Buckinghamshire New University

PROGRAMME SPECIFICATION

1. Key Information

Programme Title:	MSc Computer Science (Conversion)
Awarding Institution:	Buckinghamshire New University
Teaching Institution(s):	High Wycombe
Subject Cluster:	Computing
Award Title (including separate Pathway Award Titles where offered):	Master of Science, MSc
Pathways (if applicable)	N/A
FHEQ level of final award:	Level 7
Other award titles available (exit qualifications):	Postgraduate Diploma (PGDip) Postgraduate Certificate (PGCert)
Accreditation details:	Seeking BCS
Length of programme:	1 year (12 months)
Mode(s) of Study:	In Person (on site) delivery
Mode of Delivery:	Full Time – Attendance
Language of study:	English
QAA Subject Benchmark(s):	Computing (Master's) (2022)
Other external reference points (e.g. Apprenticeship Standard):	
Course Code(s):	MSCSCIFT
UCAS Code(s):	TBC
Approval date:	June 2024
Date of last update:	September 2025

2. Programme Summary

Computer Science drive the fundamental technologies of today's connected world. Every area of our lives, from medicine and healthcare to industrial applications, global trade, transport, communications, entertainment, and security, is dependent on computing technology. As a result, computer science is now one of the fastest growing job fields in the world and skilled computer scientists are very much in demand.

Our extensive and principled approach to computer science will give you a thorough appreciation in both the theory and practical skills, helping you to solve real-world, life-critical difficulties. You will study systems at a variety of levels of abstraction, including digital

architectures, high level programming, operating systems, A.I (Artificial Intelligence), cyber security and database design.

The Computer Science master's programme aims to equip learners to work as professional computer scientists, particularly in environments where a sound knowledge, critical awareness and competence in computer hardware, software engineering and advanced areas of computer science is required in support of creating complex computer-based systems.

3. Programme Aims and Learning Outcomes

Programme Aims

This programme aims to:

1. Provide learner with a solid underpinning for the development of the skills needed for a wide range of computing related professional engineering careers as a high-quality practitioner and leader in business, technology, research, and development.

2. Provide a framework within which learners' individual interests may be pursued based on wide range of disciplines and through an individual project.

3. Develop a range of graduate and employability skills by means of opportunities provided within the taught course modules.

4. Provide an environment which contributes towards learners' personal and professional development and acts as a basis for a wide range of subsequent study and lifelong learning.

5. Accommodate learner needs in relation to maximising their career potential by enabling them to develop knowledge, understanding and skills in their chosen subject area.

Programme Learning Outcomes

Knowledge and Understanding (K)

On successful completion of the programme, you will be able to:

ID	Learning Outcome
K1	Appreciate the fundamentals and underlying theory of computer science, computer architectures, programming, operating systems, networks, software systems, database systems in the world-wide context.
K2	Demonstrate critical awareness of key concepts, issues and theories related to the development, management and marketing of Computer Science based businesses.
K3	Demonstrate comprehensive understanding of mathematical principles that underpin computer science-based systems, including computability and algorithmic complexity.
K4	Synthesise a coherent body of knowledge to inform the execution of a sustained piece of independent work using appropriate media.
K5	Critically evaluate aspects of current research, or equivalent advanced scholarship prevalent in the software lifecycle, alongside their outputs and dependencies between stages, including ethical, professional, and legal standard requirements.

Analysis and Criticality (C)

On successful completion of the programme, you will be able to:

ID	Learning Outcome
C1	Professionally apply theory to practice in the strategic management and their resulting solutions within an organisation.
C2	Critically evaluate a range of data, to make judgements, and to frame appropriate questions to achieve a solution to a problem in a logical, analytical, and ethical manner.
C3	Communicate ideas, concepts, and findings accurately and reliably in a manner fit for purpose and audience.

Application and Practice (P)

On successful completion of the programme, you will be able to:

ID	Learning Outcome
P1	Critically evaluate a computer system application in terms of quality and associated trade-offs, whilst appreciating society's increased dependence on technology in practice.
P2	Solve problems, using ideas and techniques, some of which are at the forefront of computer science application.
P3	Critically assess current and future technologies in the application and practice within the field of computer science.
P4	Apply professional codes of conduct whilst considering the ethical impact that underpin them.

