

Macao Polytechnic University

Faculty of Health Sciences and Sports

Bachelor of Science in Nursing

Module Outline

Academic Year 2022 / 2023 Semester 1

Learning Module	Health Statistics			Class Code	NSTA3101
Pre-requisite(s)	Nil				
Medium of Instruction	Chinese / English			Credit	3
Lecture Hours	39rs	Lab/Practice Hours	6 hrs	Total Hours	45rs
Instructor	Dr Xin Wang, Amy Dr Loi Hoi Ngan, Edmund		E-mail	amywang@mpu.edu.mo hnloi@mpu.edu.mo	
Office	Room M713A, Meng Tak Building (Amy) P312, Pearl Jubilee Building, Taipa campus, (Loi)		Telephone	85993478(Amy) 87950831 (Loi)	

Description

This is a necessary learning module for year three nursing students. There are total 45 hours in 22 lectures for this module. The module 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.

Learning Outcomes

After completing the learning module, students will be able to:

1. understand statistical methods and concepts
2. use the statistical skills in research projects
3. think critically based on the evidence

Content

- 1 Basic concepts for statistics and data description (14 hours)
 - 1.1. Introduction to Medical Statistics; Concepts of biostatistics (population, sample, variables, types of data)
 - 1.2. Review of descriptive statistic (Frequency distribution, graphics, and percentile, central tendency and dispersion) , Confidence interval
 - 1.3. Normal distribution, Probability, Definition of statistical hypothesis, its classification and testing
 - 1.4. Errors (Type I errors, Type II errors), Powers; Sample size calculation
2. Bivariate and multivariate analysis (24 hours)
 - 2.1. SPSS basic and data management (1)
 - 2.2 SPSS basic and data management (2)
 - 2.3 t test and Analysis of Variance
 - 2.4 Chi-square test
 - 2.5 Linear regression and correlation coefficient
 - 2.6 Multiple regression and Logistic regression
 - 2.7. SPSS data analysis and practice (1)
 - 2.7 Other Nonparametric Statistical Methods
 - 2.8. SPSS data analysis and practice (2)
3. SPSS test and group presentation (5 hours)

Class Practice (6 hours)

Class Practice for 3A

Date & Time	Practice Item	Practice Title	Students / Group	Mode of Practice	Practice Requirement
14/9/22 11:00-13:00	SPSS	Data management	all	SPSS	Statistic software using and analysis result presentation.
23/9/22 11:00-13:00	SPSS	Data management and analysis	all	SPSS	Statistic software using and analysis result presentation.
27/9/22 11:00-13:00	SPSS	Data management and analysis	all	SPSS	Statistic software using and analysis result presentation.

Class Practice for 3B

Date & Time	Practice Item	Practice Title	Students / Group	Mode of Practice	Practice Requirement
28/10/22 09:00-11:00	SPSS	Data management	all	SPSS	Statistic software using and analysis result presentation.
11/11/22 11:00-13:00	SPSS	Data analysis	all	SPSS	Statistic software using and analysis result presentation.
15/11/22 11:00-13:00	SPSS	Data analysis	all	SPSS	Statistic software using and analysis result presentation.

Teaching Method

Power point presentation, Computer software practice

Attendance

Attendance requirements are governed by the “Academic Regulations Governing Bachelor’s Degree Programmes” of Macao Polytechnic University. Students who do not meet the attendance requirements for the module will not be permitted to sit the final / re-sit examination and 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 the pass score. **Any students scoring less than 35% of the total mark in the final examination will be given an “F” grade for the learning module even if the overall grade is 50% or higher).**

Item	Description	Percentage
1. Group Project	Use the available data to select a topic and conduct study design, data analysis, result report and do presentation	25 %
2. Mid-term test	Multiple choices, short questions and SPSS data analysis	25%
3. Final exam	Content of the course	50 %
Total Percentage:		100 %

Teaching Material(s)

Reference:

李康，賀佳。(2017). *醫學統計學（第七版）*. 北京：人民衛生出版社 ISBN：9787117266765
孫振球，徐勇勇(2014). *醫學統計學（第4版）*. 北京：人民衛生出版社 ISBN: 9787117191098
張文彤(2017). *SPSS 統計分析基礎教程（第3版）*. 北京：高等教育出版社 ISBN：9787040474602

Scott I, Mazhindu D (2014). *Statistics for Healthcare Professionals (Second Edition): An Introduction*. SAGE Publications. ISBN-13: 9781446208939 or ISBN-10: 1446208931.

