University of the West of Scotland
Module Descriptor

Session: 2024/25

Title of Module: Business Intelligence (Comp)			
Code: COMP09003	**SCQF Level: 9** (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:	Junkang Feng		

Summary of Module

This module begins by defining what business intelligence (BI) represents and then continues to consider how the requirement for business intelligence has evolved. Business intelligence is now recognized as a core requirement for businesses surviving in a dynamic and competitive environment. Most modern businesses are equipped with online transaction processing (OLTP) systems capable of efficiently supporting business applications such as stock control and customer ordering; however this technology was never designed to easily provide business intelligence.

This module looks at the range of technologies associated with business intelligence from traditional relational reporting and spreadsheets to data warehousing, online analytical processing (OLAP) and data mining. Data mining covers Clustering (as an example of unsupervised machine learning), Classification (as an example of supervised machine learning) and Association Rule mining/learning, among others. The relationship between these technologies in forming a typical BI environment and the type of decision-support provided by each is discussed. This module also includes consideration of methodologies and techniques associated with the developing business intelligence applications.

Practical sessions provide students with an opportunity to use the advanced query of a Database Management System (DBMS) such as Microsoft SQL Server to analyse/present data/information with the purpose of providing business intelligence. In addition, students will be provided with awareness of contemporary BI software and Data Mining tools such as R, Jupyter Notebook and the Orange Data Mining tool.

- The intended audience for this module is students already knowledgeable about the fundamentals of database systems and for those interested in technologies that are emerging into the world of business to support corporate decision-makers.
- 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-ToFace	Blended	Fully Online	HybridC	HybridO	Work-based Learning
✓					

Face-To-Face
Term used to describe the traditional classroom environment where the students and the lecturer meet synchronously in the same room for the whole provision.

Blended
A mode of delivery of a module or a programme that involves online and face-to-face delivery of learning, teaching and assessment activities, student support and feedback. A programme may be considered "blended" if it includes a combination of face-to-face, online and blended modules. If an online programme has any compulsory face-to-face and campus elements it must be described as blended with clearly articulated delivery information to manage student expectations

Fully Online
Instruction that is solely delivered by web-based or internet-based technologies. This term is used to describe the previously used terms distance learning and e learning.

HybridC
Online with mandatory face-to-face learning on Campus

HybridO
Online with optional face-to-face learning on Campus

Work-based Learning
Learning activities where the main location for the learning experience is in the workplace.

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)

Paisley:	Ayr:	Dumfries:	Lanarkshire:	London:	Distance/Online Learning:	Other:
✓						

Term(s) for Module Delivery

(Provided viable student numbers permit).

Term 1		Term 2		Term 3	
			✓		

Learning Outcomes: (maximum of 5 statements)

On successful completion of this module the student will be able to:
L1. Demonstrate a broad and integrated knowledge and understanding of the concepts, technologies, and issues associated with business intelligence.
L2. Use a range of routine and specialist skills and techniques to design and implement an application capable of providing business intelligence.
L3. Evaluate the opportunities and implications of introducing business intelligence technologies 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 9. A broad and integrated knowledge and understanding of the scope and main areas associated with business intelligence (BI). Knowledge and understanding of what BI represents and how the requirement for BI has evolved. Knowledge and understanding of what constitutes BI from a technical and functional perspective. Knowledge and understanding of the stages of the business dimensional lifecycle and the associated techniques such as dimensionality modelling.
Practice: Applied Knowledge and Understanding	SCQF Level 9. Use a selection of principal skills, techniques and practices associated with the business dimensional lifecycle to facilitate the development of BI applications.
Generic Cognitive skills	SCQF Level 9. Undertake critical analysis, evaluation and synthesis of ideas, concepts, information and issues relating to the emergence of business intelligence technologies into the business world.
Communication, ICT and Numeracy Skills	SCQF Level 9. Analyse, interpret and evaluate case study data and graphs to achieve goals and targets associated with the delivery of business intelligence.
Autonomy, Accountability and Working with others	SCQF Level 9. Take some responsibility for the work of others and for a range of resources in undertaking the necessary activities to complete the case study coursework.
Pre-requisites:	Before undertaking this module the student should have undertaken the following: **Module Code:** COMP08002 — **Module Title:** Database Development **Other:** or similar module

Co-requisites	Module Code:	Module Title:

* Indicates that module descriptor is not published.

Learning and Teaching

This module is mostly taught using the traditional approach of lecturing to groups of students. However, lectures are periodically supplemented with tutorials to allow for the re-visiting of the more complex aspects of the syllabus. Lab (PC)-based classes complement the lectures by providing an environment to support the learning of the more practical-based aspects of the syllabus.

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:

** Database Systems: A Practical Approach to the Design, Implementation and Management by Thomas Connolly and Carolyn Begg. Addison Wesley Publishing Company.

Internet access to Aula to allow student access to all teaching material, including slides, labs, tutorials and coursework.

DBMS such as Microsoft SQL Server.

(**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)

Engagement Requirements

In line with the Academic Engagement Procedure, Students are defined as academically engaged if they are regularly engaged with timetabled teaching sessions, course-related learning resources including those in the Library and on the relevant learning platform, and complete assessments and submit these on time. Please refer to the Academic Engagement Procedure at the following link: Academic engagement procedure

Supplemental Information

Programme Board	Computing
Assessment Results (Pass/Fail)	No
Subject Panel	Business & Applied Computing
Moderator	Tahir Mahmood (to be confirmed)
External Examiner	T Gaber
Accreditation Details	This module is accredited by BCS as part of the Business Technology programme.
Changes/Version Number	2.15 Section 9 - Change to Module Coordinator and Moderator

Assessment: (also refer to Assessment Outcomes Grids below)

Formative assessment is available through completion of the practical labs - that allow students to test their progress and understanding of the practical aspects of the syllabus. The summative assessment is lab-based, group work coursework worth 50% which is undertaken in the second half of the module.

Formative assessment is available using practice class tests via Aula - that allow students to test their progress and understanding of the syllabus. The first summative component of assessment is a class test worth 10% (individual) and this takes place approximately half way through the module and the third summative component of assessment is towards the end of the module and this class test is worth 40% (individual). The results for these two summative assessments are combined to give a total worth 50%.

(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 Handbook.)

Assessment Outcome Grids (Footnote A.)

Component 1

Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Weighting (%) of Assessment Element	Timetabled Contact Hours
Dissertation/ Project report/ Thesis	✓	✓	✓	50	0

Component 2

Assessment Type (Footnote B.)	Learning Outcome (1)	Learning Outcome (2)	Learning Outcome (3)	Weighting (%) of Assessment Element	Timetabled Contact Hours
Class test (written)	✓	✓	✓	50	0
			Combined Total For All Components	100%	0 hours

Footnotes

A. Referred to within Assessment Section above

B. Identified in the Learning Outcome Section above

Note(s):

1. More than one assessment method can be used to assess individual learning outcomes.
2. Schools are responsible for determining student contact hours. Please refer to University Policy on contact hours (extract contained within section 10 of the Module Descriptor guidance note).
   This will normally be variable across Schools, dependent on Programmes &/or Professional requirements.

Equality and Diversity

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 enabling support coordinator, 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.
UWS Equality and Diversity Policy

(N.B. Every effort will be made by the University to accommodate any equality and diversity issues brought to the attention of the School)