Teaching Guide				
Identifying Data				2017/18
Subject (*)	Auxiliary and Security Equipment		Code	670G01026
Study programme	Grao en Arquitectura Técnica			
Descriptors				
Cycle	Period	Year	Type	Credits
Graduate	2nd four-month period	Third	Obligatoria	6
Language	SpanishGalicianEnglishItalian			
Teaching method	Face-to-face			
Prerequisites				
Department	Construcións e Estruturas Arquitectónicas, Civís e Aeronáuticas			
Coordinador	Fernandez Prado, Ruben	E-mail	ruben.fprado@udc.es	
Lecturers	Fernandez Prado, Ruben	E-mail	ruben.fprado@udc.es	
Web				
General description	The aim of this course is the knowledge of all the elements necessary to carry out the construction process and , however , not part of it. their types and characteristics , use, application mode and performance are studied , complementing the knowledge acquired in other subjects so they can be possible executions.			

Study programme competences	
Code	Study programme competences
A3	Coñecer os materiais, tecnoloxías, equipos, sistemas e procesos construtivos propios da edificación en xeral e en particular aqueles específicos de Galicia.
A16	Coñecer e aplicar as técnicas de avaliación e prevención de riscos, deseño de estudos e planes, así como dos procesos de coordinación da seguridade e saúde laboral na edificación.
A23	Implementar os planes de seguridade e o seu control en obra.
A25	Deseñar e redactar estudos e planes de evacuación e seguridade dos edificios.
B1	Capacidade de análise e síntese.
B2	Capacidade de organización e planificación.
B5	Capacidade para a resolución de problemas.
B6	Capacidade para a toma de decisións.
B13	Compromiso ético.
B16	Capacidade de aplicar os coñecementos na práctica.
B22	Sensibilidade cara a temas de seguridade laboral, accesibilidade, sustentabilidade e medioambiente.
C1	Expresarse correctamente, tanto de forma oral coma escrita, nas linguas oficiais da comunidade autónoma.
C2	Dominar a expresión e a comprensión de forma oral e escrita dun idioma estranxeiro.
C3	Utilizar as ferramentas básicas das tecnoloxías da información e as comunicacións (TIC) necesarias para o exercicio da súa profesión e para a aprendizaxe ao longo da súa vida.
C4	Desenvolverse para o exercicio dunha cidadanía aberta, culta, crítica, comprometida, democrática e solidaria, capaz de analizar a realidade, diagnosticar problemas, formular e implantar solucións baseadas no coñecemento e orientadas ao ben común.
C5	Entender a importancia da cultura emprendedora e coñecer os medios ao alcance das persoas emprendedoras.
C6	Valorar criticamente o coñecemento, a tecnoloxía e a información dispoñible para resolver os problemas cos que deben enfrontarse.
C7	Asumir como profesional e cidadán a importancia da aprendizaxe ao longo da vida.
C8	Valorar a importancia que ten a investigación, a innovación e o desenvolvemento tecnolóxico no avance socioeconómico e cultural da sociedade.

Learning outcomes	
Learning outcomes	Study programme competences

Critically assess the knowledge, technology and information available to resolve the problems they face.	A3 A16 A23 A25	B1 B2 B5 B6 B13 B16 B22	C1 C2 C3 C4 C5 C6 C7 C8
Organizational skills and planning		B2	
Capacity to solve problems.		B5	
Ability to apply knowledge in practice .		B16	
Sensitivity to issues of job security , accessibility, sustainability and the environment .		B22	
Know the materials , technologies, equipment, systems and construction processes own the building in general and particularly those specific to Galicia.	A3	B1	C1
realizar actividad	A3 A16 A23 A25	B1 B2 B5 B6 B13 B16 B22	C1 C2 C3 C4 C5 C6 C7 C8

