

Programme Specification: Post Graduate Taught

Academic Year 2021/22

1. Course Summary

Names of programme and award title(s)	MSc Artificial Intelligence and Data Science
Award type	Taught Masters
Mode of study	Full-time
Framework of Higher Education Qualification (FHEQ) level of final award	Level 7
Normal length of the programme	1 year
Maximum period of registration	The normal length as specified above plus 3 years
Location of study	Keele Campus
Accreditation (if applicable)	N/A
Regulator	Office for Students (OfS)
Tuition Fees	<p>UK students:</p> <p>Fee for 2021/22 is £9,000*</p> <p>International students:</p> <p>Fee for 2021/22 is £16,500*</p>

How this information might change: Please read the important information at <http://www.keele.ac.uk/student-agreement/>. This explains how and why we may need to make changes to the information provided in this document and to help you understand how we will communicate with you if this happens.

* We reserve the right to increase fees in subsequent years of study by an inflationary amount. Please refer to the accompanying Student Terms & Conditions for full details. Further information on fees can be found at <http://www.keele.ac.uk/studentfunding/tuitionfees/>

2. Overview of the Programme

This MSc has been created as part of a £13 million Office for Students initiative to accelerate the number and diversity of skilled artificial intelligence (AI) and data science graduates. It has been designed from both an employer and student perspective to provide distinctive and inclusive teaching for students from a wide variety of backgrounds. The course is aimed at developing an advanced knowledge of the underlying principles and concepts of AI and data science, including areas of mathematics such as calculus, linear algebra, statistics and probability; visualisation and data analytics; programming and system design; cloud computing; machine learning and related areas such as distributed systems and the Internet of Things. The course also provides students with the opportunity to apply skills and techniques to real world problems, contextualise their learning to their own areas of interest and develop professionalism, team working and research skills.

Graduates from this programme should be able to undertake both development and management roles in AI and data science. The course recognises the wide variety of potential destinations for students after completion of their course and as such uses compulsory modules to deliver key skills and enable students to obtain the required knowledge, informed by input from our Employer Steering Group.

3. Aims of the programme

The broad aims of the programme are to enable you to:

- investigate data requirements, and apply data selection, data curation, data quality assurance and data investigation and engineering techniques;
- undertake data processing to produce data sets for study and perform investigations using techniques including machine learning to reveal new insights;
- visualise and present data and investigation results to a range of stakeholders;
- develop research and scholarship skills to undertake independent research and to develop applications of AI and data science techniques in a range of subject contexts;
- develop critical, analytical and problem based learning skills;
- develop student-centred independent active learning;
- develop communication, numeracy, time management, self management and professional development skills;
- develop skills for team working needed in AI and data science related industries and environments.

4. What you will learn

The intended learning outcomes of the programme (what students should know, understand and be able to do at the end of the programme), can be described under the following headings:

- Subject knowledge and understanding
- Subject specific skills
- Key or transferable skills (including employability skills)

On completion of the Masters programme, a successful student will be able to demonstrate:

Subject knowledge and understanding

- an ability to evaluate the technical, societal and management dimensions of AI and data science
- a knowledge and understanding of advanced aspects of AI and data science and their use and applications
- a combination of theory and practice, with practice being guided by theoretical considerations
- in-depth knowledge of the underlying discipline and/or applications
- mastery of the practical methodology of AI and data science, whether for general or specialised applications relating to the storing, processing and communication of information
- an understanding of, and attention to, the many and varied aspects of quality and security
- an understanding of professional, legal, social, cultural and ethical issues related to AI and data science and an awareness of societal and environmental impact.

Subject specific skills

- 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
- the ability to assess systems (which may include software, devices, 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 systems used in specialised applications such as bioinformatics, e-science, virtual environments, financial services, and transport
- 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
- 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
- identification and selection of data that needs to be collected and transitioned from a range of data systems; an ability to acquire, manage and process complex data sets, including large-scale and real-time data
- an ability to undertake analytical investigations of data to understand the nature, utility and quality of data, and develop data quality rule sets and guidelines for database designers
- an ability to formulate analysis questions and hypotheses which are answerable given the data available and come to statistically sound conclusions
- an ability to conduct high-quality complex investigations, employing a range of analytical software, statistical modelling & machine learning techniques to make data driven decisions solve commercial

- and academic research problems
- an ability to document and describe the data architecture and structures using appropriate data modelling tools, and select appropriate methods to present data and results that support human understanding of complex data sets
- an ability to scope and deliver data analysis projects, in response to priorities, create reports on outcomes suitable for a variety of stakeholders including technical and non-technical audiences.

