Course ID: HOB474	**Course name:** STEREOCHEMISTRY AND MECHANISMS OF ORGANIC REACTIONS		
Cycle: FIRST	**Year: FOURTH**	**Semester: VII**	**ECTS credits: 6**
Course status: MANDATORY		**Total course hours: 90** Lectures: 45 Laboratory: 45	

Teaching participants:	**Teachers and associates with expertise in the field to which the subject belongs**
Prerequisite for enrollment:	-
Course aims:	The aim of this course is to help students master the basic principles of spatial forms of organic molecules and their influence on the chemical and physical properties, as well as the pathway and rate of chemical reaction. In the second part of this course the student will be familiar with the methodology of determining the mechanisms of organic reactions.
Thematic course units:	Geometrical isomerism. Conformations of acyclic compounds. Conformations cyclic compounds. Chirality and optical activity. The stereochemical phenomena: conformation, enantiomers, diastereoizomers. The stereochemical nomenclature. Methods for producing stereoisomers. Methods for determining optical purity. Methods for determining the configuration. Non kinetic methods of determination of reaction mechanisms. Determination of reaction products. Proving possible intermediates. Capturing of intermediates. Physical detection of intermediates. Catalysis response. Crossover reactions. Marking with isotope. Stereochemical studies of the mechanisms of organic reaction. Kinetic methods of determination. Reaction kinetics. Evaluation of kinetic results.
Learning outcomes:	Knowledge: Acquisition of knowledge from the basics of stereochemistry as well as from the methods of determining the mechanisms of reactions through selected reactions of organic molecules. Skills: Acquiring knowledge about the importance and role of spatial arrangement of molecules in organic synthesis as well as the way of determining the mechanisms of reactions both through the theoretical basis and through practical work in the laboratory. Competences: The student develops a sense of the three-dimensional structure of organic molecules, its influence on the properties and reactivity of organic compounds, as well as methods of testing the mechanisms of organic reactions.
Teaching methodology:	Classroom lectures and laboratory exercises

Assessment methods and grading system[1]:

Grading criteria			
	Criteria	Maximal score	Required score
1.	Class attendance	5	3
2.	Class activities	10	5
3.	Midterms	45	25
4.	Final exam	40	22
	Total	100	55

Scores and grading		
Score	Grade (B&H)	Grade (ECTS)
< 55	5	F, FX
55–64	6	E
65–74	7	D
75–84	8	C
85–94	9	B
95–100	10	A

Literature[2]:

Mandatory literature:

1. Kagan, H. B. (2003) *Organska Stereohemija*, Hemijski fakultet, Beograd.
2. Baranac Stojanovi, M. (2017) *Stereohemija organskih jedinjenja*, Beograd
3. Eliel, E., Wilen, S., Mander, L. (1994) *Stereochemistry of Organic Compounds,* A Wiley-Interscience publication, New York.
4. Ćavar, S. (2013) *Uvod u ispitivanje mehanizama organskih reakcija*, Prirodno-matematićki fakultet, Sarajevo.

Supplementary literature:

1. Vollhardt, K.P.C., Schore, N.E., (2004) *Organska hemija:: struktura i funkcija*, IV izdanje, Data status, Beograd.
2. Gomez Gallego, M., Sierra, M.A. (2004) *Organic Reaction Mechanisms,* Springer-Verlag.
3. Edenborough, M. (1988) *Writing organic reaction mechanisms, A practical Guide*, Tailor&Francis.
4. March, J., (1992) *Reactions, Mechanisms and structure*, John Wiley & Sons.

[1] The grading structure for each subject is determined by the Council of the organizational unit before the beginning of the academic year in which the subject is taught as per Article 64, paragraph 6 of the Law on Higher Education of Sarajevo Canton

[2] The Senate of the higher education institution, as an institution, or the Council of the organizational unit of the higher education institution, as a public institution, determines by a special decision, which is published on its website before the beginning of the academic year obligatory, mandatory and recommended textbooks and manuals, as well as other recommended literature based on which exams are prepared and taken as per Article 56, paragraph 3 of the Law on Higher Education of the Sarajevo Canton