



Courses offered within the Erasmus+ program

A. Design of Furniture and Objects

Course title	CAD-I (Computer Aided Design-Part I)
Semester	2 nd
ECTS credits	5
Instructor	Dimitrios Lamboudis, Lecturer dlamboudis@teilar.gr
Description	<i>Theoretical part:</i> <i>Tools and principles of computer aided design. The course focuses on 2D design: 2D geometric entities (lines, arcs etc), 2D geometric transformations (rotation, mirroring etc) and special software tools for design development and presentation (layout preparation, dimensioning etc).</i> <i>Practical part:</i> <i>Numerous exercises where the student regenerates hard copy designs in digital form. The software platform is AutoCad.</i>

Course title	CAD-II (Computer Aided Design-Part II)
Semester	3 rd
ECTS credits	5
Instructor	Dimitrios Lamboudis, Lecturer dlamboudis@teilar.gr
Description	<i>Theoretical part:</i> <i>The course focuses on 3D computer aided design: 3D geometric entities (Solids, Surfaces etc), 3D geometric transformations (extrusion, lofting, rotation, mirroring etc), Boolean operations, and special software tools for design development and presentation (layout preparation, dimensioning etc).</i> <i>Practical part:</i> <i>Numerous exercises where the student regenerates hard copy designs in digital form. The software platform is AutoCad.</i>

Course title	CAD III
Semester	4 st
ECTS credits	5
Instructor	Ioannis Ntintakis, Lecturer ntintakis@teilar.gr

Description	<p><i>Theoretical part:</i> Solid modeling, surface modeling: methods and tools, description, advantages and disadvantages. Base modeling tools: Extrude, Revolve, Sweep, Loft, Emboss, Hole, Fillet, Chamfer, Pattern creation. Parametric and feature based modeling design. Assembly approaches: Bottom up Assembly and Top down assembly. Technical drawings from 3d models: base views and projected views creation, presentation view creation</p> <p><i>Practical part:</i> 3D furniture design and wooden constructions with the use of Autodesk Inventor software.</p>
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Course title	Design Project
Semester	6 st
ECTS credits	5
Instructor	Athanasios Babalis MA (RCA), Lecturer babalis@teilar.gr
Description	<p><i>Theoretical part:</i> Study of many production processes that are applicable to modern furniture + object design in most materials excluding traditional wood processing. Review and analysis of design methodology.</p> <p><i>Lab: Design Project.</i> Students are asked to design a piece of furniture or object based on an analytical design brief including context, function and manufacturing criteria. The final outcome is expected to be a design proposal that is ready for manufacture</p>

B. Wood Technology & Marketing of Wood Products

Course title	Wood Structure
Semester	1 st
ECTS credits	5
Instructor	Dr. Stergios Adamopoulos, Associate Professor adamopoulos@teilar.gr
Description	<p><i>Theoretical part:</i> Wood macroscopic features. Physical characteristics of wood: colour, texture, grain, figure, weight and hardness. Wood cell types, wood tissues. Elementary chemical composition and organic components of wood. Ultra-structural architecture of wood: microfibrils and cell wall layers. The mechanism of wood formation: primary growth, cambium activity, cell development. Variation of wood structure within and between trees. Growth abnormalities, natural growth characteristics.</p> <p><i>Practical part:</i> Macroscopic wood identification of European and tropical species. Wood microtechniques. Microscopy. Tree-ring analysis.</p>

Course title	Wood Technology I: Solid wood products
Semester	2 nd
ECTS credits	5
Instructor	Dr. Michalis Skarvelis, Associate Professor skarvelis@teilar.gr
Description	<i>Theoretical part:</i> <i>Wood harvesting (general information). Main solid wood products. Sawmilling, basic log sawing systems, cutting characteristics, sawmill layout. Quantitative and qualitative performance. Wood drying. Wood impregnation. Wood steaming and bending. Wood veneers. Classification of sawn timber according to EN and DIN standards. CE marking of sawn timber.</i>

Course title	Polymers & Composites
Semester	3 rd
ECTS credits	5
Instructor	Dr. Konstantinos Kakavas, Lecturer kakavas@teilar.gr
Description	<i>Theoretical part: Brief history of polymers, main categories of polymers thermoplastics (polyethylenes, polyvinyl chloride, polystyrene, acrylics, polyesters, polycarbonates, polyamides, polyethers) and thermosettings (polyurethanes, epoxy resins, Formaldehyde resins,], adhesives, modern composites, nanopolymers and nanotechnology, polymer extruders, cement types (Polymer-Portland Cement etc), polymer recycling.</i>

