PEKING UNIVERSITY HEALTH SCIENCE CENTER - MACAO POLYTECHNIC UNIVERSITY NURSING ACADEMY (AE) BACHELOR OF SCIENCE IN NURSING LEARNING MODULE OUTLINE

Academic Year	2025-2026	Semester	2
Module Code	NSTA3101		
Learning Module	Health Statistics		
Pre-requisite(s)	Nil		
Medium of Instruction	Chinese /English		
Credits	3	Contact Hours	45 hours
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MODULE DESCRIPTION 學科單元/科目概述

This is a necessary course for year three nursing students. There are total 45 hours in 22 lectures for this course. The course will focus on the data collection, management and analysis and other statistic application. The students will get more understanding theoretically and practically in the statistics which include statistical tables, index, probability concepts and distributions, statistical hypothesis, correlation, regression, chi-square, t-test, ANOVA, multiple regression and non-parametric analysis etc.

MODULE INTENDED LEARNING OUTCOMES (ILOS) 學科單元/科目預期學習成效

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

M1.	Understand statistical concepts
M2.	Understand statistical methods
M3.	Apply the statistical skills in research projects
M4.	Think critically based on the evidence

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

The PILOs are aligned with the Dublin descriptors, including knowledge and understanding, acquisition, application, critical judgment, communication skills, and learning skills/ability.

PILOs 課程預期學習成效	M1	M2	M3	M4
P1. Demonstrate an understanding of the holistic nature of the clients' health status involving individual, family, and community aspects.				
P2. Demonstrate effective communication skills and the ability to establish and maintain a therapeutic relationship with clients.				
P3. Demonstrate acquisition, mastery, and application of knowledge and skills for nursing practice, including biological sciences, social sciences and humanities, by making appropriate clinical reasoning and performing safe and therapeutic practice.	√	√	√	√
P4. Demonstrate the ability to maintain legal and ethical standards of nursing practice.	√	√	√	√
P5. Demonstrate the ability to carry out relevant research and contribute to the community's health.	√	√	√	√
P6. Work effectively and efficiently alone or in teams.	√	√	√	√
P7. Demonstrate the ability to identify and evaluate health care issues.				
P8. Demonstrate a critical judgment and apply the principles of evidence-based practice to deliver nursing care.	√	√	√	√

MODULE SCHEDULE, COVERAGE AND STUDY LOAD 教與學日程、內容及學習量

Week 週	**Content Coverage 涵蓋內容**	**Contact Hours 面授學時**
3	**Introduction** - Introduction to medical statistics.	2
3-4	**Basic concepts for statistics and data description** - Concepts of biostatistics (population, sample, variables, types of data) - Review of descriptive statistic (Frequency distribution, graphics, and percentile, central tendency and dispersion ）, Confidence interval - Normal distribution, Probability, Definition of statistical hypothesis, its classification and testing - Errors (Type I errors, Type II errors), Powers; Sample size calculation	10
5-6	**Bivariate and** SPSS basic and data management - t test and Analysis of Variance - Chi-square test	10
6	**SPSS Practice**	2
7	**Mid-term test**	2

7-8	**Multivariate analysis (1)** - Analysis of Variance - and correlation coefficient	4
9	**Nonparametric method** - Wilcoxon signed-rank/rank sum test - Kruskal-Walis test	2
9	**SPSS Practice**	2
9-10	**Multivariate analysis (2)** - Linear regression - Logistic regression	4
10	**SPSS Practice**	2
11	**Group Project presentation**	3
11	**Final Examination**	2
	Total	**45 hrs**

TEACHING AND LEARNING ACTIVITIES

In this learning module, students will work towards attaining the ILOs through the following teaching and learning activities: 修讀本學科單元/科目，學生將透過以下教與學活動取得預期學習成效

Teaching and Learning Activities	**M1**	**M2**	**M3**	**M4**
T1. Interactive Lectures	✓	✓	✓	✓
T2. Practice	✓	✓	✓	✓
T3. Group Project presentation	✓	✓	✓	✓

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

This learning module is graded on a 100-point scale, with 100 being the highest possible score and 50 being the passing score.

