

Subject card

Subject name and code	Stereochemistry of organic compounds, PG_00073210						
Field of study	Chemistry						
Date of commencement of studies	October 2025		Academic year of realisation of subject		2026/2027		
Education level	Bachelor's studies		Subject group		Obligatory subject group in the field of study Optional subject group Subject group related to scientific research in the field of study		
Mode of study	full-time studies		Mode of delivery		at the university		
Year of study	2		Language of instruction		Polish		
Semester of study	3		ECTS credits		2.0		
Learning profile	academic		Assessment form		credit		
Conducting unit	Laboratory of Glycochemistry -> Department of Organic Chemistry -> Faculty of Chemistry -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Andrzej Nowacki				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	0.0	30.0	0.0	0.0	0.0	30
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	30		5.0		15.0	50
Subject objectives	Searching for symmetry elements in the molecules of organic compounds and assigning molecules to symmetry groups.Manipulating on the spatial patterns of organic compounds and presenting them in the form of projection patterns.Determination of configurations of chirality centers of different types.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[CHEML3_W03] Explains the relationship between the structure of matter and its observed properties.	Understands the effect of chirality, or lack thereof, on the properties of chemical compounds. Sees the importance of chirality to the functioning of living organisms	[SW1] oral statement/ conversation/discussion
	[CHEML3_U09] Is able to learn independently.	Develops the ability to see spatially in chemistry and the environment.	[SU1] oral statement/conversation/ discussion [SU8] observation of student's independent or team work
	[CHEML3_U08] Presents in an understandable way the basic facts about chemistry using a scientific language typical of chemical sciences.	Develops skills in the use of stereochemistry terminology.	[SU4] test/exam - oral or written [SU8] observation of student's independent or team work
	[CHEML3_U01] Identifies, analyses and solves problems in the field of broadly understood chemistry on the basis of the acquired knowledge.	Solves questions about the symmetry of organic compounds; assigns organic compound molecules to symmetry groups based on analysis of symmetry elements. Performs projection formula transformations of stereoisomers and determines absolute configuration. Exercises recognition of prochiral centers.	[SU4] test/exam - oral or written [SU8] observation of student's independent or team work
Subject contents	Symmetry of organic molecules. Chirality in molecules lacking chirality centers: allenes, helices; biphenyls, helicenes, molecules with planar chirality. Transformations of projective patterns. Configuration: relative and absolute, methods for determining relative and absolute configuration. Stereoisomerism and prochirality.		
Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Colloquium, open questions, positive evaluation of colloquia	51.0%	100.0%
Recommended reading	Basic literature	M. Nogradi - Stereochemistry, fundamentals and applications, PWN, Warsaw 1988.W. M Potapow - Stereochemistry, PWN, Warsaw 1986.D. G. Morris - Stereochemistry, PWN, Warsaw 2008.	
	Supplementary literature	E. L. Eliel, S. W. Wilen, L. N. Mander Stereochemistry of organic compounds, Wiley & Sons, New York 1994 K. Mislow Introduction to stereochemistry, Dover Publications, New York 2006	
	eResources addresses		
Example issues/ example questions/ tasks being completed	1. in the given compounds, list all the elements of symmetry and determine the point group (symmetry) belongs to the given compound2. show the given compounds in Fischer projection3. determine the stereochemical relationship between the compounds (identical compound, enantiomer, diastereoisomer, constitutional isomer ...).4. In the given compounds, determine the seniority of the substituents and determine the configuration of the chirality centers (chirality axes)		
Work placement	Not applicable		

Document generated electronically. Does not require a seal or signature.