



1. General information

Course: PULP, PAPER AND RESIN INDUSTRIES**Type:** CORE COURSE**Degree:** 2340 - MASTERS DEGREE PROGRAMME IN FORESTRY ENGINEERING**Center:** 601 - E.T.S. AGRICULTURAL ENGINEERS AND MOUNTS AB**Year:** 1**Main language:** Spanish**Use of additional languages:****Web site:****Code:** 310762**ECTS credits:** 6**Academic year:** 2023-24**Group(s):** 10**Duration:** First semester**Second language:****English Friendly:** Y**Bilingual:** N**Lecturer:** ANDRES ALVARRUIZ BERMEJO - Group(s): 10

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Lecturer: AMAYA ZALACAIN ARAMBURU - Group(s): 10

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2. Pre-Requisites

Not established

3. Justification in the curriculum, relation to other subjects and to the profession

Not established

4. Degree competences achieved in this course

Course competences

Code	Description
CE02	
CE03	
CG03	
CG08	To integrate the previous knowledge (graduate degree) in a critical way and to relate them so that they can be applied to the study of real situations in the forest area and to propose alternatives.
CG09	Searching for bibliographic references, analysing documentation and processing information from various sources by applying it to problem solving in the field
CG11	Use the knowledge, skills and abilities of computers and information and communication technologies.
CG12	Be able to communicate orally and in writing, both in specialized forums and for non-experts
CG13	Develop the ability to synthesize and present one's ideas in a working group
CG15	Learn to continue studying in a self-directed or autonomous way.

5. Objectives or Learning Outcomes

Course learning outcomes

Description

Additional outcomes

6. Units / Contents

Unit 1:

Unit 1.1

Unit 1.2

Unit 1.3

Unit 1.4

Unit 1.5

Unit 1.6

Unit 2:

Unit 2.1

Unit 2.2
Unit 2.3
Unit 2.4
Unit 2.5
Unit 2.6
Unit 2.7

7. Activities, Units/Modules and Methodology							
Training Activity	Methodology	Related Competences (only degrees before RD 822/2021)	ECTS	Hours	As	Com	Description
Class Attendance (theory) [ON-SITE]	Lectures	CE02 CE03 CG03 CG08 CG09 CG15	1.6	40	Y	N	
Class Attendance (practical) [ON-SITE]	Practical or hands-on activities	CE02 CE03 CG03 CG08	0.4	10	Y	Y	
Practicum and practical activities report writing or preparation [OFF-SITE]	Self-study	CE02 CE03 CG03 CG08 CG09 CG11 CG12 CG13 CG15	0.32	8	Y	N	
Project or Topic Presentations [ON-SITE]	Reading and Analysis of Reviews and Articles	CG08 CG09 CG11 CG12 CG13	0.3	7.5	Y	Y	
Study and Exam Preparation [OFF-SITE]	Self-study	CE02 CE03 CG03 CG08 CG09 CG13 CG14 CG15	3.28	82	Y	N	
Final test [ON-SITE]	Assessment tests	CE02 CE03 CG03 CG08 CG15	0.1	2.5	Y	Y	
Total:			6	150			
Total credits of in-class work: 2.4				Total class time hours: 60			
Total credits of out of class work: 3.6				Total hours of out of class work: 90			

As: Assessable training activity

Com: Training activity of compulsory overcoming (It will be essential to overcome both continuous and non-continuous assessment).

8. Evaluation criteria and Grading System			
Evaluation System	Continuous assessment	Non-continuous evaluation*	Description
Assessment of problem solving and/or case studies	20.00%	0.00%	
Practicum and practical activities reports assessment	20.00%	0.00%	
Assessment of active participation	10.00%	0.00%	
Test	50.00%	100.00%	
Total:	100.00%	100.00%	

According to art. 4 of the UCLM Student Evaluation Regulations, it must be provided to students who cannot regularly attend face-to-face training activities the passing of the subject, having the right (art. 12.2) to be globally graded, in 2 annual calls per subject, an ordinary and an extraordinary one (evaluating 100% of the competences).

9. Assignments, course calendar and important dates	
Not related to the syllabus/contents	
Hours	hours
Class Attendance (practical) [PRESENCIAL][Practical or hands-on activities]	10
Practicum and practical activities report writing or preparation [AUTÓNOMA][Self-study]	8
Project or Topic Presentations [PRESENCIAL][Reading and Analysis of Reviews and Articles]	7.5
Unit 1 (de 2):	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	16
Study and Exam Preparation [AUTÓNOMA][Self-study]	32
Final test [PRESENCIAL][Assessment tests]	1.25
Unit 2 (de 2):	
Activities	Hours
Class Attendance (theory) [PRESENCIAL][Lectures]	24
Study and Exam Preparation [AUTÓNOMA][Self-study]	50
Final test [PRESENCIAL][Assessment tests]	1.25
Global activity	
Activities	hours
Class Attendance (theory) [PRESENCIAL][Lectures]	40
Class Attendance (practical) [PRESENCIAL][Practical or hands-on activities]	10
Project or Topic Presentations [PRESENCIAL][Reading and Analysis of Reviews and Articles]	7.5
Final test [PRESENCIAL][Assessment tests]	2.5
Practicum and practical activities report writing or preparation [AUTÓNOMA][Self-study]	8
Study and Exam Preparation [AUTÓNOMA][Self-study]	82
Total horas: 150	

10. Bibliography and Sources						
Author(s)	Title/Link	Publishing house	Citv	ISBN	Year	Description
Angel Vian Ortuño	Introducción a la Química Industrial	Reverte		84-291-7933-X	1994	
BERMÚDEZ, J.D.	La Industria de la pasta de la celulosa, papel y cartón				1999	
Casey, James P.	Pulpa y papel: Química y Tecnología Química	Limusa			1991	Bibliografía básica
Chamorro G, Gosálbez J	II International Symposium on Natural Resins 2013 Coca Segovia 16 al 18 de abril de 2013 http://www.sust-forest.eu/sites/www.sust-forest.eu/files/actas_ii_simposio_internacional_resinas_natural_2013_coca-segovia.pdf	Ministerio de Agricultura, Alimentación y Medio Ambiente			2013	
Earl Libby	Ciencia y tecnología sobre pulpa y papel	CECSA			1967	Bibliografía básica
Pinillos F., Picardo A., Allue-Andrade M., Soria E., Sanz A.	La resina: Herramienta de conservación de nuestros pinares http://www.sust-forest.eu/sites/www.sust-forest.eu/files/la_resina_sustforest.pdf	CESEFOR	Soria	978-84-7359-579-7	2009	
Sixta, Herbert	Handbook of pulp	Wiley			2006	Bibliografía complementaria
Ek, M., Gellerstedt, G.	Pulping chemistry and technology https://ebookcentral.proquest.com/lib/bibliotecaucm-ebooks/reader.action?docID=476007	De Gruyter		9783110213416	2009	Bibliografía complementaria
Biermann, C.J.	Handbook of pulping and papermaking https://ebookcentral.proquest.com/lib/bibliotecaucm-ebooks/reader.action?docID=305584	Elsevier		9780120973620	1996	Bibliografía complementaria