Course title	Wood Technology II - Glued products
Semester	3 rd
ECTS credits	5
Instructor	Dr. Sotirios Karastergiou, Professor karaso@teilar.gr
Description	<i>Theoretical part:</i> <i>Mechanism and factors of wood adhesion. Types of adhesives. Glued products: plywood, laminated wood, particleboard, fiberboard, OSB. (types, raw materials, production technology, properties, uses)</i> <i>Practical part:</i> <i>Macroscopic identification of glued products (plywood, laminated wood, particleboard, fiberboard, OSB). Preparation of wood adhesives. Laboratory construction of plywood and particleboards. Specification of mechanical properties of glued products.</i>

Course title	Chemistry of Wood & Wood Chemical Products
Semester	5 th
ECTS credits	5

Instructor	Dr. George Mantanis, Professor mantanis@teilar.gr - URL: http://teilar.academia.edu/GeorgeMantanis
Description	<i>Theoretical part: Introduction to wood chemistry; brief description of wood constituent polymers. Wood pulping - extraction - hydrolysis - thermolysis, and products thereof. Cellulose products. Lignin products. Extraction methods; wood extractives and their commercial uses. Pulp and paper. Acidity of wood and its effects. Wood as a fuel (firewood, pellets, briquettes, bio-oil). Modification of wood (thermal - chemical). Characteristics and uses of modified wood products, e.g. Accoya, Belmadur, Plato, Thermowood, Kebony, OHT. Wood and Nanotechnology products for wood protection.</i>

Course title	Furniture & Wood Products Business Management
Semester	5 th
ECTS credits	5
Instructor	Dr. Ioannis Papadopoulos, Professor - papad@teilar.gr Karagkouni Glykeria MSc, Lecturer – karagg@teilar.gr
Description	<i>This course introduces students to the business life cycle, human resource considerations, and legal environment surrounding business management focusing on wood and furniture firms. Students will learn the legal structures that relate to business, recognize potential W&F business legal liabilities, and identify resources that can assist them. Special attention will also be paid to the HR requirements of wood and furniture businesses including recruiting, person-job fit, employee development, leadership and managing family members in small W&F business. Furthermore the course extends to elementary strategic management. Description of the basic functions of management, its historical development, current trends. The meaning and importance of strategy, types of strategies for wood & furniture enterprises. Strategic objectives, mission, vision, resistance to change. Decision-making theory. Introduction to control methods, information technologies, information systems, new technologies and management. Introduction to the concept of Total Quality Management.</i>

Course title	Quality control of wood products
Semester	6 st
ECTS credits	5
Instructor	Dr. Georgios Ntalos, Professor gntalos@teilar.gr
Description	<i>Theoretical part: -Significance of quality, Systems of guarantee of quality, Institutions of standardisation, Quality control of wood, Qualitative classification of wood based on physical characteristics and structure, General classification based on the quality of wood, Determination of moisture content, Determination of dimension stability and mechanical properties of wood, Qualitative control of adhesives, Classification of adhesive substances, Determination of time of coagulation. Method of</i>

	<p><i>determination of ash of wood, Method of determination of solubility of timber in 1% solution NaOH, Particleboards and fibreboards, Definition, classification, symbolism.</i></p> <p><i>Practical part:</i></p> <p><i>Testing methods of all the above mentioned properties according European Norms</i></p>
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Course title	Technology of wooden constructions I: Log houses, wooden framed houses. Doors and windows. Wooden floors
Semester	6 th
ECTS credits	5
Instructor	Dr. Michalis Skarvelis, Associate Professor skarvelis@teilar.gr
Description	<p>Theoretical part:</p> <p>Traditional and modern wood materials, suitable for building constructions. Log houses, modern approaches. Timber framed buildings. Wooden roof construction. Types of wooden doors, characteristics, production lines. Types of wooden windows, characteristics, production lines. Types of wooden floors and parquets, characteristics, production lines.</p> <p>CE marking of doors, windows and floors. Conformity to EN Standards.</p>

Course title	Furniture & Wood Products Marketing
Semester	7 th
ECTS credits	5
Instructor	Dr. Ioannis Papadopoulos, Professor papad@teilar.gr
Description	<p><i>Introduction to Marketing. Topics covered are the marketing environment, strategic planning, market segmentation, product development, pricing, distribution, promotion, consumer decision making, control, and marketing management within the environment of wood and furniture sector. Furniture distribution channels and factors that affect them. Advertising and the marketing process within which effective advertising and sales promotions are rooted. Pricing of wooden products and furniture - pricing strategies and tactics, choice of appropriate pricing methods. Marketing research for wood processing firms and furniture manufacturers (necessity, process market research, questionnaires). Consumer behavior, retail management brand management, Communication, Case studies.</i></p>