Contents	
Topic	**Sub-topic**
BLOCK 1. SCAFFOLDING, SHORING AND DEMOLITIONS	SUBJECT 1.1. SCAFFOLDINGS SUBJECT 1.2. SHORINGS SUBJECT 1.3. MACHINERY AND HALF AUXILIARIES IN DEMOLISH And DEMOLITIONS SUBJECT 1.4. OCCUPATION OF PUBLIC ROAD SUBJECT 1.5. ROAD SIGNALING
BLOCK 2. ELEVATION	SUBJECT 2.1. PRINCIPLES OF ELEVATION. DEVICES. SUBJECT 2.2. MACHINERY OF ELEVATION SUBJECT 2.3. CRANE TOWER
BLOCK 3. EARTHWORKS	SUBJECT 3.1. THE TRACTOR SUBJECT 3.2. THE BULLDOZER SUBJECT 3.3. SCRAPER SUBJECT 3.4. GRADER SUBJECT 3.5. STANDARD STOCKPILES SUBJECT 3.6. EXCAVATORS, BACKHOES SUBJECT 3.7. Backhoe/Excavator Loaders SUBJECT 3.8. BIVALVE EXCAVATORS SUBJECT 3.9. COMPACTION AND CONSOLIDATION SUBJECT 3.10. PERFORMANCE EQUIPMENT EARTHWORKS . THE LAND. SUBJECT 3.11. POWER MACHINERY EARTHWORKS.

BLOCK 4. GENERAL INSTALLATIONS	SUBJECT 4.1. GENERAL INSTALLATIONS OF WORK. IMPLANTATION. SUBJECT 4.2. SECURITY IN THE MACHINES AND MAINTENANCE
BLOCK 5. MACHINERY AND HALF AUXILIARIES FOR STRUCTURES OF CONCRETE	SUBJECT 5.1. MACHINERY AND AUXILIARY MEDIA IN SPECIAL FOUNDATIONS SUBJECT 5.2. AUXILIARY MACHINERY AND MEANS FOR FOUNDATIONS AND CONCRETE STRUCTURES FEAR 5.3. SMALL MACHINERY AND AUXILIARIES

Planning				
Methodologies / tests	Competencies	Ordinary class hours	Student?s personal work hours	Total hours
Guest lecture / keynote speech	A3 A16 A23 A25 B1 B2 B5 B6 B13 B16 B22 C1 C2 C3 C4 C5 C6 C7 C8	27.5	45	72.5
Objective test	A3 A16 A23 A25 B1 B2 B5 B6 B13 B16 B22 C1 C2 C3 C4 C5 C6 C7 C8	2.5	2	4.5
Field trip	A3 B16 B22	2.5	2	4.5
Problem solving	A3 A16 A23 A25 B1 B2 B5 B6 B13 B16 B22 C1 C2 C3 C4 C5 C6 C7 C8	27.5	39	66.5
Personalized attention		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	
Methodologies	Description
Guest lecture / keynote speech	oral and graphic presentation using audiovisual media and support slate with insertion point inviting the students to debate appreciate comments and views and facilitate learning.
Objective test	Individual written proof that integrates open questions of development of both theory and problem solving. In addition , as to the factual questions , you can combine multiple choice questions multiple choice, ordering , short answer , of discrimination, complete , drawing or association , and resolution of practical exercises.
Field trip	one or more visits to work or attending conference to be qualified in terms of attendance and student participation in it will be done.
Problem solving	Practices are held during the interactive sessions , complemented by the use of computers for students to solve problems in person in class proposed by the teacher . It also made ??work at home team , consisting of projects proposed by the teacher to be presented publicly in interactive sesieones .

Personalized attention	
Methodologies	Description

Objective test Problem solving Guest lecture / keynote speech Field trip	Office tutorials during term time or do course , a student solicitude do ou do teacher semper through mail . A personalized service non substitute in any case ost expositivas Sesions nin Sesions interactive expostas during or course as, genone that will complement and year apoio student naqueles matters to us that , despite facer razoados attempts Fix it , non chega to assimilate or concept. Deberase an appointment via mail for unha tutoring.

Assessment			
Methodologies	**Competencies**	**Description**	**Qualification**
Objective test	A3 A16 A23 A25 B1 B2 B5 B6 B13 B16 B22 C1 C2 C3 C4 C5 C6 C7 C8	Individual written proof that integrates open questions of development of both theory and problem solving. In addition , as to the factual questions , you can combine multiple choice questions multiple choice, ordering , short answer , of discrimination, complete , drawing or association , and resolution of practical exercises.	70
Problem solving	A3 A16 A23 A25 B1 B2 B5 B6 B13 B16 B22 C1 C2 C3 C4 C5 C6 C7 C8	Practices are held during the interactive sessions , complemented by the use of computers for students to solve problems in person in class proposed by the teacher . It also made ??work at home team , consisting of projects proposed by the teacher to be presented publicly in interactive sesieones .	28
Field trip	A3 B16 B22	one or more visits to work or attending conference to be qualified in terms of attendance and student participation in it will be done.	2
Others			

