



School of Engineering and Built Environment

MSc/PgD Big Data Technologies

Programme Specification

26th June 2018

PROGRAMME SPECIFICATION PRO-FORMA - POSTGRADUATE

1 General Information

1. Programme Title:	Big Data Technologies
2. Final Award:	MSc Big Data Technologies
3. Exit Awards:	PgD Big Data Technologies PgC Big Data Technologies
4. Awarding Body:	Glasgow Caledonian University
5. Approval Date:	22 nd March 2016
6. Faculty/School:	School of Engineering and Built Environment
7. Host Department:	Computer, Communications, Interactive Systems
8. UCAS Code:	
9. PSB Involvement:	N/A
10. Place of Delivery:	Glasgow Campus
11. Subject Benchmark Statement:	Computing
12. Dates of PS Preparation/Revision:	March 2016

2 Educational Aims Of The Programme

The aim for MSc Big Data Technologies is to deliver a programme that allows students to develop expert knowledge and relevant in-depth practical skills in the rapidly expanding fields of Big Data and Analytics technologies. Students study and apply the underpinning technologies of cloud-based and service-oriented computing, Big Data architectures, platforms and analytics, together with developing a working knowledge of the Internet of Things (IoT) – an area that is expanding rapidly and that ideally demonstrates the combination of Big Data and analytics. The programme combines the latest academic advances and provides practice in utilising the tools, techniques and design patterns used by industry professionals, to produce graduates that are intellectually and practically equipped for high quality relevant employment or capable of moving onwards to undertake related research. The programme philosophy and content is consistent-with and underpinned by professional and academic quality bodies, i.e., the ACM, IEEE, BCS and QAA. The programme is consistent with the University's 2020 Vision that aims to create employable graduates wanting to use their skills to make a positive difference to society.

The MSc Big Data Technologies programme is managed along with the MSc Cloud Computing programme (previously entitled MSc Computer Science) as a programme suite within the Software Engineering subject group since Cloud Computing and Big Data Technologies are closely related subject area.

3 Intended Learning Outcomes

3.1 Attributes

The programme outcomes have been formulated with reference to the following:

- The Quality Assurance Agency for Higher Education (QAA) Subject Benchmark Statement for Masters Degrees in Computing (2011)
- The British Computer Society (BCS) Core Requirements for Accreditation of Specialist Masters Programmes
- The Department of Computer, Communications and Interactive Systems' research in the areas of:
 - Networks, and Internet of Things (IoT);
 - Cyber Security
 - Visual, Affective and Pervasive Systems
 - Cloud Computing and Big Data
 - Computing Education
- The Department of Computer, Communications and Interactive Systems' Knowledge Transfer and Lifelong Learning programmes
- Glasgow Caledonian University's Strategy for Learning
- The School of Engineering and Built Environment Learning, Teaching and Assessment Strategy (LTAS).
- Scottish Credit and Qualifications Framework, Level 11 MSc
- GCU University Qualifications Framework for MSc

The Programme Learning Outcomes detailed below are mapped against the specific Module Learning Outcomes in the Curriculum Map within Section 11 of this document.

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

Knowledge and Understanding:

- A1 Explain theoretical and practical concepts of Big Data technologies and their applications to real-world problems.
- A2 Compare processes, methods, techniques, tools and technologies and their application within Big Data systems.
- A3 Evaluate a range of technology options to determine the most appropriate within the development of Big Data applications.
- A4 Understand the principles and processes involved in the architecture and development of Big Data systems.
- A5 Evaluate advances in processes, methods, techniques & tools used to develop, evolve and support the operation of systems that utilise Big Data technologies.
- A6 Demonstrate a comprehensive knowledge and understanding of the professional and ethical responsibilities for practitioners working in IT systems.
- A7 Demonstrate a deep understanding of the concepts and practical application of Data Analytics for Big Data systems.
- A8 Demonstrate a deep understanding of the concepts, architecture and practical application of Big Data Computing Platforms.
- A9 Demonstrate deep knowledge and understanding of the concepts and application of Big Data Technologies by undertaking a Masters dissertation on a Big Data-centred topic.

Intellectual Skills:

- B1 Identify, analyse and solve practical problems.
- B2 Plan, conduct and report on work.
- B3 Evaluate alternative design and implementation solutions.
- B4 Critically evaluate work undertaken by themselves and others.
- B5 Critically evaluate research and technical evidence from a variety of sources.

