



Universitat de Lleida

DEGREE CURRICULUM **NUTRITION**

Coordination: Teresa Hernández

Academic year 2015-16

Subject's general information

Subject name	NUTRITION
Code	100616
Semester	1st Semester
Typology	Mandatory
ECTS credits	11
Theoretical credits	0
Practical credits	0
Coordination	Teresa Hernández
Office and hour of attention	to determine
Department	Food Technology
Teaching load distribution between lectures and independent student work	Class hours 110 No class hours 165
Modality	Presencial
Important information on data processing	Consult this link for more information.
Language	Català
Degree	Human Nutrition and Dietetics
Office and hour of attention	to determine
E-mail addresses	teresa.hernandez@tecal.udl.cat iodrizola@tecal.udl.cat m.teresa@tecal.udl.cat

Teresa Hernández (coordinator)

Isabel Odriozola

Teresa Piqué

Learning objectives

1. Learn at metabolic level, the use, modification and removal of nutrients in the human body.
2. Understand the factors that affect the human nutrition.
3. Know the changes in nutritional requirements in relation to body growth, regeneration and tissue repair, sex and age of the individual.
4. Know the nutritional and energy requirements of human beings at different stages of life, in the physiological situations associated with nutrition.
5. Know the different situations of nutritional imbalance, both overnutrition and malnutrition. Learn to identify the etiology of nutritional deficits and determine the situations of risk for developing malnutrition.
6. Learn how to carry out and interpret the nutritional assessment of an individual
7. Acquire practical skills to carry out the nutritional assessment. Know how to determine the anthropometric and biochemical parameters to use the results.

Competences

1. Know the nutrients, their functions and their metabolic use
2. Know the bases of nutrition and energy balance and its regulation
4. Evaluate and calculate the nutritional requirements in health status and disease at any stage of the life cycle
5. Know, detect and evaluate the quantitative and qualitative deviation of energy and nutritional balance
6. Express orally and in writing correctly
7. Solve problems reasonably, clearly and critically
8. Show capacity for analysis and synthesis

Subject contents

Module 1 - Human Nutrition in Health

1. Basic concepts of food and nutrition
2. Dietary Reference Intakes, nutritional goals, dietary guidelines and studies of food consumption
3. Assessment of nutritional status of a healthy individual
4. Analysis of the body composition of a healthy individual
5. Regulation of energy balance and caloric intake

Module 2 - Basic Nutrition

1. Physiological and biochemical basis of nutrition. Storage of nutrients.
2. Carbohydrates. Digestion, absorption, functions and needs.
3. Dietary fiber. Structure, digestion and physiological effects.
4. Protein. Digestion, absorption, functions and needs.
5. Lipids. Digestion, absorption, functions and needs.
6. Water and electrolytes. Functions and needs.
7. Vitamins. Absorption functions and needs.
8. Minerals. Absorption functions and needs.

Module 3 - Applied Nutrition

1. Balanced diet in healthy adult.
2. Infant Nutrition. Physiological development. Nutritional needs. Breastfeeding during the first year of life.
3. Nutrition at different physiological situations: pregnancy. Breastfeeding. Menopause.
4. Nutrition at various stages of life (I): infant nutrition. Children. School stage. Adolescence.
5. Nutrition at various stages of life (II): aging.

6. Intolerance and Food allergies.
7. Vitamin and mineral deficiencies. Treatment and prevention.
8. Nutrition and physical activity. Exercise physiology. Nutritional needs.
9. Nutrition and immunity

Methodology

Lectures

These will be conducted with all students. They aim to provide an overview of educational content related to specific knowledge of the subject, emphasizing those aspects that are related to the acquisition of skills, referring to basic and applied nutrition.

Seminars

The seminars are compulsory, will be in the classroom and they must be performed in the group that corresponds to each student. Consist of analysis of scientific articles and / or search for information, as a complement to the lecture content. There will be some sessions where the students will solve practical cases about energy and nutritional requirements of the individual.

Tutorials

Tutorials of 5-10 students are mandatory. Will focus on guiding the learning avoiding dispersion, clarify doubts and establish a conceptual diagram of the course.

Activities in the computer room

There will be a computer session in groups of 15-20 students to acquire knowledge on the use of nutrition databases that will facilitate the search for information on the performance of the written work.

