Study programme: Food Processing

Type and level of study: Bachelor's degree (240 ECTS) – First cycle

Course title: Oil and Fats Technology

Lecturer: Ass. Prof. Mirjana Radovanović, PhD

Language of instruction: English

ECTS credits: 6

Prerequisite:

Semester: summer

Course objective Acquiring knowledge and skills regarding the lipids production and processing. Understanding the linkage between chemical properties of lipid molecules and desired characteristics of the final products (edible lipids). Possibility to tailor the final lipid characteristics by technological (modification) processes. Knowing all critical points which may lead to the lipid spoilage, and possibility to prevent them.

Learning outcomes Gaining knowledge which enables active following of different technological processes during oils and fats production, ability of solving various problems in production, and planning research in lipid field.

Course contents
Definition and classification of oils and fats. Applications. Fatty acids. Triglycerides. Phospholipids. Sulfolipids. Lipoproteins. Tocopherols. Pigments. Reactions of fatty acids and lipids. Physicochemical properties. Crystal structure. Thermal properties. Fats consistency and lubricity. Lipids solubility. Optical properties. Spoilage of fats. Raw materials for oils and fats production. Technological maturity of oilseeds. Transport, conditioning, storage of oilseeds. Oilseeds drying. Treatments of oilseeds in silos. Peeling. Oil production (pressing, extraction). Oil refining. Degumming. Neutralization. Discoloration.
Winterization. Deodorization. Oil modification. Fractionation. Interesterification. Hydrogenation. Solid edible fats.

Recommended reading Richard O'Brien D. (2004): Fats and Oils: Formulating and processing for Applications.

Hours of active teaching				**Other classes**
Lectures: 3x15=45	Practicals: 2x15=30 teaching	Other forms of Tutorials:	Individual work:	

Teaching methods Lectures are held in classrooms and laboratories using modern devices and teaching aids. Laboratory and practical sessions involve individual student work. For term paper assignments, office hours are open for questions regarding the choice of topic and selection of relevant references.

Assessment (maximum points 100)

Examination requirements	**Points**	**Final examination**	**Points**
Class participation	10	oral examination	50
Practical sessions/tests	20	written examination	20
Term paper assignments/homework		.....	
Project			
Other			

Grading system

Grade	**ECTS**	**Description**
10	**91-100**	Excellent
9	**81-90**	Exceptionally good
8	**71-80**	Very good
7	**61-70**	Good
6	**51-60**	Passing
5	**≤50**	Failing