

**Learning outcomes - Interdisciplinary Engineering Summer School -
Energy-efficient, user-friendly and environmentally friendly construction - SPINAKEK_2026 (IISS)
Form: Summer Course**

Symbol	Learning outcomes
Knowledge: knows and understands	
K_IISS_W01	EU standards, rules and guidelines for the design of building sustainable structures and their elements
K_IISS_W02	construction, principles of operation and exploitation of modern devices used in refrigeration, heating, ventilation, air conditioning and lighting
K_IISS_W03	methods and tools, including advanced information and communication techniques, along with computational and statistical methods
K_IISS_W04	selected issues in the field of detailed knowledge - necessary to understand the thermal, flow, cooling, ventilation and air conditioning processes occurring in environmental engineering
K_IISS_W05	the latest development trends and technologies in engineering
K_IISS_W06	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_W07	influence of climatic conditions on the technical conditions of shaping the architecture of the building
K_IISS_W08	modern solutions and construction materials used in energy-efficient buildings
K_IISS_W09	basic methods of analysis and modeling of thermal-flow processes in buildings
K_IISS_W10	selected aspects of modern interior lighting technology including energy efficiency, use of daylight and non-visual effects of light
K_IISS_W11	selected aspects of energy-efficient buildings design including life cycle analyses of construction materials and buildings
K_IISS_W12	IoT tools allowing to improve functionality of buildings and to increase energy savings
Skills: is able to	
K_IISS_U01	properly plan research, perform it, interpret its results and draw correct conclusions on this basis
K_IISS_U02	use acquired knowledge for critical analysis, synthesis, creative interpretation and presentation of issues in the field of environmental engineering and sustainable construction
K_IISS_U03	properly use up-to-date information on innovations in environmental engineering/construction/ architecture/ lighting/ IoT technology

K_IISS_U04	properly select data for the design of networks, systems and technologies in buildings
K_IISS_U05	use scientific, popular science and industry literature, subject standards, legal acts, internet databases in English language; properly use the information obtained, as well as formulate and present opinions
K_IISS_U06	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_U07	assess the needs and propose lighting system solutions in accordance with the latest knowledge and requirements
K_IISS_U08	use calculation methods for assessing the energy, economic and ecological efficiency of investments based on renewable energy sources
Social competence: is ready to	
K_IISS_K01	analyze the content obtained from various sources, as well as to critically evaluate it and use it in professional work
K_IISS_K02	consciously apply non-technical aspects of engineering activity and consider its impact on the environment and the related responsibility for the decisions taken

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