FACULTY OF APPLIED SCIENCES

BACHELOR OF SCIENCE IN COMPUTING

LEARNING MODULE OUTLINE

Academic Year	2025/2026	Semester	1
Module Code	COMP3119		
Learning Module	Principles of Gaming Technology		
Pre-requisite(s)	Nil		
Medium of Instruction	English		
Credits	3	Contact Hours	45 hrs
Instructor	Andrew Siu	Email	kmsiu@mpu.edu.mo
Office	A319, Chi-Un Building	Office Phone	85996451

MODULE DESCRIPTION

This module covers the general knowledge of the current technologies applied in the gaming industry. The purpose of this module is to enable students to gain a full picture of the overall gaming environment worldwide with regard to technologies employed and to develop an understanding of the underpinning concepts behind the technologies utilised now and in future. In particular, the students will be introduced to the historical background of gaming, classification of the games, the compliance of slot machines and other peripherals used in table games.

MODULE INTENDED LEARNING OUTCOMES (ILOS)

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

M1.	Demonstrate an understanding of the gaming industry in different aspects, such as gaming operations, social impacts, ethical implications, government regulations and technologies; (C1, C7, C8)
M2.	Comprehend the mathematics applied in gambling games, gaming operations and marketing; (C1, C9)
M3.	Categorize the various kinds of gaming materials and equipment used in casinos; (C1, C7)
M4.	Apply the fundamental casino accounting methods to the financial operations of table games and slot games; (C1)
M5.	Illustrate the operations and management of the casino cage, table games, slot floor, security, surveillance etc.; (C1)
M6.	Identify problems and constraints in gaming environment; Analyze and design an innovative and feasible solution in a specific context of gaming environment. (C5)

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

PILOs		M1	M2	M3	M4	M5	M6
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, analyse 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 organise, maintain, retrieve and analyse 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;						

MODULE SCHEDULE, COVERAGE AND STUDY LOAD

Week	Content Coverage	Contact Hours
1,2	1. Background of Gaming	6
	1.1 History and Evolution	

	1.2 The Fundamentals of Gaming & Casino	
	1.3 Gaming Operating Environment	
	1.4 The Related Issues of Economics, Government Regulation and Society	
3,4	2. Fundamentals of Gaming Math	6
	2.1 Probability and Odds	
	2.2 Real odds, Expected Value and House Advantage	
	2.3 House Advantage for Major Casino Wagers	
	2.4 Volatility of the Casino Games	
5,6,7	3. Information Technology in the Gaming Industry	8
	3.1 Casino Management Information Systems (Front-End)	
	3.2 Casino Management Information Systems (Back-End)	
	3.3 Advanced Technologies in Casino	
7,8,9	4. Casino Accounting	6
	4.1 Drop, Payouts and Hold	
	4.2 Cage Operations	
	4.3 Credit and Collections	
9,10	5. Casino Cage Management	3
	5.1 Operations of Casino Cage	
	5.2 Functionalities of the components of Cage	
10,11	6. Slot game Operations	4
	6.1 Introduction to Slot Games	
	6.2 Slot Accounting and Slot Information System	
	6.3 Slot Floor Management	
12	7. Table game Operations	4
	7.1 Introduction to Table Games	
	7.2 Table Game Accounting Procedure	
13,14	8. Casino Marketing	5
	8.1 Casino Promotional Schemes	
	8.2 Player Tracking Systems	

	8.3 Player Ratings and Casino Complimentaries	
15	9. Online Gaming	3
	9.1 Online Casino Operations	
	9.2 The Issues of the Online Gaming and Mobile Gaming	
	9.3 Betting Exchanges	
	9.4 The Related Issues of Jurisdiction and Regulation	

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. In-class exercises and discussions	✓	✓	✓	✓	✓	✓

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. Project	27%	C1, C5, C7, C9	M1, M3, M4, M5, M6
A2. Test	28%	C1, C7, C8, C9	M1, M2, M3, M4, M5
A3. Examination	45%	C1, C7, C8, C9	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

1. Siu Ka Meng, Lei Iat Seng (2021). Principles of Gaming Technologies, (ISBN:978-981-4923-23-1), McGraw Hill, 01/2021.

REFERENCES

1. Jan Bokunewicz, Donald Keisel, Maria McNichols. (2011). Casino Gaming Technology. Prentice Hall.

2. Denis P. Rudd, Lincoln H. Marshall. (2000). Casino & Gaming Operations (2nd ed.). Prentice Hall.

3. Robert C. Hannum, Anthony N. Cabot. (2005). Practical Casino Math (2nd ed.). Institute for the Study of Gambling and Commercial Gaming-025, College of Business Administration.

4. Jim Kilby, Jim Fox, Anthony F.Lucas. (2005). Casino Operations Management (2nd ed.). John Wiley & Sons.

5. The Gaming industry: Introduction and Perspectives. (1996). William F.Harrah College of Hotel Administration, University of Nevada, Las Vegas. John Wiley & Sons.

6. Introduction to Casino & Gaming Operations (2nd ed.). (2000). Denis P. Rudd, Lincoln H. Marshall. Prentice Hall.

7. Robert C. Hannum, Anthony N.Cabot. Practical Casino Math (2nd ed.). (2005). Institute for the Study of Gambling and Commercial Gaming-025, College of Business Administration.

8. http://www.apgml.org. Vulnerabilities of Casinos and Gaming Sector. March 2009. FATF (Financial Action Task Force).

9. http://www.dicj.gov.mo/web/cn/frontpage/index.html. Gaming Inspection and Coordination Bureau Macao SAR.

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/.