DEPARTMENT OF FOREST INDUSTRY ENGINEERING

Content of Doctoral Degree in Forest Industry Engineering with Thesis

COURSE CODE	COURSE NAME AND CONTENTS	T	A	C	ECTS
OEM805	**Wood Material Lamination Techniques**	**3**	**0**	**3**	**8**
Purpose and Content	Determination of LVL that wood material in build, determination of adhesion conditions, determination of advantage LVL. According to the types of used of LVL on wood materials, determination of effect of wood materials on mechanic features in LVL. Factors affecting adhesion resistance. Wood material selection in lamination. Lamination techniques. Protection of laminated wood material. Usage areas of laminated material. Physical and mechanical tests in laminated wood materials.				
OEM814	**Bending Methods in Wood Material**	**3**	**0**	**3**	**8**
Purpose and Content	The aim of this course is to provide knowledge of basic concepts of wood bending technology and the ability to design and produce bent wood furniture. Wood bending theory, Wood plasticizing methods, Bending of solid and laminaed wood, Design and production of bent wood furniture.				
OEM806	**Deterioration Of Wood By Marine Organisms**	**3**	**0**	**3**	**8**
Purpose and Content	Determination of biotic factors that harms wood material in sea, determination of life conditions, determination of biotic factors according to the types of destruction on wood materials, determination of effect of wood materials on mechanic features. 1. Explain of biotic factors that harms wood material in sea, 2. Explain of life conditions, 3. Determination of biotic factors according to the types of destruction on wood materials, 4. Investigation of effect of wood materials on mechanic features 5. It describes the impregnation methods				
OEM808	**Heat Treatment Technology in Wood Material**	**3**	**0**	**3**	**8**
Purpose and Content	To give some informations on the principle of heat treatment, the objectives and requirements, physical, mechanical and chemical changes based on heat treatment in wood, , using areas and thecnological properties of heat treated wood materials. Definition of heat treatment in wood. Heat treatment techniques applied to wood. “Plato wood” process, “Thermowood” process, “Retification” method, “Bois Perdure” method and “Oil heat Treatment” method. Wood species suitable for heat treatment. Effects of heat treatment on chemical, physical, mechanical and durability properties of wood. End use possibilities of heat treated wood. Paintability, glueability, and screw holding capacity of heat treated wood.				

OEM807	**Advanced Testing Methods In Wooden Materials**	**3**	**0**	**3**	**8**
Purpose and Content	In this course, non-destructive evaluation methods that is being used in other areas, aimed to explain the possibilities of use for wood materials. Nondestructive Methods: Visual evaluation. Physical tests (electrical resistance, dielectric properties). Vibrational properties. Stress wave emission. Ultrasonic techniques. Mechanical techniques (poor loading in elastisity, bending, tension ve compression). Drill resistance. Hammer method. Destructive methods: Thermal Conductivity				
OEM809	**Thermal Properties of Wood Materials**	**3**	**0**	**3**	**8**
Purpose and Content	The aim of this course is to explain termical properties of wood and is to evaluate their importance in terms of use of wooden materials. General definition of thermal properties, classification, thermic expansion, specific heat, thermal conductivity, factors on the thermal conductivity coefficient of wood, thermal rays, comparing the differences of wood according to thermal conductivity.				
OEM817	**Wood Adhesives and Bonding Techniques**	**3**	**0**	**3**	**8**
Purpose and Content	To know adhesion theories and technologies in wooden materials. Introduction, Adhesion theory and definitions, Factors affecting the formation of the glue layer, The factors affecting the adhesion of the tree, The factors affecting the adhesion of the glue, The factors of the press affecting the adhesion, The gluing errors and adhesion quality Types of glues, Natural glues and their properties Artificial glues and their properties, Press types and properties, gluing test techniques.				
LUEE801	**Scientific Research Techniques and Science Ethics**	**3**	**0**	**3**	**8**
Purpose and Content	To be able to know how a process in a scientific research proceeds and how a scientific report must be prepared. Fundamental concepts and information about the science, the structure of scientific research, scientific methods and different ideas on these methods, data acquisition methods (quantitative and qualitative), registration, analysis, interpretation and reporting of datas.				
OEM815	**Chemical Wood Modification**	**3**	**0**	**3**	**8**
Purpose and Content	The course will provide students with the ability to understand wood modification mechanisms and their effects on physical and biological wood properties. The course provides an in-depth tretament of wood modification with special focus on chemical modification for wood preservation, thermal treatment and their effects on physical and biological wood properties.				

