

## NAME OF THE SUBJECT

MODULE	CONTENT	YEAR	TERM	CREDITS	TYPE
Food Science	Nutrition and health	2º	1º	6	Core subject
<b>LECTURER(S)</b>			<b>Postal address, telephone nº, e-mail address</b>		
Ana María Rivas Velasco			Ana María Rivas Velasco Tfno: 958243864 email: amrivas@ugr.es  Department of Nutrition and Food Science Campus de Cartuja s/n, 18071 University of Granada		
<b>DEGREE WITHIN WHICH THE SUBJECT IS TAUGHT</b>					
Nurse and Occupational therapy grades					
<b>PREREQUISITES and/or RECOMMENDATIONS (if necessary)</b>					
Adequate knowledge of Human Physiology and Biochemistry					
<b>BRIEF ACCOUNT OF THE SUBJECT PROGRAMME (ACCORDING TO THE DEGREE</b>					
Energy and nutritional requirements. Nutrients. Dietetics. Food safety					
<b>GENERAL AND PARTICULAR ABILITIES</b>					
A. general skills 1.2. Troubleshooting. 1.4. Capacity for analysis and synthesis. 1.6. Ability to manage information. 1.7. Teamwork. 1.8. Critical Thinking. 1.9. Self-learning					



## B. Specific skills

2.6. Understand learning theories applied in health education and the learning process throughout life

2.17. Understand the fundamental concepts of health and function performed by the therapist in the health system. Promoting healthy lifestyles through health education. Understanding the factors related to health and related problems in the fields of physiotherapy Primary Care and Occupational Health Specialist

### **OBJECTIVES (EXPRESSED IN TERMS OF EXPECTED RESULTS OF THE TEACHING PROGRAMME)**

- To Know the preventative effect on health of optimal nutrition.
  - To know the energy and nutrient necessary to maintain an optimal health.
  - To study the nutritional aspects, sources and recommended intakes of different nutrients.
  - To define the nutritional needs at different stages of life, and physiological states in sports.
  - To consider food as a vehicle of pollutants
  - To distinguish between the recommendations set out in the food pyramid, dietary reference intakes and nutritional goals.
- To study the healthy Mediterranean food.

### **DETAILED SUBJECT SYLLABUS**

#### THEORETICAL PROGRAM

1. GENERAL. Nutrition and food science: definitions. Concept of food and nutrient. Objectives. Historical evolution. Relation to other sciences. Current status and prospects. Bibliographical sources.
2. NUTRITIONAL NEEDS I. Cellular energy transformations. Minimum energy requirements and totals. Factors that modify them. Specific dynamic effect.
3. NUTRITIONAL NEEDS II. Energy value of foods. Tables of food composition. Nutrient and energy needs of the human organism: food pyramid, recommended intakes and nutritional goals
4. NUTRITIONAL ASPECTS OF CARBOHYDRATES. Classification, functions and sources. Digestion, absorption, metabolism and regulation. Dietary Fiber. Dietary recommendations.
5. NUTRITIONAL ASPECTS OF LIPID. Classification, functions and sources. Digestion, absorption, metabolism and regulation. Essential fatty acids. Dietary recommendations.
6. NUTRITIONAL ASPECTS OF PROTEIN. Classification, functions and sources. Digestion, absorption, metabolism and regulation. Essential amino acids. Evaluation of protein quality. Supplementation and complementation. Dietary recommendations.
7. NUTRITIONAL ASPECTS OF MINERAL. Classification, functions and sources. Digestion, absorption, metabolism and regulation. Bioavailability. Factors influencing the content of minerals in food. Dietary recommendations.
8. NUTRITIONAL ASPECTS OF VITAMIN. Classification, functions and sources. Digestion, absorption,