Transferable skills and other attributes (T)

On successful completion of the programme, you will be able to:

ID	Learning Outcome
T1	Communicate information, ideas, problems, and solutions to both specialist and non-specialist audiences effectively in writing, speaking and in appropriate forms of presentation.
T2	Deal with arithmetical data and use information technology to efficiently handle such data and simulations of systems for design and testing.
T3	Demonstrate confident leadership in building and developing efficient Computer Science based and Data Science systems with sound underpinning in response to Artificial Intelligence and Data Science problems
T4	Build on previous experience to enhance personal development.

Graduate Attributes

The BNU Graduate Attributes of: Knowledge and its application; Creativity; Social and ethical awareness and responsibility; and Leadership and self-development focus on the development of innovative leaders in professional and creative capacities, who are equipped to operate in the 21st Century labour market and make a positive impact as global citizens.

As you develop as a computer scientist on this programme, you will enhance your personal attributes through the practical application of analytical skills, mathematical principles, algorithmic intricacy, and basic microprocessor technology in various creative situations, including set real-world scenarios and life-critical case studies. (K1, C1, P3, P4, C2). Analysis and evaluation approaches are integrated throughout the course, both in individual and group tasks, and through the appraisal of current and past computer science-based systems, including the feedback given on your personal work. (P1, T1, T3, C4). You will gain an understanding and awareness of operational applications, with a strong focus on applying and assessing an appropriate life-cycle methodology. (K5). This process nurtures the self-efficacy to create your own work opportunities and adapt to a constantly evolving technological work environment. (C3, K1, K2, K4). By analysing the historical, social, and cultural contexts of operational computer science-based systems, you will develop a growing social awareness, ensuring professional and ethical values are upheld. This will also build your confidence in assessing existing real-world, life-critical systems, while appreciating the balance between the needs of software engineering practice and computer science fundamentals. (P1, P2, P3, C1, T3, T2, P4).

4. Entry Requirements

Please see the Application webpages for more information on how to apply, including a statement on how we support learners from a variety of backgrounds. Please also see general entry requirements for taught programmes. Applicants who do not meet our published entry requirements are encouraged to contact our admissions team for further advice and guidance.

Typical applicant profile and any programme-specific entry requirements

If you do not meet the entry requirements you may, if you have relevant professional experience, still be invited for interview, where you will be required to demonstrate the necessary knowledge and understanding for entry onto the course.

Previous study, professional and / or vocational experiences may be recognised as the equivalent learning experience and permit exemption from studying certain modules in accordance with our accreditation of prior learning (APL) process.

This programme is open to both International and UK (United Kingdom) resident applicants.

Applicants to the MSc will normally have obtained a Hons degree (or equivalent) in a non-Computer Science discipline. The broad nature of the MSc allows us to appeal to a broad range of applicants from across a diversity of subject disciplines or professions. The global nature of the MSc allows us to appeal to applicants from various parts of the world. Students whose first language is not English or whose language of instruction at undergraduate level was not English will be required to demonstrate English proficiency at a score of IELTS (International English Testing Service) level 6.5 or its equivalent. In keeping with the nature of MSc (Conversions) across many other institutions, the programme specification will retain some flexibility to enable senior and experienced students who lack formal academic qualifications to be considered e.g., via portfolio preparation and interview. In line with the university Credit Accumulation and Transfer Scheme, potential students can apply for Advanced Standing by Accreditation of Prior Certificated Learning (APCL) or Accreditation of Prior Experiential Learning (APEL); their application will be considered by the Course Leader or other member of the course team.

5. Programme Structure

Level	Modules (Code, Title, and Credits)	Exit Awards
Level 7	COM7010 Computer Science: An Overview (20 credits) COM7115 Network Security Systems (20 credits) COM7112 Information Systems & Database Design (20 credits) COM7119 Artificial Intelligence, Biometrics & Smart Systems (20 credits) COM7113 Software Quality Assurance & Engineering (20 credits) COM7114 Programming for Business (20 credits) COM7098 Research Methods (20 credits) COM7099 Extended Project (40 credits)	**Postgraduate Certificate (PGCert) Computer Science** 60 credits at Level 7 from any of the modules excluding the Extended Project **Postgraduate Diploma (PGDip) Computer Science** 120 credits at Level 7 from any of the modules but not the Extended Project

6. Learning, Teaching and Assessment

Learning and teaching

This programme is designed for both international and UK (United Kingdom) based learners.

