Programme Specification: Post Graduate Taught

For Academic Year 2024/25

1. Course Summary

Names of programme and award title(s)	MSc Business Analytics Postgraduate Diploma Business Analytics Postgraduate Certificate Business Analytics
Award type	Taught Masters
Mode of study	Full-time Part-time
Framework of Higher Education Qualification (FHEQ) level of final award	Level 7
Normal length of the programme	1 year full-time or 2 years part-time
Maximum period of registration	The normal length as specified above plus 3 years
Location of study	Keele Campus
Accreditation (if applicable)	Not applicable
Regulator	Office for Students (OfS)
Tuition Fees	**UK students:** Full-time fee for 2024/25 is £12,700 Part-time fee for 2024/25 is £7,000 per annum* **International students:** Full-time fee for 2024/25 is £21,900

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

The rapid development of the Internet and digital technologies has fuelled the demand to harness the power of the huge volume of available data now at an organisation's disposal. Employers need people who can manage and make sense of data, providing insight and recommendations to improve future business performance. This MSc in Business Analytics equips you with the knowledge, skills and techniques needed for embarking on a successful career in business analysis.

Business analysts not only need to understand data issues, analysis methods and results but also interpret the information within a business context to provide guidance and insights to improve efficiency, effectiveness and competitiveness. This course leverages leading expertise from both Keele Business School and the School of

Computing and Mathematics to help deepen your understanding of the technical and commercial implications of data-driven solutions. A strong focus on practical and applied working using cutting edge techniques will also ensure that you develop the appropriate set of technical and business skills that employers demand.

There is currently a recognised shortage of skills within the analytical reasoning, AI and business analysis. To help address this issue, this course is designed specifically for students from **all backgrounds** who want to develop and deepen their knowledge of how organisations function and the data analysis that underpins it. The computing and data analysis components of this course were 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.

The programme covers core subjects such as: Systems Design & Programming, Strategy and Information Management, Data Analytics & Databases, International Operations & Supply, Performance Management and AI & Machine Learning. These are supplemented by optional modules in areas such as: Financial Reporting, Human Resource Management, Marketing and Contemporary Challenges in Global Business.

Keele Business School has determined six fundamental elements namely digital, sustainability, ethics, innovation, enterprise and creativity and all of these have been embedded throughout the Programme, employing expertise from other Schools within the University as appropriate. A distinctive feature of this programme is the opportunity to select a particular route for the final 45 credits which best suits your ambitions and development needs. You will get the opportunity to select one of the following:

- Research dissertation - An in-depth independent piece of research on an area of interest to you.
- Consultancy project - 8-10 week live consultancy project working on a project within an organisation.
- Work placement - 8 weeks -12 months paid work placement.
- Entrepreneurship activity - 8 weeks -12 months based in our incubation hub and supported by our entrepreneurs in residence, working on your own business idea. (Students who require a Study Visa to undertake the programme in the UK, including Tier 4, may not able to select this pathway due to UK Home Office (UKVI) restrictions. If a student has existing immigration permission (visa) to be in the UK, they may be able to carry out entrepreneurship activities depending upon the specific conditions of their visa category.)

Overview

To meet employer demand, the number of skilled people in AI and data science needs to increase just to keep pace with demand. Industry sources regularly identify analytical reasoning, AI and business analysis within the top 10 skills companies needed. Business analysts guide businesses to improve their processes, products, services, software and hardware through data analysis - bridging the gap between IT and business to improve organisational performance, create efficiencies and add value to the business.

This MSc in Business Analytics focuses on developing your understanding of business, management, data analytics and data science within a global context, and develop the key hard and soft skills necessary to develop your career in this field. The course is grounded on both theory and practice and leverages the expertise within the Keele Business School and the School of Computing and Mathematics. This unique combination will enable you to gain both:

- a deeper insight into how businesses run their operations within today's challenging economy.
- develop the technical skills and knowhow to identify, manage and analyse the most appropriate data sources to evaluate and improve their performance.

A key feature of the course will be the focus on real-life business examples and, where possible, working to solve actual client problems. This will ensure you will gain a comprehensive knowledge and understanding of the various operational, human and environmental factors that influence performance within a business context and the different quantitative and qualitative research approaches you can use to analyse these. The course aims to looks at topics and issues right across the analysis process from options to collect real-time user data, the design of analytics programs and selecting the appropriate types of analysis for problems to summarising & visualising results and presenting the appropriate information to managers and stakeholders in a way they can understand and use in decision-making.

Your skills and knowledge will be rapidly built throughout the course. Initially, core topics such as: operations & supply and performance management will be delivered by the Business School and; systems design & programming and mathematics for A.I. and data science by the School of Computing and Mathematics. In the second semester, you will be given the option to look at more advanced business topics or explore specific areas of operation e.g. marketing & HRM more deeply, whilst covering more advanced data analytics and databases techniques and learning how to effectively present results. In the final semester, you will be given the opportunity to further develop and refine your own skills as part of a large project of your choosing. To facilitate this, there are a choice of routes available (dissertation, consultancy project, entrepreneur project and placement project), which are designed to provide you with the flexibility to develop a project that both fits with your current circumstances and overall goals.

You will graduate with a blended technical and commercial toolset that enables you to not only analyse organisations from different perspectives - strategically, functionally and operationally - but also come up with solutions that are technologically feasible and financially and functionally viable. Designed to quickly immerse students into the field of business analytics, this programme is suitable for almost anyone who is required to evaluate business performance, or aspects of it - whether you work in a for-profit business, government or non-profit organisation.

