

# **RSS503 Statistics and Data Analysis**

**Level:** 5

**Credit Units:** 5 Credit Units

**Language:** ENGLISH

**Presentation Pattern:** EVERY JULY

## **Synopsis:**

RSS503 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. RSS503 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:**

Afifi, A., May, S. & Clark. V. A. (2011).: Practical Multivariate Analysis CRC Press (Taylor & Francis)  
ISBN-13: 9781466503243-AA

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**Learning Outcome:**

- Formulate a framework for data analysis
- Analyse data sets to understand the data, discover connections and find patterns
- Interpret statistical and data mining results
- Apply findings to address research and analytics problems
- Apply statistics and data mining software
- Evaluate and select different methods of data analysis
- Implement statistical analysis and data mining
- Appraise the analysis of data in research and analytics projects

**Assessment Strategies:**

<b>Continuous Assessment Component</b>	<b>Weightage (%)</b>
TUTOR-MARKED ASSIGNMENT	20
GROUP BASED ASSIGNMENT	30
<b>Sub-Total</b>	<b>50</b>

<b>Examinable Component</b>	<b>Weightage (%)</b>
ECA	50
<b>Sub-Total</b>	<b>50</b>

**Weightage Total** **100**