



## IDENTIFYING DATA

### Graphic expression: Graphic expression and cartography

Subject	Graphic expression: Graphic expression and cartography			
Code	P03G370V01101			
Study programme	(*)Grao en Enxeñaría Forestal			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	9	Basic education	1st	1st
Teaching language	Spanish Galician			
Department				
Coordinator	Armesto González, Julia			
Lecturers	Armesto González, Julia			
E-mail	julia@uvigo.es			
Web	<a href="http://http://cursos.faitic.uvigo.es/tema1415/claroline/course/index.php">http://http://cursos.faitic.uvigo.es/tema1415/claroline/course/index.php</a>			
General description	(*)Esta materia ofrece unhas nocions fundamentais sobre os sistemas de representación aplicados ao ámbito da Enxeñaría Forestal, con especial atención ao sistema de planos acotados. Asimismo se abordan conceptos fundamentais de cartografía e xeodesia que permitirán ler e interpretar mapas correctamente. Ademais, se amosa a utilización de ferramentas de software que permiten ao alumno xerar os seus propios planos e documentos de expresión gráfica a escala considerando estándares recollidos en normas ISO.			

## Competencies

Code	
B1	Ability to understand the biological, chemical, physical, mathematical and representation systems necessary for the development of professional activity, as well as to identify the different biotic and physical elements of the forest environment and renewable natural resources susceptible to protection, conservation and exploitations in the forest area.
C1	Knowledge of representation techniques. Capacity for spatial vision. Standardization. Topographical drawing. Computer programs of interest in engineering: computer-aided design.
D2	Ability to communicate orally and written in Spanish or in English
D5	Capacity for information management, analysis and synthesis
D7	Skill in the use of IT tools and ICTs.
D8	Ability to solve problems, critical reasoning and decision making

## Learning outcomes

Expected results from this subject	Training and Learning Results
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1R. 2018 Knowledge and understanding of the mathematicians and other inherent basic sciences to the his speciality in engineering, it a level that allow them purchase the rest of the competitions of the qualifications.	B1	C1	D2 D5 D7 D8
5R. 2018 Capacity to identify, formulate and resolve problems of engineering in the his speciality; choose and apply analytical methods, of calculation and experiments properly established; Recognize the importance of the social restrictions, of health and security, environmental, economic and industrial.			
6R. 2018 Capacity to project, design and develop complex products (pieces, component, products finished, etc.), processes and systems of the his speciality, that fulfil the requirements established, including the knowledge of the social aspects, of health and environmental security, economic and industrial; as well as select and apply methods of appropriate project.			
7R. 2018 Capacity of the project using any knowledges advanced of the his speciality in engineering.			
9R. 2018 Capacity to consult and apply codes of good practices and security of the his speciality.			
11R. 2018 Understanding of the techniques and methods of analysis, project and applicable investigation and his limitations within the scope of the his speciality.			
12R. 2018 practical Competition to resolve complex problems, realize complex projects of engineering and realize specific investigations stop his speciality.			
13R. 2018 Knowledge of the application of materials, teams and tools, technological processes and of engineering and his limitations within the scope of the his speciality.			
19R. 2018 Capacity to communicate of effective way information, ideas, problems and solutions in the field of the engineering and with the society in general.			

## Contents

Topic	
1.- Normalisation	Organisms of normalisation Formats, lines and writings normalised. Folded of planes. Scales. Normalisation in the representation: Representation of seen; section, court, break. Acotation.
2.-System of representation diedric system	Descriptive geometry and systems of representation. diedric System: generalities, the point, the line, and the plane
3.- System of bounded planes	System of bounded planes: generalities, the point, the line and the plane. Intersections. Parallelism and perpendicularity. Distances. Representation and resolution of covers.
4.- Topographical drawing	Representation of the terrain. Forms of the terrain. Equidistances and curves of level. Points and singular lines of the terrain. Traced of longitudinal and transversal profiles. Explanations.
5.- Computer-aided design	Drawing of simple entities. Utilities and help to the drawing. Edition and modification of simple entities. Blocks and external references. Presentation of planes. Preparation of Digital Models of Terrain
(*)6.- Cartografía	(*)Fundamentos básicos de Geodesia. El concepto de geoide y elipsoide. Concepto de Datum. Datums de referencia. Sistemas de Proyección Cartográfica: fundamentos y clasificación. Sistema de Proyección Cartográfica UTM. Principales fuentes cartográficas: IGN, IET. Otras fuentes de cartografía digital: servidor cartográfico catastral, Google Earth.

