

Study Programme: Energy and Process Engineering			
Course Unit Title: Boiler Plants			
Course Unit Code: M3304			
Name of Lecturer(s): Borivoj Stepanov			
Type and Level of Studies; Bachelor level			
Course Status (compulsory/elective): compulsory			
Semester (winter/summer): winter			
Language of instruction:english			
Mode of course unit delivery (face-to-face/distance learning): face-to-face			
Number of ECTS Allocated:8			
Prerequisites: none			
Course Aims: Enabling students to work on: designs, engineering, exploitation, engineering and consulting in the field of boiler plants.			
Learning Outcomes: Acquisition of basic knowledge about problems and methodology in solving problems of design, engineering and plant management (stationary and non-stationary in the sense of load change), engineering and consulting of boiler plants: Boiler design; fuel, static of combustion and fireplace devices; thermal calculation; aerodynamics and hydraulics; corrosion, wearing, soiling and cleaning; rationalization and testing of boiler plants; impact of boiler on the living environment and prevention against environmental pollution.			
Syllabus: Introduction, classification of boiler, development tendencies; Fuels, contents, types and characteristics of fuels; Combustion of fuels, statics and kinetics of combustion, products of combustion; Devices for combusting solid, liquid and gas fuels. Preparation of combustion fuels; Water and vapor; Heating calculation of steam boilers; Aerodynamics of gas and air tract; Hydrodynamic processes in steam boilers; Basic elements of steam boilers; Skeleton, walling and isolation of boilers; Dynamics and control of the steam boiler; Boiler steels and strength calculation; Corrosion of boiler heating surfaces; Boilers and the environment.			
Required Reading: Relevant literature in English TBD			
Weekly Contact Hours:35	Lectures:4	Practical work:31	
Teaching Methods: Lectures, Consultations, Mentor work. Auditory Practice. Visits to the industrial plants. Knowledge is tested at the examination. Alternatively, the examination may be taken successively through two colloquiums. If the student passes only 1 colloquium, he/she takes the examination only for the part he/she didn't pass			
Knowledge Assessment (maximum of 100 points):100			
Pre-exam obligations	points	Final exam	points
Lecture attendance	5	Oral part of the exam	60
Computer exercise attendance	10		
Term paper	25		
The methods of knowledge assessment may differ; the table presents only some of the options: written exam, oral exam,			

project presentation, seminars, etc.