APPROVED

MSc Data Analytics

Course Title	Data Analytics				

Course Type	Postgraduate (taught)				

Course Code	J4BH029	No. of Semesters	3	Semesters Per Stage	3

FHEQ Level	Level 7	CATS Points	180

Effective Date	2023 September (September 2023)

Course Approval and Review Dates	
Date Types	Date
Validation	01/03/2014

Owning School	School of Architecture, Technology and Engineering

Course Leader	Sonia Timoteo Inacio

Subject Area	Mathematics

Subject Group	SG007 - Computing and Mathematics

HECoS Codes

The maximum number of external regulatory classifications Codes allowed is 3.

Code	Title	Percentage
100372	information technology	100%
	Total	100%

Professional Accreditation / Apprenticeship Standards
No Accrediting Body Recognition Assigned

UCAS Code	Code	Type

Course Collaborations
No collaborations listed

	The overall aim of the course is to provide students with a unique combination of mathematical and statistical data analytics skills. These skills will develop in tandem with the skills necessary within complex data specific projects, to oversee and manage; critically appraise; assess feasibility; risk analyse; present and see projects through to completion. This course therefore aims to meet head-on the statistical, computational and business analytical requirements of the burgeoning Data Science industry by producing graduates with well-rounded skills and expertise in specialist data analytics and associated software, quantitative methods and techniques, business intelligence and who are able to assess project viability

Course Aims	and manage large data projects successfully. More specifically, the course aims to meet industrial, commercial, academic and public sector requirements for graduate employment in an analytics capacity by producing graduates with the ability to derive information requirements relating to strategic imperatives, and who have the capacity to recommend analytic approaches suitable for specific data analysis and can design and test analytics solutions using a range of potential software platforms. • Equipping students with the mathematical and statistical knowledge specific to a data analytics environment and enhancing the student's ability to implement appropriate quantitative analyses to large data projects. • developing the students' ability to construct, present and defend the business and financial case for the Implementation of an analytics project. • Furnishing students with, and further developing their decision making and project management skills appropriate to an analytics environment.

Award Type	MSc

Integrated Foundation Year	Not Applicable

Placement Year	Optional

Awarding Body	University of Brighton

QAA Subject Benchmark statement (where applicable)	Mathematics, statistics and operational research benchmark and annex

Admissions Agency	Direct to School

Entry Requirements	https://www.brighton.ac.uk/studying-here/applying-to-brighton/ask-a-question/online-enquiry.aspx

Recognition of Prior Learning	Applicants can be eligible for Recognition of Prior Certified Learning and/or Prior Experiential Learning on this course, details of this can be found via the Admissions department

Maximum Period of Registration	6 Years

Expected Course Duration	1 Year

	Overview The course learning and teaching methods enable the aims and the learning outcomes to be achieved, taking into consideration the diverse learning styles and needs of a wide range of students' background knowledge and skills. Formal teaching will comprise a blend of lectures, tutorials/workshops and computer labs delivered weekly. The taught modules comprise 20 credits, which indicates that the total learning hours will be 200 hours per module of which approximately 20% will constitute the formally taught element. It is expected that independent study will make up the remainder. **Placement option** Students can opt for a placement module option within the MSc Data Analytics. The placement is expected to start shortly after the taught modules and the start date will be agreed with the employer. Students will be supported to find a suitable industrial placement, minimum of 24-weeks placement. Students have the opportunity to arrange a longer placement period, normally up to 38 weeks. This module aims to enable students to acquire employability skills, to develop analytics skills and to expand their knowledge in a professional environment.

