Macao Polytechnic Institute

School of Health Sciences and Sports

Bachelor of Science in Nursing

Module Outline

Academic Year 2021 / 2022 Semester 2

Learning Module	Clinical Nutrition（臨床營養學）			**Class Code**	NNUT2102
Pre-requisite(s)	Nil				
Medium of Instruction	Chinese & English			**Credit**	2
Lecture Hours	27hrs	**Lab/Practice Hours**	3 hrs	**Total Hours**	30 hrs
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Description

This 30-hour subject is one of the foundation subjects of the nursing program. It will introduce basic concepts of human nutrition and relate these concepts to health and illness. It also includes the knowledge of the major functions and metabolism of macronutrients and micronutrients in order to help students understand the association among nutrition, health and illness, as well as assessment of nutritional status.

Learning Outcomes

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

1. be familiar with terminology used in nutrition;
2. describe the major nutritional status assessments;
3. explain the major nutrients physiological functions, absorption, utilization and deficiency;
4. explain the concepts of balanced diet;
5. describe the factors which influence dietary choice;
6. give examples of diseases that result from malnutrition;
7. explain the process of nutritional assessment for identifying people at risk of becoming malnourished;
8. describe the therapeutic diets commonly used in hospitals.

Content

1. Introduction to nutrition (2 class hours)
    - 1.1 The Science of Nutrition
    - 1.2 Terminology in Nutrition
    - 1.3 The Nutrients
    - 1.4 Dietary Reference Intakes
    - 1.5 Food Guide Pyramid
    - 1.6 Nutrition Assessment

2. Carbohydrates (2 class hours)
    - 2.1 Definition of carbohydrates
    - 2.2 Classification of carbohydrates
    - 2.3 Digestion & absorption of carbohydrates
    - 2.4 Functions of carbohydrates
    - 2.5 Disorders related to carbohydrates metabolism
    - 2.6 Dietary reference intakes of carbohydrates

3. Protein (2 class hours)
    - 3.1 History of protein
    - 3.2 Essential Amino Acid
    - 3.3 Protein's function
    - 3.4 Digestion, absorption and metabolism of protein
    - 3.5 Evaluation the nutrition value of food protein
    - 3.6 Dietary protein deficiency
    - 3.7 Assessment of nutritional status
    - 3.8 Dietary reference intakes and food source of protein

4. Vitamins (2 class hours)
    - 4.1 Introduction of Vitamins
        - 4.11 History of Vitamins
        - 4.12 Characteristics
        - 4.13 Name
        - 4.14 Classification
    - 4.2 The Fat Soluble Vitamins: A, D, E, and K
        - 4.21 Functions
        - 4.22 Digestion, absorption and metabolism
        - 4.23 Deficiency and Toxicity
        - 4.24 Estimation of nutritional level
        - 4.25 Dietary reference intakes and food source
    - 4.3 The Water Soluble Vitamins: B Vitamins and Vitamin C

4.31 Functions
4.32 Digestion, absorption and metabolism
4.33 Deficiency and Toxicity
4.34 Estimation of nutritional level
4.35 Dietary reference intakes and food source

5. Lipids (2 class hours)
   5.1 Introduction of lipids
   5.2 Classification of triglycerides
   5.3 ω-3 and ω-6 fatty acids
   5.4 Lipids digestion and absorption
   5.5 Functions of lipids
   5.6 Disadvantages of lipids
   5.7 Nutritional assessment of dietary lipids
   5.8 Dietary reference intakes and food source of lipids

6. Minerals (2 class hours)
   6.1 Introduction of minerals: Calcium, Iron, Zinc, Iodine, Selenium, other
   6.2 Roles and Functions in the Body
   6.3 Absorption and Metabolism
   6.4 Deficiency and Toxicity
   6.5 Nutritional evaluation
   6.6 Dietary reference intakes and food source
   6.7 Supplementation

7. Nutrition and dietary requirements for specific populations (4 class hours)
   7.1 Life Cycle Nutrition: Pregnancy and Lactation
      7.11 Physiological changes in pregnancy and lactation
      7.12 Nutrient requirements of pregnancy and lactation
      7.13 Influence of maternal nutritional status on fetus and infants
      7.14 Rational diet during pregnancy and lactation
   7.2 Nutrition and dietary of Infancy, Childhood, and Adolescence
   7.3 Nutrition and dietary of Adulthood and the Later Years

8. Nutrition and Diet-related disease (6 class hours)
   8.1 Nutrition and obesity
      8.11 Definition, diagnosis and categorization of obesity
      8.12 Causal mechanism and influential factor of obesity
      8.13 Health Risks of obesity
      8.14 Prevention and treatment of obesity

8.2 Nutrition and coronary atherosclerosis
8.3 Nutrition and hypertension
8.4 Nutrition and diabetes mellitus
8.5 Nutrition and gout
8.6 Nutrition and immune system disease
8.7 Nutrition and Cancer

9. Nutritional Care (2 class hours)
   9.1 Goals of Nutritional Care
   9.2 Nutritional assessment and hospital diets
   9.3 Nutritional support
   9.4 Enteral nutrition
   9.5 Parenteral nutrition

10. Presentation (3 class hours)
    Review (1 class hours)

11. Examination (2 class hours)

Class Practice (3 class hours)

Date & Time	Practice Item	Title	Students / Group	Mode of Practice	Requirement
2022/04/19 (class A)	Presentation and disscuss	Diet-related disease	5-6 students per group	Oral presentation	Power-point of the subject issue should be submitted before the presentation for assessment.
2022/03/02 2022/03/03 (class B)	Presentation and disscuss	Diet-related disease	5-6 students per group	Oral presentation	

Teaching Method

Lectures, videos, demonstration and discussion.

Attendance

Attendance of the learning module is in accordance with the attendance stated in the 'Academic Regulations Governing Bachelor's Degree Programmes of Macao Polytechnic Institute'. Students are not eligible to attend the final examination and re-sit examination, moreover, an "F" will be given as the final grade to students who have less than the stated attendance for the enrolled subject.

Assessment

This learning module is graded on a 100 point scale, with 100 being the highest possible score and 50 being the passing score. *Also, 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.	Presentations and individual assignment	Title of "Diet-related disease", 5-6 students for each group.	40 %
2.	Examination	Materials from classes 1-9	60 %
		Total Percentage:	100%

Teaching Material(s)

Textbooks

焦廣宇、蔣卓勤 （2010）*臨床營養學*（第三版）。北京：人民衛生。

Reference Books

蔭士安、汪之頊 （2008）*現代營養學* （第九版）。北京：人民衛生。

Maban, L. K., & Escott-Stump, S. (2004). *Krause's food, nutrition & diet therapy* (9th ed.). Philadelphia: Saunders.

Stanfield, P. S. & Hui, Y. H. (2009). *Nutrition and diet therapy* (5th ed.). London: Jones & Barlett.