Given the potentially diverse backgrounds of students, the programme also includes options that allow you to tailor the content to suit your own experiences and interests more closely. For example, in the first semester, if you have existing computing skills you can choose to study more advanced topics on the mathematical theories behind AI and data science. In the second semester, you have a choice of modules that allow you to specialise within a specific area of business such as marketing, finance, human resource management and sustainability. Finally, there are different routes providing different options for completion depending on circumstance, background and goals.

3. Aims of the programme

The Business Analytics MSc programme aims to develop your knowledge, skills and understanding to set you apart from other graduates and embark/progress in a successful career in business analytics. By opening this course to people from any background, the programme also aims to address the current skills shortages in this area and provide analysts with diverse backgrounds that can help bring new and interesting perspectives and promote innovation.

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

- solve current real-world business and analysis problems by applying a range of theories and innovative approaches and techniques and develop the judgement to effectively choose between them;
- evaluate the role of analytics and information management within a variety of businesses and organisations and understand the issues in developing systems, processes and structures to capture data, analyse it and produce the information that organisations need to make effective decisions;
- understand and appreciate the social, cultural and ethical implications of analytics within organisation and society;
- have an open, questioning and critical approach to ideas and developments, demonstrate curiosity and initiative, independence of thought and the ability to appreciate a range of perspectives, whilst acknowledging the issues that complexity, uncertainty and rapidly changing global and local circumstance can create;
- develop the ability to collect, collate and analyse the data/information relevant to a problem and the communication skills to effectively articulate and disseminate findings, conclusions and suggestions;
- gain the ability and motivation to participate responsibly and collaboratively as an active citizen in the communities in which you live and work; appreciate and cherish diversity; comprehend the ties between local, national and global issues; appreciate the impact of your work on management, organisations and the world of work in general.

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)

Subject knowledge and understanding

Successful students will be able to:

- Understand the form and function of different types of organisations and the processes required to keep them operational. This will include functionality such as operations, supply chains and accounting and the option to look at broader issues around marketing, human resource management, finance and contemporary issues, such as sustainability.
- Explain the spectrum of factors (operational, human & environmental) that influence performance within a business context and the theory and research that underpin this material.
- Position the design, operation and quality management of operations within a theoretical and conceptual framework. Identify the benefits and limitations of performance management for a given scenario.
- Devise strategies or plans for monitoring and analysing the diverse array of factors that affect performance, including data collection, constructing & quality assuring datasets, performing different forms of analysis and producing materials to help summarise and clarify information required to inform performance and managerial decisions.

- Understand the role of accounting and finance in the operation and management of organisations and the pivotal role that financial analysis plays within all aspects of business analysis and management.
- Understand how to use information as a manager by applying managerial techniques in relevant situations. Use knowledge of decision-making techniques, their assumptions, and limitations in interpreting the implications of the results.
- Evaluate the role of strategy in the development of organisations and the theoretical, conceptual framework that underpins the development of strategy and the complex dependent relationship between strategy and data/information management in both implementing and monitoring strategic goals.
- Describe how Data Science operates within the context of data governance, data security, and communications. How Data Science can be applied to improve an organisation's processes, operations and outputs. How data and analysis may exhibit biases and prejudice. How ethics and compliance affect Data Science work, and the impact of international regulations (including the General Data Protection Regulation).
- Explain how data can be used systematically, through an awareness of key platforms for data and analysis in an organisation. This includes understanding of: a) Data processing and storage, including on-premise and cloud technologies; b) Database systems including relational, data warehousing & online analytical processing, "NoSQL" and real-time approaches; the pros and cons of each approach; c) Data-driven decision making and the good use of evidence and analytics in making choices and decisions.
- Assess the data landscape: how to critically analyse, interpret and evaluate complex information from diverse datasets. This includes: a) Sources of data including but not exclusive to files, operational systems, databases, web services, open data, government data, news and social media; b) Data formats, structures and data delivery methods including "unstructured" data; c) Common patterns in real-world data.
- Appraise the business context of AI and data science applications, including the ethical, psychological and social aspects of such applications.

Subject specific skills

Successful students will be able to:

- Identify and apply theories and frameworks to analyse organisations from different perspectives, strategically, functionally and operationally. Understand the difference in the types of data and analysis required to derive the information to complete these analyses.
- Identify and clarify problems an organisation faces and reformulate them into Data Science problems. Devise solutions and make decisions in context by seeking feedback from stakeholders. Apply scientific methods through experiment design, measurement, hypothesis testing and delivery of results. Collaborate with colleagues to gather requirements.
- Use analysis and models to inform and improve organisational outcomes, building models and validating results with statistical testing: perform statistical analysis, correlation vs causation, feature selection and engineering, machine learning, optimisation, and simulations, using the appropriate techniques for the problem.
- Analyse scenarios from a strategic planning perspective to enable an understanding of the role of data collection and analysis in planning, setting, and monitoring strategic objectives.
- Find, present, communicate and disseminate outputs effectively and with high impact through creative storytelling, tailoring the message for the audience. Use the best medium for each audience, such as technical writing, reporting and dashboards. Visualise data to tell compelling and actionable narratives. Make recommendations to decision makers to contribute towards the achievement of organisation goals.
- The ability to work with business data and apply appropriate techniques to deal with specific aspects of such data, such as privacy, security, collaboration, noise, high frequency, multiple correlations, high dimensionality and other relevant aspects.

Key or transferable skills (including employability skills)

Successful students will be able to:

- Demonstrate an inquisitive approach: the curiosity to explore new questions, opportunities, data, and techniques; tenacity to improve methods and maximise insights; and relentless creativity in their approach to solutions.
- Display empathy and positive engagement to enable working and collaborating in multi-disciplinary teams, championing and highlighting ethics and diversity in data work.
- Demonstrate an impartial, scientific, hypothesis-driven approach to work, rigorous data analysis methods, and integrity in presenting data and conclusions in a truthful and appropriate manner.
- Demonstrate a commitment to keeping up to date with current thinking and maintaining personal development, including collaborating with the business analytics community.
- Develop a critical understanding of the different research approaches required e.g. quantitative & qualitative, to analyse different types of phenomenon.

