Universidad Zaragoza

Year : 2020/21

29225 - Clinical Nutrition and Pharmacology

Syllabus Information

Academic Year: 2020/21
Subject: 29225 - Clinical Nutrition and Pharmacology
Faculty / School: 229 - Facultad de Ciencias de la Salud y del Deporte
Degree: 441 - Degree in Human Nutrition and Dietetics
ECTS: 10.0
Year: 4
Semester: Annual
Subject Type: Compulsory
Module: ---

1.General information

1.1.Aims of the course

1.2.Context and importance of this course in the degree

1.3.Recommendations to take this course

2.Learning goals

2.1.Competences

2.2.Learning goals

2.3.Importance of learning goals

3.Assessment (1st and 2nd call)

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

4.Methodology, learning tasks, syllabus and resources

4.1.Methodological overview

The methodology followed in this course is oriented towards the achievement of the learning objectives. A wide range of teaching and learning tasks are implemented, such as lectures, practice sessions, seminars, laboratory sessions, internships, autonomous work and study, and assessment tasks.

4.2.Learning tasks

This 10 ECTS course is organized as follows: lectures, practice sessions,

- **Lectures** (1.20 ECTS: 30 hours). 30 one-hour sessions. Due to space constraints generated by the COVID 19 health alert, it is expected that at least the master lessons will be delivered online using the Google Meet app as a real-time communication tool with students. The content of the lectures will be based on a book or manual recommended previously and adapted to the level of knowledge of the students. They consist of explanatory or demonstrative content sessions, using the blackboard and audiovisual material with computer support. Materials will be available in Moodle.

- **Practice sessions**:
    - **Seminars**. 10 one/two-hour sessions in which the students work on cases related to the course and must solve problems individually and in groups. The teacher will present the basic knowledge for the

development of a medical history with the knowledge of the basic physical examination and the main signs of the disease using audiovisual methods.
        - **Problem-solving and cases**.
        - **Laboratory sessions.**
        - **Internships**
        - **Group work and oral presentation.** Realization of a monographic review assignment, in small groups, on a suggested topic. Presentation and defense. During the realization of the same, corresponding teachers will have various interviews with the working groups for academic orientation and supervisión.
    - **Autonomous work and study**.
        - Course portfolio: collected reports relating to the control of the previous practical activities (individual work)
    - **Assessment tasks**

4.3.Syllabus

This course will address the following topics:

CLINICAL NUTRITION

Theory

- **Topic 1**. General indications for nutritional support
- **Topic 2**. Evaluation of artificial nutrition nutritional requirements.
- **Topic 3**. Enteral nutrition. Selection criteria for enteral nutrition formulas.
- **Topic 4**. Dietary fiber. Its application in enteral nutrition.
- **Topic 5**. Parenteral nutrition. Indications. Types of parenteral nutrition.
- **Topic 6**. Nutrients in artificial nutrition. Metabolic complications of artificial nutrition. Artificial nutrition in Pediatrics.
- **Topic 7**. Nutritional support in surgery.
- **Topic 8**. Peripheral parenteral Nutrition.
- **Topic 9**. Nutritional support in digestive diseases.
- **Topic 10**. Nutritional support in surgical diseases.
- **Topic 11**. Nutritional support in special circumstances: fasting, aggression, and critical situations (Polyraumatized, Sepsis, multiple organ difunction syndrom and burned patients).
- **Topic 12**. Nutritional support and cancer.
- **Topic 13**. Nutritional support in organ transplantation.
- **Topic 14**. Home artificial nutrition.
- **Topic 15**. Nutritional assessment in the elderly: scales and differences. Malnutrition in the elderly, consequences. Ethical aspects of malnutrition in the elderly.
- **Topic 16**. Nutritional supplements.

Practice

- **Topic 1**. Pathways to Artificial Nutrition
- **Topic 2**. Enteral Nutrition
- **Topic 3**. Parenteral nutrition
- **Topic 4**. Pharmacy and Nutrition. Preparation of parenteral formulas.

PHARMACOLOGY

Theory

Section 1. General principles of pharmacology

- **Topic 1.** Concept of Pharmacology. Definition and contents. Division of Pharmacology.
- **Topic 2.** Drug Absorption. Routes of drug administration.
- **Topic 3.** Drug Distribution.
- **Topic 4.** Elimination: Drug Metabolism. Drug Excretion.
- **Topic 5.** Pharmacodynamics.
- **Topic 6.** Adverse drug reactions (ADR).

Section 2. Drugs acting on the autonomic nervous system and peripheral nervous system

- **Topic 7.** Cholinergic Transmission. Cholinergic agent (Parasympathomimetics)

- **Topic 8.** Anticholinergic agents (Antimuscarinic agents). Neuromuscular blocking drugs
- **Topic 9.** Adrenergic Transmission. Adrenergic Drugs (Sympathomimetics)
- **Topic 10.** Adrenergic-receptor antagonists block the effects of sympathetic stimulation: Alpha-blocker and Beta-blockers

Section 3. Specific pharmacological groups

- **Topic 11.** Pharmacology of gastric secretion. Medical and dietary treatment of peptic ulcers.
- **Topic 12.** Pharmacology of gastrointestinal motility. Medical and dietary treatment of constipation and diarrhea.
- **Topic 13.** Hypertension: medical treatment and diet
- **Topic 14.** Plasma lipid-modifying agents.
- **Topic 15.** Nutritional anemia: iron deficiency anemia, vitamin B12, and folic acid deficiency anemia. Nutritional and therapeutic aspects
- **Topic 16.** Nonsteroidal anti-inflammatory drugs (NSAIDs)
- **Topic 17.** Steroids antiinflammatory drugs (Corticosteroids)
- **Topic 18.** Diabetes Mellitus. Medical and dietary treatment of Diabetes Mellitus
- **Topic 19.** Anti-obesity drugs and treating of eating disorders (anorexia and bulimia)

Section 4. Drug-nutrients interactions

- **Topic 20.** Influence of diet, nutrients and nutritional status on the efficacy and safety pharmacological response
- **Topic 21.** Influence of drugs on nutrients utilization and nutritional status
- **Topic 22.** Frequently Drug-Nutrients Interactions

4.4.Course planning and calendar

Clinical Nutrition:

Calendar of sessions and presentations during the 8th semester of the degree (from February to May). Lectures: 2 sessions a week for 14 weeks. Workshops/seminars: 1 session per week. Clinical internships: according to schedule in small groups.

Pharmacology:

Calendar of sessions and presentations will take place during the 7th semester of the degree. The practice sessions include seminars (second and third week); Problem?based learning (fourth and fifth week); Clinic cases (sixth week); Laboratory (seventh and eighth week); Exposition and defense of monographic works made by students in small groups (ninth and tenth week).

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this course will be provided on the first day of class or please refer to the Faculty of Health and Sport Sciences website (https://fccsyd.unizar.es/) and Moodle.

4.5.Bibliography and recommended resources

http://biblos.unizar.es/br/br_citas.php?codigo=29225&year=2020