

29231 - Molecular Biology and Human Nutrition

Información del Plan Docente

Academic Year	2017/18
Faculty / School	229 - Facultad de Ciencias de la Salud y del Deporte
Degree	441 - Degree in Human Nutrition and Dietetics
ECTS	6.0
Year	4
Semester	Half-yearly
Subject Type	Optional
Module	---

1.General information

1.1.Introduction

1.2.Recommendations to take this course

1.3.Context and importance of this course in the degree

1.4.Activities and key dates

2.Learning goals

2.1.Learning goals

2.2.Importance of learning goals

3.Aims of the course and competences

3.1.Aims of the course

3.2.Competences

4.Assessment (1st and 2nd call)

4.1.Assessment tasks (description of tasks, marking system and assessment criteria)

5.Methodology, learning tasks, syllabus and resources

5.1.Methodological overview

The aim of this course is to introduce the student to this new field of Genomic Nutrition, at the same time the student achieves skills and knowledge that will help to understand the present situation and the future challenges of Human Nutrition.

5.2.Learning tasks

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The course includes a variety of activities, like lectures, seminars and laboratory and computer sessions.

Lectures cover the basics of the subject. The primary emphasis is on transmitting a body of knowledge or information and explaining ideas or principle. Students may be expected to participate in classroom activities (4.4 ECTS).

Other activities (1.6 ECTS):

a) Laboratory sessions: Experimental tasks carried out in small groups, under the supervision of the professor. The purpose is the application of methods and principles related to the subject.

b) Seminars: Conducted to give students an opportunity to make a presentation on a researched topic to the rest of the class, under the direction of the professor.

5.3.Syllabus

Lectures

Lesson 1. Introduction to nutritional genomics

Lesson 2. Gene and DNA structure

Lesson 3. Gene expression and regulation

Lesson 4. Gene inheritance and transmission. Genetic variability

Lesson 5. Genes and disease

Lesson 6. Molecular methods used in nutritional genomics

Lesson 7. Nutrients and epigenetics

Lesson 8. Microbiome, diet and health

Lesson 9. Gene-environment interactions. Genetic variability and nutrition

Lesson 10. Personalized nutrition

Lesson 11. Ethical and legal issues surrounding nutrigenomics

Lesson 12. Nutrients and gene expression

Lesson 13. Nutrigenomics and nutrigenetics in ageing and calorie restriction

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Lesson 14. Nutrigenomics and nutrigenetics in cardiovascular disease

Lesson 15. Nutrigenomics and nutrigenetics in obesity

Lesson 16. Nutrigenomics and nutrigenetics in cancer

Laboratory sessions

1. DNA extraction
2. Gene amplification by polymerase chain reaction (PCR)
3. Detection of polymorphisms of human mtDNA by gel electrophoresis
4. Bioinformatics

5.4.Course planning and calendar

For further details concerning the timetable, classroom and further information regarding this course please refer to the Facultad de Ciencias de la Salud y el Deporte, website (<https://fccsyd.unizar.es/academico/horarios-y-calendarios>)

5.5.Bibliography and recommended resources