Professional/ Practical Skills:

- C1 Specify a set of requirements for a solution to meet the needs of stakeholders.
- C2 Practically apply appropriate and transferrable skills for the design and testing of solutions within Big Data domains.
- C3 Demonstrate effective use of a variety of techniques, components, tools and environments in the design and development of solutions within Big Data domains.
- C4 Apply theory to practical and realistic career-related tasks.
- C5 Demonstrate appropriate communication skills: written, oral and listening.
- C6 Develop good working practice within a design/development team.

Transferable/Key Skills:

- D1 Specialist knowledge and application
- D2 Critical thinking and problem solving
- D3 Critical analysis
- D4 Communication skills, written, oral and listening
- D5 Numeracy
- D6 Effective information retrieval and research skills
- D7 Computer literacy
- D8 Self-confidence, self-discipline & self-reliance (independent working)
- D9 Awareness of strengths and weaknesses
- D10 Creativity, innovation & independent thinking
- D11 Knowledge of international affairs
- D12 Appreciating and desiring the need for continuing professional development
- D13 Reliability, integrity, honesty and ethical awareness
- D14 Ability to prioritise tasks and time management
- D15 Interpersonal skills, team working and leadership
- D16 Presentation skills
- D17 Commercial awareness
- D18 Entrepreneurial and risk-taking

3.2 Delivery, Teaching, learning and assessment methods

A set of Delivery, Teaching, Learning and Assessment Methods are used to enable learning outcomes to be achieved and demonstrated at an appropriate academic standard.

3.2.1 Delivery methods

Each Trimester consists of a 12-week block during which students will study all modules for that Trimester and have time for consolidation and private study. Class contact will be lectures, tutorials, seminars and laboratory sessions as appropriate. Each module has an appropriate handbook detailing the module descriptor, learning outcomes, and assessment strategies adopted.

The programme admits students at both September and January intakes. All the taught modules of the programme are devised and delivered in a relatively self-contained format and there are no formal prerequisites between any taught modules; students are ensured to have uniform experiences of learning whether they start the study in September or January intake.

3.2.2 Teaching, learning and assessment methods

The programme's strategy for learning has been designed to meet the overall aims of the programme as well as the specific learning outcomes expected of students. The teaching approach is student centred, practical and participative and has been designed to move away from the traditional teacher centred paradigm to a more active, student driven, independent model of learning.

Students are expected to take a broad view of their education and to engage in external events, both locally hosted and virtual, and attend lectures by external speakers as well as attending scheduled classes, using online resources and undertaking independent study. Students are encouraged to

become active members of the global software development community, including the open source community, and interact with other developers through blogs and social media¹, both general and specialist, for example: DZone, StackOverflow, GitHub and LinkedIn Groups.

A range of delivery methods are used in the programme including: lectures; group-based tutorials and seminars (both tutor and student led); practical computing labs (supervised and directed); problem-based learning scenarios and case studies; directed study; industrial case studies; Industrial guest seminars; research seminars; formative assessments; coursework assignments (individual and group-based) and a supervised Masters dissertation.

The tutorial and laboratory work is integrated as far as possible in order to resolve any issues the student may encounter in understanding particular technologies by referring to concrete examples of their implementation. Both tutorials and labs will be geared to provide real examples and use problem solving to help solidify the concepts and theories learned in lectures.

A range of assessment instruments is applied within the programme, depending on the nature of the subject area. Assessments may involve a range of activities, including research, report-writing, designing and developing technical solutions (for example: undertaking data-analytics, developing software, developing a database), undertaking class-tests and delivering presentations.

Most of the coursework assignments involve undertaking a significant element of independent study and implementing associated practical tasks within a given deadline. Students are thus required to develop independent responsibility, plan their learning, prioritise tasks and manage their time appropriately in order to successfully complete the assignment (D8, D9, D10, D14).

Many assignments require students to retrieve and utilise and evaluate information from a variety of sources both research and commercially based (D6, D17).

Tutorial/Seminar work requires students to present their work (and consider the work of others), in both written and oral form (D4, D16).

Group working is also set within the programme and is used to develop effective communication and team working skills (D4, D15).

Students have the opportunity to develop entrepreneurial thinking practices through attendance of talks/workshops by industry experts.