- metabolism and regulation. Factors influencing the vitamin content in food. Dietary recommendations.
9. NUTRITIONAL IMPORTANCE OF WATER. Water balance. Nutritional requirements. Sources. Regulation.
  10. COMPOSITION AND NUTRITIONAL VALUE OF MAJOR FOOD GROUPS. Animal foods: meat, seafood, eggs and milk derivatives. Edible fats. Plant foods: grains, legumes, and vegetables, and fruits. Drinks.
  11. HUMAN NUTRITION DURING PREGNANCY AND BREASTFEEDING. Nutritional needs during pregnancy. Nutritional needs during lactation. Recommended food groups.
  12. HUMAN NUTRITION DURING THE FIRST YEAR OF LIFE. Nutritional needs in the infant. Milk. Milk formula. Evolution of feeding during the first year of life: Beikost.
  13. HUMAN NUTRITION IN CHILDHOOD. Nutritional requirements in infancy. Education infant nutrition.
  14. Human Nutrition in Adolescence. Physiological changes and nutritional needs of the adolescent. Nutritional problems.
  15. HUMAN NUTRITION IN HEALTHY ADULT. Physiological and psychosocial changes. Nutritional needs in the healthy adult. Recommended food groups.
  16. HUMAN NUTRITION IN THE ELDERLY. Concept of aging: associated pathologies. Physiological changes related to nutrition. Nutritional Needs. Recommended Foods.
  17. SPORTS NUTRITION IN PRACTICE. Nutritional needs of the athlete. Diets training, pre-competition and post-competition. Ergogenic substances. Alcohol and sport. Café sport.
  18. NUTRITION AND DISEASE PREVENTION. Nutrition and the prevention of obesity, cardiovascular disease, hypertension, osteoporosis, anemia, cancer and dental caries.
  19. NUTRITIONAL STATUS. Assessments of psychosocial information, food consumption, clinical, anthropometric and biochemical. Subjective assessment of nutritional status.
  20. ALTERNATIVE FORMS SUPPLY. Vegetarian Food. Macrobiotic Food. Food hygienist: dissociated diet concept. Mediterranean Food. Advantages and disadvantages.
  21. FOOD SAFETY. Toxic effects of some food components. Concept of hygiene and food poisoning, intoxication and infection. Diseases transmitted by food biotic. EET. Factors. Prevention.
  22. NEW FOODS. Functional foods: concepts and nutritional benefits. Physiological functions for the development of functional foods. Food prebiotics and probiotics. GM Foods: definition and risk-health benefits.



23. NUTRITION EDUCATION. Importance of nutrition education of the population. Approaches for intervention.

#### PRACTICAL PROGRAM

1. Calculation of baseline energy requirements and / or full of healthy individuals, athletes, according to the physiological state, etc... Calculation of the energy value of a ration or diet by using food composition tables.
2. Dietary assessment of nutritional status. 24 hrs-dietary recall for 3 consecutive days including weekend 1, using a packet data processing computer.
3. Balanced menu planning for 1-2 weeks.

#### **READING**

- ❖ A. M. Requejo, R. M. Ortega : "NUTRIGUÍA: MANUAL DE NUTRICIÓN CLÍNICA EN ATENCIÓN PRIMARIA". Complutense. Madrid, 2003.
- ❖ Angel Gil Hernández : "TRATADO DE NUTRICIÓN". Acción Médica. Madrid, 2005.
- ❖ E. Casanueva, M. Kaufer-Hortwitz, A. B. Pérez-Lizauz, P. Arroyo : "NUTRIOLOGÍA MÉDICA, 2ª edición". Panamericana Medica. Buenos Aires, 2001.
- ❖ J. Mataix Vedú : "NUTRICIÓN Y ALIMENTACIÓN HUMANA". Ergon. Madrid, 2002.

#### **RECOMMENDED INTERNET LINKS**

Ingestas dietarias de referencia (DRIs): <http://www.nal.usda.gov/fnic/etext/000105.html>  
Organización de Naciones Unidas para la agricultura y alimentación. [www.fao.org](http://www.fao.org)  
Agencia española de seguridad alimentaria: [www.aesa.msc.es](http://www.aesa.msc.es)  
Guía de la alimentación y salud UNED: <http://www.uned.es/pea-nutricion-y-dietetica-I/guia/>  
Federación española de sociedades de nutrición, alimentación y dietética. <http://www.fesnad.org/>

