1. GENERAL INFORMATION

Award	Programme Title	Duration	Credits	Mode of study
MSc	Business Analytics: Operational Research and Risk Analysis	Semesters 1, 2 & 3	180	Full time
PgD	Business Analytics: Operational Research and Risk Analysis	Semesters 1 & 2 Exit award only	120	Full time
PgC	Business Analytics: Operational Research and Risk Analysis	Semester 1 Exit award only	60	Full time

School	Manchester Business School
Faculty	Humanities
Awarding Institution	The University of Manchester
Programme Accreditation	Not relevant
Relevant QAA benchmark(s)	None applicable at Masters level. Programme reflects Masters level within the Framework for Higher Education Qualification

2. AIMS OF THE PROGRAMME

The programme aims to:

01.	Equip students with the intellectual and practical skills so that they can support analytical decision making and problem solving in organisations
02.	Provide students with a solid foundation for future doctoral work in: Analytics, Decision Sciences, Operational Research, Management Science, Management Statistics, Information Systems etc (MSc only)

3. INTENDED LEARNING OUTCOMES OF THE PROGRAMME

A. Knowledge & Understanding

Students should be able to:

A1.	Demonstrate a comprehensive understanding of the dimensions of management and decision making contexts and the theoretical basis of Analytics and applied Decision Sciences/Operational Research within these contexts
A2.	Understand and demonstrate critical awareness of appropriate scientific concepts, frameworks, methodologies and techniques for analytical support of decision making in a management context
A3.	Understand the practical application of Analytics in business and management

Learning & Teaching Processes ↓ ↑ **Assessment**

Interactive lecture sessions, which mix Powerpoint, Excel, white board presentations and practical workshops, with a variety of student exercises, including individual analysis, small group discussion work and whole class sessions (A1, A2, A3)		Unseen examinations (A1, A2, A3)
Peer learning in groups for coursework projects and case studies (A1, A2, A3)	→	Group presentations and reports (A1, A2, A3)
Written feedback on reports and essays (A1, A2 A3)		Individual reports, essays and presentations (A1, A2, A3)
Structured reading (A1, A2, A3)		
Working with academic supervisor for the dissertation (A1, A2, A3)		
Individual learning in coursework project work and for the dissertation (A1, A2, A3)		Dissertation (A1, A2, A3)

B. Intellectual Skills

Students should be able to:

B1.	Apply appropriate methodologies and techniques for supporting decision making
B2.	Identify appropriate scientific concepts, frameworks, methodologies and techniques for supporting decision making in an applied context
B3.	Undertake research and study in a logical, precise and rigorous manner (MSc only)
B4.	Critically evaluate published research in: Analytics, Decision Sciences, Operational Research, Management Science, Management Statistics, Information Systems etc

Learning & Teaching Processes		**Assessment**
Interactive lecture sessions, which mix Powerpoint, Excel, white board presentations and practical workshops, with a variety of student exercises, including individual analysis, small group discussion work and whole class sessions (B1, B2, B3, B4)		Unseen examinations (B1, B2, B3, B4)
Peer learning in groups for coursework projects and case studies (B1, B3)	→	Group presentations and reports (B1, B2, B3)
Written feedback on reports and essays (B1, B2 B3, B4)		Individual reports, essays and presentations (B1, B2, B3)
Structured reading (B1, B2, B3, B4)		
Working with academic supervisor for the dissertation (B1, B2, B3, B4)		
Individual learning in coursework project work and for the dissertation (B1, B2, B3, B4)		Dissertation (B1, B2, B3, B4)

C. Practical Skills

Students should be able to:

C1.	Design and undertake small scale research projects involving and critically reflecting on the use of a variety of research methods and their outputs.
C2.	Design, plan, implement, reflect and report on a substantial research project over a period of 5-6 months. (MSc only)

Learning & Teaching Processes	Assessment
Interactive lecture sessions, which mix Powerpoint, Excel, white board presentations and practical workshops, with a variety of student exercises, including individual analysis, small group discussion work and whole class sessions (C1)	Individual oral presentations (C1)
Peer learning in groups for coursework projects and case studies (C1)	Group presentations (C1)
Structured reading (C1, C2)	Group reports (C1)
Working with academic supervisor for the dissertation (C2)	
Individual learning in coursework project work and for the dissertation (C1, C2)	Dissertation (C2)