Masters Dissertation Assessment

The Masters dissertation module is a notional 600 hours effort on the part of the student and is supervised by an appropriate academic member of staff. The underlying philosophy of the Masters dissertation is to allow each student to develop and mature educationally by identifying, studying, analysing and evaluating a substantial problem or challenging issue within the broad discipline scope of the programme. The Masters dissertation offers a further and critical alternative to learning within the traditional lecture/tutorial environment and consequently an alternative method for the student to demonstrate their capabilities and to achieve the key learning objectives required from the module. Masters dissertations are normally research, industrially related, or consultancy based. The Masters dissertation is assessed as per the module descriptor:

- Draft Dissertation (formative)
- Oral Presentation of final dissertation (20%)
- Overall Performance of final Dissertation (80%)

¹ <https://software.intel.com/en-us/blogs/2012/11/28/social-network-hubs-for-developers-the-top-twelve-online>

A range of assessment methods are used which are designed to provide the knowledge and understanding required of the aims of the programme and to develop the array of intellectual, professional and transferable skills demanded of the programme. As such, a balance of tests and coursework assessments has been created to ensure academic rigour in relation to knowledge and intellectual ability as well as the development of professional and transferable skills. The nature of coursework assessments range from individual and group-based projects leading to individual and group reports, including online projects, live and recorded group presentations and self and peer review exercises.

4. PROGRAMME STRUCTURES AND REQUIREMENTS, LEVELS, MODULES, CREDITS AND AWARDS

All Modules are SHEM (SCQF 11) Level.

The academic year is split into trimesters, each of 15 weeks (12 teaching plus revision and assessment weeks).

Table 1(a) MSc/PgD Big Data Technologies (Full-Time)

Trimester A		
ISIS Code	Module Title	Credits
MMI223994	Big Data Landscape	20 SHEM
MMI223997	Data Analytics	20 SHEM
MMI223999	IT Professional Issues and Project Methods	20 SHEM
Trimester B		
ISIS Code	Module Title	Credits
MMI223996	Cloud Computing and Web Services	20 SHEM
MMI123998	Internet of Things	20 SHEM
MMI223995	Big Data Platforms	20 SHEM

Exit Awards:

Postgraduate Certificate in Computing (see Note 1):

60 SHEM credits

Postgraduate Diploma in Big Data Technologies:

120 SHEM credits

Trimester C		
ISIS Code	Module Title	Credits
MMG411931	Dissertation	60 SHEM

Exit Award:

MSc in Big Data Technologies:

180 SHEM credits

Note 1: PgC in Computing is awarded with 60 SHEM credits – passes in any three modules.

Note 2: SHEM = Scottish Higher Education Masters Level (SCQF Level 11)

SCQF = Scottish Credit and Qualifications Framework

Over/Part-Time Delivery

Table 1(b) MSc/PgD/PgC Big Data Technologies (Part-Time)

Year 1 Trimester A		
ISIS Code	Module Title	Credits
MMI223994	Big Data Landscape	20 SHEM
MMI223997	Data Analytics	20 SHEM
Year 1 Trimester B		
ISIS Code	Module Title	Credits
MMI223995	Big Data Platforms	20 SHEM
Year 2 Trimester A		
ISIS Code	Module Title	Credits
MMI223999	IT Professional Issues and Project Methods	20 SHEM
Year 2 Trimester B		
ISIS Code	Module Title	Credits
MMI123998	Internet of Things	20 SHEM
MMI223996	Cloud Computing and Web Services	20 SHEM

Exit Awards:**Postgraduate Certificate in Computing (see Note 1):****60 SHEM credits****Postgraduate Diploma in Big Data Technologies:****120 SHEM credits**

Year 3 Trimesters A and B		
ISIS Code	Module Title	Credits
MMG411931	Dissertation	60 SHEM

Exit Award:**MSc in Big Data Technologies:****180 SHEM credits**

Note 1: PgC in Computing is awarded with 60 SHEM credits – passes in any three modules.

Note 2: SHEM = Scottish Higher Education Masters Level (SCQF Level 11)

SCQF = Scottish Credit and Qualifications Framework

5. SUPPORT FOR STUDENTS AND THEIR LEARNING

Student Induction

Student induction is a formal programme of events that occurs when students initially enrol on the MSc programmes. Students will normally meet the Programme Leader and module delivery teams prior to teaching on the new Session in Trimester A in the University and also in the first week of Trimester B.

