

# Macao Polytechnic Institute

## School of Business

### Bachelor of Management / E-commerce / Accounting

#### Module Outline

Academic Year 2021 / 2022

Semester 2

<b>Learning Module</b>	Environmental Management System			<b>Class Code</b>	BUSS0131--221-222-323
<b>Pre-requisite(s)</b>	None				
<b>Medium of Instruction</b>	English			<b>Credit</b>	3
<b>Lecture Hours</b>	45 hrs	<b>Lab/Practic e Hours</b>	0 hrs	<b>Total Hours</b>	45 hours
<b>Instructor</b>	Dr. Terence Lai Tsz Ming		<b>E-mail</b>	tmlai@ipm.edu.mo	
<b>Office</b>	Rm. M533, Ming Tak Building		<b>Telephone</b>	8599-3346	

#### Description

This course presents the basic philosophy of environmental management system. It describes the impact of human activities on our environment including resource consumption, water quality, air quality, noise, and waste disposal. Integrated environmental tools including ISO14000 environmental management system, life cycle, assessment and eco-labeling would also be covered. Topics include: Interaction between business, technology, and environment; resource consumption and its impact on ecosystem; basic forms of pollution; application of life cycle assessment and econ-labeling to product development and introducing their effects on business activities.

#### Learning Outcomes

Upon completion of this course, the students should be able to:

1. Identify the role of human being in the environment. Describe the impact of human and business activities on the environment;
2. Describe the essential features of ISO14000 series;
3. Identify the damages which have been made to the environment. Describe and explain the concepts of environmental auditing and EMS; and
4. Suggest the remedies to the environment through scientific ways. Demonstrate the ability to

identify environmental impacts and environmental aspects in a business environment.

## Alignment of Program and Course Intended Learning Outcomes:

### Bachelor of Management

Programme Intended Learning Outcomes (PILOs)	CILOs
1. Integrate contemporary management theories and business disciplines relevant to general business practices.	CILOs 2, 3
2. Apply critical thinking and logical analysis skills and techniques to resolve management issues.	CILOs 1, 4
3. Utilize appropriate written and spoken forms to communicate effectively and professionally with stakeholders in various cultural environments.	CILO 4
4. Demonstrate leadership in a team and respecting the rights of others irrespective of their cultural background, race or gender in order to solve unpredictable problems in the field.	
5. With the help of mathematical and statistical skills, utilize the latest empirical findings and academic studies to support the recommendation of business projects or reports.	CILOs 1, 3, 4
6. Recommend an appropriate course of action by ethically examining economic, environmental, political, legal and regulatory contexts of global business practices.	CILOs 1, 4
7. Interpret and utilize management information or business software for internal control, planning, performance evaluation, and coordination to improve efficiency and effectiveness in the business process.	CILOs 1, 3, 4

### Bachelor of E-Commerce

Programme Intended Learning Outcomes (PILOs)	CILOs
1. Demonstrate an understanding of the business processes and operations and the skillful realization of information technologies required to practice electronic commerce;	CILOs 1, 2, 4
2. Apply knowledge in business, mathematics, programming, computing, web development, and database to address complex problems in the context of electronic commerce;	CILOs 1, 3, 4
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;	
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;	
9. Conduct research and devise innovative electronic commerce models to exploit business opportunities; and	
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.	CILOs 3,4

### **Bachelor of Accounting**

<b>Programme Intended Learning Outcomes (PILOs)</b>	<b>CILOs</b>
1. Integrate the contemporary theories, principles of accounting and business disciplines relevant to general business practice.	CILOs 1, 2, 4
2. Assess general business scenarios with mathematical and statistical skills.	CILOs 1, 3, 4
3. Apply critical thinking and logical analysis skills and techniques to solve business problems.	
4. Interpret and analyze accounting information for internal control, planning, performance evaluation, and coordination to continuously improve business process.	
5. Apply accounting or business software for business analysis.	
6. Develop queries to assess management information from database to improve efficiency and effectiveness.	
7. Synthesize the latest requirement of international accounting and auditing standards in preparing financial statements and auditing reports.	
8. Utilize appropriate written and spoken forms to communicate effectively with stakeholders in various cultural environments.	
9. Recommend an appropriate course of action by ethically examining the economic, environmental, political, legal and regulatory contexts of global business practice.	CILOs 1, 4
10. Utilize the latest empirical findings and academic studies to support the recommendation of business projects.	CILOs 1, 3, 4

## **Content**

- 1 Introduction (3 hours)
  - 1.1 Introduction to Environmental Management
  - 1.2 Ecology and the Environment
  - 1.3 Human Evolution

*(Understand and describe the historical development of environmental management and the initiative of the United Nations)*
  
- 2 Interaction between Business, Technology and Environment (3 hours)
  - 2.1 Industrial Revolution
  - 2.2 Environmental Incidents

*(Understand and describe the complicated relationships between business, technology and environment)*
  
