

# PSY403 Statistics and Data Analysis

**Level:** 4

**Credit Units:** 5 Credit Units

**Language:** ENGLISH

**Presentation Pattern:** EVERY JULY

## Synopsis:

PSY403 Statistics and Data Analysis focuses on understanding data, discovering connections in data and finding patterns in data. It covers a range of statistical methods such as regression and factor analysis, as well as data mining models, including artificial intelligence and decision machine approaches (e.g., association analysis, neural networks and decision trees), for analysing and interpreting data. It also explores topics beyond predictive modelling, such as prescriptive analytics. The course uses statistics and data mining software to provide students with hands-on experience in working with data sets, generating and interpreting results, and applying and deploying the findings. PSY403 adopts an applied (and not mathematical) approach to looking at data that is aimed at preparing students to undertake research/analytics projects. Students taking this course are expected to have some background in statistical methods and analysis.

## Topics:

- Visualisation and description
- Statistics and data mining concepts
- Data preparation and using statistics/data mining software
- Association analysis
- Clustering
- Factor analysis
- Statistics: Simple regression
- Multiple regression and regression issues
- Artificial intelligence: Neural networks
- Machine learning: Decision trees
- Other methods for data analysis
- Beyond predictive modelling

## Textbooks:

Practical Multivariate Analysis 6th Abdelmonem Afifi, Susanne May, Robin Donatello, Virginia A. Clark Taylor & Francis  
ISBN-13: 9781351788908

PSY403 JMP CD (Version16) JMP  
ISBN-13: PSY403Jul21

**Learning Outcome:**

- Formulate a framework for data analysis
- Analyse data sets to understand the data, discover connections and find patterns
- Evaluate statistical and data mining results
- Solve research and analytics problems with statistical and data mining findings
- Create data analytical outputs using statistics and data mining software
- Select the appropriate methods of data analysis
- Appraise the analysis of data in research and analytics projects

**Assessment Strategies - Regular Semester (Evening Class):**

<b>Components</b>	<b>Description</b>	<b>Weightage Allocation (%)</b>
Overall Continuous Assessment	TUTOR-MARKED ASSIGNMENT 1	20
	GROUP BASED ASSIGNMENT 1	30
Overall Examinable Components	ECA	50
<b>Total</b>		<b>100</b>

\*The information listed is subject to review and change.