

Undergraduate Programme Specification

BSc (hons) Computing

This specification provides a summary of the main features of the programme and learning outcomes that a student might reasonably be expected to achieve and demonstrate where full advantage is taken of all learning opportunities offered. Further details on the learning, teaching and assessment approach for the programme and modules can be accessed on the University website and Virtual Learning Environment, GCU Learn. All programmes of the University are subject to the University's [Quality Assurance](#) processes.

GENERAL INFORMATION			
Programme Title	Computing		
Final Award	BSc/BSc(hons)		
Awarding Body	Glasgow Caledonian University		
School	SCEBE		
Department	Computing		
Mode of Study	Full-time		
Location of Delivery	Glasgow Campus		
UCAS Code	G401		
Accreditations (PSRB)	British Computer Society		
Period of Approval	From:	September 2021	To: August 2026

EDUCATIONAL AIMS OF PROGRAMME
<p>This programme aims to equip students with the knowledge, understanding and skills required by modern IT professionals. It provides practical coverage of the software skills required for the development of computer systems across a full range of commercial and industrial software-based applications. The programme has been designed to be flexible and allows students to personalise their studies while preparing them for a range of graduate roles. Students study a core set of modules in the early years which provide them with a solid technical underpinning and can then tailor their studies to their own interests through the choice of modules in years 3 and 4. Different career paths are supported by elective module combinations. Students can, for example, choose paths which would prepare them for graduate roles such as software developer, web developer, user experience designer or IT manager. The programme offers a 2 + 2 pathway.</p> <p>The broad educational aims of the programme are to:</p> <ul style="list-style-type: none"> • Provide students with the necessary specialist computing knowledge and skills to equip them for a career in the development and support of computer-based information systems. • Provide students with a specific understanding of the concepts, processes, methods and tools, and their application, to their selected specialist area • Enable students to develop a cultural understanding of computing applications and the computing industry • Develop the ability to apply sound design principles and practical skills • Enable students to acquire good analytical, synthetic and communication skills • Enable students to take responsibility for their own learning as they progress through the programme. • Assist the student in developing the skills required in adapting to changing technological and organisational developments and learning new skills

- Provide articulation opportunities to access the programme for students with appropriate prior accredited learning experiences
- Provide education and training which is accredited by the British Computer Society

Expected Levels of Attainment

DESCRIPTION OF PROGRAMME

- On successful completion of year 1 of study a student will have a basic knowledge of the software and hardware concepts which underpin modern computing systems.
- On successful completion of year 2 of study a student will have a sound knowledge of software design and development and show competence in applying this to a range of software development domains.
- On successful completion of year 3 of study a student will be able to specify, develop, implement and support software developed in response to a perceived business need, in accordance with fundamental principles and methods, using appropriate techniques and tools.
- On successful completion of year 4 (honours) of study a student will, in addition, be able to critically evaluate alternative solution approaches and be able to use advanced techniques in the construction of a software solution.

LEARNING OUTCOMES

The programme provides opportunities for students to develop and demonstrate knowledge and understanding, skills, qualities and other attributes in the following areas:

A: Knowledge and understanding;

- A1 Explain the theoretical and practical aspects of software and hardware which underpin modern computer systems
- A2 Demonstrate knowledge and understanding of facts, concepts, principles and theories relating to the development of software solutions for a range of contemporary computer systems
- A3 Utilize and appraise tools and techniques to assist in the development of software solutions for a range of contemporary computer systems
- A4 Demonstrate an understanding of the methods used to specify, model, develop, deploy and maintain software systems in an operational context
- A5 Demonstrate an awareness of the role of the IT professional and the context in which they operate including moral, legal, safety and ethical issues
- A6 Demonstrate an understanding and appreciation of the importance of negotiation, effective work habits, leadership and good communication with stakeholders
- A7 Demonstrate an understanding of a range of technologies and the techniques required in the development of software systems.

