

**COURSE DATA****Data Subject**

|                      |                       |
|----------------------|-----------------------|
| <b>Code</b>          | 33964                 |
| <b>Name</b>          | Nutritional Pathology |
| <b>Cycle</b>         | Grade                 |
| <b>ECTS Credits</b>  | 4.5                   |
| <b>Academic year</b> | 2021 - 2022           |

**Study (s)**

| <b>Degree</b>   | <b>Center</b>                         | <b>Acad. year</b> | <b>Period</b> |
|---|---------------------------------------|-------------------|---------------|
| 1205 - Degree in Human Nutrition and Dietetics        | Faculty of Pharmacy and Food Sciences | 3                 | Second term   |
| 1211 - D.D. in Pharmacy-Human Nutrition and Dietetics | Faculty of Pharmacy and Food Sciences | 5                 | Second term   |

**Subject-matter**

| <b>Degree</b>   | <b>Subject-matter</b>  | <b>Character</b> |
|---|--|------------------|
| 1205 - Degree in Human Nutrition and Dietetics        | 23 - Nutritional pathology   | Obligatory       |
| 1211 - D.D. in Pharmacy-Human Nutrition and Dietetics | 1 - Asignaturas obligatorias del PDG Farmacia-Nutrición Humana y Dietética | Obligatory       |

**Coordination**

| <b>Name</b>            | <b>Department</b> |
|------------------------|-------------------|
| SANCHEZ JUAN, CARLOS J | 260 - Medicine    |

**SUMMARY**

Subject main points:

1. Knowing nutritional-caused diseases, diagnostic, prevention and treatment.
2. Knowing and analyzing nutritional impact in human pathologies.



This subject is basically framed into the sanitary ambit which is deeply binded to the nutriotionist-dietits action. It focuses nutrition to the health and disease from both the primary prevention and therapeutic ambit.

## PREVIOUS KNOWLEDGE

### Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

### Other requirements

## OUTCOMES

### 1205 - Degree in Human Nutrition and Dietetics

- Recognise the essential elements of the profession of the dietitian-nutritionist including ethical principles, legal responsibilities and the practice of the profession, apply the principle of social justice to professional practice, and work with respect to people, their habits, beliefs and cultures, from a gender perspective.
- Practise the profession with respect for other health professionals and acquire skills to work in teams.
- Communicate effectively, both orally and in writing, with people, with health or industry professionals and with the media, knowing how to use information and communication technologies, especially those related to nutrition and lifestyles.
- Recognise the need to maintain and update professional competence, with particular emphasis on independent and lifelong learning of new facts, products and techniques in the field of nutrition and food, and on motivation for quality.
- Know, judge and know how to use and apply the sources of information related to nutrition, food, lifestyles and health.
- Acquire basic training for the research activity, be able to formulate hypotheses, collect and interpret information for problem solving using the scientific method, and understand the importance and the limitations of scientific thought in the field of health and nutrition.
- Desarrollo de habilidades para emprender estudios posteriores y actividades de formación continuada en el campo de la sanidad.
- Capacidad de integrar los contenidos estudiados en las diferentes materias cursadas en un conocimiento interdisciplinar aplicable al ámbito académico y profesional con especial interés en el campo de la patología nutricional en su doble vertiente, preventiva y terapéutica.



- Conocer los servicios relacionados con la alimentación y nutrición en atención primaria y hospitalaria, y colaborar dentro de equipos multidisciplinares, interpretando y evaluando los aspectos nutricionales de la historia clínica, y elaborando planes de actuación dietética. Deberá revisar, valorar y en su caso modificar las dietas terapéuticas del centro sanitario que forman parte del proceso curativo de muchos pacientes.
- Conocer los factores socioculturales y psicológicos que inciden en el origen, desarrollo y tratamiento de trastornos de la conducta alimentaria así como de riesgos y crisis alimentarias. Conocer la función del dietista clínico en el equipo multidisciplinar que trata a estos pacientes.
- Participar en la gestión, organización y desarrollo de los servicios de Nutrición Hospitalaria, planificando y supervisando los menús y dietas, y proporcionando formación en materia dietética-nutricional e higiéno-sanitaria al personal de dicho Servicio.
- Divulgar y colaborar con el personal sanitario de hospitales y centros de salud en el conocimiento de las medidas nutricionales que, tanto preventivas como curativas, se utilizan para tratar determinadas enfermedades en las que la alimentación y nutrición son fundamentales.
- Conocer las bases y fundamentos de la alimentación y la nutrición humana.
- Aplicar las Ciencias de los Alimentos y de la Nutrición a la práctica dietética.
- Conocer los nutrientes, sus funciones y su utilización metabólica. Conocer las bases del equilibrio nutricional y su regulación.
- Assess and calculate nutritional requirements in situations of health and illness at any stage of the life cycle.
- Identificar las bases de una alimentación saludable (suficiente, equilibrada, variada y adaptada).
- Participate in the design of total diet studies.
- Know, detect early and evaluate quantitative and qualitative deviations, due to surplus or shortage, of nutritional balance.
- Plan and interpret the assessment of the nutritional status of individuals and/or groups, both healthy (in all physiological situations) and sick.
- Conocer los aspectos fisiopatológicos de las enfermedades relacionadas con la nutrición.
- Identificar los problemas dietético-nutricionales del paciente, así como los factores de riesgo y las prácticas inadecuadas.
- Write and interpret a dietary history of healthy and sick individuals.
- Understand and use clinical and biochemical data in the nutritional assessment of patients and in their dietary-nutritional treatment.
- Apply the basis of clinical nutrition to diet therapy.
- Plan, implement and evaluate therapeutic diets for individuals or groups.
- Conocer la organización hospitalaria y las distintas fases del servicio de alimentación.
- Participar en el equipo multidisciplinar de una Unidad de Nutrición Hospitalaria.