Key or transferable skills (including employability skills)

- an ability to set goals and identify resources for the purpose of learning
- an ability to critically review the literature, which includes identifying all of the key developments in a particular area of study, critically analysing them and identifying limitations and avenues for further development or explanation
- an ability to recognise and respond to opportunities for innovation
- 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.
- an ability to concisely present key findings using common business tools to support a business decision

Keele Graduate attributes

Engagement with this programme will enable you to develop your intellectual, personal and professional capabilities. At Keele, we call these our ten Graduate Attributes and they include independent thinking, synthesizing information, creative problem solving, communicating clearly, and appreciating the social, environmental and global implications of your studies and activities. Our educational programme and learning environment is designed to help you to become a well-rounded graduate who is capable of making a positive and valued contribution in a complex and rapidly changing world, whichever spheres of life you engage in after your studies are completed.

Further information about the Keele Graduate Attributes can be found here: <http://www.keele.ac.uk/journey/>

5. How is the programme taught?

You will use a variety of learning tools in studying for this course. The principal method for you to acquire knowledge is the use of formal lectures. These are supplemented by smaller group tutorials and practical sessions dependent on the topics being covered in the module. Self study using material provided and that which you research for yourself will supplement the formal learning opportunities.

Formal lectures and self study materials are used to introduce concepts. The smaller group tutorials and practicals enable both consolidation of this material and an understanding of the practicalities of its application in a modern business environment. The tutorials and practicals achieve this aim by you having to apply the taught concepts to real world problems and data sets, in a situation where individual progress can be monitored.

Apart from these formal activities, you are also provided with regular opportunities to talk through particular areas of difficulty, and any special learning needs you may have, with your Personal Tutors or module lecturers on a one-to-one basis.

All first semester 15-credit taught modules, will normally be delivered in block mode, i.e. each of these modules will normally be delivered over a period of six consecutive weeks. In any week at most two block mode modules will be scheduled for delivery during the first semester. All taught modules in the second semester are currently delivered along the whole semester.

6. Teaching Staff

Information about the Computer Science teaching and research staff is available at <http://www.keele.ac.uk/scm/staff/>

The University will attempt to minimise changes to our core teaching teams, however, delivery of the programme depends on having a sufficient number of staff with the relevant expertise to ensure that the programme is taught to the appropriate academic standard.

Staff turnover, for example where key members of staff leave, fall ill or go on research leave, may result in changes to the programme's content. The University will endeavour to ensure that any impact on students is limited if such changes occur.

7. What is the structure of the programme?

The academic year runs from September to September and is divided into three semesters. The number of weeks of teaching will vary from programme to programme, but you can generally expect to attend scheduled teaching sessions between the end of September and mid-December, and from mid-January to the end of April. Our degree courses are organised into modules. Each module is usually a self-contained unit of study and each is usually assessed separately with the award of credits on the basis of 1 credit = 10 hours of student effort. An outline of the structure of the programme is provided in the tables below.

There are two types of module delivered as part of your programme. They are:

- *Compulsory modules* - a module that you are required to study on this course;
- *Optional modules* - these allow you some limited choice of what to study from a list of modules.

Year	Compulsory	Optional		Electives	
		Min	Max	Min	Max
Level 7	60	120	120	0	0

Module Lists

Level 7

Compulsory modules	Module Code	Credits	Period
Distributed Intelligent Systems	CSC-40045	15	Semester 1
Data Analytics and Databases	CSC-40054	15	Semester 1
Visualisation for Data Analytics	CSC-40048	15	Semester 2
Applications of AI, Machine Learning and Data Science	CSC-40070	15	Semester 2

Optional modules	Module Code	Credits	Period
Research Horizons	CSC-40041	15	Semester 1
System Design & Programming	CSC-40044	15	Semester 1
The Internet of Things	CSC-40056	15	Semester 1
Mathematics for AI and Data Science	CSC-40072	15	Semester 1
Collaborative Application Development	CSC-40038	15	Semester 2
Cloud Computing	CSC-40039	15	Semester 2
Research and Consultancy Skills	CSC-40050	15	Semester 2
AI and Data Science Ambassador Scheme	CSC-40102	15	Semester 2
Industrial Placement	CSC-40035	60	Semester 3
MSc Project	CSC-40040	60	Semester 3

Level 7 Module Rules

For Semester 1 modules, students choose 2 from 4 dependent on their prior experience (in consultation with the Programme Director). Students without a suitable computing background must choose CSC-40044 System Design and Programming. Students without a suitable mathematics background must choose CSC-40072 Mathematics for AI and Data Science. For Semester 2 modules, students can choose 2 from 3.