Assessment comments
To pass the subject is a necessary condition to approve (5 out of 10) the objective test. If the objective test has been passed their qualification counted 70% of the final grade for the course. The remaining 30% will result from the simple arithmetic average of the scores of all the practices (28%) plus note of the guided tour or lecture (2%). This rating 30% of the average grade of the practices will continue and will be added to the quota of the objective test for the final score of both the first and the second chance, if any, provided that the above conditions are met and the objective test has been approved. If the objective exam has not been approved the final grade for the course will be the test score computing 100%. It will not be corrected objective evidence that not all the firm or personal data is covered. The student who does not attend practical classes or perform objective test will be graded Not Submitted

Sources of information

Basic	- Eduardo Lagarde Abrisqueta (1988). EQUIPOS DE OBRAS Y MEDIOS AUXILIARES. Getafe (Madrid). Fundación Escuela de la Edificación - Manuel Díaz del Río y Jáudenes (2007). MANUAL DE MAQUINARIA DE CONSTRUCCIÓN. Madrid. McGraw Hill - Frank Harris (1992). MAQUINARIA Y MÉTODOS MODERNOS DE CONSTRUCCIÓN. Madrid. Bellisco e Hijos - F. Ballester y J. Capote (1992). MÁQUINAS DE MOVIMIENTO DE TIERRAS. Madrid. PEDECA - Andrés Abasolo (2005). CONSTRUCCIÓN Y MÁQUINAS EN EDIFICACIÓN. Madrid. Munilla-Leira, S.L. - Félix Hernández Castellá y Luis Fernández Montes (1986). INTRODUCCIÓN A LA COMPACTACIÓN VIBRATORIA. Zaragoza. LEBRERO - (varias firmas comerciales) (2004). OPERADOR DE GRÚA TORRE. Segovia. ATRIUM - Luis Jiménez López (2002). OPERADOR DE GRÚAS TORRE. Barcelona. Grupo CEAC - Miguel Ángel Menéndez González (2004). MANUAL PARA LA FORMACIÓN DE OPERADOR DE GRÚA TORRE. Valladolid. Fundación Laboral de la Construcción del Principado de Asturias y Lex Nova, S.A. - SOCIEDAD FRANCO-ESPAÑOLA DE ALAMBRES, CABLES Y TRANSPORTES AÉREOS, S.A. (1965). CATÁLOGO DE LA SOCIEDAD FRANCO-ESPAÑOLA DE ALAMBRES, CABLES Y TRANSPORTES AÉREOS, S.A.. Bilbao - E. Carnicer Royo (1981). EQUIPOS Y HERRAMIENTAS NEUMÁTICAS. Barcelona. Gustavo Gili - Pierre Cormon (1979). FABRICACIÓN DEL HORMIGÓN. Barcelona. E.T.A. - Juan Tiktin (1995). MOVIMIENTO DE TIERRAS. Madrid. Colegio de Ingenieros de Caminos, Canales y Puertos - Campo Yagüe, José María del (2017). BULLDOZER: MAQUINARIA DE CONSTRUCCIÓN. Madrid: Ibergarceta - Campo Yagüe, José María del (2017). CARGADORAS: MAQUINARIA DE CONSTRUCCIÓN. Madrid: garceta - Campo Yagüe, José María del (2017). MAQUINARIA DE CONSTRUCCIÓN: MOTONIVELADORAS. Madrid: Garceta
Complementary	- (revista especializada) ((edición mensual)). POTENCIA. - (revista especializada) ((edición mensual)). CONSTRUCTION & EQUIPMENT.

Recommendations
Subjects that it is recommended to have taken before
Mathematics I/670G01001
Applied Fhysics I/670G01002
Materials I/670G01003
Mathematics II/670G01006
Applied Physics II/670G01007
Construction I/670G01009
Construction II/670G01011
Materials II/670G01012
Facilities I/670G01014
Construction III/670G01017
Geometry of Illustrations/670G01018
Structures I/670G01019
Topography/670G01020
Facilities II/670G01024
Structures II/670G01025
Structures III/670G01034
Subjects that are recommended to be taken simultaneously

Organisation, Programming and Control/670G01021 Construction IV/670G01022 Materials III/670G01016 Administration, Leadership and Management of Construction/670G01028 Structures III/670G01034 Facilities III/670G01035
Subjects that continue the syllabus
Other comments

(*)The teaching guide is the document in which the URV publishes the information about all its courses. It is a public document and cannot be modified. Only in exceptional cases can it be revised by the competent agent or duly revised so that it is in line with current legislation.