



Teaching Guide				
Identifying Data				2016/17
Subject (*)	Safety and prevention	Code	670G01031	
Study programme	Grao en Arquitectura Técnica			
Descriptors				
Cycle	Period	Year	Type	Credits
Graduate	1st four-month period	Fourth	Obligatoria	6
Language	SpanishGalician			
Teaching method	Face-to-face			
Prerequisites				
Department	Construcións ArquitectónicasTecnoloxía e Ciencia da Representación Gráfica			
Coordinador	Iglesias Maceiras, Álvaro José	E-mail	alvaro.iglesias@udc.es	
Lecturers	Fernandez Prado, Ruben Iglesias Maceiras, Álvaro José	E-mail	ruben.fprado@udc.es alvaro.iglesias@udc.es	
Web				
General description	Management of the prevention of risks and of security in works of Construction of buildings, as well as in processes of manufacture of materials and constructive systems, evaluating the risks and scheduling the preventive action. Editorial of Projects, Studies And Plans of Security and labour Health. Coordination of Security and Health in the Construction. Editorial of Projects of security in utilisation of buildings, as well as Plans of Emergency and Evacuation.			

Study programme competences / results	
Code	Study programme competences / results
A3	Coñecer os materiais, tecnoloxías, equipos, sistemas e procesos construtivos propios da edificación en xeral e en particular aqueles específicos de Galicia.
A4	Coñecer as técnicas e procesos de restauración, rehabilitación, acondicionamento, patoloxía, mantemento e conservación dos edificios en xeral e en particular aqueles específicos do patrimonio cultural constituído pola arquitectura popular e histórica galega.
A15	Redactar proxectos técnicos no ámbito da edificación.
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.
B2	Capacidade de organización e planificación.
B3	Capacidade para a procura, análise, selección, utilización e xestión da información.
B6	Capacidade para a toma de decisións.
B8	Capacidade para traballar nun equipo de carácter interdisciplinario.
B12	Razoamento crítico.
B13	Compromiso ético.
B16	Capacidade de aplicar os coñecementos na práctica.
B22	Sensibilidade cara a temas de seguridade laboral, accesibilidade, sustentabilidade e medioambiente.
B30	Sensibilidade cara a temas relacionados coa protección, conservación e posta en valor do patrimonio cultural e arquitectónico.
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.
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Learning outcomes			
Learning outcomes	Study programme competences / results		
Draft technical projects in the field of the construction of buildings.	A3 A4 A15 A16 A23 A25	B2 B3 B6 B8 B12 B13 B16 B30	
Know and apply the technicians of evaluation and prevention of risks, design of studies and plans, as well as of the processes of coordination of the security and labour health in the construction of buildings.	A15 A16 A23 A25		
Implement the plans of security and his control in works of construction.	A15 A16 A23 A25		
Design and draft studies and plans of evacuation and security of the buildings.	A15 A16 A23 A25		
Sensitivity to subjects of labour security, accessibility, sustainability and environment.	A3 A4 A15 A23 A25	B2 B3 B6 B8 B12 B13 B16 B22 B30	C1 C2 C3 C4 C5 C6 C7 C8
Value críticamente the knowledge, the technology and the available information to resolve the problems with which have to confront.			C1 C3 C4 C5 C6 C7 C8

Contents	
Topic	Sub-topic
1ª PART:	EXPOSITIVE Content.