After the taught modules (in Semester 3), students have the choice to undertake a formal academic project supervised by academic staff in the School or to take an industrial placement in a relevant company or

organisation. The decision about the type of project or placement students will do will be made together with the academic supervisors and will be based on student performance during the taught modules.

Learning Outcomes

The table below sets out what students learn in the programme and the modules in which that learning takes place. Details of how learning outcomes are assessed through these modules can be found in module specifications.

Level 7

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Subject Knowledge and Understanding	
Learning Outcome	Module in which this is delivered
an ability to evaluate the technical, societal and management dimensions of AI and data science	Cloud Computing - CSC-40039 Applications of AI, Machine Learning and Data Science - CSC-40070 The Internet of Things - CSC-40056 System Design & Programming - CSC-40044 Industrial Placement - CSC-40035 Collaborative Application Development - CSC-40038 Visualisation for Data Analytics - CSC-40048 Research Horizons - CSC-40041 Data Analytics and Databases - CSC-40054 Research and Consultancy Skills - CSC-40050 MSc Project - CSC-40040 Distributed Intelligent Systems - CSC-40045
a knowledge and understanding of advanced aspects of AI and data science and their use and applications	Applications of AI, Machine Learning and Data Science - CSC-40070 The Internet of Things - CSC-40056 Industrial Placement - CSC-40035 Visualisation for Data Analytics - CSC-40048 AI and Data Science Ambassador Scheme - CSC-40102 Data Analytics and Databases - CSC-40054 MSc Project - CSC-40040 Mathematics for AI and Data Science - CSC-40072 Research Horizons - CSC-40041
a combination of theory and practice, with practice being guided by theoretical considerations	Cloud Computing - CSC-40039 Applications of AI, Machine Learning and Data Science - CSC-40070 The Internet of Things - CSC-40056 System Design & Programming - CSC-40044 Mathematics for AI and Data Science - CSC-40072 Distributed Intelligent Systems - CSC-40045 Visualisation for Data Analytics - CSC-40048 Data Analytics and Databases - CSC-40054 MSc Project - CSC-40040 Industrial Placement - CSC-40035
in-depth knowledge of the underlying discipline and/or applications.	All modules

Subject Knowledge and Understanding	
Learning Outcome	Module in which this is delivered
mastery of the practical methodology of AI and data science, whether for general or specialised applications relating to the storing, processing and communication of information	Cloud Computing - CSC-40039 Applications of AI, Machine Learning and Data Science - CSC-40070 The Internet of Things - CSC-40056 System Design & Programming - CSC-40044 AI and Data Science Ambassador Scheme - CSC-40102 Distributed Intelligent Systems - CSC-40045 Visualisation for Data Analytics - CSC-40048 Data Analytics and Databases - CSC-40054 MSc Project - CSC-40040 Industrial Placement - CSC-40035
an understanding of, and attention to, the many and varied aspects of quality and security	Cloud Computing - CSC-40039 Applications of AI, Machine Learning and Data Science - CSC-40070 MSc Project - CSC-40040 Industrial Placement - CSC-40035 The Internet of Things - CSC-40056
an understanding of professional, legal, social, cultural and ethical issues related to AI and data science and an awareness of societal and environmental impact.	Applications of AI, Machine Learning and Data Science - CSC-40070 Industrial Placement - CSC-40035 AI and Data Science Ambassador Scheme - CSC-40102 MSc Project - CSC-40040 Research and Consultancy Skills - CSC-40050

