Programme Specification

Business Analytics & Management Sciences (Part Time) (2020-21)

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 s/he takes full advantage of the learning opportunities that are provided.

Awarding Institution	University of Southampton
Teaching Institution	University of Southampton
Mode of Study	Part-time
Duration in years	2
Accreditation details	Association to Advance Collegiate Schools of Business (AACSB)
Final award	Master of Science (MSc)
Name of Award	Business Analytics & Management Sciences (Part Time)
Interim Exit awards	Postgraduate Certificate Postgraduate Diploma
FHEQ level of final award	Level 7
UCAS code	
Programme Code	3667
QAA Subject Benchmark or other external reference	General Business And Management 2007
Programme Lead	Bhakti Onggo
Pathway Lead	

Programme Overview

Brief outline of the programme

Today's businesses are eagerly looking for those with analytical skills to be able to draw insights out of the huge volumes of data now available. The MSc Business Analytics and Management Sciences (BAMS) offers just such applicable skills. The programme is delivered through Southampton Business School and it is part of the Centre for Operational Research, Management Sciences and Information Systems (CORMSIS), which is a world-leading Operational Research/Management Science group. It has consistently among the top 50 in the world for Statistics and Operations Research (QS World Rankings 2019 and 2020). Furthermore, the programme has the special feature of two types of project. The external project is competitive and may be undertaken in a wide variety of organisations, offering excellent career-building experiences. The internal project offers the opportunity to work closely with the top academics in the area.

The programme is accredited by the Association to Advance Collegiate Schools of Business (AACSB), which is an internationally recognised award of excellence in business education.

Your contact hours will vary depending on your module/option choices. Full information about contact hours is provided in individual module profiles.

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Learning and teaching
Your understanding of the subjects covered and your ability to use the knowledge and skills gained will be enhanced through a variety of methods and strategies. Some of the key learning approaches that you will experience as a student in the School will include:

Group work: Group work provides you with the opportunity to meet and learn to work with many different people through these activities. This is recognised as vital in your development when looking forward to a management role in your future career.

Case-studies: Throughout the MSc Business Analytics and Management Sciences masters degree programme you will be presented with many different business case-studies that reflect the reality of decision-making and problem-solving activities in today's business environment. The case studies are selected to reflect the specific needs of your programme.

Assessment
Assessment of achievement of the intended learning outcomes takes a variety of forms: coursework, examinations and a dissertation. As with all our programmes formal examinations for the Business Analytics and Management Sciences masters degree take place in January and May/June.

Special Features of the programme

The programme is delivered through Southampton Business School and it is part of the Centre for Operational Research, Management Sciences and Information Systems (CORMSIS), which is a world-leading Operational Research/Management Science group. It has consistently among the top 50 in the world for Statistics and Operations Research (QS World Rankings 2019 and 2020). It means that students taking MSc in BAMS have the option to take modules offered by Southampton Business School and the School of Mathematical Sciences. Modules offered by Southampton Business School start with mnemonic MANG and those of Mathematical Sciences start with mnemonic MATH. Furthermore, CORMSIS runs employability related events and trainings for students taking a CORMSIS MSc programme including MSc in BAMS.

In addition to the scheduled compulsory and optional modules of the programme, students benefit from access to industrial managers' insight and support via CORMSIS. This includes attendance of practitioner talks organised at the University and the opportunity to attend relevant job fairs in analytics. Details of these specific additional features of the programme vary from year on year.

A special feature of the programme is that you can choose either the external summer project which may be undertaken with a business or other external organisation, or the internal dissertation project.

The external summer projects offer excellent career-building experience. The external summer projects are assigned on a competitive basis. The competition is based on the average marks obtained in all the modules taken in the first semester as well as the performance in interviews with sponsor organisations. These projects will be undertaken during the summer months after completion of the taught component. The set of available projects is typically announced during the second semester, eligible students will be invited to shortlist their preferred projects. After a successful interview with a sponsor organisation, a student will have then the opportunity to undertake research around a specific problem encountered in this organisation in close collaboration with this organisation and under supervision of an academic of the University, and subsequently write the dissertation on this research project and its outcome.

