

Study program: Industrial engineering – Mechanical engineering			
Course title: Heating devices and plants			
Professor/assistant: Sonja Kostić			
Type of course: Compulsory			
ECTS credits: 6			
Prerequisites: none			
Aims of the course: Students acquire knowledge and skills in the area of applied thermotechnics, heating and air-conditioning systems, and application of solar energy, that is, all kinds of solar energy conversions.			
Learning outcomes: The student will be able to supervise and coordinate project implementation of a heating and air conditioning system, and to supervise the exploitation and maintenance of heat devices and plants.			
Syllabus: <i>Theoretical part:</i> <ol style="list-style-type: none"> 1. Thermodynamic calculations. Systems and their parts. 2. Remote heating – heat networks. 3. Solar energy. Active solar systems. Heat accumulators. 4. Passive solar systems. Concentrated solar energy. Solar pools. Solar dryers and distillers. Conversion of solar energy into electrical energy. 5. Measuring the parameters of microclimate and heating and cooling performances of heating plants. 6. Optimization and managing of cooling plants. 7. Planning investments in heating plants. <i>Practical part:</i> Auditory and laboratory exercises.			
Literature: <ol style="list-style-type: none"> 1. Tomislav M. Pavlović i dr., Obnovljivi izvori energije, Akademija nauka i umetnosti RS. Banja Luka 2013. 2. Zrnić S., i dr. Grejanje i klimatizacija. Naučna knjiga. Naučna knjiga, Beograd 1988. 3. Bogner M. i dr. Termotehnika, Naučna knjiga, Beograd 1987. god. 4. Pavlović T. i dr. Fizika i mehanika solarne energetike. Građevinska knjiga Beograd 1999. 5. Nebojša Lukić., Milun Babić: Solarna energija, FIN u Kragujevcu, 2006 			
Total number of active classes: 75		Lectures: 45	Practical classes: 30
Teaching methods: lectures; auditory and laboratory practice			
Grading system (maximum 100 points) grading scale from 5 to 10: below 51 points – student fails the exam, grade 6 from 51- 60 points, grade 7 from 61-70 points, grade 8 from 71-80 points, grade 9 from 81-90 points, grade 10 from 91- 100 points.			
Pre-exam obligations:	Points:	Final exam:	Points:
Activity during lectures	max 5	Oral exam	50
Practical training	max 5		
Written test(s)	max 20		
Term papers	max 20		
Minimum requirement for the final exam	30		