

2024 / 25

School of Science and Computing

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Technological  
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## Module Descriptor

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# Business Intelligence and Data Warehousing (Computing and Mathematics)

# Business Intelligence and Data Warehousing (A13661)

**Short Title:** BI & Data Warehousing  
**Department:** Computing and Mathematics  
**Credits:** 10

**Level:** Advanced

## Description of Module / Aims

This module will introduce Business Intelligence and Data Warehousing concepts and techniques. Students will also critically analyse the theory and practice of implementing a Data Warehouse. This module will provide students with the knowledge to be able to successfully manage heterogeneous datasets and different options for integration, processing and storage. Students will investigate basic Business Intelligence tools and techniques, such as text mining, information retrieval and web content mining that would enable managers make better decisions and ultimately provide their organisation with a competitive advantage.

## Programmes

stage/semester/status		
COMP-0649	BSc (Hons) in Information Technology Management (WD_KITMA_B)	1 / 7 / M
COMP-0649	BSc (Hons) in Information Technology (WD_KINTE_B)	4 / 1 / M

## Indicative Content

- Introduction to Business Intelligence (BI) concepts, tools and technologies
- Different types of Organisation memory
- Data Warehouse Architecture: Design and Development
- Data Quality and Management. Process of Extraction, Transformation and Loading (ETL) of a Data Warehouse
- Data Warehouse Implementation, Maintenance and Trends
- Business Intelligence Tools & Techniques
- Data mining – fundamentals of analytics – reading datasets, applying techniques required for decision making
- Big data, Text and Web mining – techniques and data load processes for building analysis.

## Learning Outcomes

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

1. Assess different types of Organisations Memory for BI solutions.
2. Evaluate Data Quality Management and ETL utilities for a Data Warehouse.
3. Appraise pre-processing and preparation on the data sets.
4. Design and develop a Data Warehouse solution in terms of meeting business requirements.
5. Appraise and use Data, Text and Web mining techniques and processes.
6. Assess different Integration tools and Processing tools for unstructured, semi-structured with structured data.
7. Evaluate guidance on Data Governance, Ethics and Policies.

## Learning and Teaching Methods

- The students will be introduced to the theory of the module in lectures, which will be interactive and discursive in nature.
- Some topics will be supported with appropriate case studies and examples.
- The theory will be applied in a series of practicals that will be problem solving focused and work towards a predefined assignment, all of which is to be completed by the end of the semester.

## Learning Modes

Learning Type	F/T Hours	P/T Hours
Lecture	48	
Practical	48	
Independent Learning	174	

## Assessment Methods

	Weighting	Outcomes Assessed
Final Written Examination	50%	1,2,3,4,5,6,7
Continuous Assessment	50%	
Assignment	25%	2,3,4
Assignment	25%	5,6

## Assessment Criteria

- <40%: Unable to interpret and describe key concepts of the design and development of a Data Warehouse and Business Intelligence (BI) solutions.
- 40%–49%: Be able to interpret and describe key concepts of the design and implementation of a Data Warehouse and a BI solution.
- 50%–59%: Ability to discuss the key concepts of a Data Warehouse and BI solution and discover and integrate related knowledge in other disciplines like database and software development.
- 60%–69%: Be able to solve problems in regards to Data Warehouse and BI design and development 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 complex skills and tools.

## Essential Material(s)

- Kimball, R. *The Data Warehouse Lifecycle Toolkit*. New York: Wiley Publishing, 2014.

## Supplementary Material(s)

- Kimball, R. and T. Ross. *The Data Warehousing Toolkit*. New York: Wiley Publishing, 2013.
- Minelli, M., M. Chambers and D. Ambiga. *Big Data, Big Analytics: Emerging Business Intelligence and Analytic Trends for Today's Businesses*. New York: Wiley, 2013.
- Sharda, R. and D. Turban. *Business Intelligence, A Managerial Perspective on Analytics*. New York: Pearson, 2014.

## Requested Resources

- Room Type: Computer Lab