The internal dissertation project offers the opportunity to work closely with the top academics in the area. A student can take a topic proposed by the academic staff, propose their own research topic and work on their chosen topic under the direction of an academic supervisor, or organise their own placement in consultation with the University. The internal dissertation project provides an alternative to students who prefer to do their projects on campus, or if the requirements for an external project are not met. Students interested in pursuing a PhD degree are encouraged to take an internal project that can be developed into a strong research proposal.

Please note: As a research-led University, we undertake a continuous review of our programmes to ensure quality enhancement and to manage our resources. As a result, this programme may be revised during a student's period of registration; however, any revision will be balanced against the requirement that the student should receive the educational service expected. Please read our Disclaimer to see why, when and how changes may be made to a student's programme.

Programmes and major changes to programmes are approved through the University's programme validation process which is described in the University's Quality handbook.

Educational Aims of the Programme

This programme is designed to provide training and education in the application of the concepts, techniques, methods and approaches of business analytics and management sciences in practical organisational contexts. The aims of the programme are to:

· meet the needs of business and industry for numerate graduates with a broad spectrum of skills, ranging from technical mathematical modelling skills to more "people-based" management skills such as communication skills and teamwork.
· provide a broad and practical training in the application of the concepts, techniques, methods and approaches of business analytics and management science in organisational and managerial contexts.
· give you an appreciation and understanding of the methods of business analytics and management science research, sufficient to serve as a basis for undertaking further research in the discipline.

Programme Learning Outcomes

Knowledge and Understanding

On successful completion of this programme you will have knowledge and understanding of:

A1. the practical skills and techniques that are required for the effective application of business analytics and management sciences;
A2. the skills required to critically evaluate business and management problems, select and use the most appropriate business analytics and management science tool or technique for approaching a particular problem, and then reflect upon your selected approach;
A3. How to approach business analytics and management science practice in a manner characterised by a systemic view, a capability to deal with "soft" features of problems, and the skills required to adopt mathematical modelling where appropriate.

Teaching and Learning Methods

You will gain an understanding and knowledge of the techniques and approaches of business analytics and management science through a mixture of lectures, discussions, individual and group practical exercises, workshops, computer classes, case studies, seminars, reading, and assessed coursework. In particular, lectures, seminars and discussions will give understanding of practical BA/MS skills and give a systemic or "soft" viewpoint of problems. Further discussions, case studies, group work and individual reading and coursework will develop the ability to evaluate problems, use appropriate BA/MS skills including mathematical modelling and "soft skills". Knowledge and understanding of practical IT skills will be developed through lectures and computer workshops, as well as coursework.

Assessment Methods

Every module is assessed, typically by a combination of examination and coursework, although some modules are examined by examination or coursework alone. These means of assessment will be used to evaluate understanding of BAMS skills and the ability to critically evaluate and apply appropriate skills and techniques, whether 'soft' or 'hard', i.e. mathematical. Most assessments are individual, although some modules have a group work element. Group work will be assessed on practical and critical skills developed using appropriate BAMS approaches. Some modules (e.g. Simulation) have a practical

computer-based assignment, using commercial software.

Subject Specific Intellectual and Research Skills

On successful completion of this programme you will be able to:

B1. apply core BAMS techniques such as statistics, simulation, decision making, mathematical programming and consultancy skills;
B2. think analytically, reflectively, creatively and logically, drawing on useful approaches developed in a wide range of cognate disciplines. These disciplines include information systems, organisational behaviour, finance, and risk management.

Teaching and Learning Methods

You will gain understanding of the techniques of business analytics and management science through a mixture of lectures, individual and group practical exercises, workshops, computer classes, and private reading. Your reflective and creative skills are developed in most modules, through exercises, coursework assignments and discussion groups. Your logical and analytical skills are developed through problem-solving activities and workshops.

Assessment Methods

Your ability to apply the skills you have learnt, whether applying core BAMS techniques, critical thinking or analysis, is assessed by examinations and coursework. Some technical skills are assessed by practical computer- based work.

Transferable and Generic Skills

On successful completion of this programme you will be able to:

C1. collect and critically evaluate qualitative and quantitative information;
C2. communicate ideas and arguments fluently and effectively in a variety of written formats;
C3. communicate ideas and arguments orally and through formal presentations;
C4. work effectively in groups and recognise problems associated with group working;
C5. manage your time effectively;
C6. use computing and IT resources effectively;
C7. use library and other resources effectively, and apply bibliographical skills.

