Module Descriptor

Title	Data Warehouse Environment		
Session	2025/26	**Status**	Published
Code	COMP10002	**SCQF Level**	10
Credit Points	20	**ECTS (European Credit Transfer Scheme)**	10
School	**Computing, Engineering and Physical Sciences**		
Module Co-ordinator	Tahir Mahmood		

Summary of Module

This module examines the factors that have led to the emergence and popularity of business intelligence (also known as business analytics or data analytics) and the underlying technologies such as the data warehouse.

This module compares and contrasts the major methodologies for designing the data warehouse such as those proposed by R.Kimball and W.Inmon. The issues associated with each data warehouse methodology are discussed.

This module examines the new and established technologies that can form the data warehouse/BI environment including the warehouse, Online Analytical Processing (OLAP), data mining and dashboards. This module considers the major players in the BI/DW environment such as SAS, SAP, Microsoft, Oracle and open-source providers such as BIRT (Business Intelligence and Reporting Tools).

This module includes practical classes using a BI tool such as Tableau. Students are exposed to BI scenarios that may require investigation of emerging BI technologies and/or exploration of data sets.

This module explores new ideas and emerging trends associated with the data warehouse/BI environment such as in-memory analytics, self-service BI and sentiment analysis.

- The purpose of this module is to re-visit topics relating to business intelligence/data analytics in more depth that will have been covered in earlier database modules.
- The purpose of the module is to emphasize the increasingly important role played by data and information as a corporate asset and to gain a greater appreciation of the potential to exploit this asset and to understand the necessary technologies.
- This module will work to develop a number of the key 'I am UWS' Graduate Attributes to make those who complete this module: Universal (Critical Thinker, Ethically-minded, Research-minded), Work Ready (Problem-Solver, Effective Communicator, Ambitious) and Successful (Autonomous, Resilient, Driven).

Module Delivery Method	**On-Campus[1]** ☒		**Hybrid[2]** ☐		**Online[3]** ☒	**Work -Based Learning[4]** ☐	
Campuses for Module Delivery	☐ Ayr ☒ Dumfries		☒ Lanarkshire ☐ London ☒ Paisley		☒ Online / Distance Learning ☐ Other (specify) Online Delivery / Distance Learning applies to delivery in the BSc (Hons) Data, AI and Software Engineering programme only		
Terms for Module Delivery	Term 1	☐	Term 2	☒	Term 3	☐	
Long-thin Delivery over more than one Term	Term 1 – Term 2	☐	Term 2 – Term 3	☐	Term 3 – Term 1	☐	

Learning Outcomes	
L1	Demonstrate a critical understanding of the principal theories, concepts and issues.
L2	Demonstrate knowledge that covers and integrates most of the principal methodologies, techniques and tools associated with the data warehousing environment.
L3	Offer professional level insights, interpretations and solutions to problems and issues associated with the development of a data warehousing environment for a given case study.
L4	N/A
L5	N/A

Employability Skills and Personal Development Planning (PDP) Skills	
SCQF Headings	**During completion of this module, there will be an opportunity to achieve core skills in:**

[1] Where contact hours are synchronous/ live and take place fully on campus. Campus-based learning is focused on providing an interactive learning experience supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus contact hours will be clearly articulated to students.

[2] The module includes a combination of synchronous/ live on-campus and online learning events. These will be supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus and online contact hours will be clearly articulated to students.

[3] Where all learning is solely delivered by web-based or internet-based technologies and the participants can engage in all learning activities through these means. All required contact hours will be clearly articulated to students.

[4] Learning activities where the main location for the learning experience is in the workplace. All required contact hours, whether online or on campus, will be clearly articulated to students

Knowledge and Understanding (K and U)	**SCQF 10** Understanding of the current and future significance of the data warehouse environment for modern businesses. A critical understanding of the main methodologies and techniques associated with the development of the data warehouse environment. Detailed knowledge and understanding of the technologies that form the data warehouse environment.
Practice: Applied Knowledge and Understanding	**SCQF 10** Execute a defined project, which involves an investigation of a company's requirements for business intelligence and presents an evaluation of how current systems serve the company together with a set of feasible and relevant routes for further development.
Generic Cognitive skills	**SCQF 10** Demonstrate some originality and creativity in dealing with professional level issues such as those presented by coursework. Make recommendations where data/information is limited or comes from a range of sources such as internal company documentation and/or data files.
Communication, ICT and Numeracy Skills	**SCQF 10** Communicating effectively and appropriately in writing in the production of a business intelligence evaluation consultancy report. Interpret complex primary materials such as internal company documentation and/or data files.
Autonomy, Accountability and Working with Others	**SCQF 10** Exercise autonomy and initiative in simulating the role of a professional business intelligence analyst providing services to a real company.

