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| **PGR: Course Unit Outline 2021/2022** |
| **Unit code** | **BMAN 80121** |
| **Title** | **Introduction to Quantitative Research Methods** |
| **Credit rating** | 15  |
| **Semester** | 1 |
| **Course coordinator** **contact details** | Dr. Masakatsu (Bob) OnoRoom 7.012 AMBSEmail: masakatsu.ono@manchester.ac.ukOffice hours: TBD |
| **Other staff involved contact details** | Dr. Wing LamEmail: wing.lam@manchester.ac.ukOffice hours: TBD |
| **Pre-requisites** | n/a |
| **Co-requisites** | n/a |
| **Restrictions** | This course is limited to AMBS Ph.D. students |
| **Maximum number of students**  |  |
| **Special notes** | n/a |

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| **Aims** |

*This unit aims to:*

* Introduce students to quantitative research methods
* Provide an overall framework for the conduct of quantitative analyses
* Introduce students to basic statistical methods and hypothesis testing

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| **Objectives (Learning outcomes)** |

*On completion of this unit successful students will be able to:*

* understand different types of variables and their implications for analyses
* understand the concepts and techniques of descriptive statistics
* understand the concepts and use the basic theory of probability
* conduct hypothesis testing
* analyse, interpret and extrapolate from data
* conduct correlation, analysis of variance, and multiple regression analysis (with a single outcome variable)

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| **Contents** |

*The contents of this unit include:*

* The importance of statistics in organisational research
* Probability theory and central limit theorem (CLT)
* Sampling
* Descriptive statistics
* Null hypothesis significance testing (NHST)
* Confidence intervals
* Introduction to effect size and power
* *t*-tests and correlation
* Analysis of variance (ANOVA) and covariance (ANCOVA)
* Introduction to multiple regression analyses

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| **Employability** |

Statistical skills are useful for problem-solving in many different organizational contexts. Ability in quantitative data analysis ensures that business problems can be analyzed and understood more in-depth. Through practice-based teaching and assessment that requires the application of statistics, students will learn foundational skills relevant to analyzing and modelling organizationally relevant phenomena. While this course does not provide you with the level of training required to describe yourself as a quantitative specialist, it certainly provides an in-depth introduction to basic quantitative methods. There are many jobs which you can apply for, which are not formally jobs in quantitative methods, but where such will provide you with a considerable advantage in the labour market.

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| **Methods of Delivery** |

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| **Lectures** | 2 hours (asynchronous) per week for 6 weeks (12 hours) |
| **Seminar/Tutorial/Workshop/Lab Hours** | 1 hour (synchronous or in-person) per week for 6 weeks (6 hours); In these contact hours, there will be substantial component of computing, so the students needs to be at home with a SPSS-equipped computer or in a computing lab on campus. |
| **Private Study** | 72 hours |
| **Total Study Hours** | 90 hours |

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| **Attendance** |

Attendance at all classes is compulsory and will be monitored.

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| **Syllabus and Teaching Schedule** |

The relevant teaching materials for the sessions will be available on BlackBoard pages. We will also have synchronous interactive sessions for learning statistical software for each analytical technique (Tuesdays from 11:00 to 12:00).

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| **Week** | **Date** | **Topic** | **Tutor** |
| 7 | November 9th  | Introduction to Quantitative Research Methods, Measurements & Sampling | MO |
| 8 | November 16th  | Descriptive Statistics, Probability Theory & SPSS Overview | MO |
| 9 | November 23rd  | Null Hypothesis Significant Testing & Simple Tests (*t*-test, correlation) | MO |
| 10 | November 30th  | Analysis of Variance & Covariance | WL |
| 11 | December 7th  | Introduction to Regression | WL |
| 12 | December 14th | Revision Lecture | WL |

*Note.* Week counts are basd on the academic calendar.

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| **Reading List** |

The following reading list is designed to offer you additional information on each topic area. It is **not compulsory** to read all of the material on this list, but it is suggested that you read a minimum of one general textbook chapter, and one general review paper for each topic.

**Core Text:**

Coolidge, F. (2012). Statistics: A Gentle Introduction, 3/E, SAGE Publications, Inc. Paperback ISBN: 9781412991711.

**Supplementary Text:**

***On SPSS***

Field, A. (2013). Discovering Statistics using IBM SPSS for Windows, Sage Publications.

***Multivariate Statistics***

Tabachnick, B. G., & Fidell, L. S. (2012). Using multivariate statistics, 6th Edition. Pearson.

The book contains the chapters relevant to this course unit: multiple regression analyses and analyses of covariance.

***Mediation & Moderation***

Hayes A. F. (2013). Introduction to mediation, moderation and conditional process analysis. New York, NY: Guilford Press.

***APA REPORT STYLE***

American Psychological Association (2010). *Publication Manual of the American Psychological Association* (6th ed.). Washington, DC: American Psychological Association.

This is the definitive bible of how to write articles for all leading psychology journals. Although this manual is intended for psychologists, it is nevertheless the most comprehensive guide to writing journal articles for social science journals. Please note that individual journals often have their own house style, which must be followed.