The Computer Science course spans is divided into four terms of 10 weeks each interspersed by vacation periods. You will earn 180 credits, with seven modules worth 20 credits plus a 40-credit Extended Project over the summer. There is an Induction Programme in Week 0 to help you prepare. Supervisors will be allocated to support the production of the extended project, alongside a personal tutor throughout the programme.

Class sessions comprise of a range of activities including interactive lectures, discussions, group work, presentations, and simulation games. These relate to topics that are set in a scheme of work for each module. Learning outcomes for the programme and specific modules are applied to the content under discussion at each session. A consistent approach in this is the relationship of theory to practice. Students are introduced to theories and content; discussion applies this to their experience and to case studies. Core texts are recommended for each module.

Learners are assisted to further reading using Blackboard and Library databases. This provides them with continuous access to learning materials, discussion boards, wikis as well as the full range of library facilities.

The course aims to improve your knowledge, skills, and analytical abilities. You will learn through self-study, research, online tutor support, Blackboard materials, and tutor-led sessions. There are also guest speakers from well-known organisations and student presentations to help you learn and develop personal and teamwork skills. All of this will prepare you for a career in computer science engineering. The research and Extended Project modules will have regular discussion forums run by the tutor to check your understanding, give feedback, and support peer learning. Even though the Extended Project is an individual task, some students find it helpful to work in small groups, which the tutors will also support alongside individual meetings. These group activities allow for peer learning and feedback, helping you see different perspectives and work well in a diverse group.

You can find detailed teaching and learning strategies for each module in the module descriptions. Modules will be taught using the best practices from the university and the industry, using a mix of methods and the latest technology to keep you engaged in and out of class. The Course Team aims to include current industry practices in all modules. Teaching methods are chosen to be the best fit for each module and level of the course, helping you move from formal teaching to independent learning as you progress. A range of teaching methods will be used including:

- Lectures are formal teaching sessions where a lecturer shares theoretical information with a large group of learners. They work best when followed by smaller group sessions like seminars or tutorials to reinforce what was learned. Lectures often come with written materials or online resources to support learning, and our Virtual Learning Environment (VLE) is used to make materials available outside of class.

- Tutorials and practical sessions are smaller group sessions where students can work through exercises with the guidance of a lecturer. They can either support what was taught in a lecture or focus on practical tasks, like working through exercises in a computer room.

- Seminars vary in size and format. They can be large group sessions where students debate topics or smaller discussions, like after watching a video.

- We also use other methods like industry visits, guest lectures, and computer tools when they fit the learning goals. The goal is to engage students in several ways to enhance their learning experience. You can find more details about how each module is taught in their specific module plans.

Assessment

The [Assessment and Examination webpages](#) provide further information on how assignments are marked and moderated, including a description of assessment activities. These also include further information about how feedback on assessed work is provided to learners, including our commitment to ensure this is provided to learners within 15 working days (the 'three-week turnaround').

Assessment Strategies

The following assessment activities are used on this programme:

The assessment tasks for learners include individual assignments, exams, Time Constrained Assessments (TCA), case study analysis, personal presentations, and posts on online discussion forums. These tasks are designed to meet the course objectives and learning outcomes. The strategy ensures that learners gain the required knowledge and skills through independent learning, critical analysis, and evaluation. Assessments are done through coursework and exams/TCAs, with some modules assessed only by coursework, which can include reports, presentations, or reflective portfolios. Personal reflection is encouraged in many assessments to develop important reflective skills, even if it does not always affect the grade. These tasks prepare learners for their careers, requiring communication in various formats. Each module includes formative assessments for learning through feedback and feedforward, with support available both in person and remotely. The assessment load is carefully monitored to avoid imbalances, and feedback is provided within 15 working days of submission.

Advice, Feedback and Collaborative Learning

Assessment is a crucial part of learning, helping learners understand and apply their knowledge. It includes tasks like exams, assignments, and presentations, which measure progress and give grades based on learning outcomes. Feedback from tutors highlights strengths and areas for improvement, guiding learners in their development.

Tutors also provide ongoing support, discussing learners' progress and reviewing their work, including drafts. This helps learners understand what satisfactory performance looks like and motivates them to reach their potential. Different feedback methods include examples of past work, mock exams, portfolios, tutorials, peer reviews, model answers, group discussions, and using technology for guidance and collaboration.

Contact Hours

1 unit of credit is the equivalent of 10 notional learning hours. Full-time postgraduate learners' study 180 credits (1800 hours) per year or 'stage' of the course.

