1. **KentVision Code and title of the module**

PSYC8014 Multivariate Modelling

1. **Division and School/Department** **which will be responsible for management of the module**

Division of Human and Social Sciences, School of Psychology

1. **The level of the module (Level 4, Level 5, Level 6 or Level 7)**

Level 7

1. **The number of credits and the ECTS value which the module represents**

10 Credits (5 ECTS)

1. **Which term(s) the module is to be taught in (or other teaching pattern)**

Spring

1. **Prerequisite and co-requisite modules**

PSYC8013 Psychometrics (taken in the Autumn term)

1. **The programmes of study to which the module contributes**

Compulsory to:

MSc Organisational and Business Psychology

MSc Cognitive Psychology/Neuropsychology

MSc Developmental Psychology

MSc Forensic Psychology

MSc Political Psychology

MSc Social Psychology

Also compulsory on Psychology Postgraduate Research Courses.

Also available as an elective module.

1. **The intended subject specific learning outcomes.  
   On successfully completing the module students will be able to:**

8.1. Demonstrate a comprehensive understanding of statistical modelling by the means of structural equations, and fitting structural equation models to observed data;

8.2. Demonstrate a comprehensive understanding of the principles of inferring measurement on unobserved psychological constructs from observed data; the notions of the latent variable and the error of measurement;

8.3 Demonstrate a comprehensive understanding of the principles and techniques for establishing measurement invariance when comparing measurements across time and/or across populations;

8.4. Critically evaluate the appropriateness of particular multivariate models to research design and data;

8.5. Use appropriate statistical software to manage data, specify and test a variety of path, measurement and structural models, applying principles learnt;

8.6. Interpret and critically evaluate results of model fitting and outputs of statistical software; make inferences from the results in applied settings;

8.7 Understand and critically evaluate methods used and results of multivariate modelling reported across a variety of psychological literatures (e.g., social, forensic, clinical).

1. **The intended generic learning outcomes.  
   On successfully completing the module students will be able to:**

9.1. Appreciate and critically discuss theoretical positions and controversies related to Structural Equation Modelling (SEM), for example regarding causality;

9.2. Demonstrate an appreciation of the diverse range of SEM applications and their relevance to student’s field of study or interest, and behavioural/social sciences more broadly;

9.3. Acquire or improve competence in the use of statistical software to manage and code data, and to conduct multivariate analyses for a range of applications.

1. **A synopsis of the curriculum**

This module provides a postgraduate-level foundational course in multivariate modelling, with a particular focus on applications in psychology, public health and education. It is intended primarily for students of psychology and any other field of social science where relationships between multiple observations on humans and other subjects are of interest, but also for students with a mathematics/statistics background interested in such applications. With foundations taught in the pre-requisite module, PSYC8013 Psychometrics, ‘measurement by modelling’ is formally introduced using a Structural Equation Modelling (SEM) framework. Within this framework, specific techniques such as path analysis, confirmatory factor analysis, basic longitudinal analysis and multiple-group analysis are taught. Data analysis applications from various fields of psychological studies are considered, and it is demonstrated how to model/test statistically complex phenomena such as spurious and indirect effects, growth and change, measurement invariance, and others.

1. **Reading list**

## The University is committed to ensuring that core reading materials are in accessible electronic format in line with the Kent Inclusive Practices.

## The most up to date reading list for each module can be found on the university's [reading list pages](https://kent.rl.talis.com/index.html).

1. **Learning and teaching methods**

Total contact hours: 30

Total private study hours:70

Total module study hours: 100

1. **Assessment methods**
   1. Main assessment methods

20% ICT (10 x 15 minutes in workshop)

80% Exam (2 hours)\*

\*This element is pass compulsory and must be passed to achieve the learning outcomes of the module

13.2 Reassessment methods

100% Exam

1. ***Map of module learning outcomes (sections 8 & 9) to learning and teaching methods (section12) and methods of assessment (section 13)***

| **Module learning outcome** | 8.1 | 8.2 | 8.3 | 8.4 | 8.5 | 8.6 | 8.7 | 9.1 | 9.2 | 9.3 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *Private Study* | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |
| *Lectures* | **X** | **X** | **X** | **X** |  | **X** | **X** | **X** | **X** |  |
| *Computing workshops* |  |  |  | **X** | **X** | **X** | **X** |  |  | **X** |

| **Module learning outcome** | 8.1 | 8.2 | 8.3 | 8.4 | 8.5 | 8.6 | 8.7 | 9.1 | 9.2 | 9.3 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *ICT* |  |  |  | **X** | **X** | **X** | **X** |  |  | **X** |
| *Exam* | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |

1. **Inclusive module design**

The Division recognises and has embedded the expectations of current equality legislation, by ensuring that the module is as accessible as possible by design. Additional alternative arrangements for students with Inclusive Learning Plans (ILPs)/declared disabilities will be made on an individual basis, in consultation with the relevant policies and support services.

The inclusive practices in the guidance (see Annex B Appendix A) have been considered in order to support all students in the following areas:

a) Accessible resources and curriculum

b) Learning, teaching and assessment methods

1. **Campus(es) or centre(s) where module will be delivered**

Canterbury

1. **Internationalisation**

The curriculum of this module has been designed to incorporate contemporary techniques and methodological approaches taught on internationally recognised statistics and measurement programmes. Specifically, we included in the module content the discussion of issues in measuring psychological variables in the international context, such as measurement invariance in cross-cultural research or worldwide assessment programmes.

**DIVISIONAL USE ONLY**

**Revision record – all revisions must be recorded in the grid and full details of the change retained in the appropriate committee records.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date approved | Major/minor revision | Start date of delivery of revised version | Section revised | Impacts PLOs (Q6&7 cover sheet) |
| 15.06.23 | New | Sept 24 | - | - |
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