B: Practice: Applied knowledge, skills and understanding;

- B1 Identify, analyse and solve practical problems across a variety of application domains
- B2 Evaluate alternative solutions to problems in an appropriate subject domain.
- B3 Demonstrate effective use of a variety of appropriate techniques, tools and integrated development environments in the development and deployment of computer based information systems
- B4 Use appropriate methods and techniques to specify, develop and deploy IT systems and services
- B5 Demonstrate competence in using processes to manage IT projects within an operational context
- B6 Apply theory to practical and realistic career-related tasks

C: Generic cognitive skills;

- C1 Plan, conduct and report upon work
- C2 Critical thinking and problem solving
- C3 Critical analysis
- C4 Self-confidence, self-discipline & self-reliance (independent working)
- C5 Creativity, innovation & independent thinking
- C6 Gather and evaluate research information from a variety of sources

D: Communication, numeracy and ICT skills

- D1 Communication skills, written, oral and listening
- D2 Numeracy
- D3 Effective information retrieval and research skills
- D4 Computer literacy
- D5 Presentation skills

E: Autonomy, accountability and working with others.

- E1 Awareness of strengths and weaknesses/ Planning, monitoring, reviewing and evaluating own learning and development
- E2 Reliability, integrity, honesty and ethical awareness
- E3 Ability to prioritise tasks and time management
- E4 Appreciating and desiring the need for continuing professional development
- E5 Interpersonal skills, team working and leadership
- E6 Entrepreneurial independence and risk-taking
- E7 Knowledge of international affairs
- E8 Commercial Awareness

F Additional Industrial Placement Skills

The programme has an optional one-year credit-rated placement period in related employment which provides the opportunity for further development of the taught practical, personal and professional skills in a work-based environment

- F1 Gain additional competence and training in the application of the practical skills of the programme.
- F2 Develop an understanding of the practical considerations that constrain the application of theory in the workplace.
- F3 Communicate and interact effectively within a work-based situation
- F4 Evaluate current research and technology concepts and their relationship and application to a work-based problem

LEARNING AND TEACHING METHODS

The programme provides a variety of learning and teaching methods. Programme and Module specific guidance will provide detail of the learning and teaching methods specific to each module.

Across the programme the learning and teaching methods and approaches may include the following:

- Lectures
- Seminars
- Practical classes
- Placements
- Simulation experiences
- Groupwork
- Flipped classroom approaches
- Online learning

The above approaches may be delivered either in person or online as appropriate and determined at module level by the Module Leader.

ASSESSMENT METHODS

The programme provides a variety of formative and summative assessment methods. Programme and Module specific guidance will provide detail of the assessment methods specific to each module.

Across the programme the assessment methods may include the following:

- Written coursework (essays, reports, case studies, dissertation, literature review)
- Oral coursework (presentations, structured conversations)
- Practical Assessment (Placement, VIVA, Laboratory work)
- Group work
- Blogs and Wikis
- Portfolio Presentations
- Formal Examinations and Class Tests

The above assessments may be delivered either in person and online as appropriate and determined at module level by the Module Leader.

ENTRY REQUIREMENTS

Specific entry requirements for this programme can be found on the prospectus and study pages on the GCU website at this location: www.gcu.ac.uk/study

All students entering the programme are required to adhere to the [GCU Code of Student Conduct](#).

PROGRAMME STRUCTURE AND AVAILABLE AND FINAL EXIT AWARDS¹

The following modules are delivered as part of this programme:

