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|-------------------------------|---|-----------------|------|---------------------|---|
| Course Title                  | Food and Nutrition Science  |                 |      |                     |   |
| Course Code                   | ICUL-220  |                 |      |                     |   |
| Course Type                   | Required  |                 |      |                     |   |
| Level                         | 1 <sup>st</sup> Cycle   |                 |      |                     |   |
| Year / Semester               | Second/Spring   |                 |      |                     |   |
| Teacher's Name                | Fotini Lappa  |                 |      |                     |   |
| ECTS                          | 6   | Lectures / week | 13   | Laboratories / week | 0 |
| Course Purpose and Objectives | <p>The course aims to provide students with all the necessary knowledge that will allow them to reach in a versatile and successful way all the issues concerning the modern human being in the field of food science and nutrition. More specifically, it will analyze the fundamentals of food science and nutrition including food preservation methods, chemical additives, packaging and labeling. It will also give information on the nutrients of foods, the changes they receive in the course of preparation and cooking and the significance of these changes. Finally, there will be information on the microorganisms that can grow in food and the prevention of infections and intoxications.</p>                          |                 |      |                     |   |
| Learning Outcomes             | <p>After completion of the course, students should be able to:</p> <ul style="list-style-type: none"> <li>• Know the terminology of food science and nutrition and the most important scientific methods.</li> <li>• Recognize the nutritional value of foods, and the suggested dietary intakes.</li> <li>• Explain chemical changes that food accepts in the preparation process (preparation, serving, and holding) and the significance of these changes in the nutritional value of food.</li> <li>• Sort additives present in packaged foods according to their function.</li> <li>• Know the different ways of conservation and preservation of food.</li> <li>• Read, understand and properly explain the food labels.</li> </ul> |                 |      |                     |   |
| Prerequisites                 | None  | Required        | None |                     |   |
| Course Content                | <ul style="list-style-type: none"> <li>• <b><u>Food Science Principles</u></b> <ul style="list-style-type: none"> <li>• Segments</li> <li>• Food Chemistry and Physics</li> <li>• Food Technology</li> <li>• Food Microbiology</li> <li>• Food analysis</li> <li>• Diet</li> </ul> </li> <li>• <b><u>New directions</u></b> <ul style="list-style-type: none"> <li>• Food biotechnology</li> </ul> </li> </ul>  |                 |      |                     |   |

- Health and Food Safety

- **Food Science Principles**

- What is diet - What is healthy eating
- Food Energy - Basic metabolism
- Nutrients

- **Cooking methods and nutrient losses**

- Healthy cooking methods
- Alternatives to create taste when there is a reduction of some component (e.g. salt)
- Losses of nutrients during food preparation

- **Food Options**

- Reasons influencing our food choices

- **Diversity of Flavors**

- What is taste and what are the basic flavors
- Prenatal Configuration
- Native taste preferences and their cause
- Learning about flavor and nutrients

- **Labeling and Food Packaging**

- Why are foods labeled?
- Mandatory and non-mandatory food labels
- How a food label is read
- Why should food be packaged?
- Rules and functions about the packaged food
- Packaging in the future

- **Preservation methods, food preservation**

- Factors affecting food quality
- Preservation principles
- Preservation methods - Drying / Condensation, use of low temperature, high temperature use and maintenance on brine and sugar, smoking, radiation, aerated storage

- **Chemical Additives**

- Categories and functions of chemical additives
- Evaluation and permission of additives
- Marking Additives
- Risk Classification

- **Microbiology and Hygiene**

- What is microbiology and types of microorganisms
- What is food poisoning and its types
- Condition in which microorganisms are multiplied

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|----------------------|---|
| Teaching Methodology | Lectures, examples, amphitheatric demonstrations in modern labs, studies and presentations, videos and transparencies, as well as, in class work  |
| Bibliography         | <p>Required:</p> <ul style="list-style-type: none"> <li>• Metz/Gruner 'Χημεία και Μικροβιολογία για Τρόφιμα για αρτοποιούς, ζαχαροπλάστες, Μάγειρες, σερβιτόρους', Εκδόσεις ΙΩΝ, 2002, ISBN 960-331-327-0 (τελευταία έκδοση)</li> <li>• Lecturer's notes</li> </ul> <p>Suggested:</p> <ul style="list-style-type: none"> <li>• Γαλανοπούλου Ν., Ζαμπετάκης Γ κ.ά., 'Διατροφή και Χημεία Τροφίμων', Εκδόσεις Σταμούλη, ISBN 978-960-351-863-1 (τελευταία έκδοση)</li> <li>• Elizabeth Rose 'Food and Nutrition' The Rosen Publishing Group, ISBN 1404228217 (τελευταία έκδοση)</li> <li>• Jenny Ridgwell, 'Examining Food and Nutrition', Heinemann ISBN 043520585 (τελευταία έκδοση)</li> </ul> |
| Assessment           | Assignments, quizzes and final exams.   |
| Language             | Greek   |