Subject Specific Skills	
Learning Outcome	Module in which this is delivered
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	Applications of AI, Machine Learning and Data Science - CSC-40070 Industrial Placement - CSC-40035 MSc Project - CSC-40040 Research and Consultancy Skills - CSC-40050 Research Horizons - CSC-40041
the ability to assess systems (which may include software, devices, 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 systems used in specialised applications such as bioinformatics, e-science, virtual environments, financial services, and transport	Cloud Computing - CSC-40039 Applications of AI, Machine Learning and Data Science - CSC-40070 The Internet of Things - CSC-40056 System Design & Programming - CSC-40044 Industrial Placement - CSC-40035 Collaborative Application Development - CSC-40038 Visualisation for Data Analytics - CSC-40048 Data Analytics and Databases - CSC-40054 Research and Consultancy Skills - CSC-40050 MSc Project - CSC-40040 Distributed Intelligent Systems - CSC-40045
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	Cloud Computing - CSC-40039 Applications of AI, Machine Learning and Data Science - CSC-40070 The Internet of Things - CSC-40056 MSc Project - CSC-40040 Distributed Intelligent Systems - CSC-40045 Research and Consultancy Skills - CSC-40050 Industrial Placement - CSC-40035

Subject Specific Skills	
Learning Outcome	Module in which this is delivered
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	Applications of AI, Machine Learning and Data Science - CSC-40070 Industrial Placement - CSC-40035 Collaborative Application Development - CSC-40038 Research and Consultancy Skills - CSC-40050 MSc Project - CSC-40040 Research Horizons - CSC-40041
identification and selection of data that needs to be collected and transitioned from a range of data systems; an ability to acquire, manage and process complex data sets, including large-scale and real-time data	Cloud Computing - CSC-40039 Applications of AI, Machine Learning and Data Science - CSC-40070 The Internet of Things - CSC-40056 System Design & Programming - CSC-40044 Mathematics for AI and Data Science - CSC-40072 Distributed Intelligent Systems - CSC-40045 Visualisation for Data Analytics - CSC-40048 Data Analytics and Databases - CSC-40054 MSc Project - CSC-40040 Industrial Placement - CSC-40035
an ability to undertake analytical investigations of data to understand the nature, utility and quality of data, and develop data quality rule sets and guidelines for database designers	Cloud Computing - CSC-40039 Applications of AI, Machine Learning and Data Science - CSC-40070 The Internet of Things - CSC-40056 Industrial Placement - CSC-40035 Mathematics for AI and Data Science - CSC-40072 Visualisation for Data Analytics - CSC-40048 Data Analytics and Databases - CSC-40054 MSc Project - CSC-40040 Distributed Intelligent Systems - CSC-40045
an ability to formulate analysis questions and hypotheses which are answerable given the data available and come to statistically sound conclusions	Applications of AI, Machine Learning and Data Science - CSC-40070 The Internet of Things - CSC-40056 Industrial Placement - CSC-40035 Distributed Intelligent Systems - CSC-40045 Visualisation for Data Analytics - CSC-40048 Research Horizons - CSC-40041 Data Analytics and Databases - CSC-40054 MSc Project - CSC-40040 Mathematics for AI and Data Science - CSC-40072
an ability to conduct high-quality complex investigations, employing a range of analytical software, statistical modelling & machine learning techniques to make data driven decisions solve commercial and academic research problems	Mathematics for AI and Data Science - CSC-40072 MSc Project - CSC-40040 Data Analytics and Databases - CSC-40054 Industrial Placement - CSC-40035 Applications of AI, Machine Learning and Data Science - CSC-40070
an ability to document and describe the data architecture and structures using appropriate data modelling tools, and select appropriate methods to present data and results that support human understanding of complex data sets	Data Analytics and Databases - CSC-40054 MSc Project - CSC-40040 Visualisation for Data Analytics - CSC-40048 Industrial Placement - CSC-40035 Applications of AI, Machine Learning and Data Science - CSC-40070
an ability to scope and deliver data analysis projects, in response to priorities, create reports on outcomes suitable for a variety of stakeholders including technical and non-technical audiences.	Collaborative Application Development - CSC-40038 Applications of AI, Machine Learning and Data Science - CSC-40070 MSc Project - CSC-40040 Research and Consultancy Skills - CSC-40050 Visualisation for Data Analytics - CSC-40048 Industrial Placement - CSC-40035

