

Faculty of Metallurgy and Technology / METALLURGY AND / FERROUS METALLURGY

Course:	FERROUS METALLURGY			
Course ID	Course status	Semester	ECTS credits	Lessons (Lessons+Exercises+Laboratory)
326	Mandatory	6	7	3+2+0
Programs	METALLURGY AND			
Prerequisites	Without mutual dependence			
Aims	Learning about technologies of ironmaking and steelmaking			
Learning outcomes				
Lecturer / Teaching assistant	Zarko Radovic			
Methodology	Lectures, exercise . Consulting.			
Plan and program of work				
Preparing week	Preparation and registration of the semester			
I week lectures	Early history of Iron			
I week exercises	Introductory consideration			
II week lectures	Iron ore and agglomerates			
II week exercises	Estimation of sintermaking process			
III week lectures	Blast furnace ironmaking			
III week exercises	Constructional features of the blast furnace			
IV week lectures	BF fuel. BF slag.			
IV week exercises	Estimation of BF fuel combustion			
V week lectures	Kinetics of reduction of iron oxides in BF			
V week exercises	Mass balances of BF			
VI week lectures	Structure and properties of BF slag			
VI week exercises	Mass balances of BF			
VII week lectures	BF products and their utilisation			
VII week exercises	I Colloquium			
VIII week lectures	Corrective I Colloquium			
VIII week exercises	Technologies of steelmaking			
IX week lectures	Physical chemistry of primary steelmaking			
IX week exercises	Introduction			
X week lectures	Metallurgical features of oxygen steelmaking			
X week exercises	Reaction equilibria in steelmaking			
XI week lectures	Estimation of BOF process			
XI week exercises	II Colloquium			
XII week lectures	Electric arc furnace steelmaking			
XII week exercises	Estimation of mass balance of EAF			
XIII week lectures	Deoxidation of liquid steel			
XIII week exercises	Estimation of desulphurisation process			
XIV week lectures	Secondary steelmaking			
XIV week exercises	Corrective II Colloquium			
XV week lectures	Clean steel technology			
XV week exercises	Ingot casting of steel			
Student workload				

Per week			Per semester			
7 credits x 40/30=9 hours and 20 minuts 3 sat(a) theoretical classes 0 sat(a) practical classes 2 excercises 4 hour(s) i 20 minuts of independent work, including consultations			Classes and final exam: 9 hour(s) i 20 minuts x 16 =149 hour(s) i 20 minuts Necessary preparation before the beginning of the semester (administration, registration, certification): 9 hour(s) i 20 minuts x 2 =18 hour(s) i 40 minuts Total workload for the subject: 7 x 30=210 hour(s) Additional work for exam preparation in the preparing exam period, including taking the remedial exam from 0 to 30 hours (remaining time from the first two items to the total load for the item) 42 hour(s) i 0 minuts Workload structure: 149 hour(s) i 20 minuts (courses), 18 hour(s) i 40 minuts (preparation), 42 hour(s) i 0 minuts (additional work)			
Student obligations						
Consultations						
Literature			1. W. Kurz, D.J. Fisher: Fundamentals of Solidification, Trans. Tech. Publ., Lousiane, 1986. 2. V. A. Kudrin: Steelmaking, Mir Publishers, Moscow, 1990. 3. Mirko Gojić: Metalurgija čelika, Zagreb, 2007. 4. V. Trujić, N. Mitevska : Metalurgija gvožđa, Bor, 2007. 5. S. Muhamedagić: Metalurgija gvožđa, Zenica 2005. 6. V. Grozdanić, A. Markotić : Metalurgija gvožđa i čelika (Zbirka zadataka), Sisak, 2006.			
Examination methods						
Special remarks						
Comment						
Grade:	F	E	D	C	B	A
Number of points	less than 50 points	greater than or equal to 50 points and less than 60 points	greater than or equal to 60 points and less than 70 points	greater than or equal to 70 points and less than 80 points	greater than or equal to 80 points and less than 90 points	greater than or equal to 90 points