

2024 / 25

School of Science and Computing

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**SE
TU**

Ollscoil
Teicneolaíochta
an Oirdheiscirt

South East
Technological
University

Module Descriptor

Data Analytics (Computing and Mathematics)

Data Analytics (A13665)

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

Description of Module / Aims

Data analytics supports critical decision making in business. It helps to create new knowledge and to draw conclusions on existing models or theories. This module introduces the learner to the fundamental concepts of data analytics. These concepts include; data identification, cleaning, transforming and modelling data for the purpose of analysing and manipulating data to discover relevant information to support decision making. The student will also be introduced to advanced analytics such as prediction, data mining and Big Data.

Programmes

stage/semester/status		
DATA-0013	Higher Diploma in Science in Agri-Food ICT Systems (WD_18AFICT_G)	1 / 3 / M
DATA-0013	HDip in Science in Agri-Food ICT Systems (WD_SAFICT_G)	6 / 3 / M
DATA-0013	Higher Diploma in Science in Business Systems Analysis (WD_KBUSY_G)	1 / 1 / M

Indicative Content

- Business data requirements analysis
- Extraction, transformation and loading of cleaned data
- Modelling of data in business appropriate data storage environment
- Analytical skills for interpretation and presentation of data
- Data and decision analytics framework, value chain, tools and techniques
- Data mining: Big Data, Hadoop, MapReduce

Learning Outcomes

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

1. Prepare data for analysis through cleansing and transformation.
2. Prepare and construct data analytics on data sets.
3. Prepare an appropriate visual representation of the data analytics findings.
4. Evaluate the use and appropriateness of decision modelling.
5. Evaluate the use of the data mining process for data analytics projects.
6. Assess the use of measurement systems for monitoring performance.

Learning and Teaching Methods

- This module will be presented by a combination of lectures and computer based practicals.
- The lectures will be used to introduce new topics and their related concepts.
- The practical element will reinforce the theory topics and afford an opportunity to engage in guided project assignment work. Practical work will also allow for independent research, presentations, peer learning and peer review.

Learning Modes

Learning Type	F/T Hours	P/T Hours
Lecture	24	
Practical	24	
Independent Learning	87	

Assessment Methods

	Weighting	Outcomes Assessed
Continuous Assessment	100%	
Assignment	25%	1,2,3
Assignment	25%	3,4
Assignment	50%	1,5,6

Assessment Criteria

<40%: Unable to interpret and describe key concepts of the specific knowledge domain(s).

40%–49%: Be able to interpret and describe key concepts of the specific knowledge domain(s).

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

60%–69%: Be able to solve problems within the specific knowledge domain(s) 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, James. *Statistics, Data Analysis, and Decision Modelling*. NY: Pearson, 2013.
- Stubbs, E. *Delivering Business Analytics practical guidelines for best practice*. New Jersey: Wiley, 2013.

Requested Resources

- Room Type: Computer Lab