Teaching and Learning Methods

The project work, if based in an external organisation, typically involves liaising and contact with senior staff from the organisation. For internal projects, you need to communicate effectively with your supervisor. This enables you to develop your interpersonal and communications skills in a well regulated and structured way. For all projects, whether externally or internally based, significant report writing skills are developed in producing the final dissertation. At the end of an externally-based project you will make a formal presentation, usually to senior staff of the company or organisation, and you will be required write an executive summary suited to the company's needs.

Most modules develop some combination of the above key skills and all will build skills through coursework in critical evaluation, written communication in some format and time management. Some modules will develop oral communication and group working skills through group work and presentations. Some will in particular increase IT skills through computer workshops while others will bring familiarity with library facilities through assessed coursework. The Induction programme will introduce presentation skills and management report writing which will be further developed in other modules.

Assessment Methods

Some modules involve an assessed presentation to assess oral communication skills. Practical computer work will assess IT skills developed. Writing skills may be assessed either by individual or group work, often also assessing library and bibliographic skills. Many modules require the writing of a word-processed report in several different formats, which may be an academic essay or a management-style report. In all modules, strict hand-in deadlines will assess ability in time management.

Subject Specific Practical Skills

On successful completion of this programme you will be able to:

D1. gain relevant and up-to-date knowledge of BAMS techniques and skills,
D2. develop your modelling, technical and analytical skills, consultancy and business awareness skills.
D3. apply the methods, techniques and skills learned in the taught part of the programme to a real-life project based typically within an external organisation or based on research.

Teaching and Learning Methods

The programme content is regularly reviewed by the CORMSIS Business Advisory Board. This ensures that you will be taught topics held to be important by business and industry. New topics are regularly introduced to provide an up-to-date portfolio of techniques and skills. There is a strong emphasis on computing skills, using commercial software.

You will gain understanding, knowledge and practice of up-to-date BAMS skills through a mixture of lectures, seminars, case studies and computer workshops. Your modelling and analytical skills will be further developed through discussions, individual and group practical exercises, reading, and assessed coursework. In addition, you will be prepared for the project work by the Consultancy Skills module and additional lunchtime sessions run by the Industrial Liaison Officers in Semester 2. Your project will be supervised by a member of academic staff, who typically will have a research interest in the area of the project, as well as a representative of the organisation within which the project is located, if externally based.

Assessment Methods

In addition to the assessment associated with the modules on the taught part of the programme, you are required to write a 15,000-word dissertation on your project work.

You should be aware that as the PG Diploma is based on the attainment of credit rather than on passing specific modules you will be able to demonstrate the specific learning outcomes relating to the modules which you have passed.

Programme Structure

The programme structure table is below:

Information about pre and co-requisites is included in individual module profiles.

Where optional modules have been specified, the following is an indicative list of available optional modules, which are subject to change each academic year. Please note in some instances modules have limited spaces available.

Pathway

Part 1 (Year 1)
There are a range of compulsory and optional modules on this MSc in Business Analytics and Management Sciences. Compulsory modules provide a balanced grounding in the skills of these disciplines. Optional modules provide opportunities to broaden understanding or to specialise in specific areas, such as data mining or project management.

Programme details

The programme is closely linked with other CORMSIS MSc programmes. Some programmes are based in Mathematical Sciences. These CORMSIS programmes all share options, a Business Advisory Board, a common project scheme and many other additional features, both academic and social.

The programme is for Part-time students who take the taught modules over two nine-month periods and have 6 months to complete their dissertation.

In the following, for simplicity we shall refer only to full-time mode. The first nine months of the programme are in 'taught' mode. This period is divided into two 14-week semesters, each followed by examinations. In the following description, the term "module" is taken to mean a discrete component of the programme with its own learning outcomes and assessment requirements. All modules are at Master's level.

