PLANNING Clinical Pharmacology and Nutrition. Course 2012/13

CONTEXT

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<th>Code</th>
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<td>Subject</td>
<td>Clinical Pharmacology and Nutrition</td>
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<tr>
<td>Year</td>
<td>2012-13. C1.S2</td>
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<tr>
<td>Language</td>
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<td>Credits</td>
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<td>Faculty</td>
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<tr>
<td>Qualification</td>
<td>Nursing graduation</td>
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<tr>
<td>Typology</td>
<td>Module 1. Basic training</td>
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- Requirements to study the subject (Previous requirements and requirements)
  - Previous requirements
    - None
  - Requirements
    - None

- Data of the Coordinator, lecturer or lecturers:

  LECTURER Mercè Ibarz Escuer
  Telephone number 2468
  E-mail merce.ibarz@infermeria.udl.cat
  Office’s localization 2.15  Query’s schedule Monday 17h

  LECTURER Mercè de Bergua i Llop
  Telephone number 2468
  E-mail merce.bergua@infermeria.udl.cat
  Office’s localization 2.15  Query’s schedule Tuesday 13h

  LECTURER Emili Lonça Aventtin
  Telephone number 2460
  E-mail Emili.lonca@infermeria.udl.cat
  Office’s localization 2.04  Query’s schedule To fix

Specific proficiencies

**Biochemistry, Pharmacology:**
- Know the different groups of drugs, the principles of its authorization, use and display and their mechanisms of action.
- Drugs use, assessing the expected benefits and the associated risks and/or its effects due to their administration and consumption.

**Nutrition:**
- Be able to have a critical point of view on food and nutrition, knowing the bases of balanced nutrition and food composition.
- Be able to have a critical point of view on a particular individual or collective feeding.
- Ability to assess the suitability of a particular food or dietary pattern
- Ability to understand the possibilities of using food as a therapeutic tool.
### Subject/ matter’s learning objectives

#### Biochemistry, Pharmacology:
- Achieve a level of knowledge and develop skills, once the year finish, that allow the student to be able to:
  1. Know and apply the basic concepts of biochemistry and pharmacology.
  2. Explain in a basic way the origin and the physicochemical properties of the different classes of drugs used in therapy.
  3. Explain the most important mechanisms of action from the studied drugs.
  4. Distinguish the pharmacokinetics of the main drugs used in therapy.
  5. Identify the pharmacological actions of each pharmacological group of the subject’s program.
  6. Know the therapeutic uses of the studied drugs.
  7. Identify the adverse effects due to the drug administration and be able to avoid or control them as much as possible.
  8. Know the possible drug interactions between different drugs and their clinical consequences.
  9. Be able to instruct the patient and/or his/her family on the proper way to use drugs in order to achieve maximum effectiveness with minimum risk.
10. In short, to have a basic knowledge of pharmacology to enable students to develop their professional work, so that they could have a solid base for a future postgraduate training.

#### Nutrition:
- At the end of the year, the student should be able to:
  1. Have basic knowledge about the nutrients and their biochemical composition.
  2. Know and/or have the skills to know the nutritional value of different foods.
  3. Be able to calculate the nutritional intake of a given intake.
  4. Know the nutritional needs of a specific individual.
  5. Know the basic rules of a healthy feeding.
  6. Know how to use the feeding as a therapeutic tool.

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### BLOCK I: BIOCHEMISTRY AND PHARMACOLOGY PROGRAM

**• MODULE I**

**Lectures (5 hours):**
- Biochemical basis of pharmacology. General concepts.
- Pharmacodynamics. Drugs’ mechanisms of action.
- Pharmacokinetics.

**Seminar (5 hours):**
- Genetics. Their impact on drug therapy.
- Drugs’ adverse effects. Discussion of several examples.
- Drug interactions. Discussion of several examples.
- Individual factors of drug response. Practical case.