Key or Transferable Skills (graduate attributes)	
Learning Outcome	Module in which this is delivered
an ability to set goals and identify resources for the purpose of learning	All modules
an ability to critically review the literature, which includes identifying all of the key developments in a particular area of study, critically analysing them and identifying limitations and avenues for further development or explanation	MSc Project - CSC-40040 Research Horizons - CSC-40041 Research and Consultancy Skills - CSC-40050 Industrial Placement - CSC-40035
an ability to recognise and respond to opportunities for innovation	MSc Project - CSC-40040 Collaborative Application Development - CSC-40038 AI and Data Science Ambassador Scheme - CSC-40102 Research and Consultancy Skills - CSC-40050 Research Horizons - CSC-40041 Industrial Placement - CSC-40035
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.	Collaborative Application Development - CSC-40038 AI and Data Science Ambassador Scheme - CSC-40102 Research and Consultancy Skills - CSC-40050 Industrial Placement - CSC-40035 Applications of AI, Machine Learning and Data Science - CSC-40070
an ability to concisely present key findings using common business tools to support a business decision	Applications of AI, Machine Learning and Data Science - CSC-40070 Cloud Computing - CSC-40039 Industrial Placement - CSC-40035 Visualisation for Data Analytics - CSC-40048 Data Analytics and Databases - CSC-40054 Research and Consultancy Skills - CSC-40050 Collaborative Application Development - CSC-40038

8. Final and intermediate awards

Master's Degree	180 credits	You will require at least 150 credits at Level 7
Postgraduate Diploma	120 credits	You will require at least 90 credits at Level 7
Postgraduate Certificate	60 credits	You will require at least 40 credits at Level 7

9. How is the Programme Assessed?

The wide variety of assessment methods used on this programme at Keele reflects the broad range of knowledge and skills that are developed as you progress through the degree programme. Teaching staff pay particular attention to specifying clear assessment criteria and providing timely, regular and constructive feedback that helps to clarify things you did not understand and helps you to improve your performance. The following list is representative of the variety of assessment methods used on your programme:

- **Unseen examinations:** test a student's knowledge and understanding of computer science topics. Such examinations are of two hours in length and contain compulsory and possibly also optional questions.
- **Class tests:** these are taken during the course of a module, usually in a lecture slot. They are intended to assess a student's current understanding and subject knowledge in that module in a structured and focused manner. Some taught compulsory modules may have class tests as part of the assessment profile.
- **Coursework:** normally consists of regular short assignments designed to assess, in more depth than class tests, a student's knowledge and understanding of the programme material. Some of these assignments may be computer based; others take the form of individual reports, essays or group

projects.

- **Short reports:** for which students are required to write up their own account of small group studies and discussions on particular topics.
- **Dissertations** are formal reports of work carried out by students undertaking a project. Projects involve the integration and application of theoretical knowledge and problem-solving skills to an identified programming need and/or research problem within the discipline. Dissertations describe product and process in extended detail.
- **Oral presentations and reports** assess a student's ability to communicate their knowledge and understanding, both visually and orally, to both general and academic audiences.

Marks are awarded for summative assessments designed to assess your achievement of learning outcomes. You will also be assessed formatively to enable you to monitor your own progress and to assist staff in identifying and addressing any specific learning needs. Feedback, including guidance on how you can improve the quality of your work, is also provided on all summative assessments within three working weeks of submission, unless there are compelling circumstances that make this impossible, and more informally in the course of tutorial and seminar discussions.

10. University Regulations

The University Regulations form the framework for learning, teaching and assessment and other aspects of the student experience. Further information about the University Regulations can be found at: <http://www.keele.ac.uk/student-agreement/>

If this programme has any exemptions, variations or additions to the University Regulations these will be detailed in an Annex at the end of this document titled 'Programme-specific regulations'.

11. What are the typical admission requirements for the Programme?

See the relevant course page on the website for the admission requirements relevant to this programme: <https://www.keele.ac.uk/study/>

12. How are students supported on the programme?

Support for student learning and welfare is provided in a number of ways.