The MSc in Business Analytics and Management Sciences requires students to take of modules worth of 91.25 ECTS/182.5 CATS in total. The taught part of the programme consists of 61.25 ECTS/122.5 CATS points in total. The taught part consists of compulsory modules worth 42.5 ECTS/85 CATS and option modules worth 18.75ECTS/37.5 CATS, of which some option module are restricted. The core module, MANG6095 Dissertation, is worth 30 ECTS/60 CATS. Modules denoted MANG are provided by the Business School, and those denoted MATH by the OR Group in Mathematical Sciences. The options are shared with all CORMSIS MSc programmes as well as other Masters programmes within the Business School. Due to timetabling restrictions, not all combinations of these options may be available in any given year.

Programme enrichment

Seminars: Speakers from a wide range of organisations provide insight into how BA/MS/OR is used in their organisation, and highlight areas that are of topical interest.

Full/Half-day workshops: One or more participating companies will run half-day workshops covering either a key skill such as report writing or else involving a case study on problems arising in their industry.

Project skills sessions: Sessions will be provided on skills required for the summer project placements.

Teamworking session: There is a teamworking session provided in addition to the standard School Induction programme.

Assessment: A flexible and inclusive approach to learning and teaching will enable any student who meets the

entry requirements to access the curriculum and demonstrate achievement of all the intended learning outcomes, (The approach should minimise the need for individual alternations to be made for disabled students; however where reasonable individual adjustments are likely to be needed this should be specified).

Part 1 (Year 1) Compulsory (must take) Semester 1
Over the 2 years of your programme you must take all of the Compulsory modules.

Code	Module Title	ECTS	Type
MANG6045	Consultancy Skills	3.75	Compulsory
MANG6321	Introduction to Business Analytics and Management Sciences	3.75	Compulsory
MANG6046	Optimisation and Decision Modelling	7.5	Compulsory
MANG6003	Quantitative Methods	7.5	Compulsory
MANG6122	Simulation	7.5	Compulsory

Part 1 (Year 1) Compulsory (must take) Semester 2
Over the 2 years of your programme you must take all of the Compulsory modules.

Code	Module Title	ECTS	Type
MATH6005	Introduction to Python	3.75	Compulsory
MANG6211	Negotiation Skills	1.25	Compulsory
MANG6292	Operations Management	3.75	Compulsory
MANG6293	Project Management	3.75	Compulsory

Part 1 (Year 1) Optional Semester 1
Over the 2 years of the programme in your Option module selection you must choose either MANG6037 Systems Thinking or MANG6049 Problem Structuring and additional Option modules over both semesters totalling 15 ECTS/30 CATS.

Code	Module Title	ECTS	Type
MANG6229	Multivariate Statistics for Data Mining	3.75	Optional
MANG6049	Problem Structuring	3.75	Optional
MANG6037	Systems Thinking	3.75	Optional

Part 1 (Year 1) Optional Semester 2
Over the 2 years of the programme in your Option module selection you must choose either MANG6037 Systems Thinking or MANG6049 Problem Structuring in Semester 1 and additional Option modules over both semesters totalling 15 ECTS/30 CATS

Code	Module Title	ECTS	Type
MANG6169	Credit Risk and Banking Regulation	3.75	Optional
MANG6054	Credit Scoring and Data Mining	3.75	Optional
MANG6038	Data and Knowledge Management	7.5	Optional
MANG6144	Digital Business and Human-Computer Interaction	7.5	Optional
MATH6011	Forecasting	3.75	Optional
MANG6100	Game Theory for Business	3.75	Optional
MANG6229	Multivariate Statistics for Data Mining	3.75	Optional
MANG6143	Project Risk Management	7.5	Optional
MANG6231	Software for Data Analysis and Modelling	3.75	Optional

Part 1 (Year 2)

Part 1 (Year 2) Compulsory (must take) Semester 1
Over the 2 years of your programme you must take all of the Compulsory modules.

Code	Module Title	ECTS	Type

MANG6045	Consultancy Skills	3.75	Compulsory
MANG6321	Introduction to Business Analytics and Management Sciences	3.75	Compulsory
MANG6046	Optimisation and Decision Modelling	7.5	Compulsory
MANG6003	Quantitative Methods	7.5	Compulsory
MANG6122	Simulation	7.5	Compulsory

Part 1 (Year 2) Compulsory (must take) Semester 2
Over the 2 years of your programme you must take all of the Compulsory modules.

