NATIONAL UNIVERSITY OF LIFE AND ENVIRONMENTAL SCIENCES OF UKRAINE

Department of Technology and Design of Wood Products

"APPROVED"
Director of the Institute
_____ Roman Vasylyshyn
"03" 06 2024

"APPROVED"
at the meeting of Technology and Design of Wood Products Department
Minutes №.25 of "13" 05 2024
Head of the Department
_____ Andrii Spirochkin

"REVIEWED"
Guarantor of the AP _____
Andrii Spirochkin

CURRICULUM OF ACADEMIC DISCIPLINE

Current Problems of Woodworking

Field of knowledge 18 "Production and Technologies"
Specialty 187 "Woodworking and Furniture Technologies"
Academic programme Woodworking and Furniture Technologies
Education and Research Institute of Forestry and Landscape-Park Management
Author(s): PhD Andrii Spirochkin
(position, academic degree, academic rank)

Kyiv – 2024

Description of the discipline Current Problems of Woodworking

(name)

Academic degree, specialty, academic programme		
Academic degree	*master's*	
Specialty	*187 "Woodworking and Furniture Technologies"*	
Academic programme	*Woodworking and Furniture Technologies*	
Characteristics of the discipline		
Type	optional	
Total number of hours	120	
Number of ECTS credits	4	
Number of modules	2	
Course project (work) (if any)	-	
Form of assessment	*exam*	
Indicators of the discipline for full-time and part-time forms of university study		
	Full-time	Part-time
Year of study	2	2
Semester	3	3
Lectures	*15 hours*	*2 hours*
Practical classes and seminars	*15 hours*	-
Laboratory classes	-	-
Self-study	*90*	-
Number of hours per week for full-time students	*2 hours*	

1. Aim, objectives, competences and expected learning outcomes of the discipline

Aim formation of students' knowledge, abilities and skills to solve production tasks using a foreign language

Objectives: solving the problems of manufacturing technologies: sawn products from wood of various species, value-added products, board materials, structural materials, paper, energy and residential complexes based on wood;

knowledge and use of English terminology in the field of woodworking and furniture production

Acquisition of competences:

Integral competence (IC): The ability to solve complex tasks and problems in professional, educational, scientific, research and innovation activities related to the production of woodworking products, furniture and wood products,

research on wood, wood and non-wood materials, as well as research, design and implement relevant resource-saving and environmentally friendly technological processes characterized by uncertainty of conditions and requirements.

General competences (GC):

GC 02 Ability to identify, pose and solve problems.

GC 03 Ability to conduct research at an appropriate level.

GC 04 The ability to generate new ideas and implement them in the form of sound innovative solutions.

GC 11 The ability to communicate in a foreign language in professional (scientific and technical) activities.

Special (professional) competences: SC 2 The ability to use modern mathematical and optimization methods of research in woodworking and furniture industries to solve complex technological problems related to the development and improvement of technological processes.

SC 5 Ability to analyze existing production processes, design and implement new efficient processes of woodworking and furniture production.

SC 7 The ability to solve engineering tasks related to special woodworking productions and the design of wooden structures.

SC 10 The ability to develop and implement measures for the use of wood residues and waste at the enterprises of the industry.

_ Expected Learning Outcomes (ELO): _

ELO 03 Ability to conduct research at an appropriate level.

ELO 08 Determination and persistence in relation to assigned tasks and assumed responsibilities.

ELO 11 The ability to communicate in a foreign language in professional (scientific and technical) activities.

ELO 12 The ability to make scientific and scientific and technical reports based on the results of the work..

2. Programme and structure of the discipline for:

- full-time (part-time) form of study;

Modules and topics	Number of hours												
	full-time							part-time					
	weeks	total	including					in total	including				
			l	p	lab	ind	s.st		l	p	lab	ind	s.st
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Module 1: **Wood Structure and Processing**													
Topic 1: Wood Structure	1	12	2				10		2				10
Topic 2. Wood Processing	1	12	2				10						12
Topic 3. Furniture Manufacturing Process	5	10	2	8									10

Topic 4. Woodworking Equipment	1	14	2				12						14
Total for module 1	48		8	8			32	44	2				46
Module 2. **Wood Science**													
Topic 1: Development of Wood Science	4	28	1	7			20						28
Topic 2. Actual Problems of Wood Cutting	1	10	2				8						10
Topic 3. Actual Problems of Wood Drying	1	17	2				15						17
Topic 4. Actual Problems of Wood-Based Composite Materials Manufacturing	1	17	2				15						17
Total for module 2	72		7	7			58						72
Total hours	120		15	15			90	120	2				118

3. Topics of practical classes

№	Topic title	Hours
1	Study of English terms in the field of woodworking and furniture production	8
2	Analysis of current research in woodworking and furniture technologies	7

4. Topics for self-study

№ s/n	Topic title	Hours
1	Microscopic structure of wood	5
2	Macroscopic structure of wood	5
3	Materials in woodworking and furniture production	6
4	Woodworking machines	6
5	Scientists in woodworking	28
6	Current research in woodworking and furniture technologies	30

5. Tools for assessing expected learning outcomes: (select necessary or add)

- exam;
- module tests;
- abstracts;

- presentation of laboratory and practical works;
- other types.

6. Teaching methods:

(select necessary or add)

- verbal method (lecture, discussion, interview, etc.);
- practical method (practical classes);
- visual method (illustration, demonstration);
- processing learning resources (note-taking,summarising, reviewing, writing an abstract);
- video method (remote, multimedia, web-based, etc.);
- self-study (completing assignments);
- other types.

7. Assessment methods:

(select necessary or add)

- exam;
- oral or written assessment;
- module tests;
- team projects;
- essays and reports;
- presentation of practical works;
- other types.

8. Distribution of points received by students

The assessment of students' knowledge and skills is conducted by means of a 100-point scale and is converted into national grades according to Table 1 of the current *Exam and Credit Regulations at NULES of Ukraine*.

Student's rating, points	National grading of exams and credits	
	exams	credits
90-100	excellent	pass
74-89	good	
60-73	satisfactorily	
0-59	unsatisfactorily	fail

To determine a student's rating in the discipline $\mathbf{R_{DIS}}$ (up to 100 points), the received assessment rating $\mathbf{R_A}$ (up to 30 points) is added to the academic performance raiting $\mathbf{R_{AP}}$ (up to 70 points): $\mathbf{R_{DIS} = R_{AP} + R_A}$.

9. Teaching and learning aids

- e-learning course of the discipline (*https://elearn.nubip.edu.ua/course/view.php?id=4604*);
- lectures and presentations (in electronic form);
- guidelines for studying a discipline by full-time and part-time students;

10. Recommended sources of information

1. *Borg Madsen P. Structural Behavior of Timber. Timber Engineering LTD, North Vancouver, 1992, 405 p.*
2. *General Technical Report. Wood Handbook. Wood as an Engineering Material. Madison, WI: U.S. Department of Agriculture, Forest Service, Forest Products Laboratory, 2010, 508 p.*
3. *Dry Kiln Operator's Manual. Agricultural Handbook # 188. Department of Agriculture, Forest Service, Forest Products Laboratory, 1991, 274 p.*
4. *Бехта П.А., Бехта І.А. Англо-український українсько-англійський словник деревообробної промисловості. – Київ: Основа, 2003. – 634 с.*
5. *Adkins, Miles. Woodworking for Beginners: An Essential Guide to Learn the Art of Woodworking, Its Processes and How to Produce Incredible DIY Projects. N.p., Independently Published, 2020, 102 p*