Title of Course	Refrigeration technology		
Semester	Autumn/Spring		
Teaching Hours per Course:	Total	- Lectures:	- Tutorials:
	30	30	-
ECTS Credits	2		

The content of education	
Aims of Course	This course introduce to the basic knowledges of refrigeration system including the refrigerating cycles, the classification and thermodynamic characteristics of refrigerant, the operational principle and fabrication of the components in refrigeration system. This course provides discussion of the properties of the most commonly used refrigerants and their impact on the natural environment. It also provides calculating method for sizing and selecting several components in refrigeration system as well as operating and evaluating method via experiments in refrigeration system.
Program	L1 - Theoretical basis of refrigeration (refrigeration and heat pump cycles, reversible and irreversible cycles, COP - Coefficient of performance) L2 - Compressor refrigerators (schematic diagram, theoretical and actual cycles of steam refrigerators, theoretical and real dry and wet cycles of steam coolers, schematic diagrams and theoretical cycles of refrigerators with subcooling of liquid refrigerant and with heat regeneration, basis of thermal calculations of single-stage steam cycles; theoretical two-stage steam refrigerators, real refrigeration cycles and volume loss coefficients, energy losses, indicated and useful efficiency); L3 - Apparatus for compressor steam refrigerators (refrigeration compressors, condensers and evaporators, control and auxiliary devices); L4 - Steam jet refrigerators (schematic diagram, theoretical cycle, loss factors); L5 - Thermoelectric refrigerators (Seebeck and Peltier effects, application of thermoelectric refrigerators); L6 - Absorption refrigerators (schematic diagram and theoretical cycle of the ammonia absorption refrigerator, the schematic diagram and the theoretical cycle of the bromolithium refrigerator, the absorption home refrigerator); L7 - Refrigerants (identification, classification, thermo-physical properties); L8 - Air conditioning systems.
Conditions of completion	Colloquium at the end of the lectures or based on the evaluation of the self-prepared presentation. The colloquium is in writing. You cannot use scientific aids and notes on it.
Teacher	Marian Trafczynski, Ph.D. Eng.