<p>Subject I:</p> <p>FOUNDATIONS OF THE TECHNICIANS OF IMPROVEMENT OF THE LABOUR CONDITIONS</p>	<p>Lessons:</p> <p>01. THE WORK And THE HEALTH. THE PREVENTION OF LABOUR RISKS. 02. FORECAST, PREVENTION And PROTECTION OF THE DERIVATIVE DAMAGES OF THE WORK. 03. LABOUR ACCIDENTS.</p>
<p>Subject II:</p> <p>SECURITY IN THE WORK</p>	<p>Lessons:</p> <p>04. CONCEPT And DEFINITION OF SECURITY: TECHNICIANS And INSPECTIONS. PREVENTIVE MEASURES OF ELIMINATION And REDUCTION OF RISKS. 05. ACCIDENTS OF WORK. INVESTIGATION, ANALYSIS And GENERAL EVALUATION OF THE RISK OF ACCIDENT. 06. THE SIGNALING IN SECURITY. 07. ORGANISATION And PLANNING OF INDUSTRIAL ACTIVITIES OF CONSTRUCTION. 08. COLLECTIVE PROTECTIONS And TEAMS OF INDIVIDUAL PROTECTION. 09. TEAMS OF WORK, INSTALLATIONS, MANUAL TOOLS And MACHINES-TOOL. 10. MACHINES: SECURITY IN THE DESIGN. 11. MACHINES: RISKS IN OPERATION, STORAGE And TRANSPORT. 12. PLACES And SPACES OF WORK. 13. GENERAL RISKS UNDER CONSTRUCTION. FALLS OF HEIGHT. . 14. SPECIFIC RISKS OF CONSTRUCTION: DEMOLISH And MOVEMENT OF EARTHS, STRUCTURES And FINISHINGS. MINIMUM DISPOSALS OF SECURITY And HEALTH OF THE GENERAL COLLECTIVE AGREEMENT OF THE SECTOR OF THE CONSTRUCTION. 15. ELECTRICAL RISKS. 16. CHEMICAL PRODUCTS And TOXIC WASTE. 17. BOILERS, INSTALLATIONS OF AIR COMPRESSED And SPACES CONFINED. 18. THE FIRE And THE FIRES. SECURITY AGAINST FIRES IN BUILDINGS And WORKS.</p>
<p>Subject III</p> <p>INDUSTRIAL HYGIENE</p>	<p>Lessons:</p> <p>19. THE INDUSTRIAL HYGIENE. CONCEPTS And AIMS. 20. CHEMICAL AGENTS. LABOUR TOXICOLOGY And EVALUATION OF THE EXHIBITION. 21. SPECIFIC LEGAL RULE WITH REGARD TO WORKS WITH ASBESTOS.. 22. PHYSICAL AGENTS. CHARACTERISTICS, EFFECTS, EVALUATION And CONTROL. 23. HYGIENIC RISKS. ELECTRICAL WELDING And ACETYLENE AND OXYGEN WELDING. 24. BIOLOGICAL AGENTS. EFFECTS, EVALUATION And CONTROL.</p>
<p>Subject IV</p> <p>ERGONOMICS And PSYCHOLOGY AND SOCIOLOGY APPLIED. MEDICINE OF THE WORK</p>	<p>Lessons:</p> <p>25. ERGONOMICS And PSYCHOLOGY AND SOCIOLOGY APPLIEDAPPLIED. ENVIRONMENTAL CONDITIONS. 26. PHYSICAL And MENTAL LOAD OF WORK. 27. MEDICINE OF THE WORK. PATHOLOGIES OF LABOUR ORIGIN And SURVEILLANCE OF THE HEALTH.</p>
<p>2ª PART:</p>	<p>INTERACTIVE Content.</p>



Subject V JURIDICAL FIELD OF THE PREVENTION	Lessons: 28. NOTIONS OF RIGHT OF THE WORK. BASIC LEGISLATION OF LABOUR RELATIONS. 29. NOTIONS ON THE SPANISH SYSTEM OF THE SOCIAL SECURITY. 30. RULE ON PREVENTION OF LABOUR RISKS. BUSINESS OBLIGATIONS. 31. ORGANS OF REPRESENTATION And PARTICIPATION IN PREVENTIVE MATTER. 32.ORGANISATION OF THE PREVENTION IN SPAIN.
Subject VI MANAGEMENT OF THE PREVENTION	Lessons: 33. GENERAL APPEARANCES ON ADMINISTRATION And BUSINESS MANAGEMENT. BASIC PRINCIPLES. ORGANISATIONAL MODEL. 34. ANALYSIS, IDENTIFICATION And EVALUATION OF RISKS. 35. PLANNING OF THE PREVENTION. 36. ORGANISATION OF THE PREVENTION. 37. APPLICATION OF THE MANAGEMENT IN A SPECIAL SECTOR: THE CONSTRUCTION.

Planning				
Methodologies / tests	Competencies / Results	Teaching hours (in-person & virtual)	Student?s personal work hours	Total hours
Case study	A3 A4 A16 B2 B3 B6 B8 B12 B13 B16 B22 B30 C1 C2 C3 C4 C5 C6 C7 C8	1	2	3
Collaborative learning	A15 A23 A25	30	30	60
Oral presentation	A15 A23 A25	3	6	9
Objective test	A15 A16 A23 A25 B22 C6	2	6	8
Guest lecture / keynote speech	A16 B22 C6	23	46	69
Personalized attention		1	0	1

