></tr>
<tr><td rowspan="2">Predominant delivery method</td><td>Campus-based</td><td>Work-based</td><td>Online/distance</td></tr>
<tr><td>X</td><td></td><td></td></tr>
<tr><td>Location of Study</td><td colspan="3">Students will be located at Aston University except for their period of placement. The location of placements will be dependent upon the nature of placements available which will be subject to change.</td></tr>
<tr><td>Normal Length of Programme</td><td colspan="3">3 academic years (full-time) or 4 years (sandwich, comprising: two academic stages; placement stage; final academic stage)</td></tr>
<tr><td>Total Credits</td><td colspan="3">• Honours Degree 360
• Honours Degree with Placement Year 480 (including 120 at Level P)
• Ordinary Degree 300
• Ordinary Degree with Placement Year 420 (including credits 120 at Level P)
• Diploma of Higher Education (DipHE) 240
• Certificate of Higher Education (CertHE) 120</td></tr>
<tr><td>Programme Accredited By</td><td colspan="3">British Computer Society (BCS) Chartered IT Professional (CITP) Accreditation</td></tr>
<tr><td>Entry Requirements</td><td colspan="3">Entry requirements for each individual student will be stated in their offer letter.</td></tr>
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Educational Aims of the Programme	**The Programme aims to:**
	Aim 1: Produce Graduate Software Engineers who specialise in object-oriented software design and Implementation. Graduates will be highly attractive to employers and well prepared for a rewarding career as a computing professional adaptable to a wide range of employment opportunities.
	Aim 2: Develop practical information systems engineering capability based on well-founded principles, allowing graduates to be seen as candidate software engineers.
	Aim 3: Instill generic attributes appropriate to professionally oriented graduates.
	Aim 4: Enable students opting for the sandwich variant of the programme to enhance their career preparation through a period of structured professional training.
	Aim 5: Provide a participation route that may lead to professional computing employment that is accessible to students who have demonstrated good intellectual aptitude rather than necessarily subject-specific preparation.

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Programme Structures and Requirements: Levels, Modules and Credits

Each credit of study is equivalent to 10 learning hours (e.g. 15cr reflects 150 hours of learning). The learning hours may include but are not limited to lectures, seminars, tutorials, lab sessions, practicals, online activity, reading, other independent study, reflecting on assignment feedback, field trips and work placements.

Optional modules are reviewed each year and may change to reflect the expertise of staff, current trends in research, as a result of student feedback, or demand for certain modules.

In the table below, a letter P in brackets next to the module code indicates a pre-requisite. A letter C indicates a co-requisite.

STAGE 1						
Module Title	**Credits**	**Level**	**Module Code**	**Core/Option**	**Condonable**	**Prerequisites**
Computer Systems	15	4	CS1CS	Core	No	None
Internet Applications and Database Design	30	4	CS1IAD	Core	No	(c) CS1OOP
Mathematics for Computing Professionals	15	4	CS1MCP	Core	No	None
Object Oriented Programming	30	4	CS1OOP	Core	No	None
Business aspects of Computing	15	4	CS1BAC	Core	No	None
Professional and Social Aspects of Computing	15	4	CS1PSA	Core	No	None
TOTAL	120					

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STAGE 2						
Module Title	**Credits**	**Level**	**Module Code**	**Core/Option**	**Condonable**	**Prerequisites**
Software Engineering	15	5	CS2SE	Core	No	CS1OOP (p), CS2TP (c)
Data Structures and Algorithms in Java	15	5	CS2DSA	Core	Yes	CS1OOP (p)
Human Computer Interaction	15	5	CS2HCI	Core	Yes	None
Information Security	15	5	CS2IS	Core	No	CS1IAD, CS1OOP (p)
Programming Language Concepts	15	5	CS2PLC	Core	Yes	CS1OOP (p)
Introduction to Artificial Intelligence	15	5	CS2IAI	Core	Yes	None
Team Project	30	5	CS2TP	Core	No	CS1OOP (p), CS2SE (c)
TOTAL	120					

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STAGE P						
Module Title	**Credits**	**Level**	**Module Code**	**Core/Option**	**Condonable**	**Prerequisites**
Select 120 credits from the following options						
EAS Study Placement Year	120	P	SEP001	Option	No	None
EAS Industrial Placement Year	120	P	SEP002	Option	No	None
EAS Study/Work Placement Year	120	P	SEP003	Option	No	None
TOTAL	120					