Laboratory practices

The laboratory practices are mandatory, will be conducted in groups of 3-4 students and will take place in the Department of Food Technology. There will be activities related to the evaluation of the nutritional assessment of an individual:

- Physical evaluation, anthropometric and body composition of an individual
- Determination of biochemical parameters
- Calculation of energy and nutritional needs of an individual
- Use of rapid assessment methods for individuals with nutritional risk

Written work

The work will be conducted on a topic previously be chosen from a list provided by the teacher. Each group will make a brief oral presentation in class and must attend tutorials relating to work.

Development plan

Activity	Objective	Description
Lectures	1-7	Acquisition of knowledge about the basis of nutrition and applied nutrition of healthy people.
Seminars	3	Exposition, treatment and discussion about problems related to nutrition.
Tutorials	1-7	Guiding learning, clarifying the content doubts.
Computer activites	3-5	Use of nutrition databases

Lab practices	7-8	Acquisition of knowledge about the assessment of an individuals.
Written work	2-8	Finding information about a topic related to human nutrition. Assessment of nutritional status of an individual.

Evaluation

The evaluation will consist of an average of five grades, obtained from the following elements:

1. **Written test** (individual examination): 20%
2. **Written test II** (individual examination): 15%
3. **Written test III** (individual examination): 15%
4. **Practices**: 15%.

Practices are carried out in groups. It is necessary to present reports, which will be evaluated in the following way: content (7.5%) and development of the practices (7.5%) which will evaluate the formal aspects.

5. **Written works**: 10%.

It is also assessed the written work, the guidelines will be given during the development of the course. The 5% of the work corresponds to the evaluation of the written report submitted to the group. The remaining correspond to the oral presentation in class (5%).

6. **Individual activities**: (25%).

The final grade will be calculated from the obtained from grades obtained by students in various exercises.

Attendance at practices, seminars and exercises, and presentation of the corresponding reports are required to pass the course.

There will be three exams of the theoretical part with multiple choice questions and short answer questions. Written tests I, II and III must be pass with an average grade of 5 or higher. Such evaluation will correspond to the 50% of the final grade. This part will be recoverable conducting a written test that will cover the contents of the tests I, II and III.

Bibliography

Books

- Bender, A.E. *Fundamentos de nutrición y metabolismo*. Ed. Acribia, Zaragoza. 1995.
- Biesalski, H.K. i Grimm, P. *Nutrición*. Ed. Médica Panamericana, S.A., Madrid. 2007.
- Brown, J.E. *Nutrición en las diferentes etapas de la vida*. Ed. McGraw-Hill, S.A.. 2006.
- De Girolami, D.H. *Fundamentos de valoración nutricional y composición corporal*. Ed. El Ateneo. 2004.
- Gibney, M.J.; Vorster, H.H., i Kok, F.J. *Introducción a la nutrición humana*. Ed. Acribia, S.A., Zaragoza. 2004.
- Gil, A. i al. *Tratado de nutrición. Tomo I*. Ed. Acción Médica. 2005.
- Hernández Rodríguez, M. i Sastre Gallego, A. *Tratado de nutrición*. Ed. Díaz de Santos, S.A., Madrid. 1999.
- Linder, M. C. *Nutrición. Aspectos bioquímicos, metabólicos y clínicos*. Ed. Eunsa, Pamplona. 1988.
- Mataix, J. *Nutrición y alimentación humana. I. Nutrientes y Alimentos*. Ed. Ergon, Madrid, 2002
- Mataix, J. *Nutrición y alimentación humana. II. Situaciones fisiológicas y patológicas*. Ed. Ergon, Madrid. 2002.

- Serra Majem, Ll.; Aranceta Bartrina, J. *Nutrición y salud pública*. Ed. Masson (Elsevier), Barcelona. 2006.
- Souci, S.W.; Fachmann, W.; Kraut, H.; Scherz, H.; Sensler, F. *Food composition and nutrition tables*. 4th Edition, Ed. CRC Press Inc., Boca Raton, FL. 1989.
- Williams, M.H. *Nutrición para la salud, la condición física y el deporte*. Ed. Paidotribo, S.A., Barcelona. 2002.

Web sides

<http://www.gencat.net/salut/acsa>

<http://www.nutricion.org>

<http://www.sennutricion.org>

<http://www.nal.usda.gov/fnic>

<http://www.seedo.es>

<http://www.fesnad.org>

<http://www.sennutricion.org>

<http://www.aedn.es>

<http://www.naos.aesan.mspsi.es/>

<http://www.nutricioncomunitaria.org>