Module Code	Module Title	Core or Optional	SCQF Level	Credit Size	Coursework %	Examination %	Practical %
M1I326709	Fundamentals of Software Engineering	Core	7	20	50% & 50%		
M1I325623	Fundamentals of Computer Systems	Core	7	10	50% & 50%		
M1I326719	Programming 0	Core	7	20	50% & 50%		
M1I325624	Fundamentals of Network and Cloud Computing	Core	7	10	50% & 50%		
M1I325625	Database Development	Core	7	20	100%		
M1I326724	Practical Computing	Core	7	20	100%		
M1I325851	Maths for Computing	Core	7	20	40% & 60%		
	EXIT AWARD: Certificate of Higher Education						
M2I322952	Object Oriented Analysis and Design	Core	8	20	50% & 50%		
M2I625666	Human Computer Interaction	Core	8	20	60% & 40%		
M2I326721	Programming 1	Core	8	20	50% & 50%		
M2I326729	Programming 2	Core	8	20	100%		
M2I326713	Web Application Development 1	Core	8	20	100%		
M2I226701	Software Processes and Practice	Core	8	20	50% & 50%		
	EXIT AWARD: Diploma of Higher Education						
M3I325687	DevOps	Core	9	20	50% & 50%		
M3W226703	Group Project	Core	9	20	80% & 20%		
M3I326697	Introduction to Data Science	Core	9	20	50% & 50%		
M3I326700	Data Visualisation	Option	9	20	70% & 30%		
M3W226551	UI/UX Design	Option	9	20	100%		
M3I326184	Research Skills and Professional Issues	Core	9	20	30% & 70%		
M3I325640	Web Application Development 2	Core	9	20	30% & 70%		
	EXIT AWARD: Bachelors Degree						
MHW225671	Honours Project	Core	10	40	100%		
MHI625672	Advanced HCI (option)	Option	10	20	100%		

¹ Periodically, programmes and modules may be subject to change or cancellation. Further information on this can be found on the GCU website here: www.gcu.ac.uk/currentstudents/essentials/policiesandprocedures/changesandcancellationtoprogrammes

MHI326841	Mobile Platform Development (option)	Option	10	20	100%		
MHI326715	Front End Web Development (option)	Option	10	20	50% & 50%		
MHI226694	Big Data and IoT (option)	Option	10	20	50% & 50%		
MHI326725	Cloud Platform Development (option)	Option	10	20	50% & 50%		
MHI226693	Information Security (option)	Option	10	20	50% & 50%		
MHI226720	Machine Learning (option)	Option	10	20	50% & 50%		
	EXIT AWARD: Bachelors Degree with Honours						

Students undertaking the programme on a full-time basis commencing in September of each year will undertake the modules in the order presented above. This may be subject to variation for students commencing the programme at other times of year (e.g. January) and/or undertaking the programme on a part-time or distance learning mode of delivery.

The following final and early Exit Awards are available from this programme²:

Certificate of Higher Education in Computing - *achieved upon successful completion of 120 credits*

Diploma of Higher Education in Computing - *achieved upon successful completion of 240 credits*

Bachelor of Science in Computing - *achieved upon successful completion of 360 credits*

Bachelor of Science with Honours in Computing - *achieved upon successful completion of 480 credits*

ASSESSMENT REGULATIONS

Students should expect to complete their programme of study under the GCU Assessment Regulations that were in place at the commencement of their studies on that programme, unless proposed changes to University Regulations are advantageous to students. These can be found at: www.gcu.ac.uk/aboutgcu/supportservices/qualityassuranceandenhancement/regulationsandpolicies

² Please refer to the [GCU Qualifications Framework](#) for the minimum credits required for each level of award and the Programme Handbook for requirements on any specified or prohibited module combinations for each award.

In addition to the GCU Assessment Regulations noted above, this programme is subject to Programme Specific Regulations in line with the following approved Exceptions:

Case No: 215

Details:

Exception to Assessment Regulations, sub-section 13.2.1 Compensation: *Compensation is to make provision for allowing, within specific limits, the overall performance of a student to compensate for failure in up to and including 30 credit points of module(s) during the course of the programme, excluding Level 7.*

Case No: 216

Details:

Exception to Undergraduate Assessment Regulations, Sub-sections 19.4; 19.7.1; 19.8.2 Classification of Honours Award: *that the Level 3 Industrial Placement module is excluded from the Honours Classification Calculation Set.*

VERSION CONTROL (to be completed in line with AQPP processes)

Any changes to the PSP must be recorded below by the programme team to ensure accuracy of the programme of study being offered.

<i>Version Number</i>	<i>Changes/Updates</i>	<i>Date Changes/Updates made</i>	<i>Date Effective From</i>
1.0			