D. Transferable Skills and Personal Qualities

Students should be able to:

D1.	Communicate through written reports and essays (where appropriate)
D2.	Make oral presentations to specialists and non-specialists and participate effectively in such contexts
D3.	Demonstrate an ability to identify and respond to the views of others and work constructively in a team
D4.	Independently gather, sift, synthesize and organize material from a variety of sources (e.g. library and internet) and critically evaluate the extent to which it might be applied and contribute to current developments in the field.
D5.	Employ ITC including standard integrated office applications software (e.g. word processor, spreadsheet, presentation) and specialist add-ons or packages (e.g. Solver) to analyse and communicate the results of analysis.
D6.	Autonomously manage time and prioritise activities
D7.	Contribute to their personal professional development through planning, monitoring, peer learning, critical reflection and evaluation.

Learning & Teaching Processes	Assessment

Interactive lecture sessions, which mix Powerpoint, Excel, white board presentations and practical workshops, with a variety of student exercises, including individual analysis, small group discussion work and whole class sessions (D2, D4)		Unseen examinations (D1, D4, D6)
Peer learning in groups for coursework projects and case studies (D2, D3)	→	Group project presentations (D2, D3, D5, D6, D7)
Written feedback on reports and essays (D1)		Individual reports, essays and presentations (D1, D4, D5, D6)
Structured reading (D4, D6)		
Working with academic supervisor for the dissertation (D1)		
Individual learning in coursework and dissertation project work (D4, D5, D6, D7)		Dissertation (D1, D2, D4, D5, D6, D7)
Completion of individual PDP (D7)		

4. THE STRUCTURE OF THE PROGRAMME

Programme structure and credits	**Credits**
Semester 1 - students will take: TWO compulsory core courses AND TWO electives Semester 2 - students will take: TWO compulsory core courses TWO electives *Students must take one specialist elective Semester 3 - students will undertake and complete work on their dissertation project	
Semester 1 (compulsory core) : Mathematical Programming and Optimisation	**15**
Semester 1 (compulsory core) Applied Statistics and Business Forecasting	**15**
Semester 1 electives (choose two): Programming in Python for Business Analytics Decision Behaviour, Analysis and Support Strategic Project Organising Global Operations Management Strategic Supply Chain Management	**15**

Semester 2 (core compulsory) Risk, Performance and Decision Analysis	**15**
Semester 2 (core compulsory) Data Analytics for Business Decision Making	**15**
Semester 2 electives (choose 2): Simulation and Risk Analysis Knowledge Management and Digital Strategy Financial Data Analytics & AI in Finance	**15**
Semester 3 Dissertation	**60**

5. STUDENT INDUCTION, SUPPORT AND DEVELOPMENT

In the first week students will be given an intensive induction during which they will be:

- welcomed by the programme director, administrators and other relevant staff
- introduced to the University, the Faculty and MBS, provided with information about the campus.
- introduced to the library and careers service and given tours of these services and the campus.
- allocated access and introduced to ITC facilities including Blackboard and given an email account
- given the opportunity to review and revise basic key skills
- given the opportunity to explore and consider the available electives of the programme and potential dissertation projects.
- allocated a personal tutor
- given a programme handbook and explanation of the rules and regulations contained therein
- given full course outlines any relevant pre-reading and advice on the purchase of core texts
- informed about policies and procedures, points of contact, key dates, location of mail boxes, notice boards and students facilities and services
- introduced to all the appropriate MBS Decision Sciences academic and administrative staff

Frequently students will work in groups and will acquire support from peers and the group leader.

In lectures, workshops and whilst undertaking coursework projects the course coordinator, lecturer or workshop leader will support student learning.

Details of and any changes to the programme and course outlines, readings, cases and other course unit material will be available through Blackboard. Some course units will also use Blackboard forums for group work.

Students will be encouraged to work closely with their dissertation supervisor who will provide appropriate academic and pastoral support and guidance during the dissertation research period. Information on the requirements of the dissertation will be provided in hardcopy and via Blackboard.

The programme director will also be available to provide additional support if required.

Administrative support will be provided through the MBS PGT office.

Other forms of support (e.g. career, medical, special needs) will be provided through the University of Manchester.

