FACULTY OF BUSINESS

BACHELOR OF E-COMMERCE

LEARNING MODULE OUTLINE

Academic Year	2024 / 2025	Semester	1
Module Code	COMP3130-311		
Learning Module	E-Commerce Infrastructure		
Pre-requisite(s)	Nil		
Medium of Instruction	English		
Credits	3	Contact Hours	45 hrs
Instructor	Siu Wai Cheong	Email	siuwaich@mpu.edu.mo
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MODULE DESCRIPTION

This learning module is an introduction to computer network used in E-Commerce. It also outlines computer security fundamentals for E-Commerce enterprises as well as daily personal uses, including access control, encryption, authentication and key management. Topics include fundamentals of data communication, network architectures, wireless networks, network operating systems, internet applications, network securities, and e-commerce network solutions.

MODULE INTENDED LEARNING OUTCOMES (ILOS)

On completion of this learning module, students will be able to:

M1.	Propose the requirements for data communications in E-commerce.
M2.	Explain the design principles of TCP/IP-OSI network model.
M3.	Illustrate and explain basic standards and mechanism of wired/wireless LAN/WAN network architectures and network management systems.
M4.	Recommend network architectures and technologies for E-Commerce applications.
M5.	Compare and justify different network security implementations for E-Commerce applications.

These ILOs aims to enable students to attain the following Programme Intended Learning Outcomes (PILOs):

PILOs	**M1**	**M2**	**M3**	**M4**	**M5**
P1. Demonstrate an understanding of the business processes and operations and the skillful realization of information technologies required to practice electronic commerce;					

P2. Apply knowledge in business, mathematics, programming, computing, web development, and database to address complex problems in the context of electronic commerce;					
P3.Analyze critically the effect of web technology use on organizational performance and develop electronic commerce strategies that fit organizational objectives;	✓	✓	✓	✓	✓
P4. 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;	✓		✓	✓	✓
P5. Develop relationships, motivate others, manage conflicts, lead changes, and work across differences in multi-disciplinary electronic commerce projects;					
P6. 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;					
P7. 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;					
P8. Cope with and manage contemporary advancement related to electronic commerce development and demonstrate lifelong learning attitudes and abilities;					
P9. Conduct research and devise innovative electronic commerce models to exploit business opportunities; and					
P10. Reflect on professional responsibilities and keep up with the latest electronic commerce issues on legal, environmental, ethical, and societal considerations to benefit society comprehensively.	✓				✓

MODULE SCHEDULE, COVERAGE AND STUDY LOAD

Week	Content Coverage	Contact Hours
1	1. Introduction (Understand the network environment and propose the requirements for data communications in E-commerce.)	3 hrs
2	2. Network Standards (Explain the design principles of TCP/IP-OSI network model.)	3 hrs
3, 4	3. Network Security (Understand the necessity and propose the requirements for network security.)	6 hrs
5	4. Network and Security Management (Propose the requirements for network and security management.)	3 hrs
6, 7	5. Wired Networks (Illustrate and explain basic standards and mechanism of wired network architectures and wired network management systems.)	6 hrs

8	**TEST**	3 hrs
6, 10	6. Wireless Networks (Illustrate and explain basic standards and mechanism of wireless network architectures and wireless network management systems.)	6 hrs
11, 12, 13	7. TCP/IP and Internetworking (Explain the design principles of TCP/IP network.)	7.5 hrs
13, 14	8. Network Applications (Recommend network architectures and technologies for E-Commerce applications.)	4.5 hrs
15	**Final Examination**	3 hrs
	Total:	45 hrs

TEACHING AND LEARNING ACTIVITIES

In this learning module, students will work towards attaining the ILOs through the following teaching and learning activities:

Teaching and Learning Activities	**M1**	**M2**	**M3**	**M4**	**M5**
T1. Lecture	✓	✓	✓	✓	✓
T2. Project Presentation	✓	✓	✓	✓	✓

ATTENDANCE

Attendance requirements are governed by the Academic Regulations Governing Bachelor's Degree Programmes of the Macao Polytechnic University. Students who do not meet the attendance requirements for the learning module shall be awarded an 'F' grade.

ASSESSMENT

In this learning module, students are required to complete the following assessment activities:

Assessment Activities	**Weighting (%)**	**ILOs to be Assessed**
A1. Individual assignment (graded)	10%	M1-M5
A2. Group project (graded)	25%	M1-M5
A3. Test (graded)	25%	M1-M5
A4. Final examination (graded)	40%	M1-M5

The assessment will be conducted following the University's Assessment Strategy (see www.mpu.edu.mo/teaching_learning/en/assessment_strategy.php). Passing this learning module indicates that students will have attained the ILOs of this learning module and thus acquired its credits.

MARKING SCHEME

	Assessment Task	Criterion	Excellent	Very Good, Good	Satisfactory	Pass	Fail
			A, A-	B+, B, B-	C+, C, C-	D+, D	F
			88% - 100%	73% - 87%	58% - 72%	50% - 57%	0 – 49%
1.	Individual assignment	Demonstrate the understanding of the subjects.	High	Significant	Moderate	Basic	Not even reaching marginal levels
2.	Project	Demonstrate the understanding of the subjects and the self-learning ability.					
3.	Test	Demonstrate the understanding of the subjects.					
4.	Final Exam / Re-sit Exam	Demonstrate the understanding of the subjects.					

REQUIRED READINGS

Raymond R. Panko, Julia L. Panko, 2018, Business Data Networks and Security, 11th Ed., Global Edition, Pearson.

REFERENCES

Raymond R. Panko, Julia L. Panko, 2015, Business Data Networks and Security, 10th Ed., Global Edition, Pearson.

Chris Sanders, 2017, Practical Packet Analysis, Using Wireshark to Solve Real-World Network Problems, 3rd Edition, No Starch Press

William Stallings, 2014, Network Security Essentials: Applications and Standards, 5/E, Pearson.

William Stallings, Thomas Case, 2013, Business Data Communications - Infrastructure, Networking and Security, 7/E, Pearson.

STUDENT FEEDBACK

At the end of every semester, students are invited to provide feedback on the learning module and the teaching arrangement through questionnaires. Your feedback is valuable for instructors to enhance the module and its delivery for future students. The instructor and programme coordinators will consider all feedback and respond with actions formally in the annual programme review.

ACADEMIC INTEGRITY

The Macao Polytechnic University requires students to have full commitment to academic integrity when engaging in research and academic activities. Violations of academic integrity, which include but are not limited to plagiarism, collusion, fabrication or falsification, repeated use of assignments and cheating in examinations, are considered as serious academic offenses and may lead to disciplinary actions. Students should read the relevant regulations and guidelines in the Student Handbook which is distributed upon the admission into the University, a copy of which can also be found at www.mpu.edu.mo/student_handbook/.