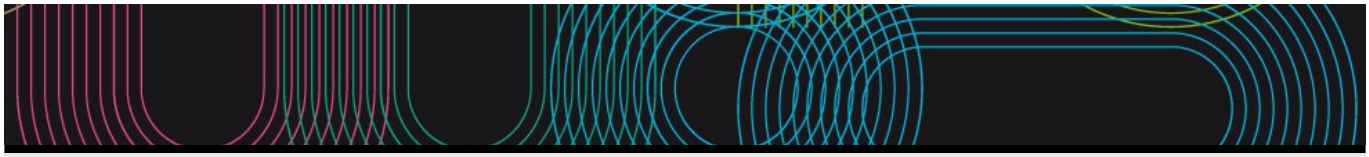
Universidade Vigo

Subject Guide 2017 / 2018



IDENTIFYING DATA				
Forest constructions				
Subject	Forest constructions			
Code	P03G370V01501			
Study programme	(*)Grao en Enxeñaría Forestal			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	6	Mandatory	3rd	1st
Teaching language				
Department				
Coordinator	Riveiro Rodríguez, Belén			
Lecturers	Riveiro Rodríguez, Belén			
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General description	(*)Principios, Coñecementos e Normas nos que se fundamentan as Construccións Forestais e o deseño de Vías Forestais			

Competencies	
Code	
B27	CG-27: Coñecementos das seguintes materias necesarios tanto para a xestión dos sistemas forestais como para a súa conservación: construción.
B29	CG-29: Coñecementos das seguintes materias necesarios tanto para a xestión dos sistemas forestais como para a súa conservación: camiños forestais.
C18	(*)CE-18: Capacidade para coñecer, comprender e utilizar os principios de: construcións forestais e vías forestais.
D1	(*)CBI 1: Capacidade de análise e síntese.
D2	(*)CBI 2: Capacidade de organización e planificación.
D3	(*)CBI 3: Capacidade de comunicación oral e escrita tanto na lingua vernácula como en linguas estranxeiras.
D4	(*)CBI 4: Coñecementos básicos de informática.
D5	(*)CBI 5: Capacidade de xestión da información.
D6	(*)CBI 6: Adquirir capacidade de resolución de problemas.
D7	(*)CBI 7: Adquirir capacidade na toma de decisións.
D8	(*)CBP 1: Capacidades de traballo en equipo, con carácter multidisciplinar e en contextos tanto nacionais como internacionais.
D9	(*)CBP 2: Habilidades nas relacións interpersoais.
D10	(*)CBP 3: Recoñecer a diversidade e a multiculturalidade.
D11	(*)CBP 4: Habilidades de razoamento crítico.
D12	(*)CBP 5: Desenvolver un compromiso ético, que implique o respecto dos dereitos fundamentais e de igualdade entre homes e mulleres, e dos principios de igualdade de oportunidades, accesibilidade universal a persoas con discapacidade e educación para a paz.
D13	(*)CBS 1: Aprendizaxe autónoma.
D14	(*)CBS 2: Adaptación a novas situacións.
D15	(*)CBS 3: Creatividade.
D16	(*)CBS 4: Liderado.
D17	(*)CBS 5: Coñecemento doutras culturas e costumes.
D18	(*)CBS 6: Iniciativa e espírito emprendedor.
D19	(*)CBS 7: Motivación pola calidade.
D20	(*)CBS 8: Sensibilidade cara a temas ambientais.

Learning outcomes	
Expected results from this subject	Training and Learning Results

(*)CE-18: Capacidad para conocer, comprender y utilizar los principios en los que se fundamentan las Construcciones forestales y Vías forestales.	B27 B29	C18	D1 D2 D3 D4 D5 D6 D7 D8 D9 D10 D11 D12 D13 D14 D15 D16 D17 D18 D19 D20