## Planning

	Class hours	Hours outside the classroom	Total hours
Problem solving	16	8	24
Laboratory practical	20	36	56
Mentored work	5	15	20
Lecturing	24	36	60
Laboratory practice	15	5	20
Problem and/or exercise solving	5	15	20
Essay	2	15	17

<b>Methodologies</b>	
	Description
Problem solving	(*)Actividade na que se formulan problemas e/ou exercicios relacionados coa materia. O alumno debe desenvolver as solucións adecuadas ou correctas mediante a exercitación de rutinas, a aplicación de fórmulas e procedementos de transformación da información dispoñible e a interpretación dos resultados. Sirve de complemento da lección maxistral. Desenvólvese en aula con dotacións específicas.  A docencia poderá impartirse total ou parcialmente en inglés en caso de demanda por parte dos alumnos ou do centro. Se desenvolven as competencias
Laboratory practical	(*)Actividades de aplicación dos coñecementos a situacións concretas e de adquisición de habilidades básicas e procedimentais relacionadas coa expresión gráfica e o dibuxo topográfico mediante software específico. Desenvólvense en aula de informática.  A docencia poderá impartirse total ou parcialmente en inglés en caso de demanda por parte dos alumnos ou do centro. Se desenvolven as competencias
Mentored work	(*)O estudante, de maneira individual ou en grupo, elabora un documento sobre a temática da materia. Inclúe a procura e recollida de información, lectura e manexo de bibliografía, redacción, etc.  Se desenvolven as competencias
Lecturing	(*)Exposición por parte do profesor dos contidos sobre a materia obxecto de estudo, bases teóricas e/ou directrices de traballos, exercicios ou proxectos a desenvolver polo estudante.  Se desenvolven as competencias

<b>Personalized assistance</b>	
Methodologies	Description
Lecturing	
Problem solving	
Laboratory practical	
Mentored work	

<b>Assessment</b>			
	Description	Qualification	Training and Learning Results
Laboratory practice	(*)Probas para a avaliación que inclúen actividades, problemas ou exercicios prácticos a resolver. Os alumnos deben dar resposta á actividade formulada, aplicando os coñecementos teóricos e prácticos da materia.	10	C1 D7 D8
Problem and/or exercise solving	(*)Proba na que o alumno debe solucionar unha serie de problemas e/ou exercicios nun tempo/condicións establecido/as polo profesor. Desta maneira, o alumno debe aplicar os coñecementos que adquiriu.	60	C1 D8
Essay	(*)O estudante presenta o resultado obtido na elaboración dun documento sobre a temática da materia, na preparación de seminarios, investigacións, memorias, ensaios, resumos de lecturas, conferencias, etc. Pódese levar a cabo de maneira individual ou en grupo, de forma oral e escrita.	20	D2 D5 D7 D8
Systematic observation	(*)Técnicas destinadas a recompilar datos sobre a participación do alumno, baseados nun listado de condutas ou criterios operativos que faciliten a obtención de datos cuantificables.	10	

**Other comments on the Evaluation**

Pass will be achieved with 5 points over 10.

TIMETABLED EXAMS:

December session: 14th January 2020, 9:00 H; First term: Cartographic Engineering Room, second term: Informatics Room II

July session: 1st July 2020 9:00 H; First term: Cartographic Engineering Room, second term: Informatics Room II

Official dates and any modification will be accesible in the official notice board and in the web page

<http://forestales.uvigo.es/gl/>

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## Sources of information

### Basic Bibliography

Rodríguez de Abajo, F.J.; Álvarez Bengoa, V., **Curso de dibujo geométrico y de croquización**, Editorial Donostiarra, 2005

Rodríguez de Abajo, F. J., **Geometría descriptiva.Tomo II. Sistema de Planos Acotados**, Editorial Donostiarra, 1993

IGN, <http://centrodedescargas.cnig.es/CentroDescargas/index.jsp>,

IET, <http://mapas.xunta.gal/visores/descargas/>,

### Complementary Bibliography

Fernando Montañó La Cruz, **Autocad 2017 Guia practica**, Anaya multimedia,

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## Recommendations

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## Contingency plan

### Description

=== EXCEPTIONAL PLANNING ===

Given the uncertain and unpredictable evolution of the health alert caused by COVID-19, the University of Vigo establishes an extraordinary planning that will be activated when the administrations and the institution itself determine it, considering safety, health and responsibility criteria both in distance and blended learning. These already planned measures guarantee, at the required time, the development of teaching in a more agile and effective way, as it is known in advance (or well in advance) by the students and teachers through the standardized tool.

=== ADAPTATION OF THE METHODOLOGIES ===

\* Teaching on line

Use of institutional on-line teaching platform Campus Remoto in a synchronous way for the theoretical classes including basics, foundations, as well as general guidelines for resolution of problems and practical cases. Specific didactic materials adapted for on line teaching will be prepared e.g. Video or presentations, graphic resources, software, etc. All the resources will be available through FAITIC platform.

\* Mechanism face-to-face of attention to the students (tutorials)

Personalized attention. Communication by email or another on-line tool. Tutorials via Campus Remoto platform.

=== ADAPTATION OF The EVALUATION ===

On-line tests and tasks via Campus Remoto and Faitic. The weight of the tests will be maintained as they are described in the main guide.

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