**• MODULE II**

**Lectures (5 hours):**
- Pharmacology of the autonomic nervous system.
- Pharmacology of the central nervous system.
- Pharmacology of pain.

- Biochemical mechanisms involved.

**Seminar (5 hours):**
- Antihistamine drugs. Discussion.
- Pharmacology of the respiratory system.
Drug treatment of nervous system diseases. Discussion on the use of different treatments.

Treatment on various pain types. Case’s discussion.

- **MODULE III**  
  **Lectures (5 hours):**  
  Corticoids.  
  Preferential drug action on the cardiovascular system.  
  Pharmacology of the digestive system.  
  Antimicrobials and antiparasitic.  
  Biochemical mechanisms involved.  

**Seminar (5 hours):**  
Diabetes. Dyslipidemia. Practical cases’ discussion.  
Discussion on the several High Blood Pressure treatments.  
Discussion on gastric protection.  
Infective diseases. Case’s discussion.

**BLOCK II: HUMAN NUTRITION PROGRAM**

* **Lectures:**

- **MODULE I (4 hours):** Biochemical basis of nutrition  
  - Concepts of Nutrition and Dietetics, nutrient and its function.  
  - Energy needs of an individual.  
  - Nutrient:  
    - Carbohydrates  
    - Proteins  
    - Lipids  
    - Minerals and vitamins  
    - Water  
    - Dietary fibre

- **MODULE II (5 hours):** Food groups and its digestion  
  - Food groups and its composition.  
  - Digestion

- **MODULE III (1 hour):** Nutritional recommendations (quantitative) in healthy individual.  
  - Nutritional basis for a balanced diet.  
  - Quantitative recommendations for a balanced diet.

- **MODULE IV (1 hours):** Qualitative recommendations for a healthy diet  
  - Wheels and Food Pyramids. Qualitative recommendations for a healthy diet.  
  - Basis for the preparation of balanced menus.

- **MODULE V (4 hours):** Recommendations on the diet in different physiological situations.  
  - Adaptation of the nutritional recommendations in different physiological situations.  
  - Critical appraisal of the alternatives foods.  
  - The diet as a therapeutic tool.

* **Seminar (Workgroups)**

**MODULE I (2 hours):**  
- Do practical cases to determine the energy needs of a certain individual, using several possibilities.
- Work in groups the previous knowledge of the food’s nutritive composition.

**MODULE II (7 hours):**
- Work the nutritive composition of several food groups.
- Know and learn to use the food composition tables.
- Calculate the energy and nutrient intake of several foods.

**MODULE III (2 hours):**
- Practice the calculation on the needs of several individuals

**MODULE IV (3 hours):**
- Develop several balanced menus in different situations.
- Assess and review several menus.

**MODULE V (1 hour):**
- Labelling of foods. Information provided and assessment.
- Reflect on the influence of media on the several food groups.

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### Summary of the student work hours. Evaluation

<table>
<thead>
<tr>
<th>Biochemistry, Pharmacology:</th>
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<tbody>
<tr>
<td>Lectures</td>
<td>15 h</td>
</tr>
<tr>
<td>Attendance at the seminars</td>
<td>15 h</td>
</tr>
<tr>
<td>Self evaluations</td>
<td>1 h</td>
</tr>
<tr>
<td>Exercise summary</td>
<td>5 h</td>
</tr>
<tr>
<td>Test evaluation</td>
<td>1 h</td>
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</table>

<table>
<thead>
<tr>
<th>Nutrition:</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Lectures</td>
<td>15 h</td>
</tr>
<tr>
<td>Attendance at the seminars</td>
<td>15 h</td>
</tr>
<tr>
<td>Resolution practical case 1 + 2</td>
<td>1 h (within seminar hour)</td>
</tr>
<tr>
<td>Resolution practical case 3</td>
<td>1 h (within seminar hour)</td>
</tr>
<tr>
<td>Test evaluation</td>
<td>1 h</td>
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</table>

