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| **Course code: FFS47**  | **Course title: BROMATOLOGY** |
| **Level: Integrated study** | **Year: IV (FOURTH)** | **Semester: VII (SEVENTH)** | **ECTS credits: 6 (SIX)** |
| **Status: Obligatory** | **Hours per week:****LECTURES (L): 3 (three) hours****EXERCISES (E): 4 (four) hours****SEMINARS (S): 1 (one) hour** | **Total teaching hours: 120** **(L: 45; E: 60; S: 15)** |
| **Teaching staff:** | Associate professor Jasmina Đeđibegović, professor-in-chargeMPharm Amila Turalić, teaching assistant DVM Emina Muftić, teaching assistant |
| 1. **Course objectives**
 | The main objective of the course is to train and enable students to perform food quality control, as well as basic analysis and interventions in human nutrition.Practical classes aim at acquiring skills and competencies in the application of separation, volumetric, spectrophotometric and other analytical methods in food quality and safety control, as well as the application of software in manu planning and analysis, and monitor of nutritional status of individuals and population. |
| **1.1. Course content** |
| 1. **Lectures**

Intoduction to Bromatology; Food sources and classification; Nutrients and other food ingredients (proteins, fats, carbohydrates, vitamins, minerals, other food ingredients); Basics of digestion and metabolism of nutrients; Principles of a healthy diet; Nutritional value of food; Energy value of food; Nutritional and energy needs assessment; Nutrition practices (macrobiotics, vegetarianism); Improper nutrition and consequences (Hunger and malnutrition; Obesity); Organization of food control systems; Legislation in food production, distribution and marketing; Functional foods, Organic foods, GM foods; Fundamentals of food microbiology; Contaminants and residues in food; Basics of risk analysis; Food preservation; Foods of animal origin (Meat and meat products; Milk and dairy products; Eggs and egg products; Honey); Foods of vegetable origin (Cereals and flour products; Fruits, vegetables and fruit and vegetable products; Commercial carbohydrates; Other vegetable and other products); Alcoholic beverages; Non-alcoholic beverages; Drinking water  |
| 1. **Practical classes (exercises)**

Organoleptic analysis; Determination of water content, dry matter, ash and mineral matter in foods; Determination of fats, carbohydrates and proteins in foods; Determination of residues and additives in food; Assessment of nutritional status, energy needs and menu planning; Drinking water analysis; Milk and dairy products analysis; Meat and meat products analysis; Fats and oils analysis; Cereals, mills and bakery products analysis; Fruits, vegetables and products of fruits and vegetables analysis; Beer and wine analysis; Non-alcoholic beverages analysis; Cocoa products and coffee analysis |
| 1. **Seminars**

Independent work seminars on current topics in bromatology and nutrition. |
| **1.2. Learning outcomes** | Upon completion of the course the student is able to:• Understand the complex structure of foods, the physical and chemical processes in food during production, processing and storage• Understand the structure of the system and processes in food quality assurance • Perform food analysis, interpret results and draw conclusions about food quality• Understand the basic principles and concepts of human nutrition• Perform nutrition assessments and manu planning• Plan and manage a research project in the field of food quality and nutrition |
| **2. ORGANIZATION OF TEACHING** |
| ***Activity description (%)*** |
| **2.1. Methods of teaching** | 1. lectures2. practical classes3. seminar | 1. 37,5 % 2. 50,0 % 3. 12,5 % |
| ***Grading system (%)*** |
| **2.2. Assessment** | 1. colloquium2. practical exam3. seminar4. I partial exam5. II partial exam | 1. 15 %2. 15 %3. 16 %4. 27%5. 27% |
| **3. LITERATURE****Mandatory**:* Milanović A. Bromatologija (Hrana i prehrana), recenzirani rukopis. Farmaceutski fakultet u Sarajevu; 2007
* Milanović A, Đeđibegović J, Softić Dž. Bromatologija - Postupci i metode utvrđivanja kvaliteta i

 zdravstvene ispravnosti namirnica, recenzirani rukopis. Farmaceutski fakultet u Sarajevu; 2007.**Additional**:* Mirić M, Šobajić SS. Zdavstvena ispravnost namirnica. Zavod za udžbenike, Beograd; 2002
* Belitz HD, Grosch W. Food Chemistry. 3rd edition. Springer, Berlin; 2004
* Pico Y. Chemical Analysis of Food: Techniques and Applications. Elsevier; 2012
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