- Conocer las distintas técnicas y productos de soporte nutricional básico y avanzado. Desarrollar e implementar planes de transición dietético-nutricional.
- Planificar y llevar a cabo programas de educación dietético-nutricional en sujetos sanos y enfermos
- Comprender la farmacología clínica y la interacción entre fármacos y nutrientes.
- Manejar las herramientas básicas en TIC utilizadas en el campo de la Alimentación, Nutrición y la Dietética.
- Conocer los límites legales y éticos de la práctica dietética.

## LEARNING OUTCOMES

When this subject ends, the student must know the relations between a good nutrition and personal health mainly looking the nutritional status as a very important part of the clinical exploration.

The student must be able to focus quantitative nutritional diseases and must also be able to make recommendations dietetic-nutritional to prevent and treat them.

He also must know which other diseases are caused by nutritional deficits and how prevent and treat them.

Knowing how food aspects have relations with a lot of pathologies in actual society, he must know which and how they appear and how to treat them from a point of view dietetic-nutritional.

The student must feel part of a multi-disciplinary team and collaborate on prevention and treatment always inside its ambit of actuation.

## DESCRIPTION OF CONTENTS

### 1. General etiology of the nutritional diseases.

Knowing the general causes of human disease related to food and nutrition and how they express in their early stages of subclinical expression until later stages.

### 2. Malnutrition

Describe and understand the nutritional condition quantitatively, both excess and defect and the impact it has on health.

### 3. Thinness. Etiology, prevention and treatment

Concept, causes, types, symptoms, diagnosis and therapeutic approach to this nutritional condition by default.



#### **4. Nervious anorexia, bulimia and other alterations of the feeding behavoir.**

Health and social importance, definition, etiology, natural history. Types, symptoms, diagnosis and therapeutic approach focused on the mission of the dietitian-nutritionist

#### **5. Obesity**

Health and social importance of this pathology, causes, types, clinical implications and diseases associated with the same diagnosis and therapeutic approach focuses on aspects of the dietitian-nutritionist

#### **6. Rickets and osteomalacia.**

Definition of the pathologies, etiology, clinic, diagnostic and nutritional treatment.

#### **7. Osteopenia and osteoporosis**

Definition, causes, symptoms, diagnosis and treatment focused mainly on the preventive aspects within the nutrition.

#### **8. Beri-Beri and Wernicke-Korsakoff síndrome.**

Definition, etiologies, clinical manifestations, diagnostic and dietetic-nutritional treatment.

#### **9. Pellagra.**

Definition, etiologies, clinical manifestations, diagnostic and dietetic-nutritional treatment.

#### **10. Xerophthalmia and nutricional blindness**

Definition, etiologies, clinical manifestations, diagnostic and dietetic-nutritional treatment.

#### **11. Scurby**

Definition, etiologies, clinical manifestations, diagnostic and dietetic-nutritional treatment.

#### **12. Nutritional anemias.**

Definition, etiologies, clinical manifestations, diagnostic and dietetic-nutritional treatment.





### **13. Iodine deficiency and endemic goiter.**

Definition, etiologies, clinical manifestations, diagnostic and dietetic-nutritional treatment.

### **14. Food allergy**

Concept, differential diagnosis, food related, pathophysiology, clinical manifestations, diagnosis and treatment focused on dietary preventive aspects.

### **15. Dyslipidemias**

Preliminary concepts, lipid metabolism, social and clinical importance of dyslipidemia, clinical manifestations, diagnosis and therapeutic approach with emphasis on preventive and curative aspects of the food-nutrition.

### **16. Cardiovascular pathology; hypertension, metabolic syndrome.**

Definitions, health importance, prevalence, causes, diagnosis and dietary-nutritional approach.

### **17. Diabetes mellitus**

Prevalence, definition, types, clinical manifestations, diagnosis and treatment focused on dietary and nutritional aspects.

### **18. Hyperuricemia and gout.**

Definition, etiologies, clinical manifestations, diagnostic and dietetic-nutritional treatment.

### **19. Nutrition and digestive and hepato-biliary pathology.**

Types and clinical manifestations of these pathologies. The same relationship with nutritional aspects. Dietary treatment, preventive and curative of them.

### **20. Nutrition and lung diseases.**

Types and clinical manifestations of these pathologies. The same relationship with nutritional aspects. Dietary treatment, preventive and curative of them.



