

Study program : Mechanical engineering			
Type and level of studies: Bachelor study			
Course unit: Thermotechnics			
Teacher in charge : Nebojsa S Lukic			
Language of instruction: English			
ECTS: 6			
Prerequisites: No			
Semester: Summer semester			
Course unit objective: The main objective of course is introduction with basic principles of heat transfer, conduction, convection, radiation, combined heat transfer, boiling, condensation, process with humid air, theory of refrigeration and heat pumps, heat exchangers, heat pipes and desalination process. Students obtain knowledge of the heat exchanger constructions, refrigeration and desalination processes.			
Learning outcomes of Course unit: Student understands basic principles and laws of all heat transfer mechanisms. Student is capable to apply methods for improving of heat transfer process, to calculate heat exchanger active areas. Student is capable to measure the defined values to obtain a setup heat power. Student can apply his obtained knowledge to humid air, refrigeration, heat pipes and desalination processes.			
Course unit contents			
<i>Theoretical classes:</i> Conduction, convection, radiation, combined heat transfer, boiling and condensation, humid air, refrigeration and heating cycles, heat exchangers theory, heat pipes theory, desalination principles.			
<i>Practical classes:</i> Theoretical practice: Carrying out of heat humid air and refrigeration practical problems. Laboratory practice: Work with real setups of defined issues.			
Literature:			
1. Homan, J.P., Heat Transfer (tenth edition), McGraw-Hill, 2010.			
2. Dunn, P., Reay, D.A., Heat Pipes, Pergamon Press, 1982.			
3. Semiat, R., Desalination: Present and Future, Water International, Vol. 25, No 1, pp. 54-65, (2000).			
Number of active teaching hours			Other classes
Lectures: 45	Practice: 30	Other forms of classes:	
Teaching methods: Lectures using video presentations, multimedia, laboratory.			
Examination methods (maximum 100 points)			
Exam prerequisites	No. of points:	Final exam	No. of points:
Student's activity during lectures	5	oral examination	20
practical classes/tests	10	written examination	20
Seminars/homework			
Project			
Colloquiums:	45		
Grading system			
Grade	No. of points	Description	
10	91-100	Excellent	
9	81-90	Exceptionally good	
8	71-80	Very good	
7	61-70	Good	
6	51-60	Passing	
5	<51	Failing	