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| **Assessment** |

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| **Assessment activity** | **Length required** | **Weighting within unit** |
| **Coursework:**Report based on analysis of provided data set using relevant quantitative techniques covered during the course unit. Full details of the coursework will be provided during the first lecture. The overall pass mark for the module is 60%. Submittion Date: Tuesday 18th January by 3:00 pm | Max 2,000 Words | 100% |
| **Resits**: The resit assessment consists of an exam to be completed during the resit examination period. | 2 hours |  |

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| **Marking Process** |

AMBS follows a fair, rigorous and transparent marking process for all summative assessments. The School’s grading scheme for PGT courses is presented below.

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| **Class** | **Descriptor (which reflects the highest possible mark attainable)** | **Possible Mark** |
| Distinction | Your work is **exceptional** and of sufficient quality to be awarded an upper-range distinction mark. Your work is authoritative and amply demonstrates very advanced knowledge and a very advanced ability to integrate the full range of principles, theories, evidence and techniques. The clarity and originality of thought and the way that it is expressed is very impressive for this level of work. | 100 |
| Distinction | 95 |
| Distinction | 92 |
| Distinction | Your work is **outstanding** and of sufficient quality to be awarded a mid-range distinction mark. Your response to the question is insightful. You demonstrate a sophisticated understanding of this topic. To improve future marks you should attempt to refine your analysis and arguments even further. | 88 |
| Distinction | 85 |
| Distinction | 82 |
| Distinction | Your work is **excellent** and of sufficient quality to be awarded a lower-range distinction mark. You demonstrate a detailed level of understanding of this topic. To improve future marks you should attempt to identify any weaker parts of your argument and/or its presentation, ensure you have addressed opposing viewpoints or evidence decisively, and consider extending the range and use of supporting resources even further. | 78 |
| Distinction | 75 |
| Distinction | 72 |
| Merit | Your work is **very good** and of sufficient quality to be awarded a merit mark. Your work is sound and well-considered. To improve future marks you could integrate a wider range of sources and/or deepen your analysis. You may also need to develop weaker parts of your argument and/or its presentation, ensuring that you have identified and addressed key opposing viewpoints or evidence. | 68 |
| Merit | 65 |
| Merit | 62 |
| Pass | Your work is **good** and of sufficient quality to be awarded a pass mark. Your work is competent and coherent. To improve future marks you could integrate a wider range of sources and should increase your level of critical appraisal and seek to demonstrate a more integrated understanding of the subject and possible opposing viewpoints in your analysis. You could also improve the presentation and structure of your work. | 58 |
| Pass | 55 |
| Pass | 52 |
| Compensatable Fail | Your work demonstrates **insufficient** knowledge and skills in the specific topic area and does not merit a pass mark. It shows a basic level of knowledge and understanding. To achieve a higher mark you need to make sure that all your points are coherent and fully supported with data or evidence from the literature. You also need to achieve greater analytical depth and take fuller account of opposing viewpoints or evidence in order to provide more substantial, comprehensive and nuanced support for your argument.  | 48 |
| Compensatable Fail | 45 |
| Compensatable Fail | 42 |
| Fail | Your work demonstrates **insufficient** knowledge and skills in the specific topic area and does not merit a pass mark. Your work demonstrates some awareness of the topic, although it is a frequently incoherent, or partial, response. To improve future marks you should improve your awareness of the appropriate principles, theories, evidence and techniques and engage more critically with them. You should present and structure your arguments better and make sure that they are substantiated. You should seek to undertake, or demonstrate that you have undertaken, independent work. | 38 |
| Fail | 35 |
| Fail | 32 |
| Fail | Your work is **inadequate** and does not merit a pass mark. It demonstrates a confused or deficient awareness of the subject matter. To improve future marks you should improve your awareness of the appropriate principles, theories, evidence and techniques and engage critically with them. You should present and structure your arguments and make sure that they are substantiated. You should seek to undertake, or demonstrate that you have undertaken, independent work. | 28 |
| Fail | 25 |
| Fail | Your work is **severely inadequate** and does not merit a pass mark. Your work demonstrates a very deficient understanding of the topic. To improve future marks you should improve your awareness of the appropriate principles, theories, evidence and techniques and engage critically with them. You should present and structure your arguments and make sure that they are substantiated. You should seek to undertake, or demonstrate that you have undertaken, independent work. | 15 |
| Fail | Your work is **profoundly inadequate** and does not merit a pass mark. Your representation or understanding of thinking in the discipline is highly deficient. To improve future marks you should seek to understand thinking in the discipline and engage critically with it. You should present and structure your arguments and make sure that they are substantiated. You should seek to undertake, or demonstrate that you have undertaken, independent work. | 5 |
| Fail |  | 0 |

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| **Feedback** |

Informal, formative feedback to students will be provided throughout the course by means of analytical demonstrations and general question and answer exercises during the lectures. If you wish to discuss progress, course content or any other relevant issues, contact the lecturers in person, by email or by telephone.

**Methods of Feedback from Students/Course Unit Survey**

Students are encouraged to give constructive feedback throughout the course directly to the course coordinator, Dr. Ono, or via the class student representatives to the Programme Committee. The course will be evaluated by means of an online feedback questionnaire completed by students on completion of the course.