

Study Abroad Programme

The module description below is from the 2019/20 academic year and is subject to change, and for the use of study abroad students only.

MODULE SPECIFICATION

KEY FACTS

Module name	Quantitative Methods and Analytics
Module code	BM1200
School	Cass Business School
Department or equivalent	Undergraduate Programme
UK credits	15
ECTS	7.5
Level	4

MODULE SUMMARY

Module outline and aims

"Data are widely available; what is scarce is the ability to extract wisdom from them." -Hal Varian (UC Berkeley and Chief Economist, Google)

Modern businesses have access to vast amounts of data. Often data are overwhelming and add to the confusion of managers striving to improve their organisation. But knowledge of a collection of techniques, known as business analytics, enables managers to manipulate, organize and analyse the data in order to gain insight into their problems, find relevant solutions, and communicate them across the organization in the most understandable way.

Therefore, the aim of this module is to introduce you to business analytics methods, and provide you with the set of tools, mostly derived from probability theory and statistics, to address business problems using data. Relevant computed packages will be taught and explored in this module.

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Content outline

The course is divided into three parts.

In the first part, the importance of business analytics and its role in addressing real-world problems is introduced using relevant case studies.

The second part is devoted to introducing students to basic concepts of probability and statistics, and their role in modelling and analysing uncertainty. Concepts of population and sample, drawing inference about a population unknown parameters using sample statistics, and discrete and continuous probability distributions will be covered. An introduction will also be provided to regression analysis and clustering techniques.

The final part introduces students to some modern concepts of business analytics, including data visualisation and the role of big data in business applications, along with some elementary programming in relational as well as non-relational databases.

To enhance your learning experience modules are designed to reflect contemporary issues in the business and financial world. As such, a degree of flexibility is expected in the exact content in terms of scope and coverage to ensure relevance to current circumstances.

Pre-requisites

None

WHAT WILL I BE EXPECTED TO ACHIEVE?

Learning outcomes should capture what the student is expected to know or be able to demonstrate by the end of the module and should:

- *be written at threshold level and at the credit level to be studied*
- *be styled so as to complete the sentence below*

Study Abroad Programme

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- *be matched to specific content and/or assessment tasks*

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

Knowledge and understanding:

- Recognize the role of business analytics in converting data to knowledge and information,
- Understand basic concepts of probability theory and statistics, and appreciate their role in business decision making under uncertainty
- Recognize the need to apply modern data management techniques triggered by big data.

Skills:

- Use probability distributions to model uncertainty in real-life problems
- Use statistics to draw inference about a population unknown parameters
- Use simple regression to investigate causal relationships
- Apply simple clustering techniques
- Employ the relevant computer package to apply the items above
- Use data visualization software to identify trends and patterns
- Perform simple queries in relational as well as non-relational databases

Values and attitudes:

- Demonstrate an appreciation of ethical issues as they relate to both the subject matter and the wider business world.

HOW WILL I LEARN?

A variety of learning and teaching methods will be used in this course.

Lectures are used to introduce context, concepts and techniques illustrated with practical and current examples. You will also have the opportunity to participate in class discussions and work through examples and exercises with the support of the lecturer. It is strongly recommended that you attend ALL lectures.

Tutorials are used to explore the concepts and practices covered in the lectures in more detail. Specifically, they are used primarily to demonstrate technical material, although some

Study Abroad Programme

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discussion and analysis will accompany the practical techniques. Tutorials take place in smaller groups and you are expected to interact with the tutor and other students.

Key learning and teaching resources will be put on the module website on Moodle.

In the independent study time you are encouraged to read widely and in depth around particular topics in preparation for lectures and tutorials. You may also spend time working through sample exercises and questions. In addition you will be preparing and undertaking your coursework assignments and preparing for your final examination.

Teaching pattern:

Teaching component	Teaching type	Contact hours (scheduled)	Self-directed study hours (independent)	Placement hours	Total student learning hours
Lecture	Lecture	30	70		100
Tutorial	Tutorial	10	40		50

Totals		40	110		150
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WHAT TYPES OF ASSESSMENT AND FEEDBACK CAN I EXPECT?

Assessments

This module is assessed by Coursework and Examination. Coursework will be in the form of five fortnightly assessed tasks, covering the material taught in the previous two weeks, each worth 6%. In each task you will be asked to perform analysis using the relevant software package and write a short report on a given problem. At the end of the module you will sit one final 135 minute exam during the University exam period, covering all the material taught in the module.

Study Abroad Programme

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Assessment pattern:

Assessment component	Assessment type	Weighting	Minimum qualifying mark	Pass/Fail?
Coursework	Five regular assessed tasks each worth 6%	30	0	N/A
Final Exam	Written exam	70	0	N/A

Assessment criteria

Assessment criteria are descriptions of the skills, knowledge or attributes you need to demonstrate in order to complete an assessment successfully and Grade-Related Criteria are descriptions of the skills, knowledge or attributes you need to demonstrate to achieve a certain grade or mark in an assessment. Assessment Criteria and Grade-Related Criteria for module assessments will be made available to you prior to an assessment taking place. More information will be available in the UG Assessment Handbook and from the module leader.

Feedback on assessment

Following an assessment, you will be given your marks and feedback in line with the University's Assessment Regulations and Policy. More information on the timing and type of feedback that will be provided for each assessment will be available from the module leader.

Assessment Regulations

The Pass mark for the module is 40%. Any minimum qualifying marks for specific assessments are listed in the table above. The weighting of the different components can also be found above. The Programme Specification contains information on what happens if you fail an assessment component or the module.



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INDICATIVE READING LIST

Albright, S. and Winston, W. (2014), *Business Analytics: Data Analysis and Decision Making*. Stamford CT: South-Western College Publishing.

Provost, F. and Fawcett, T. (2013), *Data Science for Business: What you need to know about data mining and data analytic thinking*. Sebastopol CA: O'Reilly media.

Version: 2.0

Version date: February 2019

For use from: 2019-20