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

Methodologies	
Methodologies	Description
Case study	Methodology where the subject confronts in front of the description of a specific situation that arouses a problem that has to be comprised, valued and resolved by a group of people, through a process of discussion. The student situa in front of a concrete problem (case), that describes him a real situation of the professional life, and has to be able to analyse a series of facts, referents to a particular area of the knowledge or of the action, to arrive to a decision reasoned through a process of discussion in small groups of work.
Collaborative learning	Group of procedures of education-learning guided of face-to-face form and/or supported with technologies of the information and the communications, that base in the organisation of the class in small groups in what the alumnado works jointly in the resolution of tasks assigned by the profesorado to optimise his own learning and the one of the others members of the group.
Oral presentation	Presentation of oral form with brief explanation of the aims of the course, in relation with each one of the subjects and lessons that will treat in class.
Objective test	It treats of the final examination of the asignatura. It will propose a series of exercises, similar to the developed in class during the course. Also they will be able to propose short questions of índole theoretical to evaluate the understanding of the different concepts treated in the asignatura. It is an individual proof and by writing, that will be able to consist in the integration of open questions of development type fear (program of contents), so much of theory as of solution of problems and/or practical cases.



<p>Guest lecture / keynote speech</p>	<p>The profesorado will realise the oral exhibition of each subject or lesson, complemented with the use of audiovisual means and the introduction of some questions headed to the students, with the purpose to transmit knowledges and facilitate the learning.</p> <p>In the lessons magistrales the professor will present the theoretical and practical contents of the asignatura, helping of illustrative examples with the end to motivate to the students and to help to the understanding and assimilation of the contents.</p> <p>The professor will support in dynamic presentations.</p>
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**Personalized attention**

Methodologies	Description
<p>Guest lecture / keynote speech Case study Collaborative learning Oral presentation Objective test</p>	<p>It treats of the time that the professor reserves to attend and resolve doubts to the alumnado in relation with the matter.</p> <p>Academic activity developed by the profesorado, individual or in small group, that has like purpose attend to the needs and queries of the alumnado related with the study and/or subjects linked with the matter, providing him orientation, support and motivation in the process of learning. This activity can develop of face-to-face form (directly in the classroom or in the moments that the professor has assigned to tutorías of dispatch) or of form no face-to-face (through email, of moodle or of the virtual campus).</p> <p>During the development of the practical classes (interactive) the professor will go resolving the doubts that the students pose in relation with the materia and with the realisation of the problems and/or practical cases that are developing .</p> <p>During the ,schedule of tutorías will attend all those doubts that the alumnado, of personal form and individualizada, go consulting.</p>

**Assessment**

Methodologies	Competencies / Results	Description	Qualification
<p>Guest lecture / keynote speech</p>	<p>A16 B22 C6</p>	<p>The professor will realise the oral exhibition of each subject or lesson, complemented with the use of audiovisual means and the introduction of some questions headed to the students, with the purpose to transmit knowledges and facilitate the learning.</p> <p>The mere face-to-face assistance to the classes (basic duty of the student), that is to say, without a participación proactiva in the same, will not suppose any note in the final qualification of the asignatura.</p>	<p>1</p>
<p>Case study</p>	<p>A3 A4 A16 B2 B3 B6 B8 B12 B13 B16 B22 B30 C1 C2 C3 C4 C5 C6 C7 C8</p>	<p>Resolution of cases that describe a real situation of the professional life, contributing solutions reasoned through a process of discussion in small groups of work.</p>	<p>10</p>
<p>Collaborative learning</p>	<p>A15 A23 A25</p>	<p>Resolution of tasks assigned by the professor, for the study of concrete problems, with the end to optimise the learning of the matter presented in masterclasses.</p>	<p>10</p>
<p>Oral presentation</p>	<p>A15 A23 A25</p>	<p>Exhibition of oral form and participation proactiva, with brief explanation of the aims of the course, in relación with each one of the subjects and lessons that treat in class.</p>	<p>9</p>



Objective test	A15 A16 A23 A25 B22 C6	<p>The note obtained by the works realised in the interactive classes, as well as the participation proactiva of the student to the asignatura, will be able to suppose 30% of the final note.</p> <p>The note obtained in the final examination (objective proof) will suppose 70% of the final qualification.</p> <p>The mere face-to-face assistance to the classes (basic duty of the student), that is to say, without a participación proactiva in the same, will not suppose any note in the final qualification of the asignatura.</p> <p>THE FINAL QUALIFICATION OF THE ASIGNATURA will CALCULATE OF THE FOLLOWING WAY:</p> <ul style="list-style-type: none"><li>- In the case that the note of the final examination (objective proof, that supposes 70%) was equal or elder that 4 (on 10) him añadirá the note obtained in the interactive classes (30%), for the calculation of the total qualification of the asignatura (100%).</li><li>- In the case that the student obtain a lower note that 4 (on 10) in the final examination (objective proof) the final qualification of the asignatura will be equal to this note obtained in the examination.</li></ul>	70
Others			

#### Assessment comments

The exposed norms will apply along all the course.

They do not exist partial examinations.