### **21. Nutrition and renal diseases.**

Types and clinical manifestations of these pathologies. The same relationship with nutritional aspects. Dietary treatment, preventive and curative of them.

### **22. Nutrition and oncologic pathology.**

Types and clinical manifestations of these pathologies. The same relationship with nutritional aspects. Dietary treatment, preventive and curative of them. Importance of dietary treatment in cancer patients depending on the type of tumor, clinical impact of it and influence of different treatments applied.

### **23. Nutrition and AIDS**

Types and clinical manifestations of disease. The same relationship with nutritional aspects. Dietary treatment, preventive and curative of them depending on the stage of the disease, its complications and influence of the various treatments used.

### **24. Nutrition and dental diseases.**

Types and clinical manifestations of disease. List of the same nutritional aspects. Dietary treatment, preventive and curative of them.

### **25. Nutrition and Neurological Pathology.**

Clinical types and manifestations of the disease. Relationship of the same with nutritional aspects. Dietary, preventive and curative treatment, of the same.

### **26. Enteral and parenteral nutrition.**

Definitions. Types. Clinical Indications. Precautions. Complications.



## WORKLOAD

| ACTIVITY                        | Hours         | % To be attended |
|---------------------------------|---------------|------------------|
| Theory classes                  | 38,00         | 100              |
| Tutorials                       | 2,00          | 100              |
| Seminars                        | 2,00          | 100              |
| Development of group work       | 15,00         | 0                |
| Study and independent work      | 46,50         | 0                |
| Readings supplementary material | 5,00          | 0                |
| Resolution of case studies      | 1,00          | 0                |
| <b>TOTAL</b>                    | <b>109,50</b> |                  |

## TEACHING METHODOLOGY

The methodology will be directed to the acquisition of knowledge for which lectures will be held on the proposed agenda of the subject and the preparation in small groups on specific topics of matter to be presented during the last month of school, both through written format and through oral presentation to other colleagues.

These works will be supervised by the teacher of the subject to carry out the directions for preparing the same and resolve all doubts that the student may be encountering.

This is to the professional future be able to search information sources that allow for continuous updating of knowledge in their future professional work and understand and practice the oral presentation of work and recommendations that will form part of their performance i It also aims to demonstrate the importance of research and constant updating in the field of general health and nutrition in particular. It may serve, also, to motivate students to deepen their knowledge after their college career.

The tutorials will be held on schedule as previously established face and via email.

During activities, both theoretical and practical, examples of the applications of the subject content will be given in relation to the Sustainable Development Goals (SDGs), as well as in proposals for topics for coordinated seminars. This is intended to provide students with knowledge, skills and motivation to understand and address these ODS, while promoting reflection and criticism.

## EVALUATION

The assimilation of knowledge will be assessed through a written multiple choice test questions (multiple choice). Represents 70% of the final grade.

The performance, individually or preferably in groups, an essay and subsequent presentation on a topic previously proposed nutritional disease accounts for 20% of the final grade. The remaining 10% of the note corresponds to "seminars coordinated."





The **repeating students of the subject** must attend again the seminars and tutorials in the second and subsequent registrations, NOT keeping attendance or previous notes.

In the case of **DG Pharmacy and NHD students**, the “seminars coordinated” will be governed by the corresponding regulations available on the website of the Faculty of Pharmacy.

## REFERENCES

### Basic

- Gil Hernández, Angel. Tratado de Nutrición. 3ª ed. Ed. Panamericana. 2017
- Casanueva E. Nutrición médica. 2.001
- Escobar L. Nutrición y hormonas. 2.001
- Salas-Salvadó J. y cols. Nutrición y dietética clínica. 2.000
- Bellido D, de Luis D. Manual de nutrición y metabolismo. 2006

## ADDENDUM COVID-19

**This addendum will only be activated if the health situation requires so and with the prior agreement of the Governing Council**

### 1. Content

The contents initially included in the teaching guide are maintained

### 2. Workload and temporary education planning

The workload for the student, derived from the number of credits, is maintained, but the methodology of the activities changes with respect to the conventional teaching guide, due to the current situation that makes it necessary to adopt a hybrid model of teaching

### 3. Teaching methodology

- Theoretical teaching: it will be carried out through synchronous sessions (videoconferences synchronized on BBC, or other technology indicated by the Centre) and face-to-face classes. The distribution of students will be done by groups, so 50% will be in the classroom of the Faculty while the other 50% will connect online, alternating their attendance for weeks. The class will always be held following the schedule (date and time) approved by the Center Board
- Tutoring: They will all be face-to-face according to the dates set by the course calendar
- Coordinated seminars: They will all be face-to-face according to the dates set by the course calendar



If there was a state of total confinement, all face-to-face teaching would be done online.

#### **4. Evaluation**

If the evolution of the current pandemic allows, it will be face-to-face and in the terms indicated by the teaching guide. Only if this is not possible, the evaluation will be carried out through the virtual classroom with online tasks or questionnaires with single or multiple choice questions, which can be supplemented with short questions and/or on certain occasions by means of an oral examination by videoconference.

The relative weight of theory, practices and seminars is maintained as indicated in the teaching guide.