Programme Specification: Master of Science in Data Analytics and Management

> **NOTE:** This specification provides a concise summary of the main features of the course and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if s/he takes advantage of the learning opportunities that are provided. More detail on the specific learning outcomes, indicative content and the teaching, learning and assessment methods of each module can be found (1) at www.bcu.ac.uk, (2) in the Module Specifications and (3) in the Student Handbook.
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> The accuracy of the information contained in this document is reviewed by the University and may be checked within independent review processes undertaken by the Quality Assurance Agency.

Awarding Institution / Body:	**Birmingham City University**
Teaching Institution:	**Birmingham City University**
Interim Awards and Final Award:	**Postgraduate Certificate in Data Analytics and Management**
	Postgraduate Diploma in Data Analytics and Management
	Master of Science in Data Analytics and Management
Programme Titles:	**Postgraduate Certificate in Data Analytics and Management**
	Postgraduate Diploma in Data Analytics and Management
	Master of Science in Data Analytics and Management
Main fields of Study:	**Business and Management, Data Analytics**
Modes of Study:	**Full Time**
Language of Study:	**English**
UCAS Code:	**n/a**
JACS Code:	**n/a**

The following benchmark and other (external) reference points used to inform programme outcomes:

The QAA's award descriptors for Postgraduate level qualifications

The University's award descriptors for Postgraduate level qualifications

The QAA's Subject Benchmark statement for Business and Management (2007) http://www.qaa.ac.uk/academicinfrastructure/benchmark/statements/BusinessManagementMasters.asp

The Business modules are intended as a degree of *relative* specialisation within the context of a Type 2 Generalist (career entry) Masters degree following the QAA Benchmarks (*Masters awards in Business and Management)* and can be taken by students without previous degrees in the specialism.

Relevant subject benchmark statements and other external reference points used to inform programme outcomes:

•   The FHEQ Level Descriptor

•   QAA Benchmark statement for Computing

•   "Benchmarking Standards for Taught Masters Degrees in Computing", Committee of Professors and Heads of Computing (CPHC) and the British Computer Society, 2008.

Programme philosophy and aims

The Masters Programme is based on the philosophy that management education should provide a thorough grounding in the disciplines related to the functional aspects of management and their interaction with the contextual forces which impact upon organisations. This knowledge and understanding is then further contextualised to provide integrative strategic themes. The impact of globalisation of business in all disciplines is a coherent theme throughout the course.

The course encourages students to develop the skills and competences of future managers. To do this, students should be capable of making management decisions at both a strategic and at a tactical level, emphasising the complexity and dynamics of business and management and taking cognisance of the integrative nature of the various factors which impinge upon management decisions. The programme incorporates frameworks for reviewing, reflecting, analysing and critiquing existing individual and organisational practices. It also provides new knowledge and skills, enabling enhanced and more appropriate practices to be developed. The outcome of this process will be a critical appreciation, in order to make justified decisions; apply those decisions in a variety of contexts; communicating the decisions and make integrative links between disciplines and across organisations in a context of change.

A key aspect of the programme philosophy is that the learning experience integrates use of major commercial software – SAS (data mining and business intelligence), Oracle Databases including the issues associated with distributed data systems.

The programme is a joint collaboration with the Birmingham City Business School and School of Computing, Telecommunications and Networks (CTN) which have delivered a wide range of successful Masters courses in business and computing-related areas for many years and provide a stimulating and supportive learning environment.

The School CTN has close and well-established links with industry, ensuring that the programme remains up-to-date and relevant. The School also has close links with SAS the global leaders in Data Analytics and in December 2012 launched the SAS Student Academy. The School co-developed and currently runs the SAS Student Academy Programme which provides training to other educational establishments in SAS software.

The School CTN is located within the Faculty of Technology, Engineering and the Environment in the campus at Millennium Point in the heart of Birmingham. Millennium Point was built as a focus for science, technology and education within Birmingham and the wider region and provides an excellent context for exploring advanced technology.

Graduates from the programme will be equipped for careers in business intelligence and data analytics which includes the analysis and extraction of information from Big Data from any type of industry and business. Graduates will gain high level skills in business intelligence, data analytics, database technology as well as relevant knowledge. Students will also be able to proceed to a PhD programme.

The aims of the programmes are to:

- provide an intellectually challenging and vocationally relevant learning experience where learners can develop and demonstrate a critical knowledge and understanding of the theoretical concepts of business and management and their utility in improving business and management practice;
- provide learners with the opportunity to focus on particular aspects of business and management relevant to their backgrounds, interests and career aspirations in the context of an industry based specialism;
- facilitate the development and demonstration of learners' intellectual skills of information processing, analysis, synthesis, critical appraisal, creativity and innovation and the ability to manage and make decisions in situations of ambiguity and uncertainty;
- enable learners to develop business and management competences and research skills to enhance employability and support career advancement;
- deepen understanding and broaden an awareness of cultural issues through working within international student groups;
- produce future managers who are able to improve the quality of management decision-making, leadership and business practice across a range of organisations and in a variety of contexts.
- develop in-depth knowledge and skills in a range of advanced topics in Business Intelligence, with a particular emphasis on Data Analytics techniques and the issues associated with analysing distributed, multiple format stored data.
- develop skills of analysis, synthesis, critical appraisal and the ability to solve complex problems.

