

MODULE SPECIFICATION

Name of Module		Business Intelligence					
Parent School/Dept		Computer Science					
Programme(s) where module is offered		BSc Computer Science with Electrical Engineering; BSc Computer Science with Economics; BSc Computer Science with Business; BSc Computer Science with International Relations; BSc Computer Science with Political Science;					
Status (core, option, free choice)		Core		Pre-Requisite Modules or Qualifications		None	
FHEQ Level	6	Unit Value	6 ECTS	Module Code	CS360	Module coordinator	Nedim Hifziefendic
Term taught		Spring		Applicable From		2019	

Educational Aims of the Module

The aim of this module is to excel decision-making and managerial skills of our students so that they can ultimately save money and increase profit in their future working environment. Information-based business decision making has and is being embraced by more and more modern business organisations. With the increasing use of big data and business decision support systems, it is important for IS students to gain knowledge of the state-of-the-art computing technologies behind business intelligence. The module builds on previous modules in system analysis and design, databases, data mining, and programming. Students will work in small groups using state-of-the-art tools. The module will also provide students with an opportunity for critical evaluation, independent thinking, and sense of real-life problem solving.

Module Outline/Syllabus

- **Introduction:** Data, information and knowledge. Business decision making. What is business intelligence (BI)? BI structure and context. Current use of BI systems. Promises and challenges.
- **Data Warehousing Concepts and Principles:** Concepts of data warehouse. Data warehouse process and architecture. Data extraction, transformation, and loading (ETL) process. Data warehouse management issues. Tools and technologies. Data warehouse for BI. Data Warehouse Design.
- **Data Mining Concepts and Principles, Techniques and Performance issues:** Concept of data mining. Data mining problems. Types of data and information patterns. Data mining case study. Importance of evaluation.
- **Business Intelligence in Practice:** System infrastructure issues. Implementation issues. Performance Management Issues. Big data issues. Building a BI dashboard. Impacts of BI. Technical challenges in practice. Social and ethical issues of BI.
- State-of-the-art tools for good decision making.

Student Engagement Hours

Type	Number per Term	Duration	Total Time
Lectures	15	2 hours	30 hours
Lab Sessions	15	2 hours	30 hours
Total Guided/Independent Learning Hours			90
Total Contact Hours			60
Total Engagement Hours			150

Assessment Method Summary

Type	Number Required	Duration / Length	Weighting	Timing/Submission Deadline
Assignment/Quiz	1	60 minutes	10%	Weeks: 5
Mid-term exam	1	90 minutes	20%	Mid-semester
Project (individual)	1	3000 words	20%	End of semester
Final exam	1	180 minutes	50%	End of semester

Module Outcomes

<p><u>Intended Learning Outcomes:</u></p> <ol style="list-style-type: none"> 1. Demonstrate a critical and systematic understanding of data mining and data warehousing principles 2. Demonstrate knowledge and understanding of business intelligence concepts 3. In-depth understanding of novel solutions and techniques in data mining for supporting business intelligence 4. Demonstrate current knowledge and critical understanding of the different available technology behind the theory. 5. Select appropriate methods and tools for good decision making and therefore excel their managerial skills. 	<p><u>Teaching and Learning Strategy:</u></p> <ol style="list-style-type: none"> 1. Lectures provide core information on specific topics. (ILO:1-5) 2. Research and investigation assignments designed to aid self-study will be delivered in the IT lab. (ILO: 3-5) 3. Project assignment: to integrate theoretical concepts with practical skills and build essential practical skills. (ILO:3-5)
	<p><u>Assessment Strategy</u></p> <ol style="list-style-type: none"> 1. Assignment/Quiz (ILO: 2) 2. Mid-term exam (ILO: 1-2) 3. Project (ILO: 3-5) 4. Final exam (ILO: 1-3)
<p><u>Practical Skills</u></p> <ol style="list-style-type: none"> 1. Effective use of state-of-the-art tools 2. Data Analysis skills 	<p><u>Teaching and Learning Strategy:</u></p> <ol style="list-style-type: none"> 1. A mixture of lectures, exercises in the lab, and case studies are used to deliver the various topics in this module. (ILO:1-2) 2. Some material is covered using a problem-based format to advance the learning objectives. Other material is covered through directed study to enhance students' independent learning ability. (ILO:1-2) 3. Some case studies, largely based on consultancy experience, are used to integrate these topics and demonstrate to students how the various techniques are interrelated and can be applied in real-life situations. (PS:1-2)
	<p><u>Assessment Strategy</u></p> <ol style="list-style-type: none"> 1. Project (PS:1-2) 2. Mid-term exam (PS:2) 3. Final exam (PS: 2)
<p><u>Transferable Skills</u></p> <ol style="list-style-type: none"> 1. Effective IT skills 2. Independent study skills 3. Problem-solving skills 4. Project management skills 	<p><u>Teaching and Learning Strategy:</u></p> <ol style="list-style-type: none"> 1. Laboratory sessions (TS:1,3-5) 2. Project (TS:1-5)
	<p><u>Assessment Strategy</u></p> <ol style="list-style-type: none"> 1. Project (TS: 1-4) 2. Mid-term exam (TS: 3) 3. Final exam (TS: 3)

Key Texts and/or other learning materials

Set text

- Sharda, R., et al., (2014), *Business Intelligence and Analytics: Systems for Decision Support*, 10th Edition, Pearson

Supplementary Materials

- Sherman, R., (2014), *Business Intelligence Guidebook*, Morgan Kauffman
- Nofal, M., Yusof, Z., (2013), *Integration of Business Intelligence and Enterprise Resource Planning within Organisations*, *Procedia Technology*, Vol. 11, [online], <http://www.sciencedirect.com/science/article/pii/S2212017313003964> (Accessed 9th December 2015).
- Han, J., et al., (2011), *Data Mining: Concepts and Techniques*, Morgan Kauffman
- Krishnan, K., (2013), *Data Warehousing and the Age of Big Data*, Morgan Kauffman
- Other resources to be included at the discretion of the lecturer.

Please note: This specification provides a concise summary of the main features of the module and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. More detailed information on the learning outcomes, content and teaching, learning and assessment methods of each module and programme can be found in the departmental or programme handbook. The accuracy of the information contained in this document is reviewed annually by the University of Buckingham and may be checked by the Quality Assurance Agency.

Date of Production	Spring 2019
Date approved by School Learning and Teaching Committee	28 th September 2016
Date approved by School Board of Study	12 th October 2016
Date approved by University Learning and Teaching Committee	2 nd November 2016
Date of Annual Review	December 2017