Code	Module Title	ECTS	Type
MATH6005	Introduction to Python	3.75	Compulsory
MANG6211	Negotiation Skills	1.25	Compulsory
MANG6292	Operations Management	3.75	Compulsory
MANG6293	Project Management	3.75	Compulsory

Part 1 (Year 2) Core (must take and pass)

Code	Module Title	ECTS	Type
MANG6095	Dissertation	30	Core

Part 1 (Year 2) Optional Semester 1
Over the 2 years of the programme in your Option module selection you must choose either MANG6037 Systems Thinking or MANG6049 Problem Structuring in Semester 1 and additional Option modules over both semesters totalling 15 ECTS/30 CATS

Code	Module Title	ECTS	Type
MANG6229	Multivariate Statistics for Data Mining	3.75	Optional
MANG6049	Problem Structuring	3.75	Optional
MANG6037	Systems Thinking	3.75	Optional

Part 1 (Year 2) Optional Semester 2
Over the 2 years of the programme in your Option module selection you must choose either MANG6037 Systems Thinking or MANG6049 Problem Structuring in Semester 1 and additional Option modules over both semesters totalling 15 ECTS/30 CATS

Code	Module Title	ECTS	Type
MATH6112	Computer-based statistical modelling	3.75	Optional
MANG6169	Credit Risk and Banking Regulation	3.75	Optional
MANG6054	Credit Scoring and Data Mining	3.75	Optional
MANG6038	Data and Knowledge Management	7.5	Optional
MANG6144	Digital Business and Human-Computer Interaction	7.5	Optional
MATH6011	Forecasting	3.75	Optional
MANG6100	Game Theory for Business	3.75	Optional
MANG6143	Project Risk Management	7.5	Optional
MANG6231	Software for Data Analysis and Modelling	3.75	Optional

Progression Requirements

The programme follows the University's regulations for ***Progression, Determination and Classification of Results : Undergraduate and Integrated Masters Programmes*** or ***Progression, Determination and Classification of Results: Postgraduate Master's Programmes.*** Any exemptions or variations to the University regulations, approved by AQSC are located in ***section VI of the University Calendar***.

Support for student learning

There are facilities and services to support your learning some of which are accessible to students across the University and some of which will be geared more particularly to students in your particular Faculty or discipline area.

The University provides:

- library resources, including e-books, on-line journals and databases, which are comprehensive and up-to-date; together with assistance from Library staff to enable you to make the best use of these resources
- high speed access to online electronic learning resources on the Internet from dedicated PC Workstations onsite and from your own devices; laptops, smartphones and tablet PCs via the Eduroam wireless network. There is a wide range of application software available from the Student Public Workstations.
- computer accounts which will connect you to a number of learning technologies for example, the Blackboard virtual learning environment (which facilitates online learning and access to specific learning resources)
- standard ICT tools such as Email, secure filestore and calendars.
- access to key information through the MySouthampton Student Mobile Portal which delivers timetables, Module information, Locations, Tutor details, Library account, bus timetables etc. while you are on the move.
- IT support through a comprehensive website, telephone and online ticketed support and a dedicated helpdesk in the Hartley Library.
- Enabling Services offering support services and resources via a triage model to access crisis management, mental health support and counselling. Support includes daily Drop In at Highfield campus at 13.00 – 15.00 (Monday, Wednesday and Friday out of term-time) or via on-line chat on weekdays from 14.00 – 16.00. Arrangements can also be made for meetings via Skype.
- assessment and support (including specialist IT support) facilities if you have a disability, long term health problem or Specific Learning Difficulty (e.g. dyslexia)
- the Student Services Centre (SSC) to assist you with a range of general enquiries including financial matters, accommodation, exams, graduation, student visas, ID cards
- Career and Employability services, advising on job search, applications, interviews, paid work, volunteering and internship opportunities and getting the most out of your extra-curricular activities alongside your degree programme when writing your CV.
- Other support that includes health services (GPs), chaplaincy (for all faiths) and 'out of hours' support for students in Halls and in the local community (18.00-08.00).
- A Centre for Language Study, providing assistance in the development of English language and study skills for non-native speakers.