The Keele Graduate Attributes

The Keele Graduate Attributes are the qualities (skills, values and mindsets) which you will have the opportunity to develop during your time at Keele through both the formal curriculum and also through co- and extra-curricular activities (e.g., work experience, and engagement with the wider University community such as acting as ambassadors, volunteering, peer mentoring, student representation, membership and leadership of clubs and societies). Our Graduate Attributes consist of four themes: **academic expertise, professional skills, personal effectiveness, and social and ethical responsibility.** You will have opportunities to engage actively with the range of attributes throughout your time at Keele: through your academic studies, through self-assessing your own strengths, weaknesses, and development needs, and by setting personal development goals. You will have opportunities to discuss your progress in developing graduate attributes with, for example, Academic Mentors, to prepare for your future career and lives beyond Keele.

5. How is the programme taught?

The mode of study is either full-time or part-time. Entry point will be twice a year, September and January and modules will be taught to multiple cohorts simultaneously. The same teaching strategy is employed for all modes. Acquisition of knowledge and understanding is through subject specialist and guest lectures, small-group discussions and tutorials, individual consultation, guided reading and self-study, and through the research dissertation, consultancy project, placement or entrepreneurship module. Engagement with real world business is embedded throughout the programme, including assessment. These principal learning and teaching methods are assisted by a variety of other learning activities, such as group and individual presentations, individual feedback on assignments, the use of case studies and summative and formative assessment.

Learning and teaching methods used on the programme vary according to the subject matter and level of the module. They include the following:

- Lectures include a range of formative activities, including class discussions, group presentations and exercises, to check understanding and to assist students when preparing for summative assessment.
- Tutorials focus on a range of formative activities, including class discussions, group activities, group or individual presentations, case studies, question and answer sessions, to check understanding and to assist students when preparing for summative assessment.
- Labs include a range of formative practical activities from guided tasks to opened problem solving that help to develop and refine practical skills and gain experience with different technologies and tools.
- Case study workshops include class participation activities related to the presentations by academics and external business speakers.
- Essay guidance sessions are also provided for students to discuss their approach to the essay and to receive feedback before they submit.
- Web-based learning using the University's virtual learning environment (KLE). The KLE is used to give students easy access to a wide range of resources and research tools.
- Independent study based on directed reading from (e-)text books, research papers, academic journals and business reports.
- Working in groups on assessments and other activities, in order to development employment skills.

The programme also offers the choice of 45 compulsory credits between dissertation, consultancy project, placement or entrepreneurship.

- The **Research dissertation** requires independent thought and action and encourages the integration of course material with areas of individual expertise and interest. The context, data, analysis and conclusions of the study are to be presented for assessment in a dissertation. Completion of the dissertation is supported by an academic supervisor.
- **Consultancy Project**: the aim is to encourage and enable you to reflect on an applied research placement and to develop and apply your marketing skills within organisations. You will work for 8-10 weeks on a consultancy project for an organisation chosen by Keele Business School. The consultancy period plus a consultancy report, presentation, reflective piece and an organisation/company assessment will constitute the module's summative assessment.
- **Placement Project** - it will be your responsibility, with the support of the School's Placement Officer, to find and secure the placement which can last between 8 week-12 months. The placement should be a paid work placement at a suitable level for Master's study. During your time on the placement you will be required to complete an extended project on behalf of the organisation. The project report, presentation and a reflective piece and an organisation assessment will constitute the module's summative assessment.
- **Entrepreneurship Project[1]**: The aim is to allow you time and space to develop your own business idea. You will have access to facilities and expertise for a period of 8 week-12 months. During this time, you will be required to complete a portfolio of evidence, presentation to an external stakeholder to your project and a reflective piece which will constitute the module's summative assessment.

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[1]Students who require a Study Visa to undertake the programme in the UK (including Tier 4) are not able to select this pathway due to UK Home Office (UKVI) restrictions. If a student has existing Immigration permission (visa) to be in the UK, they may be able to carry out entrepreneurship activities depending upon the specific

conditions of their visa category.

Apart from these formal activities, students are also provided with regular opportunities to talk through particular areas of difficulty, and any special learning needs they may have, with their Academic Mentors or module lecturers on a one-to-one basis.

These learning and teaching methods enable students to achieve the learning outcomes of the programme in a variety of ways. For example:

- Lectures and independent study allow students to gain a systematic understanding of the theory & practice of business and data analysis.
- Seminars and tutorials provide opportunities for students to ask questions about, and suggest answers to problems in a responsible way, and to present their own ideas to members of staff and other students using an appropriate medium of communication.
- Seminars and tutorials encourage students to reflect on their own learning and take responsibility for its development by addressing areas of difficulty, perhaps by discussing them with their fellow students or by getting additional help from a member of staff.
- Labs provide the opportunities for student to develop and practice their practical skills, learn about new technologies and tools, use their skills to apply technologies to practical problems and present and discuss their solutions and ideas with members of staff and other students.
- Undertaking a dissertation with the support of an experienced and active researcher allows students to formulate relevant research questions and devise a feasible and methodologically sound strategy for answering them.
- Undertaking a consultancy project allows students the opportunity to gain work experience and apply the skills developed during the taught modules in a real-life business setting.
- Participating in the work placement gives students the opportunity to gain extended work experience, whilst applying the skills developed during the taught modules in a real-life business setting.
- The entrepreneurship project will enable students to develop their own business idea with the intention of building their own business.