Intended learning outcomes and the means by which they are achieved and demonstrated:

Learning Outcomes

On successful completion of the programme the student should be able to:

- Apply knowledge and understanding of advanced theories, concepts and methods in relation to the functional aspects of business and management within their contextual environments and their application to management practice.
- Examine and evaluate strategic and tactical business decisions in a variety of contexts and within their specialist discipline, whilst appreciating the complexity and dynamics of business and management.
- Evaluate, choose and apply relevant theories, conceptual models and techniques to the solution of business and management problems.
- Exhibit the development and achievement of skills in relation to communication, organisation and working with others from diverse cultures and backgrounds in a professional manner.
- Demonstrate the ability to apply a range of academic and intellectual skills relevant to postgraduate level study including, information gathering, critical analysis, synthesis, problem solving, creativity, innovation and evaluation to aid business decision making.
- Conduct advanced research and enquiry to further their understanding of their chosen specialism and to inform business decision making.
- Articulate knowledge and understanding of relevant facts, concepts, theories and principles of data analytics.
- Critically evaluate and apply techniques and methods used in data analytics.

Learning teaching, and assessment methods used

The modules will utilise methods of learning, teaching and assessment which are appropriate to Masters level study, as set out in the FHEQ and outlined in principle in the

QAA Benchmark statement for Masters programmes in Business, such as a case study approach, group discussions, presentations, report writing etc. Although a proportion of the contact time will be spent in teaching, emphasis will also be placed upon the use of the group as a resource for learning. There will be group discussion of practical management situations and problems, making use of case studies, problem situations and scenarios and where relevant, the participants' own experiences. External academic and professional speakers from the Business world will be invited to address the students.

Theoretical concepts might typically be delivered in a lecture followed by smaller group seminars based on, for example, group based case study analysis. Short post lesson "fact" tests will be made available over Moodle (VLE). Discussion and interactive sessions will encourage students to critically examine key elements of business and management further. The business/management modules and the theoretical material will be delivered on a 2/3 (BCBS) to 1/3 basis (by appropriate faculty subject staff), with the exception of the 'Managing Finance' module, which will be wholly delivered by BCBS. A lecture/seminar slot will be delivered by the business school, this content will then be put into the subject context in a one hour seminar delivered by the subject faculty. Case studies and course materials from the sector will be used to enable students to understand, see the relevance and apply the general theory/content to their sector or specific subject area. In addition, students will be expected to research and incorporate material from their specialist area into their assessments and course work for the management modules.

Individual subject modules are wholly specific to the award title, delivered by the appropriate faculty and will entirely address the context and award subject title.

Topics for the dissertation / research project must reflect or be researched within the specialism and reflect the programme title. In addition, students are expected to undertake considerable independent study to prepare for and support class contact time.

