



## IDENTIFYING DATA

### Product development and innovation in the wood industry

Subject	Product development and innovation in the wood industry			
Code	P03G370V01708			
Study programme	(*)Grao en Enxeñaría Forestal			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	6	Optional	4th	1st
Teaching language	Spanish Galician			
Department				
Coordinator	Bartolome Mier, Javier			
Lecturers	Bartolome Mier, Javier García-Pintos Escuder, Adela			
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Web	<a href="http://www.forestaes.uvigo.es">http://www.forestaes.uvigo.es</a>			
General description	Matter that treats on the industrial processes of transformation of the wood, especially those that carry out in the manufacture of the final products, as well as the technicians of management and continuous improvement of the production			

## Competencies

Code	
C31	(*)CE-31: Coñecementos para o cálculo e deseño de instalacións de carpintería. Secado, descortizado e trituración da madeira.
D2	(*)CBI 2: Capacidade de organización e planificación.
D18	(*)CBS 6: Iniciativa e espírito emprendedor.
D19	(*)CBS 7: Motivación pola calidade.

## Learning outcomes

Expected results from this subject	Training and Learning Results	
Knowledges for the calculation and design of installations of carpentry, dried, *descortizado and *trituración of the wood	C31	D2 D18 D19
The relation between competitions and results, and the weight of each competition inside the matter show in the pdf attach.		
<a href="http://forestaes.uvigo.es/sites/default/files/38%20Innovacion.Pdf#*overlay-*context=is/*content/competitions-and-resulted-of-learning-by-matter">http://forestaes.uvigo.es/sites/default/files/38%20Innovacion.Pdf#*overlay-*context=is/*content/competitions-and-resulted-of-learning-by-matter</a>		

## Contents

Topic	
1.- Material technified wooden	1.1.Tables derived from wood 1.2 Laminated wood sections 1.3 Microlaminated wood (LVL) 1.4 Reconstituted wood with strips (PSL) 1.5 Wood reconstituted with chips (LSL) 1.6 Reconstituted wood with small chips (OSL) 1.7 Plastic Wood
2.- Wooden components	2.1 Fences and precercations 2.2 Flashing 2.3 Decorative moldings 2.4 Turned timber 2.5. Wood bent 2.6 Rolled profiles

3.- Hardware	3.1 Legs, feet and support elements- leveling. 3.2 Joining and assembly elements. 3.3 Hinges. 3.4 Guiding systems. 3.5 Installation and assembly elements. 3.6 Locks and closures
4.-Coatings of boards and wooden singings	4.1 Coverings of edges. 4.1.1 Based on solid wood battens. 4.1.2 Based on wood veneers. 4.1.3 The base of PVC sheets. 4.1.4 Decorative paper base.  4.2.- Coverings of boards. 4.2.1 Made of sheet metal. 4.2.2 A base of impregnated papers. 4.2.3 Laminates. 4.2.4 Lacquered.
5.- Finished in carpentry and pieces of furniture	5.1 Introduction. 5.2 Classification of finishes. 5.2.1 By the function of the varnish. 5.2.2 For the chemical composition of the varnish. 5.3 Components of a finish. 5.3.1 Solvents. 5.3.2 Resins. 5.3.3 Dyes and additives. 5.3.4 Loads. 5.4 Varnishes dried uv
6.- Wooden doors	6.1 Introduction. 6.2 Classification of the doors. 6.2.1 By his constitution. 6.2.2 By the appearance of his faces. 6.2.3 By the form of the singing. 6.2.4 By the appearance of the singing. 6.3 Measures and tolerances of a door. 6.4 Characteristics of the wood. 6.5 Doors in function of his constitution 6.5.1 Doors to the flat. 6.5.2 Doors of carpentry. 6.5.3 doors of carpentry in relief. 6.6 special Doors 6.6.1 Doors to resistant to the fire. 6.6.2 acoustic Doors. 6.6.3 Doors of security.
7.- Wooden windows	7.1 Introduction. 7.2 Elements that constitute a window. 7.2.1 Elements of the window recess. 7.2.2 Window elements. 7.3 Characteristics of a wooden window. 7.3.1 Air permeability. 7.3.2 Resistance to wind. 7.3.3 Water tightness. 7.3.4 Glazing.
8.- Wooden floors	8.1 Deckings 8.2 Pallets 8.3 Lamparquet 8.4 Multi-layer parquet 8.5 Panels 8.5.1 Inlaid parquet 8.5.2 Industrial Parquet 8.5.3 Panels of historical designs 8.5.4 Multilayer panels 8.6 Lingering 8.7 Recessed panel flooring 8.8 laminated floors 8.9 Plastic flooring (pwc)