6. Teaching Staff

The MSc Business Analytics course is delivered jointly by staff from the Keele Business School (KBS) and the School of Computing and Mathematics (SCM). Both Schools maintain a strong commitment to excellence and innovation in teaching and research. Most current permanent staff have PhDs or other higher degrees or professional qualifications. All staff members engage with continuing professional development as academic teachers. All established staff have substantial teaching experience and/or formal teaching qualifications. All probationary appointments receive an intensive training programme on Teaching in Higher Education. Dedicated postgraduate administrative support is also provided.

KBS staff have extensive teaching, research and work experience in their fields. Their specialist expertise spans topics such as: creative methods of engagement; the design and organisation of operations and supply networks; accounting and auditing; sustainability and; management practices.

Staff within the School of Computing and Mathematics conduct internationally-recognised research in multidisciplinary AI and Data Analytics. The School also has several collaborative projects with industry partners, for example, a Knowledge Transfer Partnership with the global automotive company, Bentley Motors Ltd, to develop an innovative data mining process that will allow Bentley to exploit the value hidden in the data it owns and collects.

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?

Keele University operates a module credit system, where each taught module on the MSc is worth 15 credits. This corresponds to 150 hours of study, which is normally broken down into taught contact hours, assessment preparation, class preparation and independent study. The programme design presumes that students attend all assigned teaching and contact times as advertised, devote adequate time to assignment preparation and supplementary readings.

Entry point will be twice a year, September and January and modules will be taught to multiple cohorts simultaneously. The programme lasts between 12 and 24 months (full-time) or 24 and 36 months (part-time) dependent upon the route chosen. There are eight taught modules (four per semester full-time, two per

semester part-time) and a research dissertation, consultancy project, work placement or entrepreneurship project.

The programme also includes a series of workshops run across the academic year (second academic year for part-time). These workshops will be offered as additional support sessions and run bi-weekly. Forming part of a structured programme, they will introduce research concepts, there will be guest lectures covering different areas of business e.g. HRM, Marketing, Accounting etc. and challenges related to these areas will be set, to help develop applied analytics skills.

Year	Compulsory	Optional	
		Min	Max
Level 7	120	60	60

Module Lists

Level 7

The summary of the year for the full-time mode is as follows.

For the September intake, students will be first taught all semester 1 modules, followed by the study of all semester 2 modules, and then the compulsory study of a dissertation or a consultancy project or a placement project or an entrepreneurship project in semester 3.

For the January intake, variations for the Jan intake are shown below.

Variations for the part-time mode are shown below.

Compulsory modules	Module Code	Credits	Period
Performance Management	ACC-40006	15	Semester 1
System Design & Programming	CSC-40044	15	Semester 1
Mathematics for AI and Data Science	CSC-40072	15	Semester 1
International Operations and Supply	MAN-40110	15	Semester 1
Data Analytics and Databases	CSC-40054	15	Semester 2
Strategy and Information Management	MAN-40036	15	Semester 2
Creativity and Personal Development	MAN-40058	15	Semester 2
Research Methods	MAN-40192	15	Semester 2-3

Optional modules	Module Code	Credits	Period
International Financial Reporting	ACC-40001	15	Semester 2
FinTech and Mobile Banking	FIN-40051	15	Semester 2
Strategic Human Resource Management	HRM-40044	15	Semester 2
Entrepreneurship	MAN-40018	15	Semester 2
Contemporary Challenges in Global Business	MAN-40118	15	Semester 2
Strategic Marketing in a Global Context	MAN-40124	15	Semester 2
International Marketing Communications	MAN-40130	15	Semester 2
Consultancy Project	MAN-40198	45	Semester 3
Placement Project	MAN-40200	45	Semester 3
Entrepreneurship Project	MAN-40202	45	Semester 3
Dissertation - Management	MAN-40204	45	Semester 3

Level 7 Module Rules

Computer programming skills and the compulsory module, System Design and Programming (CSC-40044)

Programming skills are a pre-requisite for the computing modules. To enable students without a computing or programming background to access data science courses, the module (System Design and Programming - CSC-40044) has been designed specifically to provide a rapid introduction to program design and development.

Availability of optional modules in Semester 2

The availability of optional modules will be determined by demand and staff availability. An option is chosen to bring the number of credits taken in Semester 2 up to 60.

Preparatory module options and the final project route.

After the taught modules in semesters 1 and 2, 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 undertake will be made together with the academic supervisors and will be based on student performance during the taught modules.

In Semester 3 (semester 3 of the 2nd year for part time students), students begin their final 45 credits project. Student will get the opportunity to select one of the following pathways:

- **Research dissertation** - An in-depth independent piece of research on an area of interest to them.
- **Consultancy projec**t - 8-10 week live consultancy project working on a project within an organisation.
- **Work placement** - 8 week-12 months paid work placement.
- **Entrepreneurship activity** - 8 week-12 months based in our incubation hub and supported by our entrepreneurs in residence, working on their own business idea. **Note: Students who require a Study Visa to undertake the programme in the UK, including Tier 4, may not able to select this pathway due to UK Home Office (UKVI) restrictions**. If a student has existing immigration permission (visa) to be in the UK, they may be able to carry out entrepreneurship activities depending upon the specific conditions of their visa category.

A key pre-requisite of undertaking these pathways is that the project, placement or business proposal must align with the programme and its learning outcomes, so a proposal must include elements of both business and analytics. Consideration of the appropriateness of a proposed project placement or business idea will form part of the discussion with the academic supervisor when making the decision on the most suitable pathway.

For the January starter mode:

Due to the block teaching, there is an implication in the module digest for the Jan starters in terms of module offering, although the module and the credits will remain the same.