Learning and Teaching Methods	The university will assist the student in obtaining a placement, but it is the student responsibility to secure a placement. However, a placement cannot be guaranteed as it may depend on the job market conditions and the student's previous skills and experience. If a placement is not secured, the course pathway is changed from 2 years (with placement option) to 1 year. **SAS Certification** The MSc in Data Analytics has developed a collaboration with industry-leading experts in statistics and analytics from the SAS Institute. SAS Certifications are among the most globally recognised credentials in the industry, being of significant value to students as it is one of the most demanded skills for data scientists in the local and international job market. The SAS certification require students to complete the optional module "Programming for Analytics with SAS" and to complete any SAS training required to fulfil the requirements of the SAS Certification. Students will be encouraged to attempt a SAS Certification exam. The SAS Institute is constantly reviewing/updating their courses, therefore requirements to the SAS certification programme might change in each academic year. **Research-informed teaching** The course is delivered by colleagues and guest lecturers who are research active. In addition, links with the industry allow students to be presented with real case scenarios and work experience in the field of statistics in the industry. Appropriate research papers are introduced and used alongside the teaching material and added to the reading list in the module area via StudentCentral. This encourage students to use research papers that will test their understanding of how the taught material is applied in real-world situations, which contributes to providing students with the capacity to conduct individual research and to go beyond the taught material. In the final project module MM708 students are often exposed to the research interests of the academic supervisor(s). **Education for Sustainable Development** There is currently a burgeoning accumulation of data in almost every walk of life, ranging from internet customer behavioural data to medical, economic and financial data as well as vast stockpiles of environmental data. The combination of complex data analytics and business intelligence skills inherent in the MSc Data Analytics provides an ideal and unique opportunity to embed and apply the principles of sustainability within the teaching and learning environment. With the abundance of available data as noted above, there is ample opportunity for the direct exploration and analysis of large data sets within the context of global sustainability, for example environmental, climate change and health data, as well as population dynamics; an area of much interest, which can be examined in the modules "Multivariate Analysis and Statistical Modelling", "Medical Statistics" and "Programming for Analytics with SAS". Additionally, the sustainability of business and financial environments and models as well as customer base analysis, maintenance and enhancement can be explored in the modules "Business Analytics Strategy & Practice" and "Forecasting and Credit Risk Analysis". Sustainable technological development is of vital importance if we are to anticipate and solve problems and issues arising in areas such as those outlined above. Students on the course will develop research skills and skills of critical thinking relevant to the principle of sustainability whilst analysing data sets selected for that purpose.
Assessment Strategy	All modules are assessed using the assessment criteria detailed on the individual module descriptions, which are linked to the learning outcomes for that module. M odules are mainly assessed by individual coursework assignments. This allows the student to schedule the assignment within their overall workload.

	The MSc Data Analytics course aims at training a data analyst for business environment and hence course assessments are aligned with this aim and include business-style presentations (ISM122, MM701) and written data analysis reports ranging from set exercises to practical problem exploration.
Course Expenses	You may have to pay additional costs during your studies. The cost of optional activities is not included in your tuition fee and you will need to meet this cost in addition to your fees. A summary of the costs that you may be expected to pay, and what is included in your fees, while studying a course in the School of Architecture, Technology and Engineering are listed here. • Travel and accommodation costs are included for all mandatory taught residential field trips, but you'll need to provide your own food and drink. • There will be opportunities to attend additional study trips or optional taught residential field trips throughout the school, but these are not required to pass your course. Normally, a contribution will be required towards expenses such as travel, entrance fees and accommodation. This will vary depending on where and how long the trip is, but you should budget around £1,500. • Where optional international field trips are offered, these are not required to pass your course. You should expect to budget £300–£500 for these, to cover flight, accommodation, food and entrance to museums. The total amount spent would be based on location and number of trips taken. • If you choose to take an optional paid placement, you'll be expected to cover your own travel, accommodation, food and drink. • Some students require specialist outdoor equipment and/or personal protective equipment (PPE) and should budget up to £150. • You will have access to computers and necessary software; however, many students choose to buy their own hardware, software and accessories. The amount spent will depend on your individual choices, but this expenditure is not essential to pass any of our courses. Find out what free software (**https://www.brighton.ac.uk/current-students/my-studies/libraries-and-computing/index.aspx**) is available from the University of Brighton. • Course books are available from the university, but you may wish to budget from £15 to £100 per year to buy your own copies and subscribe to design magazines. • In most cases coursework submissions are electronic but students may wish to print notes which would involve an extra cost. • Costs of up to £50 are included in the fees for students on engineering courses to pay for materials for their final year projects. On rare occasions where material costs exceed £50, they will need to be paid for by the student.
Attendance and Engagement Requirement	The University expects that students will fully and proactively engage with their studies and the learning and teaching activities within their course as outlined in the Attendance and Engagement Policy
Examination Board(s) (AEB /CEB)	Postgraduate Computing, Engineering and Mathematical Sciences AEB / CEB
Approved Exceptions to GEAR	
Date of Academic Board Approval	
	All students benefit from: University induction week; Student Contract; Course Handbook; Extensive Library Facilities; Email address; Welfare Service; Computer pool rooms; personal tutor for advice and guidance. Research Informed learning The course itself is specifically designed to nurture students' learning capabilities through research and aims to train students as critically reflective researchers and learners. The School is supported by an Industrial Advisory Board (IAB) for Mathematics and Computing. In the final stage of the course students will complete a project under the supervision of a member of teaching staff within many cases, mentoring contributions from IAB members. It is also envisaged that a number of IAB industry partners will contribute case studies for both the final projects and continuous assessment components.