OEM810	**Microwave Wood Modification**	**3**	**0**	**3**	**8**
Purpose and Content	The objective of this course, to describe microwave dielectric properties of wood and their use in industry. Interaction between the electromagnetic field and wood. Polarization of wood. Dielectric parameters of wood. Physical model of wood as a multi-component dielectric. The factors which are effect of wood dielectric properties. Microwave dielectric properties of wood and their use in industry.				
OEM816	**Anthropometric Optimization in Furniture Production**	**3**	**0**	**3**	**8**
Purpose and Content	The aim of this course is to teach M.Sc students anthropometrics used in industrial wooden furniture production and design. Ergonomics and anthropometrics factors in forest furiuture protuction and desgin. Statisticial data in Anthropometrics. Cost-Usebility Analysis. Ant. data catogories. Statics and dinamics Anth. Application on Anhropometrics design. Inner and outer measurements. Work postures. Anthropometrics work station design.				
OEM803	**Wood Drying Systems**	**3**	**0**	**3**	**8**
Purpose and Content	The fundamental objective of this course for forest products engineers learns drying methods in high temperatures, high temperature drying, organic solvent, the vapour of organic item and chemical materials, microwave drying, other drying techniques. Gaining knowledge about drying of wood materials.				
OEM801	**Decking Methods**	**3**	**0**	**3**	**8**
Purpose and Content	Advertising the development of parquet industry, classification of parquet and application characteristics of parquet. The development of parquet industry, classification of parquet and the describtions, parquet production technologies (massive parquet laminated parquet), preponderence of parquet according to other ground flooring, application characteristics (flooring and finishing) the maintenance of parquets, quality test on parquet, some important technological characteristics on parquet, standardization and quality control, the planning of parquet fabric.				
ORM896	**Doctorate Qualification**	**3**	**0**	**3**	**26**
Purpose and Content	To follow up-to-date topics in the thesis to be made and to transfer information. General information about the thesis study.				
OEM897	**Doctoral Seminar**	**0**	**2**	**0**	**6**

Purpose and Content	The seminar course is a practical class designed for doctoral students under the supervision of a faculty member. It involves conducting comprehensive research on a certain topic related to their thesis area, compiling this research into a report, and presenting the findings orally.				
OEM898D	**Course Specialised Field**	**4**	**0**	**0**	**4**
Purpose and Content	Course Specialised Field is a theoretical course proposed by a faculty member to share their knowledge, experience, and expertise in their scientific field with graduate students under their supervision. This course aims to educate students on scientific ethics and instil a strong work discipline				
OEM898T	**Thesis Specialised Field**	**4**	**0**	**0**	**4**
Purpose and Content	Thesis Specialised Field is a theoretical course that the faculty member proposes to the graduate students he/she supervises in order to share the methods of conducting research in the current literature, following and evaluating the literature, and to establish and carry out the scientific foundations of the student's thesis / exhibition / project work.				
OEM899	**Doktoral Thesis Study**	**0**	**1**	**0**	**26**
Purpose and Content	The Thesis Course is a practical class designed for graduate students under the supervision of a faculty member. It includes guidance on various aspects of their thesis work, such as literature review, methodology, fieldwork, and laboratory research. This course provides the necessary information and direction for the students to prepare their theses following the "Graduate Thesis Writing Guidelines and Templates," as well as guidance on defending and submitting their theses.				