With only the change in terms of one module offered during the summer semester and due to this change, the placement pathway option is not available for the Jan starter. I have shared the details below for reference.

Jan starter	
System Design & Programming CSC-40044	Sem 2 (in Jan)
Strategy and Information Management MAN-40036	Sem 2 (in Jan)
Data Analytics and Databases CSC-40054	Sem 3 (summer semester, in May)
Creativity and Personal Development MAN-40058	Sem 2
Research Methods MAN-40192	Sem 2-3
Pathway option	Sem 2
Optional Module: Performance Management ACC-40006 OR Business Intelligence and Data Visualisation - 15 credit - MAN-40391	Sem 1 (in Sept)
Advanced Data Analytics and Machine Learning - 30 credit - MAN-40389	Sem 1 (in Sept)
International Operations and Supply MAN-40110	Sem 1 (in Sept)

For the Part-time mode:

In Semester 1 of the first year (based on computing background) CSC40044 Systems Design & Programming **and** MAN-40110 International Operations and Supply are taken. CSC-40054 Data Analytics and Databases **and** MAN-40036 Strategy and Information Management are taken in Semester 2 of the first year. MAN-40192 Research Methods is taken in Semester 3 of the first year.

ACC-40006 Performance Management and CSC-40072 Mathematics for AI & Data Science are taken in Semester 1 of the second year. MAN-40058 Creativity and Personal Development and an option are taken in Semester 2 of the second year.

The summative 45-credit dissertation/project/placement is taken in Semester 3 of the second year.

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**

Subject Knowledge and Understanding	
Learning Outcome	**Module in which this is delivered**
Understand the form and function of different types of organisations and the processes required to keep them operational. This will include functionality such as operations, supply chains and accounting and the option to look at broader issues around marketing, human resource management, finance and contemporary issues, such as sustainability	International Financial Reporting - ACC-40001 System Design & Programming - CSC-40044 Strategic Human Resource Management - HRM-40044 International Operations and Supply - MAN-40110 Contemporary Challenges in Global Business - MAN-40118 Strategic Marketing in a Global Context - MAN-40124 International Marketing Communications - MAN-40130 Consultancy Project - MAN-40198 Placement Project - MAN-40200 Entrepreneurship Project - MAN-40202 Dissertation - Management - MAN-40204
Explain the spectrum of factors (operational, human & environmental) that influence performance within a business context and the theory and research that underpin this material.	International Financial Reporting - ACC-40001 System Design & Programming - CSC-40044 FinTech and Mobile Banking - FIN-40051 Strategic Human Resource Management - HRM-40044 Entrepreneurship - MAN-40018 International Operations and Supply - MAN-40110 Contemporary Challenges in Global Business - MAN-40118 Strategic Marketing in a Global Context - MAN-40124 International Marketing Communications - MAN-40130 Consultancy Project - MAN-40198 Placement Project - MAN-40200 Entrepreneurship Project - MAN-40202 Dissertation - Management - MAN-40204
Position the design, operation and quality management of operations within a theoretical and conceptual framework. Identify the benefits and limitations of performance management for a given scenario.	International Financial Reporting - ACC-40001 System Design & Programming - CSC-40044 Strategic Human Resource Management - HRM-40044 Entrepreneurship - MAN-40018 International Operations and Supply - MAN-40110 Contemporary Challenges in Global Business - MAN-40118 Strategic Marketing in a Global Context - MAN-40124 International Marketing Communications - MAN-40130 Consultancy Project - MAN-40198 Placement Project - MAN-40200 Entrepreneurship Project - MAN-40202 Dissertation - Management - MAN-40204
Understand how to use information as a manager by applying managerial techniques in relevant situations. Use knowledge of decision-making techniques, their assumptions, and limitations in interpreting the implications of the results.	International Financial Reporting - ACC-40001 System Design & Programming - CSC-40044 FinTech and Mobile Banking - FIN-40051 Entrepreneurship - MAN-40018 Strategy and Information Management - MAN-40036 International Operations and Supply - MAN-40110 Contemporary Challenges in Global Business - MAN-40118 Consultancy Project - MAN-40198 Placement Project - MAN-40200 Entrepreneurship Project - MAN-40202 Dissertation - Management - MAN-40204