9.- Wooden stairs	9.1 Introduction 9.2 Definitions 9.3 Typology of stairs 9.3.1 Structural Typology 9.3.2 Typology by path 9.4 Technical aspects in the design of a ladder
10.- Ergonomics and piece of furniture	10.1 General concepts 10.2 Scientific bases in ergonomics 10.3 Implications in furniture design of the sedentary stance. 10.4 Anthropometric tables.
11.- Modular pieces of furniture	11.1 General concepts 11.2 Modular furniture 11.3 Components of modular furniture 11.4 Exploded view of modular furniture
12.- Solid wood furniture	12.1 General concepts 12.2 Modular furniture 12.3 Components of modular furniture 12.4 Exploded view of modular furniture
13.- Attached furniture and others	13.1 General concepts 13.2 Modular furniture 13.3 Components of modular furniture 13.4 Exploded view of modular furniture
14.- Introduction to the innovation and new products	14.1 basic Concepts on innovation 14.2 The management of the innovation and the R&D 14.3 Types of innovation
15.- Technical of work in team and creativity	15.1 Creativity and processes 15.2 Technicians for the creation and management of innovation of products
16.- Phases of a project of development of new products	16.1 Phases of a project of development of new products

### Planning

	Class hours	Hours outside the classroom	Total hours
Master Session	23	70	93
Laboratory practises	4	6	10
Autonomous practices through ICT	6	10	16
Classroom work	11	18	29
Short answer tests	2	0	2

\*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

### Methodologies

	Description
Master Session	Explanation of theoretical concepts and exemplifications
Laboratory practises	Activities of application of the knowledges to concrete situations and of acquisition of basic skills and procedural related with the matter object of study. It will develop in a special space with the suitable equipment
Autonomous practices through ICT	Resolution of practical cases of design of modular pieces of furniture
Classroom work	The student will realise a project of development of a new product so much in the classroom as of autonomous way under the guidelines and the supervision of the professor.

### Personalized attention

Methodologies	Description
Classroom work	The tutorials will fix to principle of the semester.
Autonomous practices through ICT	The tutorials will fix to principle of the semester.

### Assessment

	Description	Qualification	Training and Learning Results	
Master Session	Assistance and active participation in the sessions *magistrales	10	C31	
Laboratory practises	Activities of application of the knowledges to concrete situations and of acquisition of basic skills and *procedimentales related with the matter object of study.	5	C31	D2 D18 D19

Classroom work	The student will realise a project of development of a new product	50	C31	D2 D18 D19
Short answer tests	Proof written to final of course for the evaluation of the competitions purchased along the course	35	C31	

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### Other comments on the Evaluation

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### Sources of information

#### Basic Bibliography

#### Complementary Bibliography

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### Recommendations

#### Subjects that continue the syllabus

Environmental management/P03G370V01608

Quality control and prevention of occupational hazards in the forestry industry/P03G370V01804

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#### Subjects that are recommended to be taken simultaneously

Quality control and prevention of occupational hazards in the forestry industry/P03G370V01804

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#### Subjects that it is recommended to have taken before

Basics of business economics/P03G370V01104

Wood technology/P03G370V01606

Wood preservation and drying technology/P03G370V01705

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### Other comments

The student has to give of high and keep a \*ficha up to date in the telematic platform of support to the teaching (\*FAITIC). They will have to request the high to the start of the course to access to the on-line contents of said matter, available in the web: <http://faitic.uvigo.es>, previous to the effective registration.

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