Support and Information	The IAB comprises a number of Data Analytics specialists including, Tom Khabaza who was founding chairman of the Society of Data Miners and co-author of the data mining software Clementine and methodology CRISP-DM and was elemental in designing the course. Specific comments from IAB members include: "In the games industry the use of Data Analytics is becoming more and more important and we would love to be involved with students on final projects by either providing ideas and data for projects or by mentoring students." Andrew Eades, CEO, Relentless Software. It is envisaged that many of the projects will arise out of and become part of the research interests of teaching staff. Examples of MSc Data Analytics Course Team research include: Dr Sonia Inacio includes in her areas of research Statistical Inference in Linear Models and in the private sector Credit Scoring, Forecasting, Logistics Regression. Example publications are: - Inácio S, Oliveira M. M., Mexia J. T. (2015) Confidence Intervals for large non-centrality parameters, Discussiones Mathematicae Probability and Statistics. - Ferreira D, Ferreira SS, Nunes C, Inácio S (2013) Inducing pivot variables and non-centrality parameters in elliptical distributions. AIP Conf. Proc. 1558: 833 (http://dx.doi.org/10.1063/1.4825625) Dr Anestis Touloumis's area of research is medical statistics includes in his portfolio of publications: - Touloumis, A., Tavaré, S. and Marioni, J.C. (2015). Testing the Mean Matrix in High-Dimensional Transposable Data. Biometrics 71, pp: 157-166. - Piccirillo, S.G.M., Spiteri, I., Sottoriva, A., Touloumis, A., Ber, S., Heywood, R., Francis, N.J., Howarth, K.D., Collins, V.P., Venkitaraman, A.R., Curtis, C., Marioni, J.C., Tavaré, S., Watts, C. (2015). Contributions to Drug Resistance in Glioblastoma Derived from Malignant Cells in the Sub-ependymal Zone. Cancer Research 75, pp: 194-202. Dr Alexey Chernov conducts research in Machine Learning. A recent publication is: - Adamskiy, D., Koolen, W., Chernov, A., Vovk, V. A closer look at adaptive regret. Journal of Machine Learning Research, 17(23):1-21, 2016
Course Structure Details	The programme structure requires full time students to study three modules in Semester 1 (Oct-Jan), three modules in Semester 2 (Feb-May) totalling 60 credits per semester; at the end of the programme, full-time students are expected to undertake a 60-credit 12-week-long final project under academic supervision. For all students, Semester 1 modules are compulsory and in Semester 2 one module is compulsory and students choose two more modules from four optional modules*. *Individual optional modules may not run in a particular year. Full-time students can opt to undertake at least a 24 weeks industrial placement, and normally not more than 38 calendar weeks, , completing their final project after the job experience. The university will assist in finding a placement but cannot guarantee it. The course leader may permit to replace at most one of the optional modules by any level 7 university module aligned with the course aims and suitable for the student's background and career aspirations. Additionally, the course leader may permit to replace at most one of the compulsory modules by one of the optional modules or any level 7 university module aligned with the course aims and suitable for the student's background and career aspirations, if the course leader is satisfied that the student is sufficiently familiar with the contents of the compulsory module to be replaced (normally, through prior certificated or experiential learning though not necessarily at level 7) and that the course learning outcomes will be met. The teaching patterns of replacement level 7 university modules may vary, and it is the student's responsibility to ensure that their timetable is feasible.