Subject Knowledge and Understanding	
Learning Outcome	**Module in which this is delivered**
Evaluate the role of strategy in the development of organisations and the theoretical, conceptual framework that underpins the development of strategy and the complex dependent relationship between strategy and data/information management in both implementing and monitoring strategic goals.	International Financial Reporting - ACC-40001 System Design & Programming - CSC-40044 Mathematics for AI and Data Science - CSC-40072 Strategic Human Resource Management - HRM-40044 Strategy and Information Management - MAN-40036 International Operations and Supply - MAN-40110 Contemporary Challenges in Global Business - MAN-40118 Strategic Marketing in a Global Context - MAN-40124 Consultancy Project - MAN-40198 Placement Project - MAN-40200 Entrepreneurship Project - MAN-40202
Describe how Data Science operates within the context of data governance, data security, and communications. How Data Science can be applied to improve an organisation's processes, operations and outputs. How data and analysis may exhibit biases and prejudice. How ethics and compliance affect Data Science work, and the impact of international regulations (including the General Data Protection Regulation.)	System Design & Programming - CSC-40044 Data Analytics and Databases - CSC-40054 Mathematics for AI and Data Science - CSC-40072 FinTech and Mobile Banking - FIN-40051 Strategy and Information Management - MAN-40036 Consultancy Project - MAN-40198 Placement Project - MAN-40200 Entrepreneurship Project - MAN-40202 Dissertation - Management - MAN-40204
Explain how data can be used systematically, through an awareness of key platforms for data and analysis in an organisation. This includes understanding of: a) Data processing and storage, including on-premise and cloud technologies; b) Database systems including relational, data warehousing & online analytical processing, "NoSQL" and real-time approaches; the pros and cons of each approach; c) Data-driven decision making and the good use of evidence and analytics in making choices and decisions.	Data Analytics and Databases - CSC-40054 Mathematics for AI and Data Science - CSC-40072 FinTech and Mobile Banking - FIN-40051 Strategy and Information Management - MAN-40036 Consultancy Project - MAN-40198 Placement Project - MAN-40200 Entrepreneurship Project - MAN-40202 Dissertation - Management - MAN-40204
Assess the data landscape: how to critically analyse, interpret and evaluate complex information from diverse datasets. This includes: a) Sources of data including but not exclusive to files, operational systems, databases, web services, open data, government data, news and social media; b) Data formats, structures and data delivery methods including "unstructured" data; c) Common patterns in real-world data.	System Design & Programming - CSC-40044 Data Analytics and Databases - CSC-40054 FinTech and Mobile Banking - FIN-40051 Strategy and Information Management - MAN-40036 Consultancy Project - MAN-40198 Placement Project - MAN-40200 Entrepreneurship Project - MAN-40202 Dissertation - Management - MAN-40204
Appraise the business context of AI and data science applications, including the ethical, psychological and social aspects of such applications	Data Analytics and Databases - CSC-40054 Strategy and Information Management - MAN-40036 Consultancy Project - MAN-40198 Placement Project - MAN-40200 Entrepreneurship Project - MAN-40202 Dissertation - Management - MAN-40204
Devise strategies or plans for monitoring and analysing the diverse array of factors that affect performance, including data collection, constructing and quality assuring datasets, performing different forms of analysis and producing materials to help summarise and clarify information required to inform performance and managerial decisions.	System Design & Programming - CSC-40044 Data Analytics and Databases - CSC-40054 Mathematics for AI and Data Science - CSC-40072 Strategy and Information Management - MAN-40036 International Operations and Supply - MAN-40110 Consultancy Project - MAN-40198 Placement Project - MAN-40200 Entrepreneurship Project - MAN-40202 Dissertation - Management - MAN-40204

Subject Specific Skills	
Learning Outcome	**Module in which this is delivered**
The ability to identify and apply theories and frameworks to analyse organisations from different perspectives, strategically, functionally and operationally. Understand the difference in the types of data and analysis required to derive the information to complete these analyses.	International Financial Reporting - ACC-40001 System Design & Programming - CSC-40044 Data Analytics and Databases - CSC-40054 FinTech and Mobile Banking - FIN-40051 Entrepreneurship - MAN-40018 Strategy and Information Management - MAN-40036 International Operations and Supply - MAN-40110 Contemporary Challenges in Global Business - MAN-40118 Strategic Marketing in a Global Context - MAN-40124 International Marketing Communications - MAN-40130 Consultancy Project - MAN-40198 Placement Project - MAN-40200 Entrepreneurship Project - MAN-40202
Understand the role of accounting and finance in the operation and management of organisations and the pivotal role that financial analysis plays within all aspects of business analysis and management.	International Financial Reporting - ACC-40001 System Design & Programming - CSC-40044 FinTech and Mobile Banking - FIN-40051 International Operations and Supply - MAN-40110 Contemporary Challenges in Global Business - MAN-40118 Consultancy Project - MAN-40198 Placement Project - MAN-40200 Entrepreneurship Project - MAN-40202
Devise strategies or plans for monitoring and analysing the diverse array of factors that affect performance, including data collection, constructing & quality assuring datasets, performing different forms of analysis and producing materials to help summarise and clarify information required to inform performance and managerial decisions.	Data Analytics and Databases - CSC-40054 Mathematics for AI and Data Science - CSC-40072 Strategy and Information Management - MAN-40036 Consultancy Project - MAN-40198 Placement Project - MAN-40200 Entrepreneurship Project - MAN-40202 Dissertation - Management - MAN-40204
The ability to analyse scenarios from a strategic planning perspective to enable an understanding of the role of data collection and analysis in planning, setting, and monitoring strategic objectives.	International Financial Reporting - ACC-40001 System Design & Programming - CSC-40044 Data Analytics and Databases - CSC-40054 Strategy and Information Management - MAN-40036 International Operations and Supply - MAN-40110 Contemporary Challenges in Global Business - MAN-40118 Consultancy Project - MAN-40198 Placement Project - MAN-40200 Entrepreneurship Project - MAN-40202 Dissertation - Management - MAN-40204
The ability to identify and clarify problems an organisation faces, and reformulate them into Data Science problems. Devise solutions and make decisions in context by seeking feedback from stakeholders. Apply scientific methods through experiment design, measurement, hypothesis testing and delivery of results. Collaborate with colleagues to gather requirements.	System Design & Programming - CSC-40044 Data Analytics and Databases - CSC-40054 Mathematics for AI and Data Science - CSC-40072 Strategy and Information Management - MAN-40036 Consultancy Project - MAN-40198 Placement Project - MAN-40200 Entrepreneurship Project - MAN-40202 Dissertation - Management - MAN-40204
The ability to find, present, communicate and disseminate outputs effectively and with high impact through creative storytelling, tailoring the message for the audience. Use the best medium for each audience, such as technical writing, reporting and dashboards. Visualise data to tell compelling and actionable narratives. Make recommendations to decision makers to contribute towards the achievement of organisation goals.	System Design & Programming - CSC-40044 Data Analytics and Databases - CSC-40054 Mathematics for AI and Data Science - CSC-40072 Strategy and Information Management - MAN-40036 International Operations and Supply - MAN-40110 Consultancy Project - MAN-40198 Placement Project - MAN-40200 Entrepreneurship Project - MAN-40202 Dissertation - Management - MAN-40204

