澳門理工大學
Universidade Politécnica de Macau
Macao Polytechnic University

FACULTY OF BUSINESS

BACHELOR OF E-COMMERCE

LEARNING MODULE OUTLINE

Academic Year	2025/26	Semester	1
Module Code	COMP2120-211		
Learning Module	Introduction to Programming		
Pre-requisite(s)	Nil		
Medium of Instruction	English		
Credits	3	Contact Hours	45
Instructor	Dr. Jacob K. M. Chan	Email	t1421@mpu.edu.mo
Office	B110	Office Phone	---

MODULE DESCRIPTION

This course covers the basic skills of object-oriented and web programming. Students will learn the skills through examples of basic application programs and hands-on programming experience in the lab.

MODULE INTENDED LEARNING OUTCOMES (ILOS)

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

M1.	Master basic Python programming techniques such as making use of variables, program control statements, etc.
M2.	Explain the major concepts of object-oriented programming.
M3.	Select appropriate data structures to handle data on different occasions.
M4.	Apply data analytical techniques, such as data cleaning, data wrangling, calculating basic descriptive statistics, etc., to a problem.
M5.	Generate data visualizations for the problems.

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
1-2	Introduction to Python Programming	4
2-4	Control Statements and Program Development	6
4-5	Functions	4
5-7	Sequences: Lists and Tuples	5
7-8	Dictionaries and Sets	4
9	Test 1	2
8-10	Array-Oriented Programming with NumPy	4
10-11	Strings: A Deeper Look	4
12-13	Files and Exceptions	4
13-14	Object-Oriented Programming	5
15	Test 2	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
T1. Lectures	✓	✓	✓	✓	✓
T2. Online reading and videos	✓	✓	✓	✓	✓
T3. Assignments	✓	✓	✓	✓	✓
T4. Tests	✓	✓	✓	✓	✓
T5. Project	✓	✓	✓	✓	✓

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. Class Participation (Bonus)	[§]5	M1-M5
A2. Assignments	30	M1-M5
A3. Two Tests	50	M1-M5
A4. Group Project	20	M1-M5

§ The total scores for A1-A4 would not exceed 100% in total.

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 (A, A-) 88% - 100%	Very Good, Good (B+, B, B-) 73% - 87%	Satisfactory (C+, C, C-) 58 - 72%	Pass (D+, D) 50% – 57%	Fail (F) 0% - 49%
1.	Assignments	Demonstrate the **understanding** of the subjects covered in the classes.	High	Significant	Moderate	Basic	Not even reaching marginal levels
2.	Group Project	Demonstrate the **ability** to **solve** programming problems by applying appropriate concepts, methods, and techniques.	High	Significant	Moderate	Basic	Not even reaching marginal levels
3.	Tests	Demonstrate the **ability** to **identify** and **apply** appropriate concepts, methods, and techniques	High	Significant	Moderate	Basic	Not even reaching marginal levels

The class participation marks, being some additional bonus, will only be given to the students who:

- (P) Actively **participate** in class discussions,
- (H) **Help** other classmates to solve their problems, and
- (A) Pay **attention** in classes.

Marks	Criteria
5	Demonstrate P, H, and A
3-4	Demonstrate mainly only two activities among P, H, and A
1-2	Demonstrate mainly only one activity among P, H, and A
0	Barely show any activity among P, H, and A

REQUIRED READINGS

Textbook + Digital Learning Platform (Revel Access Code)

Paul Deitel & Harvey Deitel (2019) Intro to Python for Computer Science and Data Science, Pearson.

Reference Book

Eric Matthes (2023) Python Crash Course, 3rd edition, No Starch Press.

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/.