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| **Subject**  | **Nutrition Science**  |
| **Type**  | **Semester**  | **ECTS**  | **Code**  |
| **Obligatory (O)**   | **V**  | **4**  |   |
| **The lecturer of the subject**  | Prof. Asst Dr.LAURA BINXHIJA QESKA  |
| **The assistant of the subject**  | /  |
| **Goals and Objectives**  | The course will provide students with knowledge of the science of nutrition, definitions and importance of food and nutrition, as well as the role of nutrients in the human body. The student in this course should understand that proper nutrition ensures good health and reduces the risk of chronic non-communicable diseases. The aim of the course is for the student to be able to calculate the need for nutrients, recommend their sources and proportions in the daily diet, use knowledge of the principles of proper nutrition and factors affecting it, and information on individual foods and food standards. To know the basics of the anatomy of the digestive system, the process of digestion and absorption of nutrients. Also, by applying the knowledge gained in the course, the student can monitor trends in nutrition and improve the health of the population. From the practical side, students will be able to learn about nutrients, to calculate the necessary amounts of nutrients (proteins, fats, carbohydrates, vitamins and minerals). The body's energy needs to calculate the energy values of nutrients. Calculate basic metabolism (age, gender). Calculation of additional energy for physical activity, digestion and in disease states. The food pyramid, menu planning according to the food group chart and the proper nutrition pyramid. Examination of nutrition quality. Nutrition quality indicator. Food quality index calculations. Assessment of nutritional status. Research project: Dietary methods (weighed food diary, 24-hour recall, FFQ).   |
| **Expected results**  | After successfully mastering this subject, students will be able to:  * Recognize foods and their importance in nutrition based on nutritional values.
* They will be able to understand the trends in modern nutrition, describe the factors affecting nutrition and diseases caused by improper nutrition.
* To know the basics of the anatomy of the digestive system, the process of digestion and absorption of nutrients.
* Define the role and daily needs for energy and nutrients (proteins, fats, carbohydrates, water, minerals, vitamins), as well as nutritional standards and guidelines.
* They will be able to calculate the energy values of foods and assess their nutritional status based on their daily energy needs.
* To know the biological and energy value of foods according to groups of plant and animal origin. To know the basic role of functional food.
* To explain chemical, biological and radioactive food poisoning. Create menus according to the principles of the proper food pyramid.
* To calculate the state of nutrition using the methods of assessment of eating habits at different ages.
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| **Content**  | **Weekly Plan                                                                                                                                     Week**  |
| Familiarizing students with the module, syllabus, assessment criteria, expected learning outcomes and literature for the Food Science course.                          Week 1.  |
| Factors affecting nutrition and diseases caused by improper nutrition.             Week 2.  |
| Basics of the physicological digestive system and food digestionPWeek 3  |
| Sources of nutrients: of plant origin (cereals, fruits, vegetables, oil seeds, medicinal and aromatic plants). Food of animal origin (meat, fish, eggs, milk).               Week 4.  |
| Nutritional values (proteins, fats, carbohydrates, vitamins, minerals, water).   Week 5.  |
| The body's energy needs (basal metabolism, caloric effect of food, physical activity, age, climate).                                                                                                      Week 6.  |
| Presentation of Students' Works and projects                                                                                                                             Week 7.  Basics of meal preparation.                                                                                Week 8.  |
|  Basics of functional food. Week 9.  |
| Nutritional standards: reference values and dietary guidelines.                       Week 10.  |
| Basics of food poisoning (biological, chemical and radioactive agents).         Week 11.  Examination of diet quality and assessment of nutritional status.                   Week 12.  |
| Nutrition research.                                                                                            Week 13. Explain the principles of education and counseling and the basic concepts, define learning theories, Explain the importance of nutrition education and counseling.                                                                                                                           Week 14. Presentation of Students' Works and projects  Final Exam.                                                                                                      Week 15.  |
| **Literature/References**  | **Mandatory:** Teaching material for the course Food Science (ppt), FACULTY OF FOOD SCIENCE AND BIOTECHNOLOGY  **Additional material:** Sari Edelstein Second edition Food Science An Ecological Approach ISBN – 13 978-1284122305 ( 2018 ) Lori A. Smolin, Ph.D., and Mary B. Grosvenor, M.S., R.D. Basic Nutrition Chelsea House, ISBN 978-1-4381-4380-4 New York -NY (2019). Rhiannon Lambert. First published by Dorling Kindersley. The Science of Nutrition. A Penguin Random House Company. ISBN: 978-0-2415-0646-2. Great Britain in (2021). Ministry of Agriculture, animal industry, and fisheries. Food and nutrition handbook. October (2015) Benjamin Caballero. First edition 1998, Second edition 2005. Encyclopedia of human nutrition third edition. Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD, USA. ISBN 978-0-12-375083-9. Baltimore (2010). Nikolaos Katsilambros, MD. Clinical Nutrition in Practice. ISBN 978-1-4051-8084-9. (2010). M.L. Mandić: Znanost o prehrani, Prehrambeno-tehnološki fakultet. Osijek, 2003. L.Kathleen Mahan, Ms, Rdn, Cd. Janice L. Raymond, Ms, Rdn, Dc, Csg. 2017. Krause's Food & the Nutrition Care Process. St. Louis, Missouri: Elsevier, (2017). ISBN: 9780323340755. *Dunne L.J., Sve o zdravoj prehrani, 3.izd., Mate, Zagreb, 1996.* Articles from reputable scientific journals.   |
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