Prerequisites	**Module Code** COMP09003 COMP08002	**Module Title** Business Intelligence (Comp) Database Development
	Other	
Co-requisites	**Module Code**	**Module Title**

Learning and Teaching
In line with current learning and teaching principles, a 20-credit module includes 200 learning hours, normally including a minimum of 36 contact hours and maximum of 48 contact hours.

Learning Activities During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	**Student Learning Hours** (Note: Learning hours include both contact hours and hours spent on other learning activities)
Lecture / Core Content Delivery	20
Tutorial / Synchronous Support Activity	8
Laboratory / Practical Demonstration / Workshop	20
Independent Study	152
Please select	
Please select	
TOTAL	200

Indicative Resources
The following materials form essential underpinning for the module content and ultimately for the learning outcomes: Howson, C. (2013) Successful business intelligence: Unlock the value of BI & big data. 2nd edition. McGraw-Hill Education Group. Hwang, J. and Yoon, Y. (2021) Data Analytics and Visualization in Quality Analysis Using Tableau. CRC Press. Internet access to Aula VLE to allow student access to all teaching material, including slides, labs, tutorials and coursework.
(N.B. Although reading lists should include current publications, students are advised (particularly for material marked with an asterisk*) to wait until the start of session for confirmation of the most up-to-date material)

Attendance and Engagement Requirements
In line with the Student Attendance and Engagement Procedure, Students are academically engaged if they are regularly attending and participating in timetabled on-campus and online teaching sessions, asynchronous online learning activities, course-related learning resources, and complete assessments and submit these on time. **For the purposes of this module, academic engagement equates to the following:** The School of Computing, Engineering and Physical Sciences considers attendance and engagement to mean a commitment to attending, and engaging in, timetabled sessions. You will scan your attendance via the scanners each time you are on-campus and you will login to the VLE several times per week. Where you are unable to attend a timetabled learning session due to illness or other circumstance, you should notify the Programme Leader that you cannot attend. Across the School an 80% attendance threshold is set. If you fall below this, you will be referred to the Student Success Team to see how we can best support your studies.

Equality and Diversity

The University's Equality, Diversity and Human Rights Procedure can be accessed at the following link: UWS Equality, Diversity and Human Rights Code. Aligned with the University's commitment to equality and diversity, this module supports equality of opportunity for students from all backgrounds and learning needs. Using the VLE, material will be presented electronically in formats that allow flexible access and manipulation of content. This module complies with University regulations and guidance on inclusive learning and teaching practice. This module has lab-based teaching and as such you are advised to speak to the Module Co-ordinator to ensure that specialist assistive equipment, support provision and adjustment to assessment practice can be put in place, in accordance with the University's policies and regulations.
(N.B. Every effort will be made by the University to accommodate any equality and diversity issues brought to the attention of the School)

Supplemental Information

Divisional Programme Board	**Computing**
Overall Assessment Results	☐ **Pass / Fail** ☒ **Graded**
Module Eligible for Compensation	☐ **Yes** ☒ **No** **If this module is eligible for compensation, there may be cases where compensation is not permitted due to programme accreditation requirements. Please check the associated programme specification for details.**
School Assessment Board	Business & Applied Computing
Moderator	Frances McCormick
External Examiner	V Sharma
Accreditation Details	This module is accredited by BCS as part of a number of specified programmes.
Module Appears in CPD catalogue	☐ **Yes** ☒ **No**
Changes / Version Number	2.17

Assessment (also refer to Assessment Outcomes Grids below)
Assessment 1
Class Tests: The summative component of assessment is a class test worth 60% (individual) and this takes place towards the end of the module.
Assessment 2
Coursework: The second summative assessment is submitted towards the end of module and is in two parts; Part 1 (20%) is submitted in the form of a report that requires research and writing skills and Part 2 (20%) is submitted in the form of a report (and data file) that requires the learning of a BI tool, application of basic data analysis, creation of appropriate visualizations of results and discussion of findings. The complete assignment is worth 40%.
Assessment 3
(N.B. (i) Assessment Outcomes Grids for the module (one for each component) can be found below which clearly demonstrate how the learning outcomes of the module will be assessed. (ii) An indicative schedule listing approximate times within the academic calendar when assessment is likely to feature will be provided within the Student Module Handbook.)

Component 1							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Class Test (Written)	☒	☒	☒	☐	☐	60	2

Component 2							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Dissertation/Project report/Thesis	☒	☒	☒	☐	☐	40	

Component 3							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
	☐	☐	☐	☐	☐		
Combined total for all components						100%	2 hours

Change Control

What	When	Who
Attendance and Engagement and Equality and Diversity Statements	21/01/25	R Moffat
Guidance Note 23-24 provided and general housekeeping to text across sections.	12/12/23	D Taylor
Updated Student Attendance and Engagement Procedure and updated UWS Equality, Diversity and Human Rights Code	19/10/23	C Winter
Updated contact hours	14/09/21	H McLean