

ANL501 Data Visualisation and Storytelling

Level: 5

Credit Units: 5 Credit Units

Language: ENGLISH

Presentation Pattern: EVERY SEMESTER

Synopsis:

ANL501 Data Visualisation and Storytelling aims to equip students with the knowledge and skills to acquire, measure, monitor, visualise and report business performance in a scalable and reproducible manner.

Students will learn essential concepts, skills, and techniques in probability theory, statistics, MySQL, Python, R, and data storytelling. Emphasis will be placed on learning and implementing visualisation best practices in R as part of a reproducible workflow. Students will also learn core MySQL, Python, and R skills to acquire and prepare data for visualisation from a variety of data sources. Finally, students will learn how to apply storytelling techniques to create impactful data-rich presentations tailored for senior management decision-making.

Topics:

- Introduction to R and RStudio
- Essential concepts in probability and statistics
- Visualisation in R
- Introduction to MySQL
- Reproducible workflow with RMarkdown
- Working with spatial datasets
- Introduction to Python
- Working with Python and MySQL
- Integrating Python, MySQL, and R
- Telling stories through data-rich presentations
- Common pitfalls in data visualisation
- Best practices for data storytelling

Textbooks:

Kieran Healy: Data Visualization: A Practical Introduction 1st Princeton University Press (2018)
ISBN-13: 9780691181622

Learning Outcome:

- Assess the data requirements for business performance metrics
- Compose effective data-rich presentations for a senior management audience
- Critique data stories constructively
- Construct R programs to visualise data
- Create RMarkdown documents as part of a reproducible workflow
- Design and implement a full stack from data acquisition to analytics and then to visualisation with Python, MySQL, and R
- Demonstrate understanding of descriptive statistics in the context of data visualisation

Assessment Strategies (Evening Class):

Components	Description	Weightage Allocation (%)
Overall Continuous Assessment	PRE-COURSE QUIZ 1	10
	TUTOR-MARKED ASSIGNMENT 1	30
	PARTICIPATION 1	10
Overall Examinable Components	ECA	50
Total		100