	Specialist Resources:
	• It is anticipated that industry specialists will contribute to course delivery.
	• Specialist software will be provided to facilitate delivery. Examples will include SAS, R and SPSS Modeller.
	• Sample data sets will be created in collaboration with industrial advisors, to illustrate the application of analytics techniques on realistic large data sets.
Module Status Information	M = mandatory (modules which must be taken and passed to be eligible for the award),
	C = compulsory (modules which must be taken to be eligible for the award),
	O = optional (optional modules),
	A = additional (modules which must be taken to be eligible for an award accredited by a professional, statutory or regulatory body, including any non-credit bearing modules).
	Optional modules listed are indicative only and may be subject to change, depending on timetabling and staff availability.

Awards
Stage 1
Award Rules

Award Outcome/Classification   Yes

Classification Algorithm   Level 7 marks

Level of Award   Level 7

Permissible Awards	Title	Award Type	Award Credits
PGCert	Data Analytics	Intermediate Award	60
PGDip	Data Analytics	Intermediate Award	120
MSc	Data Analytics	Recruit to Award	180

Course Learning Outcomes
On successful completion of this course the student will be able to :

#	Description	Brighton Graduate Attributes	UN Sustainable Development Goals
CLO1	Critically evaluate the requirements for the solution to an analytics problem in terms of data structures and technologies and produce appropriate specifications and solutions.	LOT1	
CLO2	Develop a coherent plan for an analytics project and present and defend the associated business case.	LOT1	
CLO3	Design, test and implement relevant analyses using appropriate software tools including programming using an appropriate software platform.	LOT1	
CLO4	Manage and critically appraise the success of a data analytics project using appropriate project management techniques and software.	LOT1	
CLO5	Ensure the ethical and legal use of data collected and analysed according to established professional codes of practice.	LOT1	
CLO6	Apply a range of statistical and other analytical skills appropriate to a specified business problem that may derive from an unfamiliar environment.	LOT2	
CLO7	Specify, design, implement and test software to meet data specific project goals.	LOT2	
CLO8	Critically assess the potential for the application of contemporary techniques not formally taught.	LOT2	
CLO9	Function effectively as part of a project team and take responsibility for the management of functional aspects of a project	LOT2	
CLO10	Design and maintain both technical and application documentation to a high standard	LOT2	
CLO11	Evaluate and assess the success of a project and make recommendations for improvement	LOT2	

Brighton Graduate Attribute Key

      LOT1 - Knowledge and Theory

      LOT2 - Skills

      LOT3 - Behaviours

      BGA1 - A Critical Thinker

      BGA2 - An Engaged Global Citizen

      BGA3 - A Solution-Focused Innovator

      BGA4 - A Confident Communicator

      BGA5 - An Inclusive Collaborator

      BGA6 - A Resilient Self-Advocate

      BGA7 - A Creative and Confident User of Digital Technologies

	FHEQ Learning Outcomes Descriptors	Course Learning Outcomes AQF Level 7 Masters' degrees are awarded to students who have demonstrated / will be able to / have:
	a systematic understanding of knowledge, and a critical awareness of current problems and/or new insights, much of which is at, or informed by, the forefront of their academic discipline, field of study or area of professional practice	
	a comprehensive understanding of techniques applicable to their own research or advanced scholarship	

FHEQs	originality in the application of knowledge, together with a practical understanding of how established techniques of research and enquiry are used to create and interpret knowledge in the discipline	
	conceptual understanding that enables the student: − to evaluate critically current research and advanced scholarship in the discipline − to evaluate methodologies and develop critiques of them and, where appropriate, to propose new hypotheses.	
	deal with complex issues both systematically and creatively, make sound judgements in the absence of complete data, and communicate their conclusions clearly to specialist and non-specialist audiences	
	demonstrate self-direction and originality in tackling and solving problems, and act autonomously in planning and implementing tasks at a professional or equivalent level	
	continue to advance their knowledge and understanding, and to develop new skills to a high level	
	the qualities and transferable skills necessary for employment requiring: − the exercise of initiative and personal responsibility − decision-making in complex and unpredictable situations − the independent learning ability required for continuing professional development	

Structure Framework

Module Status	Title	Description	Credit Points		Modules	
			Min	Max	Min	Max
Compulsory	Stage 1, Level 7 Compulsory modules		80	80	4	4
Mandatory	Stage 1, Level 7 Mandatory Modules		60	60	1	1
Optional	Optional Sandwich Year	Optional 24 week placement option	0	0	1	1
Optional	Stage 1, Level 7 Optional Modules	Please choose TWO modules from the following list:	40	40	2	2

