

COURSE DESCRIPTION CARD – MODULE 1

Field of study	International Interdisciplinary Summer School "Energy-efficient construction, users and environment friendly"					Programme type	Summer course
Module name	Modern Architecture					Course code	IISS2026-M1
						Course type	obligatory
Forms and number of hours of tuition	L	LC	P	SW	FW	Language	English
	1			7			
Course objectives	The aim of the lecture is to make students aware of the importance of cooperation within a design team when implementing a coherent architectural concept. Students will understand the impact of modern design techniques and construction technologies on architectural form. The design workshop aims to ensure the proper selection of window joinery and artificial solutions dedicated to the shading of a selected single-family house in a specific climate zone.						
Course content	<p>Lecture: A presentation of the latest design trends in modern architecture. The aim is to familiarise students from various engineering faculties with the multitude of design approaches in contemporary architecture, which have both humanistic and technical foundations, in the context of sustainable development goals and the experience of vernacular architecture.</p> <p>Project and discussion: The aim of the design workshop is proper selection of window joinery and artificial solutions dedicated to the shading for a selected single-family house located in selected climate zone. The goal will be achieved through:</p> <ul style="list-style-type: none"> -presentation and discussion of selected types of single-family houses to students -discussion and exchange of thoughts on climatic conditions, and thus design guidelines and technical solutions in various parts of the world -discussion and exchange of ideas on vernacular architecture in selected regions, and on construction and material solutions that respond to the individual regions' climatic conditions. -analysis of the location conditions and plans of selected buildings carried out by student design teams and consultation with the teacher carrying out the task -the selection of window joinery and artificial solutions dedicated to the shading by student team and consultation it with the tutor -discussion of the results and solutions proposed by student teams. Possible correction of proposed solutions. The developed solution will be used for further design activities at the next workshop <p>Final test</p>						
Teaching methods	Lecture, workshop, carrying out a design work						
Assessment method	Design work defence, evaluation of design work, final test						



Symbol of learning outcome	Learning outcomes	Reference to the learning outcomes for the field of study	
L01	The graduate knows and deeply understands the the latest development trends and technologies in engineering	K_IISS_W05	
L02	The graduate knows and understands contemporary trends in construction technologies, including those based on principles of sustainable and vernacular construction, and their impact on the architectural form of buildings	K_IISS_W06	
L03	The graduate knows and has an in-depth understanding of the influence of climatic conditions on the technical conditions of shaping the architecture of the building	K_IISS_W07	
L04	The graduate knows modern solutions and construction materials used in energy-efficient buildings	K_IISS_W08	
L05	Graduates are able to use acquired knowledge for critical analysis, synthesis, creative interpretation and presentation of issues in the field of environmental engineering and sustainable construction	K_IISS_U02	
L06	Graduates are able to properly select the technical conditions for designing buildings in relation to climatic conditions in order to design selected building elements of the facility	K_IISS_U06	
L07	The graduate is ready to analyze the content obtained from various sources, as well as to critically evaluate it and use it in professional work	K_IISS_K01	
Symbol of learning outcome	Methods of assessing the learning outcomes	Type of tuition during which the outcome is assessed	
L01	Defence of the completed project, test	SW	
L02	Defence of the completed project, test	SW	
L03	Defence of the completed project, test	SW	
L04	Defence of the completed project.	SW	
L05	Defence of the completed project.	SW	
L06	Defence of the completed project.	SW	
L07	Defence of the completed project, test	SW	
Student workload (in hours)		No. of hours	
Calculation	Participation in the lecture.	1	
	Participation in the workshop.	7	
	Preparation of the design.	7	
	Preparation for the final test.	3	
	Consultation.	2	
	TOTAL:	20	
Quantitative indicators		HOURS	No. of ECTS credits
Student workload – activities that require direct teacher participation		9	0,36

Student workload – practical activities		19	0,76
Basic references	<p>Lucas Dorian. Sustainable Buildings : Environmental Awareness in Architecture. Salenstein]: Braun Publishing, 2023.</p> <p>Lechner Norbert and Patricia Andrasik. Heating, Cooling, Lighting : Sustainable Design Strategies towards Net Zero Architecture. Fifth. Hoboken: John Wiley & Sons, 2022.</p> <p>Future of the City. Editors: Dorota Gawryluk and Dorota Anna Krawczyk, Bialystok 2021</p> <p>Antony Radford, Selen Morkoc, Amit Srivastava. The Elements of Modern Architecture: Understanding Contemporary Buildings. London: Thames and Hudson, 2015</p> <p>Andrzej Basista. Composition of a Work of Architecture. TAIWPN Universitas, Cracow, 2009</p> <p>Buildings 2020+. Constructions, materials and installations. Editor: Dorota Anna Krawczyk. Bialystok-Cordoba-Vilnius 2019</p> <p>Fast-Forward Urbanism. Rethinking Architecture's Engagements with the City. Editors: Dana Cuff and Roger Sherman. Princetown Architectural Press, 2011</p> <p>The EcoEdge. Urgent Design Challenges in Building Sustainable Cities. Editors: Esther Charlesworth and Rob Adams. Routledge Taylor & Francis Group, London and New York, 2011</p>		
Organisational unit conducting the course	Department of HVAC Engineering, BUT with participation of abroad expert	Date of issuing the programme	
Author of the programme	dr inż. arch. Dorota Gawryluk prof. Maria Aurora Florez de la Colina, Spain	20.10.2025	

L – lecture, LC – laboratory classes, P – project, SW – specialization workshop, FW - field work