Module code	DSB704	**Level**	7
Module title	**Data Analytics**	**Credit value**	20
Programme(s) on which the module is taught	MSc Data Science in Business	**ECTS Credits**	10
		Notional learning hours	200

1. Pre-requisite modules

None

2. Module aims

This module aims to provide you with an in-depth understanding of a core selection of business-focused statistical techniques, via the use of an industry-standard data analytics platform. It provides a journey from rudimentary data management techniques to descriptive visualisation to inferential and predictive analytics. Importantly the module will show you how data scientists use applied statistical modelling to create business narratives and inform management decision-making. Successful students will receive joint SAS/Regent's University Certificate in Data Analytics.

3. Learning outcomes

Upon successful completion of this module, you will be able to:

LO2: Analyse and critically evaluate complex situations to solve problems, using data.
LO3: Use the tools and approaches of data analytics to gain valuable insights into consumer behaviour to drive strategy.
LO4: Create flexible, innovative data–driven solutions for strategic objectives.
LO9: Negotiate the ethical, legal, and regulatory dimensions of data analysis, to deliver sustainable outcomes.

4. What you will do on the module

You will be introduced to the core analytical concepts of "big" data analysis. You will gain a practical competency in the core statistical analytics methods in the world of data science, using a recognised industry-standard software platform. You will learn how to transform raw data in actionable business insights using a variety of techniques: descriptive analytics, inferential and predictive modelling, and the interpretation of statistical testing. More importantly, you will learn how to translate these statistical insights into business-focused narratives for various organisational stakeholders. The ethics of data capture and monetisation will also be covered.

5. Learning and teaching methods

The following learning and teaching methods are employed on this module:

- Seminar/Lab sessions
- Self-directed online exercises
- Case study group work
- Discussion forums
- Guest speakers

The notional learning hours for this module are:

20 credit module – 200 learning hours	
Directed learning	**44 hours**
Workshops / classes	44
Collaborative Learning	**6 hours**
Synchronous and Asynchronous interactions	6
Self-directed learning	**150 hours**
Self-Directed learning (pre & post class)	75
Preparation for assessment, response to feedback and summative assessment	75
Total	**200 hours**

6. Assessment, formative feedback and relative weightings

The assessment strategy for this module comprises both formative and summative assessment.

Summative Assessment 1: Descriptive Analytics Written Presentation, 2000 words (+/- 10%) (50% TMM)

Working individually, you create a "written" presentation, based on one or more business-generated data set(s). You will employ appropriate descriptive analytics to provide a visual-focused narrative in the form of a slideshow or a poster. If a slideshow is generated, the word-count refers to the text produced in the slideshow notes (as opposed to in the actual slides). If a poster is created, the wordcount refers to any text generated to accompany the visualisations generated. In summary, you will create a set of visual analyses and provide an interpretive narrative to accompany them.

Formative work for Assessment 1

Prior to this summative submission, you will explore the dataset(s) provided and present a draft visual overview of the required work (slideshow or poster). At this stage, the focus will be on the appropriate selection of charts, graphs, and tables. You may provide some narrative pointers, indicating the general direction of the analyses, or any provisional narrative work you have completed. This work will be reviewed, and feedback given.

Summative Assessment 2: Inferential/Predictive Analytics Project, 2500 words (+/- 10%) (50% TMM)

Working individually, you will write a data analysis report, based on one or more business-generated data set(s). You are expected to employ variations of a variety of inferential and predictive models. Analyses should be hypothesis driven and should attempt to demonstrate findings of statistical

significance and business benefit. In your findings, you should demonstrate an ability to interpret the appropriate statistical models, and translate the outcomes into business-focused, non-technical narratives for managerial stakeholders.

Formative work for Assessment 2

Prior to this summative submission, you will provide a sketch draft of the report. This should highlight the overall structure, a brief overview of the chosen dataset, a description of the chosen models, and any provisional analyses you may have generated. This work will be reviewed, and feedback given.

General formative approach:

The module is practical in nature and has an ongoing formative focus. You will manipulate various data sets during class activities, which will comprise directed and self-directed study tasks, primarily using SAS software, or similar platforms. Feedback will be provided on a regular basis.

7. Mapping of assessment tasks for the module									
Assessment tasks	**Learning Outcomes**								
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
Assessment 1: Descriptive Analytics Written Presentation	n/a	x	x	x	n/a	n/a	n/a	n/a	
Assessment 2: Inferential/Predictive Analytics Project	n/a	x	x		n/a	n/a	n/a	n/a	x

8. Key resources (e.g. reading, audio-visual)

Key Reading

Spiegelhalter, D (2020) The Art of Statistics: Learning from Data. Penguin Books Ltd., London.

Bailey, M (2017) JMP® Software: ANOVA and Regression: Course Notes. SAS Institute Inc., Cary, NC, USA.

Lehman, J.S., Stephens, M.L., Loring, S (2017) JMP Start Statistics: A Guide to Statistics and Data Analysis Using JMP, Sixth Edition. SAS Institute Inc., Cary, NC, USA.

Web Resources

Overview | Getting Started with JMP

Statistical Thinking - Free Online Statistics Course | JMP

Learning Library | JMP

Learn JMP - JMP User Community