Course Structure Framework
Year 1 / Sandwich Year

Optional Sandwich Year

Optional 24 week placement option

Optional											
Structure Section	Code	Title	Owner	Allow Mapping	Version	Credits	Module Level	Face to Face	Written Exam	Coursework	Practical
Optional Sandwich Year	MM799	Data Analytics Industrial Placement **(Part 1 of 2)**	Sonia Timoteo Inacio	Yes	1.0	0	7	0.00	0.00	0.00	0.00

Year 1 / Sandwich Year - Sem 2

Optional											
Structure Section	Code	Title	Owner	Allow Mapping	Version	Credits	Module Level	Face to Face	Written Exam	Coursework	Practical
Optional Sandwich Year	MM799	Data Analytics Industrial Placement **(Part 2 of 2)**	Sonia Timoteo Inacio	Yes	1.0	0	7	0.00	0.00	0.00	0.00

Stage 1 / Semester 1

Stage 1, Level 7 Compulsory modules

Compulsory

Structure Section	Code	Title	Owner	Allow Mapping	Version	Credits	Module Level	Face to Face	Written Exam	Coursework	Practical
Stage 1, Level 7 Compulsory modules	ISM122	Data Management	Jennie Harding	Yes	1.0	20	7	3.00	0.00	100.00	0.00
Stage 1, Level 7 Compulsory modules	MM701	Business Analytics Strategy and Practice	Sonia Timoteo Inacio	Yes	1.0	20	7	3.00	0.00	70.00	30.00
Stage 1, Level 7 Compulsory modules	MM703	Introduction to Statistical Data Analysis with R	Alexey Chernov	Yes	1.0	20	7	2.77	0.00	100.00	0.00

Stage 1 / Semester 2

Stage 1, Level 7 Compulsory modules

Stage 1, Level 7 Optional Modules

Please choose TWO modules from the following list:

Compulsory

Structure Section	Code	Title	Owner	Allow Mapping	Version	Credits	Module Level	Face to Face	Written Exam	Coursework	Practical
Stage 1, Level 7 Compulsory modules	MM702	Data Mining and Knowledge Discovery in Data	Nikolaos Polatidis	Yes	1.0	20	7	3.00	0.00	100.00	0.00

Optional

Structure Section	Code	Title	Owner	Allow Mapping	Version	Credits	Module Level	Face to Face	Written Exam	Coursework	Practical
Stage 1, Level 7 Optional Modules	MM704	Forecasting and Credit Risk Analysis	Sonia Timoteo Inacio	Yes	1.0	20	7	3.00	0.00	100.00	0.00

Stage 1, Level 7 Optional Modules	MM705	Multivariate Analysis and Statistical Modelling	Alexey Chernov	Yes	1.0	20	7	3.00	0.00	100.00	0.00
Stage 1, Level 7 Optional Modules	MM709	Medical Statistics	Anestis Touloumis	Yes	1.0	20	7	3.00	0.00	100.00	0.00
Stage 1, Level 7 Optional Modules	MM711	Programming for Analytics with SAS	Sonia Timoteo Inacio	Yes	1.0	20	7	3.00	0.00	100.00	0.00

Stage 1 / Semester 3

Stage 1, Level 7 Mandatory Modules

Mandatory												
Structure Section	Code	Title		Owner	Allow Mapping	Version	Credits	Module Level	Face to Face	Written Exam	Coursework	Practical
Stage 1, Level 7 Mandatory Modules	MM708	Project		Sonia Timoteo Inacio	Yes	1.0	60	7	1.08	0.00	80.00	20.00

