Macao Polytechnic University

Faculty of Business

Bachelor of E-Commerce

Module Outline

Academic Year 2022 / 2023 Semester 2

Learning Module	Business Intelligence			**Class Code**	ECOM3140
Pre-requisite(s)	None				
Medium of Instruction	English			**Credit**	3
Lecture Hours	24 class hours	**Lab/Practice Hours**	21 class hours	**Total Course Duration**	45 hours
Instructor	Billy Yu		**E-mail**	billyyu@mpu.edu.mo	
Office	M5-34		**Telephone**	8599 3312	

Description

This course includes data warehousing, data mining, business performance management, predictive analysis, online analytical processing. Data techniques are becoming indispensable in business. A warehouse is designed to facilitate reporting and analysis while data mining is the key part of the analysis. This course begins with the architecture for such warehousing followed by its design methodologies. Then the data mining sections are more practical. It focuses on the use of tools as in analytical CRM as well as the mechanisms behind.

Learning Outcomes

After completing the learning module, students will be able to:

1. explain concepts of data mining (DM)
2. use SAS Enterprise Miner™ for DM purposes;
3. explain and use appropriate DM model for analysis;
4. compare working mechanisms of various DM models; and
5. propose their choice of models for DM analysis.

Alignment of Program and Module Intended Learning Outcomes

PILOs	MILOs
1. Demonstrate an understanding of the business processes and operations and the skillful realization of information technologies required to practice electronic commerce;	
2. Apply knowledge in business, mathematics, programming, computing, web development, and database to address complex problems in the context of electronic commerce;	1
3. Analyze critically the effect of web technology use on organizational performance and develop electronic commerce strategies that fit organizational objectives;	
4. Select and apply tools and technologies to effectively implement electronic commerce systems in business intelligence, enterprise resources planning, supply chain management, and customer relationship management;	2
5. Develop relationships, motivate others, manage conflicts, lead changes, and work across differences in multi-disciplinary electronic commerce projects;	
6. Communicate and work effectively using written and spoken word, non-verbal language, and electronic tools with fellow professionals and different stakeholders in the electronic commerce industry;	
7. Demonstrate a global electronic commerce perspective as evidenced by an understanding of foreign languages and the role of Macau as an interface between the East and the West;	
8. Cope with and manage contemporary advancement related to electronic commerce development and demonstrate lifelong learning attitudes and abilities;	3 & 4
9. Conduct research and devise innovative electronic commerce models to exploit business opportunities; and	5
10. Reflect on professional responsibilities and keep up with the latest electronic commerce issues on legal, environmental, ethical, and societal considerations to benefit society comprehensively.	

Content

1. An Introduction, DM and SAS enterprise miner (EM) overview (3 class hours)
2. Introduction to BPM, modeling, data warehousing and OLAP (3 class hours)
3. Predictive modeling using regression (3 class hours)
4. Predictive Modeling Using Decision Trees (3 class hours)
5. Data preprocessing and filtering (3 class hours)
6. Data insight for analysis (3 class hours, practice)
7. Predictive Modeling Using Neural Networks (3 class hours)
8. Model Evaluation (3 class hours)
9. Mid-term Examination (1.5 class hours)
10. SAS code to work with EM macros & Programming with SAS code (4.5 class hours)
11. Project audit and corrections (3 class hours)
12. Scoring data and cluster analysis (3 class hours)
13. Association and Sequence Analysis (3 class hours)
14. Project Presentations (3 class hours)
15. Final Examination (3 class hours)

Teaching Method

Students are required to prepare for and actively participate in class discussions. Other than passive listening, they are expected to take notes and ask questions in lectures as well as in group discussions. The projects expect students to be creative and students should apply the course material as well as knowledge from other subjects than what they learn in this course.

Attendance

Attendance requirements are governed by the "Academic Regulations Governing Bachelor's Degree Programmes of Macao Polytechnic University". Students who do not meet the attendance requirements for the course will not be permitted to sit the final or re-sit examination and shall be given an 'F' grade.

Assessment

This course is graded on a 100 point scale, with 100 being the highest possible score and 50 the pass score. The followings activities and tasks (i.e. coursework components and examinations) are designed to give students experience of a broad range of approaches aimed at developing and assessing their learning. Assessment will be both formative and summative and will involve oral presentations and group project reports, assignments, in-class discussions, and written examinations, and a mid-term test. The following is a summary of the assessment tasks:

	Item	Description	Percentage
1.	Project	Project of this subject	35%
2.	Midterm I	Midterm Examination (written)	25%
3.	Examination	Examination (written)	40%
		Total Percentage:	100%

Plagiarism Policy

It is student's responsibility to ensure that his/her assignment has been checked by Turnitin software, and the similarity score given by Turnitin software cannot be higher than 30%. However, a special case can be determined by the instructor.

Teaching Material(s)

Reference

Textbook(s)

Sarma, Kattamuri S. (2018) Predictive Modeling with SAS® Enterprise Miner™: Practical Solutions for Business Applications, Third Edition, SAS Publishing, ISBN 1635268958.

López, César Pérez (2021) Predictive models to risk analysis with neural networks, regression, and decision trees, Lulu.com, ISBN 100897952X.

Reference book(s)

Hongbo Du (2010) Data Mining Techniques and Applications: An Introduction, Cengage Learning EMEA 1844808912

Alan C. Elliott, Wayne A. Woodward (2009) SAS Essentials: A Guide to Mastering SAS for Research (Research Methods for the Social Sciences) Jossey-Bass, 0470461292

Randall S. Collica (2007) CRM Segmentation and Clustering Using SAS Enterprise Miner (Sas Press Series) SAS Publishing, 1590475089

Byron Francis (2016) Data Analytics: The Complete Beginner's Guide - The Black Book, CreateSpace Independent Publishing Platform (September 12, 2016), 1537630016.

Note:

1. The above class schedule is tentative and subject to change depending on the progress of the students.
2. Students are responsible for ALL materials covered in class AND in the textbook.