Buckinghamshire New University

Course Stage	Scheduled Activities (Hours)	Guided Independent Study (Hours)	Placement / Study Abroad / Work Based Learning (Hours)
Terms 1 to 3	360	840	0
Summer Term	45	555	600
Total	405	1395	600

7. Programme Regulations

This programme will be subject to the following assessment regulations:

- Regulations for Taught Degree Programmes (2023)

8. Support for learners

The following systems are in place to support you to be successful with your studies:

- The appointment of a personal tutor to support you through your programme
- A programme handbook and induction at the beginning of your studies
- Library resources, include access to books, journals, and databases - many of which are available in electronic format – and support from trained library staff
- Access to Blackboard, our Virtual Learning Environment (VLE), which is accessible via PC, laptop, tablet, or mobile device
- Access to the MyBNU portal where you can access all University systems, information, and news, record your attendance at sessions, and access your personalised timetable
- Academic Registry staff providing general guidance on university regulations, exams, and other aspects of students and course administration
- Central student services, including teams supporting academic skills development, career success, student finance, accommodation, chaplaincy, disability, and counselling
- Support from the Bucks Students' Union, including the Students' Union Advice Centre which offers free and confidential advice on university processes.

9. Programme monitoring and review

BNU has several ways for monitoring and reviewing the quality of learning and teaching on your programme. You will be able to comment on the content of their programme via the following feedback mechanisms:

- Formal feedback questionnaires and anonymous module 'check-ins'
- Participation in external surveys
- Programme Committees, via appointed student representatives
- Informal feedback to your programme leader

Quality and standards on each programme are assured via the following mechanisms:

- An initial event to approve the programme for delivery
- An annual report submitted by the External Examiner following a process of external moderation of work submitted for assessment
- The Annual Monitoring process, which is overseen by the University's Education Committee
- Review by the relevant PSRB(s)

- Periodic Subject Review events held every five years
- Other sector compliance and review mechanisms

10. Internal and external reference points

Design and development of this programme has been informed by the following internal and external reference points:

- The Framework for Higher Education Qualifications (FHEQ)
- QAA Master's Degree Characteristics Statement (2020)
- Computing (Master's) Subject Benchmark Statement – see detailed mapping below
- The Apprenticeship Standard – see detailed mapping below
- The BNU Qualifications and Credit Framework
- The BNU Grading Descriptors
- The University Strategy, Impact 2022

Opportunities for learners on successful completion of the programme

Learners cover modules on the various aspects of computer science as part of a broader computing education. This means that graduates could go into a diversity of roles in computing and IT (Information Technology), as well as specific roles in the field of computer science.

Computer science specialists are currently in great demand with employers across a range of sectors around the globe. We anticipate that this pattern will continue for the near future as computer science techniques become even more embedded in technological developments. Our learners will have gained the fundamental skills and knowledge necessary to adopt the emerging technologies and concepts in this dynamic mathematical based field. Furthermore, they will also possess the analytical and professional skills needed to be able to exploit the various computer science features to meet the needs and requirements of the organisations for which they will work. Opportunities for future employment exist in a wide range of sectors including engineering, finance, healthcare, games and films, pharmaceuticals and public services and many other areas of business and society. A range of employers from large multinational firms to regional and local organisations are waking up to the benefits of employing graduates with a sound background in this field.

After our MSc Computer Science (Conversion) learners may apply for a range of computer science roles including: -Software engineering, information technology, network administration, and web development.

Mapping of Subject Benchmark Statement and any relevant Apprenticeship Standard to Programme Learning Outcomes

Subject Benchmark Statement / Apprenticeship Standard:	Knowledge and understanding (K)					Analysis and Criticality (C)			Application and Practice (P)				Transferable skills and other attributes (T)			
Benchmark / Standard requirement	K1	K2	K3	K4	K5	C1	C2	C3	P1	P2	P3	P4	T1	T2	T3	T4
The development of Artificial Intelligence solutions as an emerging area of study and inquiry, and its multidisciplinary or interdisciplinary nature.		X			X		X		X	X	X			X	X	
Understanding the various sources of information about Artificial Intelligence, both quantitative and qualitative, and how they are produced - including their location legal, political, social, and ideological frameworks - and how they can be interpreted.	X						X					X		X		
The development, role, organisation, and governance of efforts to ensure personal and public safety and security in different Artificial Intelligence systems; the role of the state and non-governmental agencies.		X				X			X			X				
An ability to evaluate the technical, societal and management dimensions of computer systems		X					X		X		X					
A knowledge and understanding of advanced aspects of computer systems and their use	X								X				X		X	
A combination of theory and practice, with practice being guided by theoretical considerations		X				X	X			X	X				X	
A strong emphasis on the underlying discipline and/or applications	X	X	X		X	X					X	X				