The Students' Union provides

- an academic student representation system, consisting of Course Representatives, Academic Presidents, Faculty Officers and the Vice-President Education; SUSU provides training and support for all these representatives, whose role is to represent students' views to the University.
- opportunities for extracurricular activities and volunteering
- an Advice Centre offering free and confidential advice including support if you need to make an academic appeal
- Support for student peer-to-peer groups, such as Nightline.

Associated with your programme you will be able to access:

· a Personal Academic Tutor (usually the Programme Director) who acts as a mentor and is available to offer both academic and pastoral advice. The Business School has an International Student Advisor to help international students with any specific difficulties. The Language School provides additional support in the form of regular language tuition for students whose first language is not English;

· additional computing facilities available for MSc students in the Business School, over and above the standard facilities provided by the University Computing Services. The Library provides support in the form of study skills sessions, information sessions on accessing electronic databases, and a Librarian with special responsibility for the Business School.

Methods for evaluating the quality of teaching and learning

You will have the opportunity to have your say on the quality of the programme in the following ways:

- Completing student evaluation questionnaires for each module of the programme.
- Acting as a student representative on various committees, e.g. Staff/Student Liaison Committees, School Programmes Committee OR providing comments to your student representative to feedback on your behalf.
- Serving as a student representative on Faculty Scrutiny Groups for programme validation.
- Taking part in programme validation meetings by joining a panel of students to meet with the Faculty Scrutiny Group.

Further details on the University's quality assurance processes are given in the ***Quality handbook***.

Career Opportunities

Graduates of the MSc in Business Analytics and Management Sciences have exciting career prospects in a wide variety of business and government organisations, typically in roles involving data analytics. Recent graduates are pursuing careers at BT, British Airways, Deloitte and Nationwide.

External Examiner(s) for the programme

Name: Dr Antuela Tako - Loughborough University

Students must not contact External Examiner(s) directly, and external examiners have been advised to refer any such communications back to the University. Students should raise any general queries about the assessment and examination process for the programme with their Course Representative, for consideration through Staff: Student Liaison Committee in the first instance, and Student representatives on Staff: Student Liaison Committees will have the opportunity to consider external examiners' reports as part of the University's quality assurance process.

External examiners do not have a direct role in determining results for individual students, and students wishing to discuss their own performance in assessment should contact their Personal Academic Tutor in the first instance.

Please note: 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 they take full advantage of the learning opportunities that are provided. More detailed information can be found in the programme handbook.

Appendix 1:

Students are responsible for meeting the cost of essential textbooks, and of producing such essays, assignments, laboratory reports and dissertations as are required to fulfil the academic requirements for each programme of study. In addition to this, students registered for this programme also have to pay for:

Additional Costs

Type	Details
Approved Calculators	Candidates may use calculators in the examination room only as specified by the University and as permitted by the rubric of individual examination papers. The University approved models are Casio FX-570 and Casio FX-85GT Plus. These may be purchased from any source and no longer need to carry the University logo.
Optional Visits (e.g. museums, galleries)	Some modules may include optional visits t. You will normally be expected to cover the cost of travel and admission, unless otherwise specified in the module profile.
Printing and Photocopying Costs	In most cases, written coursework such as essays; projects; dissertations are submitted online and by hard copy. The costs of printing a hard copy for submission of such coursework will be the responsibility of the student. The cost of photocopying will also be the responsibility of the student. https://www.southampton.ac.uk/isolutions/students/printing
Stationery	You will be expected to provide your own day-to-day stationary items, e.g. pens, pencils, notebooks, etc). Any specialist stationery items will be specified under the Additional Costs tab of the relevant module profile.
Textbooks	Where a module specifies core texts these should generally be available on the reserve list in the library. However due to demand, students may prefer to buy their own copies. These can be purchased from any source. Some modules suggest reading texts as optional background reading. The library may hold copies of such texts, or alternatively you may wish to purchase your own copies. Although not essential reading, you may benefit from the additional reading materials for the module.

In some cases you'll be able to choose modules (which may have different costs associated with that module) which will change the overall cost of a programme to you. Details of such costs will be listed in the Module Profile. Please also ensure you read the section on additional costs in the University's Fees, Charges and Expenses Regulations in the University Calendar available at ***www.calendar.soton.ac.uk***.