**Other assessment requeriments**
**BLOCK I: Evaluation methods in Biochemistry, Pharmacology (BLOCK I):**

<table>
<thead>
<tr>
<th>Evaluation activity</th>
<th>Description</th>
<th>%</th>
<th>Nature</th>
<th>Realization</th>
<th>Dates</th>
<th>Observations</th>
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<tbody>
<tr>
<td>Attendance to seminars</td>
<td>Attend a minimum of 80%</td>
<td>1</td>
<td>Obligatory</td>
<td>Individual</td>
<td>2n half semester</td>
<td>· &gt; 90 %  = 1 point&lt;br&gt;· 80 – 90 %  = 0.8 points&lt;br&gt;· &lt; 80 %  = 0 points</td>
</tr>
<tr>
<td>Self evaluation</td>
<td>questions, multiple choice.</td>
<td>2</td>
<td>Obligatory</td>
<td>Individual</td>
<td>At the end of Module I</td>
<td>Sakai.</td>
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<tr>
<td></td>
<td>questions, multiple choice.</td>
<td></td>
<td></td>
<td></td>
<td>At the end of Module II</td>
<td></td>
</tr>
<tr>
<td>Exercise summary</td>
<td>Critics of a drug appeared in the current year. Compare with the</td>
<td>2</td>
<td>Obligatory</td>
<td>Individual</td>
<td>At the end of Module III</td>
<td></td>
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<tr>
<td></td>
<td>therapeutic alternatives.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Test evaluation</td>
<td>36 questions multiple choice, with a single correct answer.</td>
<td>5</td>
<td>Obligatory</td>
<td>Individual</td>
<td>Review i allocated recovery</td>
<td>2 wrong questions avoid a correct one.&lt; 50 % = 0 points</td>
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<tr>
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<td></td>
<td></td>
<td></td>
<td>periods semester</td>
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**BLOCK II: Evaluation method in HUMAN NUTRITION (BLOCK II):**

<table>
<thead>
<tr>
<th>Evaluation activity</th>
<th>Description</th>
<th>%</th>
<th>Nature</th>
<th>Realization</th>
<th>Dates</th>
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<td>10</td>
<td>Obligatory</td>
<td>Individual</td>
<td>2n half semester</td>
<td>· &gt; 90 %  = 1 point&lt;br&gt;· 80 – 90 %  = 0.8 points&lt;br&gt;· &lt; 80 %  = 0 points</td>
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<tr>
<td>Practical case resolution</td>
<td>Calculate the energy and % of nutrients provided by a meal.</td>
<td>20</td>
<td>Obligatory</td>
<td>Individual</td>
<td>At the end of Module III</td>
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<tr>
<td></td>
<td>Calculate the energy needs and the nutrients of a fixed individual.</td>
<td></td>
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<tr>
<td>Practical case resolution</td>
<td>Review a fixed meal and give balanced alternatives.</td>
<td>20</td>
<td>Obligatory</td>
<td>Individual</td>
<td>At the end of Module IV</td>
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<td>50</td>
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<td>Review i allocated recovery</td>
<td>2 wrong questions avoid a correct one.&lt; 50 % = 0 points</td>
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<td>periods semester</td>
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The overall grade for the course will be the arithmetic mean of those obtained in each block, provided they have obtained a minimum score of 5 in each block (Block I - Methods for evaluation of Biochemistry, Pharmacology and Block II - Methods Evaluation of Human Nutrition).

**BIBLIOGRAPHY AND RESOURCES**

<table>
<thead>
<tr>
<th>Books</th>
</tr>
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<tbody>
<tr>
<td><strong>Bibliography CLINICAL PHARMACOLOGY:</strong></td>
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  • FLOREZ, J. Compendio de farmacología humana.  
  • GOTH. Farmacología clínica. Ed. Panamericana.  
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