The programme of events and information includes the following:

- Introduction to Programme Leader and academic members of the programme module teams
- An induction pack that includes a programme information handbook, module descriptors and assessment schedules
- Introduction to the programme aims and objectives, the programme content and modes of assessment.
- Introduction to GCULearn services
- Tour of the Library and the use of on-line library catalogues
- Tour of major specialist labs and research labs
- Tour of the campus
- Introduction to IT facilities

Student Support and Counselling

IT Support

All students have access to a range of computer-based facilities including email, GCULearn VLE, access to computers in laboratories and other learning spaces, software for home use through the GCU AppStore (a software service which allows students and staff to run software on-demand to any Windows PC) and an extensive printing service. Students have online access (through the My Caledonian portal) to maintain their security settings/passwords, library credentials, graduation/tuition fees and printing fees. All students and staff are connected to the eduroam² (education roaming) wireless Internet service, providing Internet access throughout GCU and at many educational institutions around the world. Everyone at GCU has access to lynda.com³ - an online learning company that helps users learn business, software, technology and creative skills to achieve personal and professional goals. The IT Helpdesk is open from 8.30am to 10pm weekdays, and 9am to 6pm on weekends; it is accessible by phone or email.

Academic Support

Academic support is provided through access to module leaders and tutors. Staff office locations, email and telephone contact details are provided in the Module Handbooks and can be accessed through a Managed Learning Environment.

In order to provide on-going support for students, academic staff including the Programme Leader operates a policy of open access for consultation and help through email and suitable managed learning environments. If there is a major concern by an individual student, the student is encouraged in the first instance to contact the Programme Leader to discuss their concerns and to help try and facilitate an early resolution. Students are also made aware of the support and guidance offered by the Learning Development Centre (LDC) and may be referred to LDC as appropriate by both academic and administrative staff.

Personal Development

As part of the learning strategy students will participate in Personal Development to ensure that they undertake effective planning for their own personal, educational and career development.

A key element in the process is to foster the employability of graduates. Students will be encouraged to make use of the University Careers Guidance service and other mechanisms in order to develop an awareness of the industry and identify career opportunities. Students will also be encouraged to attend research Seminars in the school & department and BCS and IET local branch meetings.

² <https://www.eduroam.org/>

³ <http://www.lynda.com/>

MSc Dissertation Support

Students who undertake this module are supported through the allocation of an *academic supervisor*. During the development of the Masters dissertation proposal students are encouraged and facilitated to approach and meet relevant academic staff to discuss the topic intended for masters dissertation. After preparing the Masters dissertation proposal students submit a project agreement form that names the supervising staff member.

The programme also has a named academic who acts as the Masters *dissertation coordinator* and who provides overall guidance for both the student cohort and the academic supervisors on the management and assessment procedures of the Masters dissertations. Prior to the start of Masters dissertations, the Masters dissertation coordinator will confirm to the students the allocation of academic supervisors for their Masters dissertations.

The Masters Dissertation Handbook provides all the key information on the running, management and assessment of the Masters dissertation.

6. CRITERIA FOR ADMISSION

Candidates must be able to satisfy the general admissions requirements of Glasgow Caledonian University

- a) A minimum of a 2:2 honours degree of a UK university or equivalent that contains a substantial computing or information and communications technology component.

OR

- b) A formal qualification equivalent to (a) above.

OR

- c) Substantial experience in industry or commerce and supporting evidence of an ability to undertake a programme of study at postgraduate level.

AND

- d) A good knowledge of Computing as evidenced by (c) above or appropriate industrial certification or interview.

- e) For students for whom English is not their first language

An IELTS average score of 6.0 and no element less than 5.5

OR

A TOEFL score of 550 (213 for Computer based test)

OR

An equivalent qualification

Flexible Entry: Credit Transfer and RPL.

Glasgow Caledonian University (GCU) recognises that knowledge and skills can be acquired from a wide range of learning experiences, both formal and informal. Students at GCU should enter a programme at a level appropriate to their prior learning and qualifications. The University therefore encourages the Recognition of Prior Certificated Learning, or credit transfer, and the Recognition of Prior informal Learning as a means of providing entry to, or credit within, all of its programmes at both undergraduate and postgraduate levels. Such recognition will take place within the context of the Scottish Credit and Qualifications Framework (SCQF). The University will support Schools in the implementation of RPL processes in all subject areas.