6. CURRICULUM MAP OF COURSES AGAINST INTENDED LEARNING OUTCOMES FOR THE PROGRAMME

Course Title and Code		Knowledge & Understanding				Intellectual Skills				Practical Skills		Transferable Skills & Personal Qualities						
Code	**Course title**	**C/O**	**A1**	**A2**	**A3**	**B1**	**B2**	**B3**	**B4**	**C1**	**C2**	**D1**	**D2**	**D3**	**D4**	**D5**	**D6**	**D7**
BMAN60101	Mathematical Programming and Optimisation	C	A D	A D	A D	A D	A D	A D	A D	A D		A D	AD	AD	A D	A D	A D	
BMAN71791	Applied Statistics and Business Forecasting	C	A D	A D	A D	A D	A D	A D	A D	A D		A D	A D	A D	A D	A D	A D	
BMAN73942	Simulation and Risk Analysis	O	A D	A D	A D	A D	A D	A D	A D	A D		A D	A D	A D	A D	A D	A D	
BMAN60092	Risk, Performance and Decision Analysis	C	A D	A D	A D	A D	A D	A D	A D	A D		A D	A D	A D	A D	A D	A D	
BMAN60422	Data Analytics for Business Decision Making	C	A D	A D	A D	A D	A D	A D	A D	A D		A D	A D	A D	A D	A D	A D	
BMAN70081	Global Operations Management	O	A D	A D	A D	A D	A D	A D	AD	A D		A D			A D	A D		
BMAN70111	Strategic Supply Chain Management	O	A D	A D	A D	A D	A D	A D	AD			A D			A D	A D	A D	
BMAN73271	Decision Behaviour, Analysis and Support	O	A D	A D	A D	A D	A D	A D	AD	A D		A D	AD	AD	A D	A D	A D	
BMAN71652	Knowledge Management and Digital Strategy	O	A D	A D	A D	A D	A D	A D	AD	A D		A D	AD	AD	A D	A D	A D	
BMAN74222	Financial Data Analytics & AI in Finance	O	A D	A D	A D	A D	A D	A D	AD	A D		A D	AD	AD	A D	A D	A D	
BMAN73701	Programming in Python for Business Analytics	O	A D	A D	A D	A D	A D	A D	AD	A D		A D	AD	AD	A D	A D	A D	
BMAN70391	Strategic Project Organising	C	A D	A D	A D	A D	A D	A D	A D	A D		A D			A D	A D	A D	
BMAN73250	Dissertation	C	A D	A D	A D	A D	A D	A D	A D	A D	A D	A D	D	D	A D	A D	A D	D

Legend for cells

D = intended learning outcomes of the programme are taught or developed by students within this course
A = intended learning outcomes of the programme are assessed within this course

C = compulsory course
O = optional course

7. CRITERIA FOR ADMISSION

Candidates must be able to satisfy the general admissions criteria of the University and of the School in at least one of the following ways:

Good honours degree in a quantitative subject (e.g. Mathematics, Statistics, Physics, Engineering, Management Science, Economics) or from another disciple showing evidence of appropriate quantitative problem solving skills.

IELTS score 7 or TOFEL score 100 ITB

Two academic references

Personal Statement of interest and motivation

Completed application form

8. PROGRESSION AND ASSESSMENT REGULATIONS

The ordinances and regulations for the degrees of Masters, Postgraduate Diploma and Postgraduate Certificate will apply to this programme. Details of the ordinances and regulations can be found at:

http://www.maths.manchester.ac.uk/postgraduate/pgstudies/info/docs/regs-masters-current.pdf

For an MSc students are expected to achieve 50% or more on all taught courses and the dissertation. In addition, students will be expected to achieve at least 40% on each major assessment of any single core course (major assessments include any examination or coursework assignments that contribute to at least 25% of the course assessment). Students who fail to achieve at least 40% in a major assessment will be required to resubmit or retake the assessment. Only one resubmission or retake is permitted for each course assessment. The maximum mark to be awarded for resubmitted coursework or retaken examination will normally be 50% for the Masters degree and 40% for the Postgraduate Diploma.

Students may be registered initially for the Postgraduate Diploma or Postgraduate Certificate. After successfully completing the required assessments, they may be permitted to progress to the Masters or Postgraduate Diploma degrees respectively.

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