- 3 Resource Consumption and its Impact on Eco-system (3 hours)
  - 3.1 Energy Sources and Power Generation
  - 3.2 Rainforest
  - 3.3 Water Resources

*(Describe the way humans regard the planet and resources and the impact of human activities on the physical and biological environment)*
  
- 4 Environmental Consideration (3 hours)
  - 4.1 Identification of Environmental Impacts
  - 4.2 Major Category of Environmental Aspects
  - 4.3 Weighting and Normalization

*(Demonstrate the ability to identify environmental aspects and environmental impacts)*
  
- 5 Air Quality (3 hours)
  - 5.1 Air Quality Objectives
  - 5.2 Air Pollution Impact – Short and Long Terms
  - 5.3 Control Processes and Classifications

*(Describe and discuss the issues of air quality in Macao)*

### **Mid-term examination (3 hours)**

- 6 Noise Pollution (3 hours)
  - 6.1 Environmental Noise and Community Noise
  - 6.2 Basic Noise Units, Measurement and Applications
  - 6.3 Noise Control Methodologies and Processes

*(Describe and discuss noise pollution issues in Macao)*
  
- 7 Nonrenewable Energy (3 hours)
  - 7.1 Energy Resources from Fossil Fuels

*(Describe Energy Resources and Fossil Fuels.)*

- 8 Renewable Energy (3 hours)
  - 8.1 Solar Energy
  - 8.2 Alternative Energy and Conservation  
*(Describe Solar Energy and Alternative Energy and Conservation.)*
  
- 9 ISO14001 Environmental Management System (6 hours)
  - 9.1 Impact Identification and Assessment
  - 9.2 Management Commitment and Registration Procedures
  - 9.3 Implementation
  - 9.4 Continual Improvement Programme  
*(Understand and describe ISO14001 EMS; demonstrate the ability to identify the essential steps for ISO certification, auditing, and compliance monitoring)*
  
- 10 Life Cycle Assessment (6 hours)
  - 10.1 Cradle to Grave Approach
  - 10.2 Applications of Life Cycle Assessment
  - 10.3 Examples and Lessons Learnt  
*(Describe and discuss the uses of life cycle assessment for product development)*
  
- 11 Eco-labeling (3 hours)
  - 11.1 Eco-labeling Schemes  
*(Describe and discuss the uses of eco-labeling)*

**Final examination (3 hours)**

**Teaching Method:**

This course is delivered through a series of lectures that provide a detailed explanation and understanding of various environmental issues and core concepts. Class activities, exercises, case studies, and class discussions integrating with multimedia resources such as videos and websites are utilized to support students' learning. Specifically, different teaching and learning activities (TLAs) are adopted.

**Attendance:**

Attendance during the course must meet the attendance requirements as stated in the 'Academic Regulations'. Students who have less than the required attendance for the enrolled subject are not eligible to attend the final or resit examinations and will be given an "F" as their final grade.

**Assessment:**

This course is graded on a 100 point scale, with 100 being the highest possible score and 50 the pass score.

	<b>Item</b>	<b>Description</b>	<b>Percentage</b>
1	Project	Project	20%
2	Assignment	Assignment	20%
3	Test	Mid-term examination	20%
4	Exam	Final examination	40%
<b>Total percentage:</b>			100%

**Teaching Material(s)****Textbooks**

1. Macao Environmental Protection Bureau, (2019). Report on the State of the Environment of Macao 2019. Available at [https://www.dspa.gov.mo/Publications/StateReport/2019/2019\\_en.pdf](https://www.dspa.gov.mo/Publications/StateReport/2019/2019_en.pdf)
2. 澳門環境保護局, (2019). 澳門環境狀況報告 2019. Available at [https://www.dspa.gov.mo/Publications/StateReport/2019/20200605\\_2019\\_tc.pdf](https://www.dspa.gov.mo/Publications/StateReport/2019/20200605_2019_tc.pdf)
3. Macao Statistics and Census Service, (2019). Environmental Statistics 2019. Available at [https://www.dsec.gov.mo/getAttachment/f11174a8-bd7c-427b-9e1c-48b47ec8b139/C\\_AMB\\_PUB\\_2019\\_Y.aspx](https://www.dsec.gov.mo/getAttachment/f11174a8-bd7c-427b-9e1c-48b47ec8b139/C_AMB_PUB_2019_Y.aspx)

**Reference book(s):**

1. Henry J.G. and Heinke, G.W. (1996) Environmental Science and Engineering, 2nd edition, Prentice-Hall.
2. Macao Environmental Protection Bureau, (2017). Published materials. Available at <http://www.dspa.gov.mo/publish.aspx>
3. D.L. Goetsch & S.B. Davis (2000), ISO14000 Environmental Management, 1st edition, Prentice Hall.

**Plagiarism Policy:**

When a student submits an assignment, he has a duty to ensure that his 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.