Module Descriptor

Title	Data Mining and Business Intelligence		
Session	2025/26	**Status**	Published
Code	COMP11122	**SCQF Level**	11
Credit Points	20	**ECTS (European Credit Transfer Scheme)**	10
School	**Computing, Engineering and Physical Sciences**		
Module Co-ordinator	Shahid Mahmood Awan		

Summary of Module

Most modern businesses are equipped with online transaction processing (OLTP) systems capable of efficiently supporting traditional business applications such as customer ordering and stock control. Once the transactional data has served its primary purpose, the data can be re-used to provide valuable business intelligence to corporate decision-makers.

Business intelligence enables businesses to work smarter not just harder through analysis of their data assets. This module considers how BI has evolved to become a core business function and the various facets of business intelligence (BI). In recent years, business intelligence (BI) has become so critical that dedicated technologies have emerged to meet this development.

This module looks at the range of technologies associated with business intelligence from traditional querying/reporting to more advanced data mining. 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. This module introduces (or mostly likely revises descriptive statistics) to ensure students have sufficient statistical knowledge to enable basic data exploration and interpretation.

Practical sessions provide students with an opportunity to use a traditional and popular BI tool (e.g.MS Excel) to explore a data set and to interpret and present the results to a business audience.

The intended audience for this module are students that are already knowledgeable about the fundamentals of data management and for those interested in how data stored in databases can be transformed into business intelligence for 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	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)	

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 knowledge and a critical understanding of the concepts, technologies, and issues associated with business intelligence
L2	Demonstrate knowledge and a critical understanding of the steps and techniques associated with data exploration
L3	Use a range of routine and specialist skills and techniques to design and implement an application capable of providing business intelligence 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:**
Knowledge and Understanding (K and U)	**SCQF 11** A critical understanding of the principal theories, concepts and principles associated with business intelligence (BI). A critical understanding of the principal theories, concepts and services associated with BI technologies. Extensive, detailed and critical knowledge and understanding Kimball's Business Dimensional Lifecycle and the associated techniques such as dimensionality modelling
Practice: Applied Knowledge and Understanding	**SCQF 11**

[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

	Use a range of the principal professional skills, techniques, practices and/or materials associated the design and implementation of BI applications
Generic Cognitive skills	**SCQF 11** Apply critical analysis, evaluation and synthesis to forefront issues and routine problems (including those associated with the security and privacy of data) associated with the development and use of BI applications in a business environment
Communication, ICT and Numeracy Skills	**SCQF 11** Use a range of routine and specialised skills to establish the requirements for BI applications. Critically 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 11** Take responsibility for own work and/or significant responsibility for the work of others and for a range of resources in undertaking the necessary activities to complete the module coursework

Prerequisites	**Module Code**	**Module Title**
	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. This module is delivered through live and pre-recorded lectures. Lectures are supplemented with tutorials for smaller groups of students to allow for the re-examination 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** (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: Database Systems: A Practical Approach to the Design, Implementation and Management by Thomas Connolly and Carolyn Begg. Addison Wesley Publishing Company *
(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	Raja Ujjan
External Examiner	A Malhi
Accreditation Details	
Module Appears in CPD catalogue	☐ **Yes** ☒ **No**
Changes / Version Number	1.1

Assessment (also refer to Assessment Outcomes Grids below)
Assessment 1
Formative assessment is available using on-line practice tests (on 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 halfway 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%
Assessment 2
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 second summative assessment is lab- based, group work coursework worth 50% which is undertaken in the second half of the module
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)	☒	☐	☐	☐	☐	50	0

Component 2							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Dissertation/ Project report/ Thesis	☒	☒	☒	☐	☐	50	0

Component 3							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**

	☐	☐	☐	☐	☐		
Combined total for all components						100%	0 hours

Change Control

What	**When**	**Who**
Attendance, EDI and External Examiner updated	22/01/2025	A Adamson