# SYLLABUS

**1. Course title:**

Bioactive components of food

**2. Code:**

(max. 20 characters)

**3. Cycle of study:**

1

**4. ECTS credits:**

3

**5. Type of course:**

(●) Mandatory ( ) Elective

**6. Prerequisites:**

Recommended previous courses in: organic chemistry, biochemistry, biology, instrumental methods

**7. Class restrictions:**

does not have

**8. Duration / semester:**

1 6

**9. Weekly contact hours:**

9.1. Lectures: 2

9.2. Seminars: 0

9.3. Laboratory/Practice classes: 1

**10. Faculty:**

Technology

**11. Department/study program:**

Food Technology

**12. Lecturer:**

dr.sc. Midhat Jašić

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

jasic_midhat@yahoo.com

**14. Web site:**

www.hranomdozdravlja.com

**15. Course aims:**

Acquiring knowledge and creating images based on the facts of the biologically active components of of food. Specific objectives of the subject are to acquire knowledge about:
a) the type of bioactive components of food (BCF),
b) activity of BCF in the individual systems in the body,
c) chemical characteristics,
d) a dietary supplement based on BCF,
e) free radicals and antioxidants in food,
f) preventing degradation of BCF and
g) ethics and self-awareness in food.

**16. Learning outcomes:**

At the end of the course, successful students, who during the entire period of teaching continuously perform their duties, will be able to:
a) to recognize foods that contain BCF essential in maintaining health,
b) are used the acquired knowledge needed in the production and preservation of BCF and preserving their biological and nutritional values.
Upon completion of the course students acquire the basic skills necessary for the knowledge of the specific compounds from foods that have a positive impact in maintaining health and preventing disease.

**17. Course content:**

Introduction to the subject. Biologically active substances in the diet. Classification of biologically active substances. Nutritional BCF. Cellulose and hemicellulose, pectin, gums and mucilage. Fructans-fructosans. Significant amino acids and fatty acids. Peptides.
Unnutritious BCF. Pigments, antioxidants, chlorophylls, flavonoids, Beetroot, hemoglobin, glycosides, alkaloids, phytosterols, isoflavones, acid.
The impact on health. Effect of BCF on individual system's asteroid belt in the body. The influence of certain phytochemicals to health. The protective effect of BCF.
Free radicals and antioxidants in food. The main consequences of oxidative changes. Oxidative stress. Protection of oskidacijskih changes. Chemistry effects of antioxidants. Food antioxidants (vitamins, minerals, carotenoids, polyphenols, flavonoids). Determination of antioxidant activity.
Karinogene and mutagenic substances in of food. Preventing the degradation of BCF during food processing. Ethics, self-awareness in food production.

**18. Learning methods:**

1. Lectures. Each methodological unit is developed according to the principle: theme, objectives, teaching strategies (lectures, discussions, discussion groups), educational issues, the sources of information-literature.
2. Seminar. During the course students automatically chooses the theme of the seminar with a list of topics or by an independent proposal by the student teacher accepted.
3. Laboratory exercises. Based on the acquisition of skills in the analysis of BCF that may be present in food.

**19. Assessment methods:**

During the course assures permanent monitoring of the degree of the knowledge of students, as well as the monitoring of their activities. Students' work is monitored and evaluated continuously during the semester following the overall work and knowledge of students in all forms of teaching. Examination is done in writing and orally.
Written exams. Written exam is in the form of test combined with tasks and written responses. A student in the course of the lecture approach laying Tests I and II, and after the completion of every fifteen lectures.
Final exam. The final exam consists of an oral answer and defense seminars like the individual project. On the final exam there are two issues according to pre published list of questions. Student chooses a randomized questions. Seminar is done by pre-prescribed procedure of defense seminars.
Rating. Students who have met on the first and second test + final exam, the teacher will obtain a rating in the index after the completion of all obligations in the case (the signature of the teachers in the index). The requirement for a signature are performed duties attendance at schools in accordance with the rules of the University.
Reformatory exam. Additional examination approach the students who did not meet the test (I + II + final exam), and have done all obligations to the case (with the signature of the teachers in the index). The first is a written exam, if the student is not the same already successfully passed during the continuous assessment. Passed part of the written exam is recognized in subsequent examination periods during the same school year.
Notification. Communication on the results exam tasks is using the usual message boards. The test results can be sent via e-mail or verbally announce the students in a certain time for consultations.
Keeping of results the examination. Results of written examinations are kept before 1 of November following school year.

**20. Assessment components:**

The final grade is based on of results the continued activity, test, laboratory practice and the final exam. During attendance counts coming and activity of students in class with a maximum of 10 points. Tests during the course, after every 15 hours of lectures. Both maximum of 40 points. The passage of a minimum achievement of 22 points in both tests. Work in the laboratory a maximum of 20 points. The final exam is mandatory and carries 30 points.

**21. Required reading list:**

1. Kukric Z, Jasic M: Bioactive components of food, Tecnology faculty, University of Tuzla-Banja Luka, 2013.
2. Kampulainen J.T., Salonen J.T.: Natural antioxidants and anticarcinogens in nutrition, health and disease. Royal Sociaty of Chemistry.

**22. Web sources:**

www.hranomdozdravlja.com (Bioactive components of food)

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

2015/2016

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

(max. 10 char.)