SE
TU

Ollscoil
Teicneolaíochta
an Oirdheiscirt

South East
Technological
University

Module Descriptor

Data Analytics Essentials (Computing and Mathematics)

Short Title: Data Analytics Essentials
Department: Computing and Mathematics
Credits: 5   **Level:**   Advanced

Description of Module / Aims

The student is introduced to the use of analytics to support the decision making process in the business context. The student will experience the identification, description, cleaning, transforming and storage of structured data in an appropriate environment. Data mining techniques appropriate for the business analytics' context such as up-selling, cross-selling, customer classification and pattern discovery will be investigated. The student will conduct appropriate statistical analysis, rule generation and modelling in order to discover patterns and create new insights. The student will present and evaluate that analysis using visualisation tools.

Programmes

	stage/semester/status
DATA-0016 BSc (Hons) in Software Engineering (WD_KDEVP_BI)	4 / 7 / M
COMP-0609 BSc (Hons) in Software Systems Development (WD_KCSDV_B)	4 / 1 / M
DATA-0016 BSc (Hons) in Software Systems Development (WD_KDEVP_B)	4 / 7 / M
DATA-0016 BSc (Hons) in Software Systems Practice (WD_KSOFP_B)	1 / 1 / M

Indicative Content

- Introduction to Business Analytics
- The Data Mining process; Data Identification, Data description, Data cleaning, Data transformation
- Data modelling: Statistical modelling; decision trees; rudimentary rules
- Deployment, evaluation and maintenance
- The application of business analytics: CRM; Sales; Marketing etc
- Business Analyst job role

Learning Outcomes

On successful completion of this module, a student will be able to:

1. Appraise the use of analytics in the business context to support decision making.
2. Prepare results from an introductory analytics project using an appropriate Data Mining process.
3. Organise a set of data in preparation for business analytics.
4. Develop, implement and evaulate the results of data models on a data set.
5. Assess the use of a data mining process in the context of business analytics.
6. Evaluate and determine appropriate introductory data mining techniques.

Learning and Teaching Methods

- The lectures will introduce the theory content to the student. The student will be encouraged to participate in class discussions and ask questions to support their learning process.
- The practical classes facilitate the student in implementing the theory learned in the lectures. Each lab incrementally builds on the previous, developing the students practical skills in business analytics.
- The continuous assessment will require the student to apply the theory and practical knowledge to a new business scenario.

Learning Modes

Learning Type	F/T Hours	P/T Hours
Lecture	12	
Practical	36	
Independent Learning	87	

Assessment Methods

	Weighting	Outcomes Assessed
Continuous Assessment	100%	
Assignment	100%	1,2,3,4,5,6

Assessment Criteria

<40%: Unable to interpret and describe key concepts of the Business Analytics domain.

40%–49%: Be able to interpret and describe key concepts of the Business Analytics knowledge domain, particularly the data mining process.

50%–59%: Ability to discuss key concepts of the Business Analytics knowledge domain and ability to discover and integrate related knowledge in other knowledge domains.

60%–69%: Be able to solve basic business analytics problems by experimenting with the appropriate skills and tools.

70%–100%: All the above to an excellent level. Be able to analyse and design solutions to a high standard for a range of both complex and unforeseen problems through the use and modification of appropriate skills and tools.

Supplementary Material(s)

- Evans, J. *Statistics, Data Analysis, and Decision Modelling.* NY: Pearson, 2013.
- Jank, Wolfgang. *Use R! Business Analytics for Managers.* NY: Springer, 2011.
- Stubbs, E. *Delivering Business Analytics practical guidelines for best practice.* NY: Wiley, 2013.

Requested Resources

- Room Type: Computer Lab