Subject Specific Skills	
Learning Outcome	**Module in which this is delivered**
The ability to work with business data and apply appropriate techniques to deal with specific aspects of such data, such as privacy, security, collaboration, noise, high frequency, multiple correlations, high dimensionality and other relevant aspects.	System Design & Programming - CSC-40044 Data Analytics and Databases - CSC-40054 Mathematics for AI and Data Science - CSC-40072 FinTech and Mobile Banking - FIN-40051 Strategy and Information Management - MAN-40036 International Operations and Supply - MAN-40110 Consultancy Project - MAN-40198 Placement Project - MAN-40200 Entrepreneurship Project - MAN-40202 Dissertation - Management - MAN-40204
Use analysis and models to inform and improve organisational outcomes, building models and validating results with statistical testing: perform statistical analysis, correlation vs causation, feature selection and engineering, machine learning, optimisation, and simulations, using the appropriate techniques for the problem.	System Design & Programming - CSC-40044 Data Analytics and Databases - CSC-40054 Mathematics for AI and Data Science - CSC-40072 Strategy and Information Management - MAN-40036

Key or Transferable Skills (graduate attributes)	
Learning Outcome	**Module in which this is delivered**
Develop a critical understanding of the different research approaches required e.g. quantitative & qualitative, to analyse different types of phenomenon.	System Design & Programming - CSC-40044 Mathematics for AI and Data Science - CSC-40072 Strategy and Information Management - MAN-40036 Creativity and Personal Development - MAN-40058 Consultancy Project - MAN-40198 Placement Project - MAN-40200 Entrepreneurship Project - MAN-40202 Dissertation - Management - MAN-40204
The development of an inquisitive approach: the curiosity to explore new questions, opportunities, data, and techniques; tenacity to improve methods and maximise insights; and relentless creativity in their approach to solutions.	System Design & Programming - CSC-40044 Mathematics for AI and Data Science - CSC-40072 FinTech and Mobile Banking - FIN-40051 Entrepreneurship - MAN-40018 Strategy and Information Management - MAN-40036 Creativity and Personal Development - MAN-40058 International Operations and Supply - MAN-40110 Consultancy Project - MAN-40198 Placement Project - MAN-40200 Entrepreneurship Project - MAN-40202 Dissertation - Management - MAN-40204
The development of empathy and positive engagement to enable working and collaborating in multi-disciplinary teams, championing and highlighting ethics and diversity in data work.	System Design & Programming - CSC-40044 Data Analytics and Databases - CSC-40054 Strategy and Information Management - MAN-40036 Creativity and Personal Development - MAN-40058 International Operations and Supply - MAN-40110 Consultancy Project - MAN-40198 Placement Project - MAN-40200 Entrepreneurship Project - MAN-40202 Dissertation - Management - MAN-40204
The development of an impartial, scientific, hypothesis-driven approach to work, rigorous data analysis methods, and integrity in presenting data and conclusions in a truthful and appropriate manner.	Data Analytics and Databases - CSC-40054 Mathematics for AI and Data Science - CSC-40072 Strategy and Information Management - MAN-40036 Creativity and Personal Development - MAN-40058 Consultancy Project - MAN-40198 Placement Project - MAN-40200 Entrepreneurship Project - MAN-40202 Dissertation - Management - MAN-40204
The development of a commitment to keeping up to date with current thinking and maintaining personal development, including collaborating with the business analytics community.	International Financial Reporting - ACC-40001 System Design & Programming - CSC-40044 Data Analytics and Databases - CSC-40054 Mathematics for AI and Data Science - CSC-40072 FinTech and Mobile Banking - FIN-40051 Entrepreneurship - MAN-40018 Strategy and Information Management - MAN-40036 Creativity and Personal Development - MAN-40058 International Operations and Supply - MAN-40110 Contemporary Challenges in Global Business - MAN-40118 Strategic Marketing in a Global Context - MAN-40124 International Marketing Communications - MAN-40130 Consultancy Project - MAN-40198 Placement Project - MAN-40200 Entrepreneurship Project - MAN-40202

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:

The function of the assessments listed is to test students' attainment of the learning outcomes. For example:

- **Essays** - including those based on case study material, test the quality and application of subject knowledge. In addition they allow students to demonstrate their ability to carry out basic bibliographic research and to communicate their ideas effectively in writing in an appropriate scholarly style using the Harvard, or recognised alternative, system of referencing.
- **Research reports** - test a student's knowledge of different research methodologies and the limits and provisional nature of knowledge. They also enable students to demonstrate their ability to formulate research questions and to answer them using an appropriate strategy.
- **Class tests** - 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.
- **Oral presentations** - assess a student's subject knowledge and understanding. They also test the ability to work effectively as members of a team, to communicate what they know orally and visually, and to reflect on these processes as part of their own personal development.
- **Unseen examinations** - in different formats test a student's core and in-depth knowledge as well as their ability to apply that knowledge responsibly in understanding problems. Examinations may consist of essay, short answer and/or multiple choice questions.
- **Dissertation** - tests a student's ability to work independently, to formulate a research topic and questions, to develop an appropriate research methodology, and to demonstrate mastery of the topic through a critical engagement with the literature, the quality of its presentation and the ability to draw together all the strands of a particular argument into the approach to the solution to an academic question.
- **Consultancy project** - tests a student's ability to work independently and with business clients on a project of benefit to the organisation. In doing so, the student will develop an appropriate research methodology and demonstrate mastery of the subject by applying to a business context. Through the final report and presentation, the student will demonstrate the ability to draw together all the strands of a particular argument into the approach to the solution to a business problem.
- **Work Placement report** - tests a student's ability to work independently and with business clients on a project of benefit to the organisation. In doing so, the student will develop an appropriate research methodology and demonstrate mastery of the subject by applying to a business context. Through the final report and presentation, the student will demonstrate the ability to draw together all the strands of a particular argument into the approach to the solution to a business problem.
- **Entrepreneurship portfolio** - tests a student's ability to present evidence of entrepreneurial activity and rigorous engagement with the activity designed to support the development of their new business venture.