Course Structure Framework

Stage	Study Period	Module Status	Structure Section	Code	Title	Owner	Allow Mapping	Version	Credits	Module Level	Face to Face	Written Exam	Coursework	Practical
1	Sandwich Year	Optional	Optional Sandwich Year	MM799	Data Analytics Industrial Placement	Sonia Timoteo Inacio	Yes	1.0	0	7	0.00	0.00	0.00	0.00
1	Semester 1	Compulsory	Stage 1, Level 7 Compulsory modules	ISM122	Data Management	Jennie Harding	Yes	1.0	20	7	3.00	0.00	100.00	0.00
1	Semester 1	Compulsory	Stage 1, Level 7 Compulsory modules	MM701	Business Analytics Strategy and Practice	Sonia Timoteo Inacio	Yes	1.0	20	7	3.00	0.00	70.00	30.00
1	Semester 1	Compulsory	Stage 1, Level 7 Compulsory modules	MM703	Introduction to Statistical Data Analysis with R	Alexey Chernov	Yes	1.0	20	7	2.77	0.00	100.00	0.00
1	Semester 2	Compulsory	Stage 1, Level 7 Compulsory modules	MM702	Data Mining and Knowledge Discovery in Data	Nikolaos Polatidis	Yes	1.0	20	7	3.00	0.00	100.00	0.00
1	Semester 2	Optional	Stage 1, Level 7 Optional Modules	MM704	Forecasting and Credit Risk Analysis	Sonia Timoteo Inacio	Yes	1.0	20	7	3.00	0.00	100.00	0.00
	Semester		Stage 1, Level 7											

1	2	Optional	Optional Modules	MM705	Multivariate Analysis and Statistical Modelling	Alexey Chernov	Yes	1.0	20	7	3.00	0.00	100.00	0.00
1	Semester 2	Optional	Stage 1, Level 7 Optional Modules	MM709	Medical Statistics	Anestis Touloumis	Yes	1.0	20	7	3.00	0.00	100.00	0.00
1	Semester 2	Optional	Stage 1, Level 7 Optional Modules	MM711	Programming for Analytics with SAS	Sonia Timoteo Inacio	Yes	1.0	20	7	3.00	0.00	100.00	0.00
1	Semester 3	Mandatory	Stage 1, Level 7 Mandatory Modules	MM708	Project	Sonia Timoteo Inacio	Yes	1.0	60	7	1.08	0.00	80.00	20.00

LO Mapping

	Course learning outcome (CLO):										
	1	2	3	4	5	6	7	8	9	10	11
ISM122 Data Management (v1.0)											
LO1 Design Build and Test a database application, providing appropriate documentation.											
LO2 Analyse and critically evaluate the applicability of a database management system to an organisational environment.											
LO3 Evaluate current and future trends in data management and underlying technologies.											
LO4 Evaluate and discuss issues surrounding the ethical and legal use, quality and integrity of data.											
MM701 Business Analytics Strategy and Practice (v1.0)											
LO1 Analyse corporate goals and objectives to develop a business strategy and produce achievable plans.											
LO2 Understand analytical methodologies and describe how they are applied in practice.											
LO3 Be able to formulate analytical goals which help achieve business objectives, and understand how business knowledge is used to achieve these goals.											
LO4 Understand how analytical results are evaluated and deployed, and be able to formulate achievable evaluation and deployment plans for analytical projects.											
LO5 Understand and be able to apply concepts of leadership and change management in organisations.											
LO6 Understand how to work in teams, and how teams and their performance are managed.											
MM702 Data Mining and Knowledge Discovery in Data (v1.0)											
LO1 Assess raw input data, and pre-process it appropriately to provide suitable input for a range of data mining and machine learning methods.											
LO2 Understand, identify, apply and evaluate different machine learning algorithms.											
LO3 Design, implement and evaluate solutions to mine data, and extract knowledge, also addressing ethical aspects											
LO4 Select and apply different suitable summarisation, visualisation and other methods to communicate results to a range of audiences.											
MM703 Introduction to Statistical Data Analysis with R (v1.0)											
LO1 Analyse and solve problems that require selecting and applying appropriate probabilistic models and inferential statistical methods.											
LO2 Select and implement appropriate data structures and develop, test and document R programs for an applied data analysis problem.											
LO3 Complete a small-scale data analysis project using appropriate software tools and statistical methods.											
MM704 Forecasting and Credit Risk Analysis (v1.0)											
LO1 Investigate and assess the fundamental characteristics of a time series with a view to modelling and forecasting.											
LO2 Evaluate and implement a range of forecasting methods using a suitable software platform.											
LO3 Demonstrate knowledge of credit risk modelling current practices and applications in retail finance.											
LO4 Demonstrate an understanding how credit scoring and scorecards are used to assess credit risk.											
LO5 Carry out analysis to build and implement credit risk scorecards.											
MM705 Multivariate Analysis and Statistical Modelling (v1.0)											

