UNIVERSIDADE DA CORUÑA

Teaching Guide				
Identifying Data				**2023/24**
Subject (*)	BIM Methodology		**Code**	730547017d
Study programme	Máster Universitario en Eficiencia Enerxética e Sustentabilidade (a distancia)			
Descriptors				
Cycle	**Period**	**Year**	**Type**	**Credits**
Official Master's Degree	2nd four-month period	First	Optional	3
Language	SpanishGalician			
Teaching method	Non-attendance			
Prerequisites				
Department	Enxeñaría Industrial			
Coordinador	López Vázquez, José Antonio		**E-mail**	jose.lopez@udc.es
Lecturers	Fernández Ibáñez, María Isabel		**E-mail**	isabel.fibanez@udc.es
	López Vázquez, José Antonio			jose.lopez@udc.es
Web				
General description	BIM (Building Information Modeling) Is a methodology of work colaborativa for the management of projects through a maqueta digital. This conforms a big database that allows to manage the elements that form part of the edificación during all the cycle of life of the same. On the information contained in the maqueta digital can make simulations for the comprobación of the operation of the installations, to know his energetic behaviour, to coordinate the works of construction, etc.			

Study programme competences / results	
Code	**Study programme competences / results**
A13	CE13 - Analyze, apply and optimize energy use systems
A17	CE17 - Apply the BIM methodology for sustainability and energy efficiency
B3	CB8 - That students are able to integrate knowledge and face the complexity of formulating judgments based on information that, being incomplete or limited, includes reflections on the social and ethical responsibilities linked to the application of their knowledge and judgments
B5	CB10 - That students have the learning skills that allow them to continue studying in a way that will be largely self-directed or autonomous
B9	CG4 - Extract, interpret and process information, from different sources, for use in the study and analysis
B11	CG6 - Acquire new knowledge and skills related to the professional field of the master's degree
B16	CG11 - Evaluate the application of emerging technologies in the field of energy and the environment
C3	CT3 - Use the basic tools of information and communication technologies (ICT) necessary for the exercise of their profession and for learning throughout their lives
C7	CT7 - Develop the ability to work in interdisciplinary or transdisciplinary teams, to offer proposals that contribute to sustainable environmental, economic, political and social development
C8	CT8 - Value the importance of research, innovation and technological development in the socioeconomic and cultural progress of society

Learning outcomes			
Learning outcomes	**Study programme competences / results**		
The student will be able to work in a BIM environment and generate graphic documentation and data reports	AC13 AC17	BC3 BC5 BC9 BC11 BC16	CC3 CC7 CC8

Contents	
Topic	**Sub-topic**

Fundamentals of the BIM methodology. Creation of BIM models. Interoperability and collaborative work in a BIM environment.	

Planning				
Methodologies / tests	Competencies / Results	Teaching hours (in-person & virtual)	Student?s personal work hours	Total hours
Supervised projects	A13 A17 B3 B5 B9 B16 C3 C8	7	22.5	29.5
ICT practicals	A13 A17 B3 B5 B9 B16 C3 C8	7	22.5	29.5
Workbook	B5 B9 B11 B16 C3 C7	7	9	16
Personalized attention		0		0
(*)The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.				

Methodologies	
Methodologies	Description
Supervised projects	The works will make applying the methodology BIM (Building Information Modeling).
ICT practicals	The practices will make with the program REVIT with the aim to familiarise with the methodology BIM.
Workbook	Reading of didactic material, viewing of videos and query of multimedia material.

Personalized attention	
Methodologies	Description
Workbook Supervised projects ICT practicals	The profesorado will attend the doubts that can arise in the study of the educational materials and in the realisation of the practices and of the works.

Assessment			
Methodologies	Competencies / Results	Description	Qualification
Supervised projects	A13 A17 B3 B5 B9 B16 C3 C8	They value the works made by the students	50
ICT practicals	A13 A17 B3 B5 B9 B16 C3 C8	They value the works made by the students	50

Assessment comments
The criteria and the activities of evaluation will be the same for the 1ª and 2ª opportunity and for the extraordinary announcements. It will consider as ?No presented? (NP) that student that, being enrolled in a matter, no concurriera to the distinct activities of evaluation that establish for the academic course. In absence of specific regulation for each degree, will consider that it will have to be described as ?No presented?: the) when it did not complete the process of continuous evaluation, in the conditions that appear in the educational guide, or b) when it do not present to the proof of the official period of evaluation. The fraudulent realisation of the probas or activities of evaluation, once checked, will involve directly the qualification of suspense in the announcement in that it commit : the/the student will be described with ?suspense? (numerical note 0) in the corresponding announcement of the academic course, so much if the commission of the fault produces at the earliest opportunity as in the second. For this, will proceed to modify his qualification in the record of first opportunity, if it was necessary.