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/

Recognition of Prior Learning (RPL) is considered on a case-by-case basis and those interested should contact the Programme Director. The University's guidelines on this can be found here: https://www.keele.ac.uk/qa/programmesandmodules/recognitionofpriorlearning/

12. How are students supported on the programme?

Support for student learning on the Programme is provided in the following ways:

- Module leaders are responsible for providing support for learning on the modules and in the tutorial groups for which they are responsible. They also give individual feedback on in-course assessments and more general feedback on examinations. Module leaders have set student consultation hours each week and students are encouraged to attend these hours to get specific help and support for their learning. Module leaders are available to see students at other times by appointment (usually via email).
- The Programme Director assumes responsibility for monitoring overall student progress through the subject, undertaking progress reviews and providing a general point of contact for students. The Programme Director may be consulted on a wide range of issues and, among other things, commonly may be approached to provide a reference for job and other applications. The Programme Director can act as a first point of contact for students on non-academic issues.
- Academic Mentors can also act as a first point of contact for students on non-academic issues which may affect their learning and can refer students to a range of specialist health, welfare and financial services co-ordinated by the University's Student Services Centre.
- Additional help for international students is also available from the Language Centre.

13. Learning Resources

Teaching on the MSc in Business Analytics will be delivered by both Keele Business School and the School of Computing and Mathematics. The Smart Innovation Hub is the state-of the-art home for this course and the Keele Business School. Consisting of lecture theatres, Think Lab, Business Lounge, Big-Data laboratory, Business Incubator, and Creative Playroom, the facility offers students opportunities to think, create and commercialise.

The School of Computing and Mathematics has 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 learning resources available to students on the Programme include:

- The extensive collection of business and management materials relevant to postgraduate study held in the University Library. Built up over an extensive period of delivering Business and Computing courses, these materials include books, journals and government publications. Much of this material is also accessible online to Keele students from anywhere in the world with a University username and password.
- The Keele Learning Environment (KLE) which provides easy access to a wide range of learning resources including lecture notes, electronic materials available in a repository maintained by the University Library and other resources - video, audio and text-based - accessible from external providers via the internet.

14. Other Learning Opportunities

A series of workshops will run across the academic year (second academic year for part-time). These workshops will be offered as additional support sessions and will run bi-weekly. These workshops will form part of a structured programme designed to explore links between the computing and business aspects of the programme. They will also introduce research concepts, guest lectures will covering different areas of business e.g. HRM, Marketing, Accounting etc. and challenges related to these areas will be set to develop applied analytics skills. The aim of these workshops is to develop the research and applied skills required for the dissertation/consultancy/placement/entrepreneurship project and subsequent employment.

The programme also includes activities such as team-building exercises and consultancy exercises involving real-life business problems. Students also have the opportunity to engage in short paid innovation projects with local businesses, to attend workshops and lectures from prominent external industrial speakers, to visit organisations and to engage in wider networking and collaboration events.

For the School of Computing and Mathematics, individual taught modules can also be accessed as CPD (Continuing Professional Development) modules. These modules are open to people to attend who are not

members of the student cohort studying on the programme.

15. Additional Costs

Whilst there are no anticipated additional costs for this programme, there may be travel costs associated with any visits you decide to make to your host company for the live project. However, it may be possible for the project to be conducted remotely via digital communications, for which you would not incur any travel costs.

These costs have been forecast by the University as accurately as possible but may be subject to change as a result of factors outside of our control (for example, increase in costs for external services). Forecast costs are reviewed on an annual basis to ensure they remain representative. Where additional costs are in direct control of the University we will ensure increases do not exceed 5%.

As to be expected there will be additional costs for inter-library loans and potential overdue library fines, print and graduation. We do not anticipate any further costs for this programme.

16. 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 Revalidation 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/

17. 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:

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: (Master's degrees in Business and Management, 2015)
https://www.qaa.ac.uk/docs/qaa/subject-benchmark-statements/sbs-business-and-management-15.pdf?sfvrsn=1997f681_16
c. Keele University Regulations and Guidance for Students and Staff: http://www.keele.ac.uk/regulations

Version History

This document

Date Approved: 26 September 2025

What's Changed

Changes affecting January 2025 intake, as consulted on with students

Previous documents

Version No	Year	Owner	Date Approved	Summary of and rationale for changes
1.1	2024/25	GEETIKA JAIN	04 April 2025	For the January starter mode: Due to the block teaching, there is an implication in the module digest for the Jan starters in terms of module offering, although the module and the credits will remain the same and minor change in the pathway option. With only the change in terms of one module offered during the summer semester and the placement opportunity will not be available for the Jan students.
1	2024/25	GEETIKA JAIN	10 June 2024	
1	2023/24	AIKATERINI KOSKINA	17 April 2023	
1	2022/23	GEETIKA JAIN	20 July 2022	
2	2021/22	ELAINE FERNELEY	25 May 2021	i) Main project (Dissertation or Consultancy Project or Work Placement or Entrepreneurship Activity) split into 45 credit version with a 15 credit Research Methods module. ii) Work Placement and Entrepreneurship Activity amended to 8 weeks - 12mths to cater for overseas students. iii) MAN-40058 Creativity and Personal Development is now a compulsory module.
1	2021/22	DAVID TRIGG	12 November 2020	