LO1	Formalise research questions as statistical hypothesis and evaluate alternative experimental design and analysis techniques appropriate for particular statistical investigations.												
LO2	Select from and evaluate a range of multivariate data analysis and visualisation techniques depending on the available data.												
LO3	Implement and apply appropriate methods related to the learning outcomes above with the help of statistical software and draw statistically sound conclusions.												
LO4	Formulate research questions and choose appropriate data sources taking into account legal, ethical, societal and professional context.												
MM708 Project (v1.0)													
LO1	Synthesise material from taught modules to select and apply methods and techniques appropriate to the solution of a substantial analytics problem.												
LO2	Research the applicability of theories and methods not explicitly covered in taught modules.												
LO3	Identify a set of objectives for the project and apply project management principles and appropriate analytics methodologies to bring the project to completion.												
LO4	Produce project documentation to a high standard incorporating a business case justification and interpretation of results in terms of improved business /application knowledge.												
LO5	Evaluate the success of the project in relation to the defined objectives and defend resulting conclusions.												
LO6	Situate the project in the context of current research/benchmarking in the area.												
MM709 Medical Statistics (v1.0)													
LO1	Perform suitable statistical procedures for processing medical data using appropriate software.												
LO2	Assess agreement between different studies and critically evaluate their design.												
LO3	Carry out analysis and interpret the results for data from clinical trials with the help of appropriate statistical techniques.												
LO4	Demonstrate an understanding of the properties of survival data; carry out suitable analysis and interpret the results.												
LO5	Document statistical analysis of medical data and summarize the findings for a range of audiences.												
MM711 Programming for Analytics with SAS (v1.0)													
LO1	Analyse an application problem and select appropriate data and program structures; and statistical analysis to address the analytical task.												
LO2	Visualize and explore the data using charts, plots, diagrams and tables.												
LO3	Apply DATA step programming and other SAS procedures to clean data, to check for invalid numbers, outliers and missing values.												
LO4	Develop and execute a program with SAS code for accessing, manipulating and analysing data, producing summary and statistical results.												
LO5	Document a program fully, including the design process, implementation details and test results.												
MM799 Data Analytics Industrial Placement (v1.0)													
LO1	Be able to apply data analytics knowledge and understanding of the business context to deliver the company's strategy.												
LO2	Develop own leadership style and professional values aimed at high team performance.												
LO3	Be able to identify own continuing professional development needs and find ways to meet those needs successfully.												

Availabilities

Site/Campus Where Delivered	Attendance Mode	Mode of Delivery	Availability Start Date	Course Availabilities Code

Moulsecoomb	Full Time	Face to Face	September 01 2023	A
Moulsecoomb	Full Time	Face to Face	February 01 2024	D
Moulsecoomb	Part Time	Face to Face	February 01 2024	E
Moulsecoomb	Part Time	Face to Face	September 01 2023	B
Moulsecoomb	Sandwich	Face to Face	February 01 2024	F
Moulsecoomb	Sandwich	Face to Face	September 01 2023	C

Professional Competency Mapping

PO Domains	Course Learning Outcomes	Competencies
LOT1 - Knowledge and Theory	1. Critically evaluate the requirements for the solution to an analytics problem in terms of data structures and technologies and produce appropriate specifications and solutions.	
LOT1 - Knowledge and Theory	2. Develop a coherent plan for an analytics project and present and defend the associated business case.	
LOT1 - Knowledge and Theory	3. Design, test and implement relevant analyses using appropriate software tools including programming using an appropriate software platform.	
LOT1 - Knowledge and Theory	4. Manage and critically appraise the success of a data analytics project using appropriate project management techniques and software.	
LOT1 - Knowledge and Theory	5. Ensure the ethical and legal use of data collected and analysed according to established professional codes of practice.	
LOT2 - Skills	6. Apply a range of statistical and other analytical skills appropriate to a specified business problem that may derive from an unfamiliar environment.	
LOT2 - Skills	7. Specify, design, implement and test software to meet data specific project goals.	
LOT2 - Skills	8. Critically assess the potential for the application of contemporary techniques not formally taught.	
LOT2 - Skills	9. Function effectively as part of a project team and take responsibility for the management of functional aspects of a project	
LOT2 - Skills	10. Design and maintain both technical and application documentation to a high standard	

LOT2 - Skills	11. Evaluate and assess the success of a project and make recommendations for improvement