University of the West of Scotland

Module Descriptor

Session: 2024/25

Title of Module: Data Warehouse Environment			
Code: COMP10002	SCQF Level: 10 (Scottish Credit and Qualifications Framework)	Credit Points: 20	ECTS: 10 (European Credit Transfer Scheme)
School:	School of 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

Face-To-Face	Blended	Fully Online	HybridC	Hybrid 0	Work-Based Learning
☒	☒	☐	☐	☐	☐

See Guidance Note for details.

Campus(es) for Module Delivery

The module will **normally** be offered on the following campuses / or by Distance/Online Learning: (Provided viable student numbers permit) (tick as appropriate)

Paisley:	Ayr:	Dumfries:	Lanarkshire:	London:	Distance/Online Learning:	Other:
☒	☐	☒	☒	☐	☐	Add name

Term(s) for Module Delivery

(Provided viable student numbers permit).

Term 1	☐	Term 2	☒	Term 3	☐

Learning Outcomes: (maximum of 5 statements)
These should take cognisance of the SCQF level descriptors and be at the appropriate level for the module.
At the end of this module the student will be able to:

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.

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:
Knowledge and Understanding (K and U)	SCQF Level **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 Level **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 Level **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 Level **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 Level **10** Exercise autonomy and initiative in simulating the role of a professional business intelligence analyst providing services to a real company.

Pre-requisites:	Before undertaking this module the student should have undertaken the following:	
	Module Code: COMP09003 COMP08002	**Module Title:** Business Intelligence (Comp) Database Development
	Other:	or similar module
Co-requisites	**Module Code:**	**Module Title:**

*Indicates that module descriptor is not published.

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** (Normally totalling 200 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
	200 Hours Total

**Indicative Resources: (eg. Core text, journals, internet access)
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.

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.

Nothing in the module should present difficulties for students on the basis of their gender, ethnicity, or sexual orientation. In relation to students with special needs, when a student discloses a disability the individual module tutor, in consultation with the special needs co-ordinator, will agree any appropriate adjustments to be made. Students should note that the language of instruction is English and that they will need to have a reasonable grasp of the language in order to keep abreast of the teaching materials and in submitting assessed work.

(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
Assessment Results (Pass/Fail)	Yes ☐No ☒
School Assessment Board	Business & Applied Computing
Moderator	Frances McCormick
External Examiner	T Gaber
Accreditation Details	This module is accredited by BCS as part of a number of specified programmes.
Changes/Version Number	2.16 Section 9 - Change to Resources

Assessment: (also refer to Assessment Outcomes Grids below)

This module consists of the following assessments:
- **Class Tests:** The summative component of assessment is a class test worth 60% (individual) and this takes place towards the end of the module.
- **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 1 – **Class Tests**

Assessment 2 – **Coursework**

(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.)

Assessment Outcome Grids (See Guidance Note)

Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Weighting (%) of Assessment Element	Timetabled Contact Hours
Class test (written)	✔	✔	✔	60	2

Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Weighting (%) of Assessment Element	Timetabled Contact Hours
Dissertation/ Project report/ Thesis	✔	✔	✔	40	0
Combined Total for All Components				**100%**	**2 hours**

Change Control:

What	When	Who
Further guidance on aggregate regulation and application when completing template	16/01/2020	H McLean
Updated contact hours	14/09/21	H McLean
Updated Student Attendance and Engagement Procedure	19/10/2023	C Winter
Updated UWS Equality, Diversity and Human Rights Code	19/10/2023	C Winter
Guidance Note 23-24 provided	12/12/23	D Taylor
General housekeeping to text across sections. .	12/12/23	D Taylor

Version Number: MD Template 1 (2023-24)