SYLLABUS

Name of the course (as specified in the approved curriculum) Wood Based Materials II	Number of ECTS Credits
Name of the course in Polish Tworzywa drzewne II	2
Unit providing the course (Department/Institute) Department of Wood Based Materials	
Course co-ordinator Joanna Siuda	

Field of study Furniture design	Level	Profile	Semester
Scope	Thesis specialisation		

TYPE OF CLASSES AND COURSE LOAD
(lectures and self-learning of the student)

Mode of studies: full-time		Mode of studies: part-time	
- lectures	10	- lectures	
- practical classes	15	- practical classes	
-		-	
-		-	
-		-	
- Self- learning	20		
Total number of hours:	45	Total number of hours:	

OBJECTIVE OF THE COURSE

The aim of teaching the subject is to provide knowledge of the properties and technology of various types of wood based materials used in furniture design.

TEACHING METHODS

Lecture with a multimedia presentation;
Laboratory exercises in groups of 2-3 people;
Discussions related to the results of the experiments.

	Course learning outcomes	The reference to field of study outcomes
Knowledge	O1 display basic knowledge of materials used in solving engineering tasks in the field of wood based materials connected with furniture design	PM1A_W08
	O2 is knowledgeable with the latest materials used in wood and related to furniture design.	PM1A_W08
Skills	O3 is able to perform a simple research or design task under the supervision of a research tutor regarding furniture design, correctly interprets the results and draws conclusions	PM1A_U04
	O4 has the ability to search, understand and analyse information coming from various sources, given in various forms, as well as to interpret and draw conclusions, as well as to formulate and justify opinions	PM1A_U01
Social skills	O5 is aware of the need for further education and self-improvement	PM1A_K01
	O6 is able to interact and work in a team both as a leader and a member of the group.	PM1A_K02

Methods of evaluation of learning outcomes	Symbols of course learning outcomes
Exam Preparation of reports on the subject of practical classes	O1, O2, O3, O4, O4, O6

TEACHING CONTENTS

Program content of the lectures:

Wood materials: definitions, classification, properties, application, quality assessment criteria. New materials based on wood and other lignocellulosic materials. Issues related to the surface activation of the lignocellulosic materials. Issues related to the limitation of formaldehyde emissions.

Program content of the laboratory excercise:

Calculation of the demand for raw materials in the production of wood materials. Production of selected lignocellulosic materials in laboratory conditions. Use of scavenger to reduce formaldehyde emissions. Activation of the lignocellulosic materials and its influence on the properties of produced materials.

The course completion methods and criteria	Percentage of a final grade
Exam	50%
Reports	50%

LITERATURE REFERENCE

Baldwin R.F.: Plywood and veneer-based products: manufacturing practices. Forest Products Society. Madison, Wisconsin 1995

Kollmann, F. F., Kuenzi, E. W., and Stamm, A. J. (2012). *Principles of Wood Science and Technology: II Wood Based Materials*, Springer Science & Business Media.

Maloney T.M.: Modern particleboard and dry-process fiberboard manufacturing. Forest Products Society. Madison Wisconsin 1993

Rowell, R. M. (2012). *Handbook of wood chemistry and wood composites*, CRC press.

Supplementary literature:

Mirski, R., Kawalerczyk, J., Dziurka, D., Wieruszewski, M., and Trociński, A. (2020). "Effects of Using Bark Particles with Various Dimensions as a Filler for Urea-formaldehyde Resin in Plywood," *BioResources*, 15(1), 1692–1701.

Mirski, R., Kawalerczyk, J., Dziurka, D., Siuda J., and Wieruszewski, M. (2020). „The Application of Oak Bark Powder as a Filler for Melamine-Urea-Formaldehyde Adhesive in Plywood Manufacturing" *Forests*, 11, 1249

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