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STAGE F						
Module Title	**Credits**	**Level**	**Module Code**	**Core/Option**	**Condonable**	**Prerequisites**
Individual Project	45	6	CS3IP	Core	No	None
Software Project Management	15	6	CS3SPM	Core	Yes	CS2SE (p)
Select 60 credits from the following options						
Interaction Design	15	6	CS3ID	Option	Yes	CS2HCI (p)
Mobile Design and Development	15	6	CS3MDD	Option	Yes	CS1OOP (p), CS2HCI (p), CS3ID (c)
Computational Intelligence	15	6	CS3CI	Option	Yes	CS1OOP (p)
Multi-Agent Systems	15	6	CS3MAS	Option	Yes	CS1OOP (p)
Advanced Database Systems and GIS	15	6	CS3ADG	Option	Yes	CS1IAD; CS2DSA (p)
Techniques for Data Analysis (Data Mining)	15	6	CS3DM	Option	Yes	None
Game Development	15	6	CS3GD	Option	Yes	None
Operating Systems	15	5	CS2OS	Option	Yes	CS1CS (p)
Image and Video Processing	15	6	CS3IVP	Option	Yes	None
Multimedia Information Retrieval	15	6	CS3MIR	Option	Yes	None
Computer Animation	15	6	CS3CA	Option	Yes	CS2CG (c)
Computer Graphics	15	5	CS2CG	Option	Yes	CS1OOP (p)
Enterprise Computing Strategies	15	6	CS3ECS	Option	Yes	None
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Stage 1 (First Year, should map to FHEQ1 Level 4 equivalent to an interim award of Cert.HE)	
	On successful completion of this level, students will be able to:
LO4.1	Utilise intellectual skills in course relevant context: critical thinking; making a case; numeracy and literacy; information literacy. Construct well-argued and grammatically correct documents. Research and describe relevant ideas, ensuring these are correctly and accurately referenced and attributed.
LO4.2	Apply appropriate mathematical and/or statistical principles.
LO4.3	Construct reliable, secure and usable object-orientated computer-based systems
LO4.4	Recognise the legal, social, ethical and professional issues involved in the exploitation of computer technology and be guided by the adoption of appropriate professional, ethical and legal practices
LO4.5	Demonstrate knowledge and understanding of systems architecture and related technologies
LO4.6	Describe the business aspects of computer science.
LO4.7	Construct and deploy Internet applications incorporating a server-side database.

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Stage 2 (Second Year, should map to FHEQ Level 5 equivalent to an interim award of Dip.HE)	
	On successful completion of this level, students will be able to:
LO5.1	Specify, design and construct and test reliable, secure and usable object-orientated computer-based systems
LO5.2	Work as a member of a development team recognising the different roles within a team and different ways of organising teams
LO5.3	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
LO5.4	Use a variety of programming languages, software tools and environments
LO5.5	Explain essential facts, concepts, principles, and theories relating to computing and computer applications in modelling and design
LO5.6	Recognise and analyse criteria and specifications appropriate to specific problems and plan strategies for their solutions
LO5.7	Use appropriate diagrammatic and formal written notations in design work and in reports
LO5.8	Reason about the scope for information security issues within a given computing environment, recognise security breaches and apply appropriate measures and tools to protect against future breaches.

Stage 3 (Placement Year, Level P (not mapped to FHEQ))	
	On successful completion of this level, students will be able to:
LOP.1	Develop an understanding of business and the relevant commercial environment and/or intercultural study and their role within it.
LOP.2	Gain knowledge of key aspects of good practice relevant to industry and/or intercultural study context.
LOP.3	Develop new knowledge and understanding appropriate to the industrial, business, study or research sector related to degree programme.
LOP.4	Communicate effectively in a variety of ways in a professional and industrial environment and/or in an intercultural study context.

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Stage F (Final Year, should map to FHEQ Level 6 and a final award of BSc Hons)	
	On successful completion of this level, students will be able to:
LO6.1	Deploy appropriate theory, practices and tools for the specification, design, implementation and evaluation of computer-based system
LO6.2	Analyse the extent to which a computer based-system meets the criteria defined for its current use and future development
LO6.3	Follow appropriate theoretical and practical processes to specify and deploy, verify and maintain information systems, including working with technical uncertainty
LO6.4	Work independently to tackle substantial practical problems with limited individual guidance
LO6.5	Select and apply concepts and principles and methodologies relevant to chosen areas of specialisation, thereby achieving additional depth and breadth
LO6.6	Manage a software project effectively, especially in relation to planning, scheduling, resourcing, monitoring, and control.
LO6.7	Demonstrate qualities and general transferable skills that will be useful in a wide range of situations: these include: problem-solving, working with others, effective information management and information retrieval skills, numeracy in both understanding and presenting cases involving a quantitative dimension, communication skills in electronic as well as written and oral form to a range of audiences and planning self-learning and improving performance as the foundation for on-going professional development.
LO6.8	Integrate and apply knowledge and methods from a variety of sources

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Assessment Types
The programme will be assessed through a combination of written and oral examinations, class tests, individual and group coursework, projects, presentations and practical assessments.

Approved Exemptions from General Regulations

None.

General Regulations (https://www2.aston.ac.uk/clipp/quality/a-z/general-regulations) and the Regulations for the programme (above) take precedence over other information sources such as student handbooks if there is a conflict. If there is a conflict between General Regulations and Programme Regulations then General Regulations take precedence unless an exemption has been approved.

For administrative use only:

Dates Programme Specification Written and Revised	**Written:** 2019-06-01 **Revised:**