# SYLLABUS

**1. Course title:**

FOOD CHEMISTRY

**2. Code:**

**3. Cycle of study:**

1

**4. ECTS credits:**

3

**5. Type of course:**

(•) Mandatory ( ) Elective

**6. Prerequisites:**

**7. Class restrictions:**

**8. Duration / semester:**

1 4

**9. Weekly contact hours:**

| | |
|---|---|
| 9.1. Lectures: | 2 |
| 9.2. Seminars: | 0 |
| 9.3. Laboratory/Practice classes: | 0 |

**10. Faculty:**

Faculty of Technology

**11. Department/study program:**

Food Technology

**12. Lecturer:**

Dr.sc. Jasmin Suljagić, Assistant professor

**13. Lecturer's e-mail:**

jasmin.suljagic @untz.ba

**14. Web site:**

www.tf.untz.ba

**15. Course aims:**

Successful work in any segment of technology of food today is unimaginable without the knowledge and understanding of basic food ingredients. The aim of this course is to provide students with basic theoretical and practical knowledge of the food chemistry, identification and understanding of the structure of basic food ingredients and training of students to understand the changes that take place in food. Food processing is the primary task for food industry. Food does nothing but chemical compounds, mostly organic: carbohydrates, proteins, fats and oils, vitamins and other substances.

**16. Learning outcomes:**

After successfully mastering the course students will be able to:
- classify basic food ingredients, with an analytical approach to food chemistry, to know the structure and properties of the basic food ingredients.
- explain the chemical and biochemical reactions that can occur in food during handling, processing and storage.
- show the structures (2D and 3D) of all food ingredients as well as the reactions taking place in the food, using the software for drawing chemical structures.

**17. Course content:**

- Introduction to food chemistry; Water (structure, properties, food interactions);
- Disperse systems, food as a dispersion system; Food Ingredients (Ingredients and Characteristics of Foods, Substances Changing Substances During Preparation, Processing and Storage);
- Carbohydrates (monosaccharides, oligosaccharides, polysaccharides, non-enzymatic smoothing);
- Lipids: Saturated and unsaturated fatty acids, essential fatty acids, Chemical aspects: lipolysis, self-oxidation, lipid oxidation in food, antioxidants;
- Amino acids, peptides and proteins (structure, functional properties, nutritional properties);
- Enzyme;
- Vitamins;
- Minerals (chemical and functional properties of minerals in food);
- Food supplements

**18. Learning methods:**

The most important learning methods in the subject are:
- Lectures with the use of multimedia resources, active learning techniques and with active participation and discussion of students;
- Use software for two-dimensional and three-dimensional representation of structures;
- Solving problem tasks.

**19. Assessment methods:**

Activity - for activity in lectures and exercises students can obtain 0-5 points.
Colloquium: colloquium of experimental work which consists of a theoretical basis and conducted experimental exercises. For the colloquium student can obtain a maximum of 15 points, the minimum number of points that a student must achieve is 5.
Colloquium and completion of the experimental work is a prerequisite for obtaining a signature.
Written assessment during the semester (Test I and II) - Test I and Test II include problem-solving tasks. The maximum number of points on each test is 15th
Final exam - assessment implies the unification of the entire matter handled.
In order to pass the courses, student must achieve a minimum of 51 points, of which a minimum of 25 points on the final exam.

**20. Assessment components:**

Rating exam is based on the total number of points a student has obtained by completing pre-exam requirements and exams, according to the quality of the acquired knowledge and skillsand contains a maximum of 100 points. It is determined according to the following scale:

| Obligations | Points |
|---|---|
| Presence in classes | 0-5 |
| Experimental work | 5-15 |
| Test I | 0-15 |
| Test II | 0-15 |
| Final Exam | 25-50 |

**21. Required reading list:**

1. O. R. Fennema, Food Chemistry, 3rd edition by Marcel Dekker Inc. (1996).
2. N. N. Potter, J. H. Hotchkiss, Food Science, 3rd edition, Chapman &Hall, New York (1995).

**22. Web sources:**

**23. Applicable starting from the academic year:**

2015/2016

**24. Adopted in the Faculty/Academy session:**