Throughout the programme students, as part of their personal development, will be engaged in a comprehensive programme of Business Management Skills Development which will offer students ample opportunities to improve their transferable skills, in addition, to the development of their management research skills.
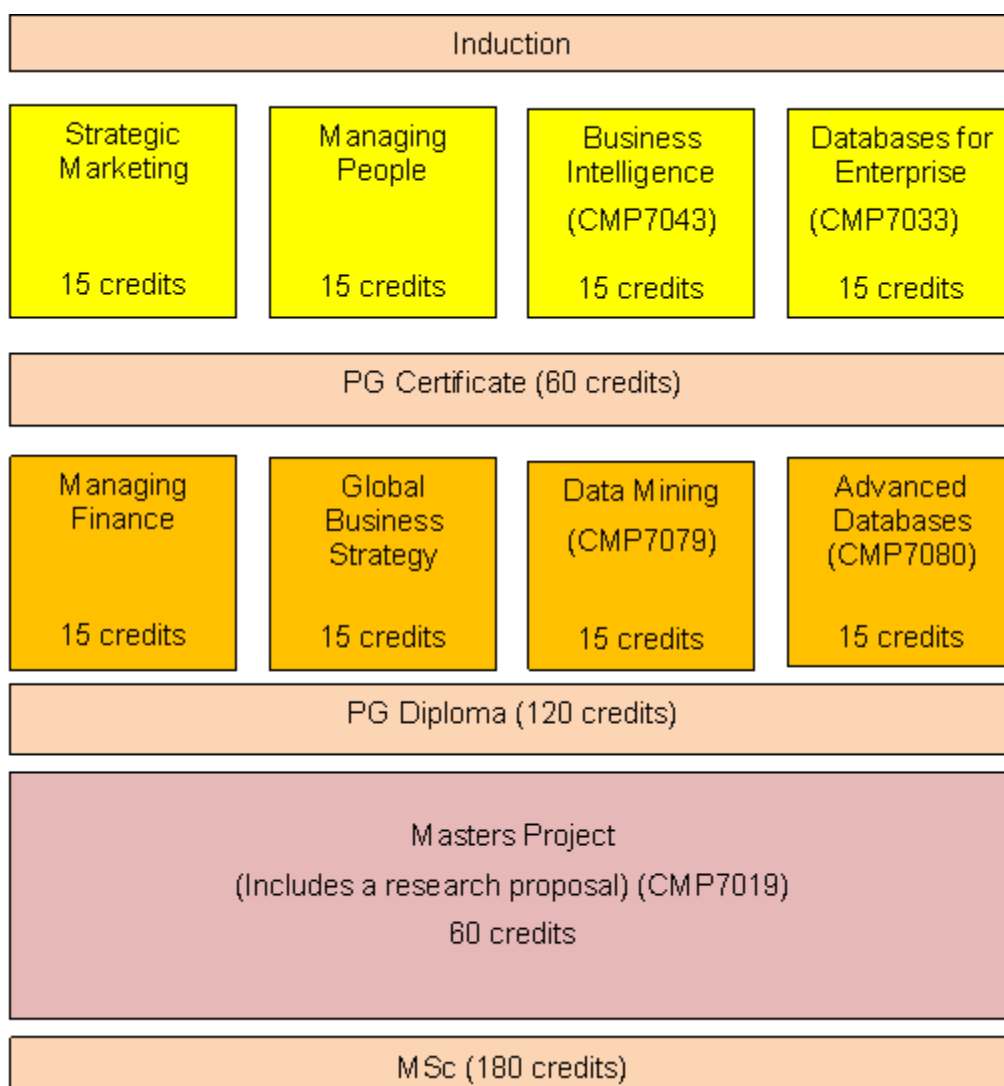
Assessment on the programme is designed to be an integral part of the learning process for students and to enhance and confirm their knowledge and practice. Formative feedback will be provided to students through a combination of self-reflection, peer group and tutor feedback. Summative assessments will provide a measure of the extent to which students have achieved the learning outcomes of the modules. Assessment within the modules will take various forms including: coursework assignments, reports, controlled assessment, examinations and the Dissertation. The student must be able to defend the dissertation through a viva, drawing on the skills developed in the Programme.

Analytical and problem solving skills are further developed using a range of appropriate 'real' and 'theoretical' case studies and problem-based learning scenarios.

Practical, including lab-based, sessions are used throughout the programme to develop practical skills and to place theory in a work-related context. Where appropriate, students use commercial development environments.

Programme structure and requirements, levels, modules, credits and awards

The structure of the course, the modules, levels and credit values, are shown in the diagram below.

Induction

Strategic Marketing 15 credits	Managing People 15 credits	Business Intelligence (CMP7043) 15 credits	Databases for Enterprise (CMP7033) 15 credits

PG Certificate (60 credits)

Managing Finance 15 credits	Global Business Strategy 15 credits	Data Mining (CMP7079) 15 credits	Advanced Databases (CMP7080) 15 credits

PG Diploma (120 credits)

Masters Project (Includes a research proposal) (CMP7019) 60 credits

MSc (180 credits)

Support for Learning including Personal Development Planning (PDP)

Students are encouraged to identify and, with guidance, to reflect on their own learning needs and are offered the following support as appropriate to meet those needs:

- A one-week induction programme dealing with orientation and the dissemination of essential information

- within modules, further support provided in relation to essay-writing, problem solving and examination techniques

- tuition on research methods appropriate to the topic of the programme either concurrent with the dissertation or prior to the commencement of the dissertation

- a Course Guide, containing information relating to the University, the course and the modules

- access to academic and administrative staff at reasonable times

- access to University learning and teaching resources, including the Centre for Academic Success, and a range of supported IT equipment, including postgraduate computer rooms and continuous support from Academic Development Tutors

- access to the services of the Faculty librarians

- assistance and support for learning skills provided centrally by the University

- access to the University's Student Services, including those offered by the careers service, financial advisors, medical centre, disability service, crèche, counselling service and chaplaincy

Criteria for admission

Candidates must satisfy the general admission requirements of the programme. The current admission requirements can be found under the 'Entry Requirements' tab of the web page for this course.

Methods for evaluation and enhancement of quality and standards including listening and responding to views of students

Committees:
- Boards of Study
- Examination Board
- Faculty Academic Standards and Quality Enhancement Committee
- Faculty Learning and Teaching and Student Experience Committee
- Faculty Board
- Senate

Mechanisms for review and evaluation:
- Individual module evaluation by students, staff and, where appropriate, stakeholders
- Regular review of VLE content and usage
- Review of teaching support (texts, cases etc)
- Annual review of modules by module leaders
- Annual course evaluation reports and action plans
- Annual monitoring process
- Peer observation of teaching
- Individual performance reviews
- External examiners' comments and formal reports
- Student representatives' feedback to Boards of Studies
- Consideration of the minutes of Boards of Studies by Academic Standards and Quality Enhancement Committee
- Approval and review and re-approval events
- National Student Survey
- Student Experience Survey
- Course development day