Sources of information

Basic	Es.BIMhttps://www.esbim.es/es-bim/It is.Bim Is an open group to all the agents involved (administrations, engineerings, constructors, universities, professionals?) whose aim is the implantation of BIM in Spain.Building SMART Spainhttps://www.buildingsmart.es/BuildingSMART Spanish Chapter Is a non-profit association whose main aim is to boost the efficiency in the sector of the construction through the use of open standards of interoperability on BIM (Building Information Modeling) to reach new levels in reduction of costs and time of execution and increase of the quality.BIMcommunitywww.bimcommunity.comThe main resource that will be able to find in this web is INFORMATION in surroundings BIM: software, mobile applications, guides, servers BIM, books, components BIM, etc. And of course, links to the main webs that offer all these resources.Es.BIMhttps://www.esbim.es/es-bim/It is.Bim Is an open group to all the agents involved (administrations, engineerings, constructors, universities, professionals?) whose aim is the implantation of BIM in Spain.Building SMART Spainhttps://www.buildingsmart.es/BuildingSMART Spanish Chapter Is a non-profit association whose main aim is to boost the efficiency in the sector of the construction through the use of open standards of interoperability on BIM (Building Information Modeling) to reach new levels in reduction of costs and time of execution and increase of the quality.BIMcommunitywww.bimcommunity.comThe main resource that will be able to find in this web is INFORMATION in surroundings BIM: software, mobile applications, guides, servers BIM, books, components BIM, etc. And of course, links to the main webs that offer all these resources.
Complementary	bimobjectwww.bimobject.comBIM Object Is one of the most powerful webs of free downloads of objects BIM. Once registered, can download all what want to. Also you can download you components BIM for ArchiCAD, Allplan, Rhinoceros, Sketchup, etc.polantiswww.polantis.comPolantis Is a library BIM. In her you will be able to find crowd of objects BIM in crowd of formats, compatible with the main softwares of current architecture: Revit, Allplan, Rhinoceros, ArchiCAD, Autocad, Artlantis, Microstation, etc. And of course, in format IFC.bimstorehttps://www.bimstore.co.uk/It is a bookshop BIM for Revit, in addition to a factory of objects BIM. Bimstore Eye, his finder of reality increased, allows you see in 3D the components BIM of the manufacturers.bimobjectwww.bimobject.comBIM Object Is one of the most powerful webs of free downloads of objects BIM. Once registered, can download all what want to. Also you can download you components BIM for ArchiCAD, Allplan, Rhinoceros, Sketchup, etc.polantiswww.polantis.comPolantis Is a library BIM. In her you will be able to find crowd of objects BIM in crowd of formats, compatible with the main softwares of current architecture: Revit, Allplan, Rhinoceros, ArchiCAD, Autocad, Artlantis, Microstation, etc. And of course, in format IFC.bimstorehttps://www.bimstore.co.uk/It is a bookshop BIM for Revit, in addition to a factory of objects BIM. Bimstore Eye, his finder of reality increased, allows you see in 3D the components BIM of the manufacturers.

Recommendations
Subjects that it is recommended to have taken before
Subjects that are recommended to be taken simultaneously
Subjects that continue the syllabus
Other comments

Recommendations Sostenibilidade Environment:Take into account for the delivery of the documentary works that make in this matter: 1.1. It will request in virtual format and/or computer support. 1.2. It will make through the Virtual Campus, in digital format.Recommendations in matter of equality of gender and respect to the diversity: As it collects in the distinct rules of application for the university teaching will have to incorporate the perspective of gender in this matter (will use language no sexista, will use bibliography of authors of both sexes, propiciará the intervention in class of students and students?).It will work to identify and modify damages and attitudes sexist, and will influence in the surroundings to modify them and boost values of respect and equality. Will have to detect situations of discrimination by reason of gender and will propose actions and measures to correct them. It will facilitate the full integration of the students that by physical reason, sensory, psychic or socioculturales, experience difficulties to an ideal access, egalitarian and profitable to the university life.