Each one of the methodologies of evaluation will be independent in cualto to qualification.

So that the student can present to the objective proofs (official examinations of June and of Julio) has to have realised and presented the works of the interactive classes.

Both objective proofs, the one of June and the one of Julio, will have the same value and the same requirements for his qualification, constituting the two opportunities to surpass the asignatura in the course

#### Sources of information

<b>Basic</b>	<ul style="list-style-type: none"><li>- Gómez Etxebarria, Genaro (2010). MANUAL PARA LA FORMACIÓN EN PREVENCIÓN DE RIESGOS LABORALES. CURSO SUPERIOR. CISS Grupo Wolters Kluwer; Valencia</li><li>- Martínez Cuevas, Alfredo J. (Coord.) (2003). MANUAL PRÁCTICO PARA LA ELABORACIÓN DE ESTUDIOS DE SEGURIDAD Y SALUD EN OBRAS DE CONSTRUCCIÓN. COAAT de Sevilla; Sevilla.</li><li>- Espeso Santiago, José Avelino, y otros (2012). COORDINADORES DE SEGURIDAD Y SALUD EN EL SECTOR DE LA CONSTRUCCIÓN. Lex Nova; Valladolid.</li></ul>
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<b>Complementary</b>	<p>- Gómez Etxebarria, Genaro (2010). MANUAL PARA LA FORMACIÓN EN PREVENCIÓN DE RIESGOS LABORALES. ESPECIALIDAD EN SEGURIDAD EN EL TRABAJO. CISS Grupo Wolters Kluwer; Valencia</p> <p>- Rodríguez Gómez, Francisco de Asís (2008). MEMORIA Y PLIEGO DE CONDICIONES PARA CONFECCIONAR UN ESTUDIO DE SEGURIDAD Y SALUD. Fundación del Coaat de Alicante; Alicante.</p> <p>- Xunta de Galicia (1997). GUÍA DE AVALIACIÓN DE RISCOS LABORAIS. Xunta de Galicia, Santiago de Compostela.</p> <p>- Fundación Laboral de la Construcción (2011). COORDINADOR EN MATERIA DE SEGURIDAD Y SALUD EN LAS OBRAS DE CONSTRUCCIÓN (Volúmenes I, II y III). FLC; Madrid.</p> <p>- Sanvicente Callejo, Evaristo (1996). PREVENCIÓN, PROTECCIÓN Y LUCHA CONTRA EL FUEGO. Paraninfo; Madrid</p> <p>- Azcuénaga Linaza, Luís Mª (2007). MANEJO DE CARGAS. RIESGOS Y MEDIDAS PREVENTIVAS. FC Editorial; Madrid</p> <p>- Gómez Etxebarria, Genaro (2009). 1000 SOLUCIONES EN PREVENCIÓN DE RIESGOS LABORALES. CISS Grupo Wolters Kluwer; Valencia.</p> <p>- Cassinói Gómez de Cádiz, J. y de la Fuente Moreno, M.A. (2015). ANUARIO DE PREVENCIÓN DE RIESGOS LABORALES 2015. Thomson Reuters</p> <p>O primeiro día de clase farase unha PRESENTACIÓN DA MATERIA tratando os seguintes puntos: Introducción á materia de SEGURIDAD E PREVENCIÓN. Presentación do profesorado e do coordinador da materia. Coñecementos previos necesarios. Formación de grupos. Horarios de clases e tutorías. Campus virtual (Moodle). Tutorías. Avaliación. Datas de exames. Estatísticas de calificacións en cursos anteriores. As Tutorías do Profesor: realizaranse no horario oficial aprobado e publicado respecto diso polo Centro.</p>
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## Recommendations

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

Construcción I/670G01009  
 Construcción II/670G01011  
 Instalacións I/670G01014  
 Equipos. medios auxiliares e de seguridade/670G01026  
 Construcción III/670G01017  
 Proxectos Técnicos I/670G01023  
 Instalacións II/670G01024  
 Proxectos Técnicos II/670G01027

### Subjects that are recommended to be taken simultaneously

Organización. programación e control/670G01021  
 Construcción IV/670G01022  
 Dirección. Xefatura e Xestión de Obras/670G01028

### Subjects that continue the syllabus

Proxecto Fin de Grao/670G01036

### Other comments

Recommendations for the study of the matter:

- it treats of a matter with an estructura theoretical basic and a big quantity of legal rule, needing a big practical development that involves a continuous follow-up along all the academic course by part of the student.
- It is indispensable the continuous query of the virtual platform Moodle, where will publish contents, practical, exercises, norms, examinations, etc.
- previous Knowledges: the contents of the asignaturas indicated.

(\*)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.