Subject Benchmark Statement / Apprenticeship Standard:	Knowledge and understanding (K)					Analysis and Criticality (C)			Application and Practice (P)				Transferable skills and other attributes (T)			
Benchmark / Standard requirement	**K1**	**K2**	**K3**	**K4**	**K5**	**C1**	**C2**	**C3**	**P1**	**P2**	**P3**	**P4**	**T1**	**T2**	**T3**	**T4**
The mastery of the practical methodology of the relevant area of computing, whether for typical application in software development or in specialised applications relating to the storing, processing, and communication of information	X		X				X	X					X	X		
An understanding of, and attention to, the many and varied aspects of quality and security	X				X	X			X					X	X	
An ability to engage in a peer review process that involves the critical review of papers, software, and proposals, coupled with positive advice for improvement and innovation					X						X					
Competences at a systems level appropriate to the learning outcomes of the course: the ability to assess systems (which may include software, devices, people, and so on), to recognise the individual components and to understand their interaction, to improve systems, to replace them and to create them; this includes socio-technical systems such as those relevant to aspects of healthcare and also computing systems used in specialised applications such as bioinformatics, e-science, virtual environments, financial services, and transport		X							X							

Subject Benchmark Statement / Apprenticeship Standard:	Knowledge and understanding (K)					Analysis and Criticality (C)			Application and Practice (P)				Transferable skills and other attributes (T)			
Benchmark / Standard requirement	K1	K2	K3	K4	K5	C1	C2	C3	P1	P2	P3	P4	T1	T2	T3	T4
Familiarity with codes of ethics and codes of practice specific to the specialism of the degree course, relevant industrial standards and principles underpinning the development of high integrity systems (for safety, security, trust, privacy, and so on), while keeping in focus the benefits of, approaches to and opportunities offered by innovation	X	X			X	X			X		X	X				
Entrepreneurship, which tends to involve acquiring resources to ensure the success of some technically sound endeavour; this may include a company start-up or placing a well-argued resource request before an industrial concern, a research council or some such organisation		X														
Translational skills which involve the necessary communication between technical and non-technical audiences.								X					X			
Those required for the creation of the lifelong learner, who can set goals and identify resources for the purpose of learning										X	X					X
An ability to critically review the literature, which includes identifying all the key developments in a particular area of study, critically analysing them, and identifying limitations and avenues for further development or explanation		X		X	X		X				X					

Subject Benchmark Statement / Apprenticeship Standard:	Knowledge and understanding (K)					Analysis and Criticality (C)			Application and Practice (P)				Transferable skills and other attributes (T)			
Benchmark / Standard requirement	K1	K2	K3	K4	K5	C1	C2	C3	P1	P2	P3	P4	T1	T2	T3	T4
An ability to recognise and respond to opportunities for innovation				X			X			X						
Leadership skills, which tend to be characterised by acquiring a vision (based on sound technical insights) coupled with the ability to encourage others to share in that vision and to ensure that this will not be to their detriment.															X	

Mapping of Programme Learning Outcomes to Modules

Programme Learning Outcome	Knowledge and understanding (K)					Analysis and Criticality (C)					Application and Practice (P)					Transferable skills and other attributes (T)				
Module Code (Core)	K1	K2	K3	K4	K5	C1	C2	C3			P1	P2	P3	P4		T1	T2	T3	T4	
Level 7																				
COM7010	X	X	X				X						X	X		X			X	
COM7115	X			X		X	X				X	X	X	X		X	X		X	
COM7112	X	X		X	X		X				X	X	X			X	X		X	
COM7119	X		X	X		X	X				X	X	X	X		X	X	X	X	
COM7113	X	X	X		X	X	X				X	X	X	X		X		X	X	
COM7114	X	X	X				X				X	X					X		X	
COM7098	X		X	X	X		X	X			X	X	X	X		X	X		X	
COM7099	X	X	X	X	X	X	X	X			X	X	X	X		X	X	X	X	