# FACULTY OF BUSINESS
# BACHELOR OF E-COMMERCE
# LEARNING MODULE OUTLINE

| Academic Year | 2023/2024 | Semester | 1 |
|---|---|---|---|
| Module Code | COMP3120-312 | | |
| Learning Module | System Analysis and Design | | |
| Pre-requisite(s) | Nil | | |
| Medium of Instruction | English | | |
| Credits | 3 | Contact Hours | 45 |
| Instructor | Prof. CHAN KA YIN VICTOR | Email | vkychan@mpu.edu.mo |
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**MODULE DESCRIPTION**

This learning module forms an introduction to formal procedures and methods of e-commerce systems analysis and design. Topics include data, process, object-oriented analysis and design modeling methods, systems life cycle, feasibility analysis, data analysis, aspects of systems design, database design, external design, architectural design, portals design, systems implementation and maintenance. Case studies are a feature of the learning module.

**MODULE INTENDED LEARNING OUTCOMES (ILOS)**

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

| M1. | describe the object-oriented system analysis and design, UML and the Unified Process, |
|---|---|
| M2. | practise detailed object-oriented system analysis and design, |
| M3. | practise software quality assurance, software testing, and software maintenance, and |
| M4. | evaluate the value of system analysis and design in real-world enterprises. |

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

| PILOs | M1 | M2 | M3 | M4 | M5 | M6 |
|---|---|---|---|---|---|---|
| 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 | Introduction to Systems Analysis and Design Requirements | 3 |
| 2 | Requirements<br>The Business Modelling and Requirements Workflows | 3 |
| 3 | The Business Modelling and Requirements Workflows<br>The Analysis Workflow | 3 |
| 4 | The Analysis Workflow | 3 |
| 5 | The Design Workflow | 3 |
| 6 | Implementation and Maintenance<br>Requirements: Practice | 3 |
| 7 | Requirements: Practice | 3 |
| 8 | Requirements: Practice<br>The Business Modelling and Requirements Workflows: Practice | 3 |
| 9 | The Business Modelling and Requirements Workflows: Practice | 3 |
| 10 | The Business Modelling and Requirements Workflows: Practice<br>The Analysis Workflow: Practice | 3 |

| 11 | The Analysis Workflow: Practice | 3 |
|---|---|---|
| 12 | The Analysis Workflow: Practice | 3 |
| 13 | The Design Workflow: Practice | 3 |
| 14 | The Design Workflow: Practice | 3 |
| 15 | Final Examination | 3 |

**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 | M6 |
|---|---|---|---|---|---|---|
| T1.  Lectures | ✓ |  | ✓ |  |  |  |
| T2.  Case studies |  | ✓ |  | ✓ |  |  |
| T3.  Group discussion |  | ✓ |  | ✓ |  |  |
| T4.  Class practice |  | ✓ |  | ✓ |  |  |

**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.  Interim Report | 30 | M1, M2 and M4 |
| A2.  Final Report | 30 | M1, M2, M3 and M4 |
| A3.  Examination | 40 | M1, M2 and M4 |

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 Criterion | Level of Comprehensiveness | | | | |
|---|---|---|---|---|---|
| | 0 (0% - 29%) | 1 (30% - 49%) | 2 (50% - 69%) | 3 (70% - 89%) | 4 (90% - 100%) |
| The use case diagram | Not relevantly presented | Vaguely presented and not discussed | Presented but not adequately discussed | Presented and somewhat adequately discussed | Clearly presented and adequately discussed |
| The use-case descriptions: brief | Not relevantly presented | Vaguely presented and not discussed | Presented but not adequately discussed | Presented and somewhat adequately discussed | Clearly presented and adequately discussed |
| The use case descriptions: step-by-step | Not relevantly presented | Vaguely presented and not discussed | Presented but not adequately discussed | Presented and somewhat adequately discussed | Clearly presented and adequately discussed |
| The communication diagram(s) | Not relevantly presented | Vaguely presented and not discussed | Presented but not adequately discussed | Presented and somewhat adequately discussed | Clearly presented and adequately discussed |
| The sequence diagram(s) | Not relevantly presented | Vaguely presented and not discussed | Presented but not adequately discussed | Presented and somewhat adequately discussed | Clearly presented and adequately discussed |
| The class diagram: the classes | Not relevantly presented | Vaguely presented and not discussed | Presented but not adequately discussed | Presented and somewhat adequately discussed | Clearly presented and adequately discussed |
| The class diagram: the attributes | Not relevantly presented | Vaguely presented and not discussed | Presented but not adequately discussed | Presented and somewhat adequately discussed | Clearly presented and adequately discussed |
| The class diagram: the operations | Not relevantly presented | Vaguely presented and not discussed | Presented but not adequately discussed | Presented and somewhat adequately discussed | Clearly presented and adequately discussed |
| The structure | Not relevantly presented | Vaguely presented and not discussed | Presented but not adequately discussed | Presented and somewhat adequately discussed | Clearly presented and adequately discussed |
| The components | Not relevantly presented | Vaguely presented and not discussed | Presented but not adequately discussed | Presented and somewhat adequately discussed | Clearly presented and adequately discussed |

**REQUIRED READINGS**

A. Dennis, B. H. Wixom, R. M. Roth, 2022, Systems Analysis and Design, 8th ed., Wiley.

**REFERENCES**

https://www.wiley.com/en-us/Systems+Analysis+and+Design%2C+8th+Edition-p-9781119803782

S. R. Schach, 2011, Object-Oriented and Classical Software Engineering, 8th ed., McGraw Hill.

**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/.