In this learning module, students are required to complete the following assessment activities:

Assessment Activities	**Weighting (%)**	**ILOs to be Assessed (M1,M2,M3,M4)**
A1. Group Project presentation	25	M1, M2, M3, M4
A2. Mid-term test	25	M1, M2, M3, M4
A3. Final Examination	50	M1, M2, M3, 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 (評分準則)

Assessment Activities	Assessment Criteria	Mark Ranges				
		88-100	73-87	58-72	50-57	<50
A1. Group Project	Demonstrate the ability to identify and apply appropriate concepts methods and techniques	Excellent	Good/ Very Good	Satisfactory	Marginal Pass	Fail; not reaching marginal levels
A2. Mid-term test	Demonstrate the ability to identify and apply appropriate concepts methods and techniques	Excellent	Good/ Very Good	Satisfactory	Marginal Pass	Fail; not reaching marginal levels
A3. Final Examination	Demonstrate the ability to identify and apply appropriate concepts methods and techniques	Excellent	Good/ Very Good	Satisfactory	Marginal Pass	Fail; not reaching marginal levels

ASSESSMENT CRITERIA FOR GROUP PROJECT

Num	Items	Assessment Criteria			
		16-20	11-15	6-10	⩽5
1	**Organization**	Clear organization,	Mostly organized, but loses focus once or twice.	Somewhat organized, but loses focus 3 or more times.	No clear organization to the presentation.
2	**Quality of Content**	The selected case is appropriate, the statistical method used is correct, and the analysis process is detailed and correct	The selected case is appropriate, the statistical method used is not entirely correct, and the analysis process is simple	The selected case is somewhat appropriate, the statistical methods used do not match the data exactly, and the analysis process is not specific	The selected case is inappropriate, the statistical method used is incorrect, and the specific analysis process is not reported
3	**Quality of slide**	Slides/media support the presentation, are easy to read and understand. Slides contain no spelling or grammatical errors.	80% of the slides/media are easy to read and understand. Others contain too much information or have illegible font. One or two spelling grammatical errors are present	50% of the slides/media are easy to read and understand. Others contain too much information or have illegible font. Three to five spelling or grammatical errors are present	80% of the slides/media are difficult to read and understand. More than five spelling and grammar errors exist.
4	**Voice quality, pace**	Voice is clear, easy to hear and understand. Pace is neither too fast nor too slow.	80% of the problems exist with either voice or pace	50% of the problems exist with either voice or pace	Voice is not clear, hard to hear and understand. Pace is either too fast or too slow.
5	**Professionalism**	Clothing is business-like, speaker is poised and well prepared	Clothing is business-like or neat. Speaker lacks some confidence and/or relies on note cards several times	Clothing is business-like or neat. Speaker lacks some confidence and/or relies on note cards more than 50% of the time	Clothing is not appropriate and/or appearance is unkempt. Speaker reads entire presentation.

REQUIRED READINGS 書單

孫振球，徐勇勇（2020）.醫學統計學（第 5 版）. 北京：人民衛生出版社

REFERENCES 參考文獻

李康，賀佳.（2017）.*醫學統計學（第七版）*. 北京：人民衛生出版社.

Pagano M, Gauvreau K, Mattie H (2022). Principles of Biostatistics (Third Edition).

Scott I, Mazhindu D (2014). Statistics for Healthcare Professionals (Second Edition): An Introduction. SAGE Publications.

STUDENT FEEDBACK

At the end of each 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/.

Timetable CLASS A

Topics

Session	Contact hours	Topics
1	2	Introduction to Medical Statistics
2	2	Concepts of biostatistics (population, sample, variables, types of data)
3	2	Descriptive statistic (Frequency distribution, graphics, percentile, central tendency and dispersion)
4	2	Confidence interval； Normal distribution; Probability
5	2	Definition of statistical hypothesis, its classification and testing
6	2	Errors (Type I errors, Type II errors); Powers; Sample size calculation
7	2	SPSS basic and data management (1)
8	2	SPSS basic and data management (2)
9	2	SPSS basic and data management (3)
10	2	t test
11	2	Chi-square test
12	2	SPSS practice (1)
13	2	Mid-term test
14	2	Analysis of Variance
15	2	Correlation coefficient
16	2	Nonparametric method
17	2	SPSS practice (2)
18	2	Linear regression
19	2	Logistic regression
20	2	SPSS practice (3)
21	3	Group Project presentation
22	2	Final exam