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

FACULTY OF APPLIED SCIENCES

BACHELOR OF SCIENCE IN COMPUTING

LEARNING MODULE OUTLINE

Academic Year	2024/2025	Semester	1
Module Code	SOCI1112		
Learning Module	Sustainable Development		
Pre-requisite(s)	Nil		
Medium of Instruction	English		
Credits	2	Contact Hours	30 hrs
Instructor	Jieying Lin	Email	t1802@mpu.edu.mo
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MODULE DESCRIPTION

Through a combination of lectures by instructor and active exploration by students, this module aims to provide students with an understanding of the basic concepts, principles and models related to sustainable development. It covers the national governance system and related laws and regulations of sustainable development. By introducing the various governance patterns of sustainable development, it promotes students to understand the worldwide development trend and multi-dimensions of the sustaianble development. Combining the relevant frontier issues and social hot spots of Macao's sustainable development, inspire students to pay attention to the fields of economy, education, national security, science and technology, protection of vulnerable groups, cultural tourism, smart cities, artificail intelligence and social welfare security, and consider about how to promote the sustainable development of Macao.

MODULE INTENDED LEARNING OUTCOMES (ILOS)

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

M1.	Distinguish and generalize the basic concepts and related fields of sustainable development;(C7)
M2.	Identify and summarize the general principles and theories of the sustainable development; Define distinguish the fundamental objectives, measures, and the typical cases of governance patterns of sustainable development; (C8, C11)
M3.	To understand the trend of sustainable development in the worldwide, including the latest development in environmental protection, advance technology, nation security, political structure green economy, and cultural tourism, etc. (C12)
M4.	To grasp the contents of the sustainable development of Macao society, and to understand the cutting-edge dynamics in related fields, especially those related to the smart cities and artificial intelligence(C14)

M5.	Using relevant theories, drawing lessons from typical cases, explain and evaluate the current situation, conditions and limitations of local sustainable development, and analyse the future sustainable development prospects of Macau in the field of smart cities and artificial intelligence.

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

PILOs		M1	M2	M3	M4	M5
P1.	Select and apply proven methods, tools and techniques to the effective and efficient implementation of information systems on common platforms, including the Internet platform;					
P2.	Acquire essential knowledge in specific fields of computing disciplines including networking, artificial intelligence, and security;					
P3.	Apply necessary mathematical techniques to model, analyze and devise solutions to complex problems;					
P4.	Work independently to develop an understanding of, and the knowledge and skills associated with the general support and mitigation of security risks of computer systems and networks;					
P5.	Design and implement relational database, with an emphasis on how to organize, maintain, retrieve, and analyze information;					
P6.	Distinguish the fundamental and operational issues of computer systems, with considerations of user, business, ethical, societal, and environmental needs;		✓	✓	✓	✓
P7.	Evaluate, prepare, and communicate effectively on technical information to both technical and non-technical audience;	✓		✓		
P8.	Work as an effective member of a team in the analysis, design, and development of software systems, with recognition of requirement to support equality, diversity, and inclusion;					
P9.	Use project planning, risk management and quality management techniques in solutions to complex problems;				✓	✓
P10.	Build the capacity and desire for lifelong learning and to learn advanced and emerging technologies on one's own;					
P11.	(For Business Intelligence specialization) Gain an in-depth knowledge of technologies related to data analysis and management of information to support business processes in enterprises;					
P12.	(For Gaming Technology specialization) Acquire the general and advanced knowledge of current technologies and operating environment for the development of the gaming and tourism industry;					
P13.	(For Computer Education specialization) Acquire general and practical knowledge of computer education and its practicing environment in secondary education;					

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MODULE SCHEDULE, COVERAGE AND STUDY LOAD

Week	Content Coverage	Contact Hours
1-2	1. Introduction	4
	1.1 Basic concept of Sustainable Development in general	
	1.2 Main objectives and development history of Sustainable Development	
	1.3 The leading organizations and important roles related to SD.	4
3-4	2. The main governance patterns of Sustainable Development	
	2.1 The classic theories and principles of Sustainable Development.	
	2.2 Some worldwide typical cases and advance experiences of SD.	
	2.3 The relationship between economy sustainable development and environment protection	
5-12	3. The specific fields of Sustainable Development	16
	3.1 National Security- the fundamental of Sustainable Development	
	3.2 Sustainable Development in Macroeconomic Growth, Regional Differences and the Gap between Rich and Poor	
	3.3 Social Security, Population Ageing of Sustainable Development	
	3.4 International Relations, Global Governance of Sustainable Development	
	3.5 Education Equality and Public Health of Sustainable Development	
	3.6 Green Economy, Environmental Protection and Sustainable Development	
	3.7 Cultural Tourism Exploration and Cultural Heritage Protection	
	3.8 Technological Innovation and Artificial Intelligence development	
13-15	4. The Sustainable Development of Macao	6
	4.1 The current situation and course of urban development in Macao	
	4.2 The advantages and limitations of Macao development	
	4.3 The sustainable development policy and governance measurements of Macao enterprises and government.	
	4.4 Smart City -the one of the development objectives in future of Macao.	

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. In-class exercises			✓	✓	✓

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 (%)	AHEP4 LOs	ILOs to be Assessed
A1. Assignment / Classwork	25%	C7, C8, C11, C12	M1, M2, M3, M4, M5
A2. Tests	25%	C7, C8, C11	M3, M4, M5
A3. Examination	50%	C8, C11, C12, C14	M1, M2, M3, M4, 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.

Students with an overall score of less than 35 in the coursework must take the re-sit examination even if the overall score for the module is 50 or above.

Students with a score of less than 35 in the final examination must take the re-sit examination even if the overall score for the module is 50 or above.

Students with an overall final grade of less than 35 are NOT allowed to take the re-sit examination.

REQUIRED READINGS

There is no official text for this module. Module notes are distributed in the class.

REFERENCES

1.   Zheng, L. (2009). *An Introduction to the Study of China's Sustainable Economic Development*. Shanghai: Shanghai University Press.
2.   YiChao, W. (2018). *China's Sustainable Economic Development: Environment, Industry and Population*. Beijing: Social Science Literature Press.

3. Fang, C. (2007). *China's Population and Sustainable Development*. Beijing: Science Press.
4. Li, Z.& Ning, K. (2007). *Education and Sustainable Development in China*. Beijing: Science 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/.