In considering applications for direct entry, the University's "Recognition of Prior Learning at GCU policy will be adhered to: <http://www.gcu.ac.uk/study/postgraduate/rpl/>

7. METHODS FOR EVALUATING AND IMPROVING THE QUALITY AND STANDARDS OF TEACHING AND LEARNING

Mechanisms for review and evaluation of teaching, learning, assessment, the curriculum and outcome standards:

Examples:

- Module review
- Development events, Enhancement Led Internal Subject Reviews (ELISR)
- Annual Programme Analysis
- External Examiner reports
- Review by the Software Engineering Subject Group (academic staff responsible for this area of teaching) within CCIS department
- Programme Board
- Reports from BCS

Committees with responsibility for monitoring and evaluating quality and standards:

- Student/Staff Consultative Group
- Programme Board
- School Management Group
- Assessment Boards
- University Learning & Teaching Sub-committee
- Academic Policy Committee

Mechanisms for gaining student feedback on the quality of teaching and their learning experience:

- Student/Staff Consultative Group
- Student representation on Programme Boards
- Student representation on Senate Standing Committees
- Open access to module leaders and programme leader
- National Student Survey

Staff development priorities include:

- PgC in Learning & Teaching in HE
- Discipline-based Continuous Profession Development
- Performance Annual Review (PDAR)
- Peer support for teaching
- Mentoring scheme
- Regular Programme Team and Subject group meetings
- Seminar programme with visiting lecturers
- Conference presentations
- Research Excellence submissions
- Institutional learning and teaching workshops
- Membership of the HEA
- Membership of a professional body

8. ASSESSMENT REGULATIONS

The Glasgow Caledonian University Assessment Regulations and associated policies apply to this programme. They can be accessed at the following web page:

<http://www.gcu.ac.uk/gaq/regulationsandpolicies/assessmentregulationsandassociatedpolicies/>

9. INDICATORS OF QUALITY AND STANDARDS

- Programme Board statements on modules
- Annual Programme Analysis
- Enhancement-led Internal Subject Reviews
- Enhancement-led Institutional Review
- External Examiner Reports
- Details of approval, development events and Cognate Area Reviews organised by the School/University
- QAA subject reviews
- External Assessor Reports
- Institutional accreditation e.g. BCS, IET.

Over/

10. INFORMATION ABOUT THE PROGRAMME

This specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. More detailed information on the learning outcomes, content and teaching, learning assessment methods of each module can be found in the individual module descriptors in the University's module catalogue. The accuracy of the information in this document is reviewed by the University and may be checked by the Quality Assurance Agency for Higher Education.

Key information about the programme can be found in:

- Programme Specification/Submission Document
- Programme Handbook
- Student Handbook
- University Web Site
- University Prospectus
- ISIS Module Catalogue
- Departmental publications

A curriculum map in Section 11 of this document shows how the outcomes are developed and assessed within the programme. This relates the modules from Section 4 to the outcomes in Section 3.

11 Curriculum Map For MSc/PgD/PgC Big Data Technologies

This map (Table 1) provides both a design aid to help academic staff identify where the programme outcomes (Table 2) are being developed and assessed within the course. It also provides a checklist for quality assurance purposes and could be used in approval, accreditation and external examining processes. This also helps students monitor their own learning, and their personal and professional development as the course progresses. The map shows only the main measurable learning outcomes that are assessed. There are additional learning outcomes (e.g. attitudes and behaviour) detailed in the module specifications which are developed but do not lend themselves to direct measurement.

Table 1

Code	Module	A1	A2	A3	A4	A5	A6	A7	A8	A9		B1	B2	B3	B4	B5		C1	C2	C3	C4	C5	C6
MMI223994	Big Data Landscape	✓			✓	✓						✓				✓							✓
MMI223997	Data Analytics	✓	✓	✓				✓				✓	✓	✓	✓			✓	✓	✓		✓	
MMI223996	Cloud Computing and Web Services	✓	✓	✓	✓	✓						✓	✓	✓	✓			✓	✓	✓	✓	✓	
MMI223999	IT Professional Issues And Project Methods						✓					✓	✓	✓	✓	✓					✓	✓	✓
MMI123998	Internet of Things	✓	✓	✓	✓	✓						✓	✓	✓	✓			✓	✓	✓	✓	✓	
MMI223995	Big Data Platforms	✓	✓	✓	✓				✓			✓	✓	✓	✓			✓	✓	✓	✓	✓	
MMG411931	Dissertation	✓	✓	✓	✓	✓	✓			✓		✓	✓	✓	✓	✓		✓	✓	✓	✓	✓	

Modules	Codes	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16	D17	D18
MMI223994	Big Data Landscape	✓	✓	✓	✓		✓					✓					✓	✓	
MMI223997	Data Analytics	✓	✓	✓	✓	✓	✓	✓	✓		✓				✓		✓		
MMI223996	Cloud Computing and Web Services	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓	✓			✓	
MMI223999	IT Professional Issues And Project Methods	✓	✓	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
MMI123998	Internet of Things	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓			✓			✓	
MMI223995	Big Data Platforms	✓	✓	✓	✓			✓	✓		✓				✓			✓	
MMG411931	Dissertation	✓	✓	✓	✓		✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Table 2 Programme Outcome Descriptions