- Module leaders and demonstrators are responsible for providing learning support on the individual modules. They also give feedback on all summative and formative assessment, from individual feedback on coursework to more general feedback on examinations.
- The members of academic staff in Computer Science operate an open-door policy whereby lecturers and tutors are happy to see and advise students at any reasonable time or by mutually convenient appointment.
- Every student enrolled on the Programme will be allocated a Personal Tutor who is responsible for reviewing and advising on the student's academic progress throughout their time on the Programme. Students should approach their Personal Tutor, in the first instance, if they are experiencing issues with any part of the Programme.
- Personal Tutors also act as a first point of contact on any non-academic issues that may be affecting their learning and can also refer students to a range of specialist health, welfare and financial services coordinated by the Student and Support Development Services.
- There is an Independent Support Tutor from the School of Computing and Mathematics who is independent of the lecturing team delivering the modules and available to all students on the Programme. The role of the Independent Support Tutor is to provide general support for students, though they will deal specifically with attendance monitoring and the exceptional circumstances procedure

13. Learning Resources

- There is a specialist teaching laboratory and associated workroom with equivalent configuration of machines, both of which are reserved for access by those studying postgraduate taught programmes in the School. All the systems available have software appropriate to the modules included in this programme, in addition to those provided as standard by the University.
- The relevant Programme Handbook will provide you with key information and guidance on structure, content and assessment.
- You may contact the Course Director and the MSc Administrator, or their substitutes, via e-mail at all times on weekdays and you may expect a response to your communications within 3 working days.
- You will have access to the Course Director and tutors by appointment.
- You will have access to material in the programmes' online learning resources.
- You will have access to Keele's Library Information Services on campus and via the Internet.

14. Additional Costs

As to be expected there will be additional costs for inter-library loans and potential overdue library fines, print and graduation.

The AI and Data Science Ambassador Scheme module is an optional module which involves students volunteering within local organisations such as schools/colleges or relevant small businesses/charities. Due to UK Home Office rules on student Tier 4 Visas this option is not available if a student has a student Tier 4 Visa to study in the UK. A DBS check may be required in order to take the module, and this currently costs £44. Travel will be required, depending on the location of the organisation(s) you choose. The costs of both of these would be incurred by the student and cannot be reimbursed by the University. It is possible to select alternative modules, which do not incur any cost.

We do not anticipate any further costs for this programme.

15. Quality management and enhancement

The quality and standards of learning in this programme are subject to a continuous process of monitoring, review and enhancement.

- The School Education Committee is responsible for reviewing and monitoring quality management and enhancement procedures and activities across the School.
- Individual modules and the programme as a whole are reviewed and enhanced every year in the annual programme review which takes place at the end of the academic year.
- The programmes are run in accordance with the University's Quality Assurance procedures and are subject to periodic reviews under the Internal Quality Audit (IQA) process.

Student evaluation of, and feedback on, the quality of learning on every module takes place every year using a variety of different methods:

- The results of student evaluations of all modules are reported to module leaders and reviewed by the Programme Committee as part of annual programme review.
- Findings related to the programme from the annual Postgraduate Taught Experience Survey (PTES), and from regular surveys of the student experience conducted by the University, are subjected to careful analysis and a planned response at programme and School level.
- Feedback received from representatives of students on the programme is considered and acted on at regular meetings of the Student Staff Voice Committee.

The University appoints senior members of academic staff from other universities to act as external examiners on all programmes. They are responsible for:

- Approving examination questions
- Confirming all marks which contribute to a student's degree
- Reviewing and giving advice on the structure and content of the programme and assessment procedures

Information about current external examiner(s) can be found here:

<http://www.keele.ac.uk/qa/externalexaminers/currentexternalexaminers/>

16. The principles of programme design

The programme described in this document has been drawn up with reference to, and in accordance with the guidance set out in, the following documents, as well as input from our Employer Steering Group:

a. UK Quality Code for Higher Education, Quality Assurance Agency for Higher Education:

<http://www.qaa.ac.uk/quality-code>

b. QAA Subject Benchmark Statement for Master's Degrees in Computing, Quality Assurance Agency for Higher Education, 2019. [https://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/subject-benchmark-statement-computing-\(masters\).pdf](https://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/subject-benchmark-statement-computing-(masters).pdf)

c. Level 7 Digital and technology solutions specialist (integrated degree) Apprenticeship Standard (Data Analytics Specialist): <https://www.instituteforapprenticeships.org/apprenticeship-standards/digital-and-technology-solutions-specialist-integrated-degree/>

d. Keele University Regulations and Guidance for Students and Staff: <http://www.keele.ac.uk/regulations>

Version History

This document

Date Approved: 28 July 2021

What's Changed

Additional option module added in Semester 2.

Previous documents

Version No	Year	Owner	Date Approved	Summary of and rationale for changes
1	2020/21	EDWARD DE QUINCEY	11 August 2020	