Timetable (Class 3A)

Session	Date	Time	Teacher	Topic
1	19/8/22	11:00-13:00	LOI	Introduction to Medical Statistics
2	23/8/22	16:30-18:30	LOI	Concepts of biostatistics (population, sample, variables, types of data)
3	24/8/22	9:00-11:00	LOI	Descriptive statistic (Frequency distribution, graphics, percentile, central tendency and dispersion)
4	26/8/22	11:00-13:00	LOI	Confidence interval; Normal distribution; Probability
5	30/8/22	16:30-18:30	LOI	Definition of statistical hypothesis, its classification and testing
6	31/8/22	9:00-11:00	LOI	Errors (Type I errors, Type II errors); Powers; Sample size calculation
7	2/9/22	11:00-13:00	Wang	SPSS basic and data management (1)
8	5/9/22	11:00-13:00	Wang	SPSS basic and data management (2)
9	7/9/22	9:00-11:00	Wang	SPSS basic and data management (3)
10	9/9/22	11:00-13:00	Wang	t test
11	13/9/22	11:00-13:00	Wang	Chi-square test
12	14/9/22	11:00-13:00	Wang	SPSS practice (1)
13	16/9/22	9:00-11:00	Wang	Mid-term test
14	16/9/22	11:00-13:00	Wang	Analysis of Variance
15	20/9/22	11:00-13:00	Wang	Correlation coefficient
16	23/9/22	9:00-11:00	Wang	Linear regression
17	23/9/22	11:00-13:00	Wang	SPSS practice (2)
18	23/9/22	14:30-16:30	Wang	Logistic regression (1)
19	27/9/22	9:00-11:00	Wang	Logistic regression (2)
20	27/9/22	11:00-13:00	Wang	SPSS practice (3)
21.5	6/10/22*	9:00-12:00	Wang	Group Project presentation
22.5	05/12/22	14:30-16:30	Wang	Final exam

*** Three hours**

Timetable (Class 3B)

Session	Date	Time	Teacher	Topic
1	19/8/22	09:00-11:00	LOI	Introduction to Medical Statistics
2	24/8/22	11:00-13:00	LOI	Concepts of biostatistics (population, sample, variables, types of data)
3	26/8/22	09:00-11:00	LOI	Descriptive statistic (Frequency distribution, graphics, percentile, central tendency and dispersion)
4	30/8/22	14:30-16:30	LOI	Confidence interval; Normal distribution; Probability
5	31/8/22	11:00-13:00	LOI	Definition of statistical hypothesis, its classification and testing
6	2/9/22	09:00-11:00	LOI	Errors (Type I errors, Type II errors); Powers; Sample size calculation
7	8/9/22	9:00-11:00	Wang	SPSS basic and data management (1)
8	8/9/22	11:00-13:00	Wang	SPSS basic and data management (2)
9	25/10/22	09:00-11:00	Wang	SPSS basic and data management (3)
10	27/10/22	9:00-11:00	Wang	t test
11	27/10/22	11:00-13:00	Wang	Chi-square test
12	28/10/22	09:00-11:00	Wang	SPSS practice (1)
13	31/10/22	11:00-13:00	Wang	Analysis of Variance
14	3/11/22	11:00-13:00	Wang	Correlation coefficient
15	4/11/22	09:00-11:00	LOI	Mid-term test
16	8/11/22	09:00-11:00	Wang	Linear regression
17	11/11/22	11:00-13:00	Wang	SPSS practice (2)
18	11/11/22	14:30-16:30	Wang	Logistic regression (1)
19	15/11/22	09:00-11:00	Wang	Logistic regression (2)
22	15/11/22	11:00-13:00	Wang	SPSS practice (3)
22	17/11/22*	9:00-12:00	Wang	Group Project presentation
22	05/12/22	14:30-16:30	LOI	Final exam

* **Three hours**