New

Contents

Topic	
1.- Previous concepts of mechanics and principles of materials resistance.	1.- Moment of a force, Balance of a body, Diagram of the Free Body, Reactions, Unions and supports. 2.- Centers of gravity, centroid, first-order static moment, moment of inertia, spinning radius. 3.- Forces distributed 4.- Curtains 5.- General principles and definitions of the Resistance of Materials.
2.- The elastic solid	1.- Tension state of a point, intrinsic components of tension, stress matrix, stresses, strain matrix. 2.- Diagrams of solicitations. 3.- Introduction to Hyperestaticity, degree of hyperstability, Compatibility Equations of Deformations.
3.- Axial Efforts. Traction-Compression	1.- Traction test of ductile materials. 2.- The elastic regime. Young's Modulus, Poisson's Coefficient. 3.- Uniaxial tensile strain. 4.- Hyperasticity in bars subjected to axial stress.
4.- Introduction to the Cut	1.- Cutting voltage, angular distortion, Rigidity module. 2.- Joints: screws and rivets. 3.- Types of failure in joints by shear stress.
5.- Introduction to Twisting	1.- Elementary theory of torsion in prisms of circular section. 2.- Tension and strain analysis, turning angle.
6.- Introduction to Flexion	1. Beams: definition and classes. Applied forces 2.- Cutting force and bending moment 3.- Relations between shear, bending and load 4.- Cutting and bending diagrams 5.- Types of flexion. Hypothesis and limitations 6.- Normal stresses. Law of Navier 7.- Concept of resistant module 8.- Bending deformations: Differential Equation of the Elastic, Theorems of Mohr. 9.- Hyperelastic Flexing
7- Introduction to Buckling	1.- Buckling instability. 2. Euler's critical load. 3.- Limit of application of the formula of Euler, mechanical slenderness, efficient sections.
8.- Introduction to the analysis of structures	1.- Reticulated structures. 2.- Porticos, semipórticos and pictures. 3.- Initiation to the matrix calculation. 4.- Limit States. 5.- Degrees of Freedom.
9.- Constructive elements: metallic, cement, concrete, wood.	1.- Foundations. Land. 2.- Cement and Concrete. 3.- Industrial Warehouses.

10.- Obligatory standards in construction.	1.- Standards obliged to comply. Building Technical Code. 2.- Eurocode.
11.- Forest roads	1.- Land analysis and soil improvement. 2.- Planning of Roads
12.- Construction Projects	1.- Calculation Systems and Budget. 2.- Systems of contracting and control of works. Pert, Gant. 3.- Quality control of buildings. 4.- Prevention Plan. 5.- Principles of Maintenance.

Planning

	Class hours	Hours outside the classroom	Total hours
Introductory activities	1	1	2
Master Session	21	42	63
Troubleshooting and / or exercises	11	22	33
Practice in computer rooms	9	27	36
Jobs and projects	1	8	9
Multiple choice tests	1	2	3
Long answer tests and development	2	2	4

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

Methodologies

	Description
Introductory activities	Efforts to make contact and gather information about the students, and to present the subject.
Master Session	Presentation by the teacher of the contents on the subject under study, theoretical and / or guidelines for a job, exercise or project to be developed by the student.
Troubleshooting and / or exercises	Activity which formulated problem and / or exercises related to the course. The student should develop appropriate solutions or right through the exercise routines, application of formulas or algorithms, application processing procedures available information and interpretation of the results. It is often used to complement the lecture.
Practice in computer rooms	Activities application of knowledge to specific situations, and the acquisition of basic skills and procedural matters related to the object of study, which are held in computer rooms.

Personalized attention

Methodologies	**Description**
Troubleshooting and / or exercises	The students will come to the teachers to clarify the concepts necessary to perform the problems and / or exercises performed in the classroom, as well as to clarify / discuss any doubts that may appear after the end of the sessions.
Tests	**Description**
Jobs and projects	Students will be able to use face-to-face tutoring, or teledocence tools for correct tutoring by teachers in terms of carrying out work / projects.

Assessment

	Description	Qualification	Training and Learning Results
Jobs and projects	(*)Ao longo do curso realizaranse traballos ou pequenos proxectos nos que se abordarán exercicios e casos de estudo que complementen as sesións prácticas.	15	C18
Multiple choice tests	(*)Realizaranse dúas probas ao longo do curso para fixar os coñecementos adquiridos	10	C18
Long answer tests and development	(*)Examen evaluatorio final de verificación de adquisición das competencias específicas	75	C18

Other comments on the Evaluation

Sources of information

Basic Bibliography

Complementary Bibliography

M. Vázquez, **RESISTENCIA DE MATERIALES**, 4,

P. Jiménez Montoya, **HORMIGÓN ARMADO**, 1,

Rafael Dal-Ré Tenreiro, **CAMINOS RURALES. PROYECTO Y CONSTRUCCIÓN**, 1,

MINISTERIO DE FOMENTO, **CODIGO TECNICO DE EDIFICACION**, 1,
Ferdinand P. Beer, **MECÁNICA DE MATERIALES**, 1,

Recommendations

Subjects that continue the syllabus

Hydraulics/P03G370V01404
Forest exploitation/P03G370V01601
Environmental Impact/P03G370V01504
Forest Fires/P03G370V01802
Primary wood processing industries/P03G370V01706

Subjects that are recommended to be taken simultaneously

Forest certification and legislation/P03G370V01505
Forestry machinery/P03G370V01502
Projects/P03G370V01503

Subjects that it is recommended to have taken before

Graphic expression: Graphic expression and cartography/P03G370V01101
Physics: Physics II/P03G370V01202
Mathematics: Overview of mathematics/P03G370V01203
Mathematics: Mathematics and IT/P03G370V01103
Chemistry: Chemistry/P03G370V01204