	Knowledge and Understanding:
A1	Explain theoretical and practical concepts of Big Data technologies and their applications to real-world problems.
A2	Compare processes, methods, techniques, tools and technologies and their application within Big Data systems.
A3	Evaluate a range of technology options to determine the most appropriate within the development of Big Data applications.
A4	Understand the principles and processes involved in the architecture and development of Big Data systems.
A5	Evaluate advances in processes, methods, techniques & tools used to develop, evolve and support the operation of systems that utilise Big Data technologies.
A6	Demonstrate a comprehensive knowledge and understanding of the professional and ethical responsibilities for practitioners working in IT systems.
A7	Demonstrate a deep understanding of the concepts and practical application of Data Analytics for Big Data systems.
A8	Demonstrate a deep understanding of the concepts, architecture and practical application of Big Data Computing Platforms.
A9	Demonstrate deep knowledge and understanding of the concepts and application of Big Data Technologies by undertaking a Masters dissertation on a Big Data-centred topic.
	Intellectual Skills:
B1	Identify, analyse and solve practical problems.
B2	Plan, conduct and report on work.
B3	Evaluate alternative design and implementation solutions.
B4	Critically evaluate of work undertaken by themselves and others.
B5	Critically evaluate research and technical evidence from a variety of sources.
	Professional/ Practical Skills:
C1	Specify a set of requirements for a solution to meet the needs of stakeholders.
C2	Practically apply appropriate and transferrable skills for the design and testing of solutions within Big Data domains.
C3	Demonstrate effective use of a variety of techniques, components, tools and environments in the design and development of solutions within Big Data domains.
C4	Apply theory to practical and realistic career-related tasks.
C5	Demonstrate appropriate communication skills: written, oral and listening.

C6 Develop good working practice within a design/development team.

Transferable/Key Skills:

- D1 Specialist knowledge and application
- D2 Critical thinking and problem solving
- D3 Critical analysis
- D4 Communication skills, written, oral and listening
- D5 Numeracy
- D6 Effective information retrieval and research skills
- D7 Computer literacy
- D8 Self-confidence, self-discipline & self-reliance (independent working)
- D9 Awareness of strengths and weaknesses
- D10 Creativity, innovation & independent thinking
- D11 Knowledge of international affairs
- D12 Appreciating and desiring the need for continuing professional development
- D13 Reliability, integrity, honesty and ethical awareness
- D14 Ability to prioritise tasks and time management
- D15 Interpersonal skills, team working and leadership
- D16 Presentation skills
- D17 Commercial awareness
- D18 Entrepreneurial and risk-taking

12 Assessment Schedule

Table 4 Assessment Schedule

Module Code	Module Title	Credits	Trimester	Assessment Type	Weighting
MMI223994	Big Data Landscape	20	A	Coursework 1	40%
				Coursework 2	60%
MMI223997	Data Analytics	20	A	Exam (School)	50%
				Exam (School)	50%
MMI223999	IT Professional Issues and Project Methods	20	A	Coursework 1	30%
				Coursework 2	70%
MMI223996	Cloud Computing and Web Services	20	B	Coursework 1	50%
				Coursework 2	50%
MMI123998	Internet of Things	20	B	Coursework 1	50%
				Coursework 2	50%
MMI223995	Big Data Platforms	20	B	Coursework 1	50%
				Coursework 2	50%
MMG411931	Dissertation	60	C (for TRI A-start students) B (for TRI B-start students) A Part-time students, please discuss options with Programme Leader.	Coursework 1	80%
				Coursework 2	20%

13 Overall Schedule

Depending when students start their studies on the programme, there will be a specific schedule. Below we have schedules for students starting in Trimester A or Trimester B:

Table 5: Overall Schedule

	Trimesters				
Start Point	TRI A Sept 2018	TRI B Jan 2019	TRI C May 2019	TRI A Sept 2019	TRI B Jan 2020
TRI A Start	Taught Modules	Taught Modules	Dissertation		
TRI B Start		Taught Modules		Taught Modules	Dissertation

Therefore, a student starting in September 2018 should finish in the first week of September 2019. A student starting in January 2019 should finish in the first week of April 2020.