



## Teaching Guide

Identifying Data					2022/23
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) é unha metodoloxía de traballo colaborativa para a xestión de proxectos a través dunha maqueta dixital. Esta conforma unha gran base de datos que permite xestionar os elementos que forman parte da edificación durante todo o ciclo de vida da mesma. Sobre a información contida na maqueta dixital pódense realizar simulacións para a comprobación do funcionamento das instalacións, para coñecer o seu comportamento enerxético, para coordinar os traballos de construción, 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	BC3	CC3
	AC17	BC5	CC7
		BC9	CC8
		BC11	
		BC16	

## 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	Os traballos realizaranse aplicando a metodoloxía BIM (Building Information Modeling).
ICT practicals	As prácticas realizaranse co programa REVIT co obxectivo de familiarizarse coa metodoloxía BIM.
Workbook	Lectura de material didáctico, visionado de vídeos e consulta de material multimedia.

Personalized attention	
Methodologies	Description
Workbook Supervised projects ICT practicals	O profesorado atenderá as dúbidas que poidan xurdir no estudo dos materiais docentes e na realización das prácticas e dos traballos.

Assessment			
Methodologies	Competencies / Results	Description	Qualification
Supervised projects	A13 A17 B3 B5 B9 B16 C3 C8	Valóranse os traballos prácticos realizados polos estudantes.	50
ICT practicals	A13 A17 B3 B5 B9 B16 C3 C8	Valóranse as prácticas realizadas polo estudiantado.	50

Assessment comments
Na segunda oportunidade os criterios e actividade de avaliación son os mesmos que na primeira oportunidade. O plaxio na realización de calquera das actividades de avaliación implicará directamente a cualificación de suspenso "0" na materia, na oportunidade correspondente.

Sources of information



<b>Basic</b>	<p>Es.BIM<a href="https://www.esbim.es/es-bim/">https://www.esbim.es/es-bim/</a>Es.Bim es un grupo abierto a todos los agentes implicados (administraciones, ingenierías, constructoras, universidades, profesionales?) cuyo objetivo es la implantación de BIM en España. Building SMART Spain <a href="https://www.buildingsmart.es/BuildingSMART_Spanish_Chapter">https://www.buildingsmart.es/BuildingSMART Spanish Chapter</a> es una asociación sin ánimo de lucro cuyo principal objetivo es fomentar la eficacia en el sector de la construcción a través del uso de estándares abiertos de interoperabilidad sobre BIM (Building Information Modeling) para alcanzar nuevos niveles en reducción de costes y tiempos de ejecución y aumento de la calidad. BIMcommunity <a href="http://www.bimcommunity.com">www.bimcommunity.com</a> El principal recurso que podrás encontrar en esta web es INFORMACIÓN en entorno BIM: software, aplicaciones móviles, guías, servidores BIM, libros, componentes BIM, etc. Y por supuesto, links a las principales webs que ofrecen todos estos recursos.</p>
<b>Complementary</b>	<p>bimobject <a href="http://www.bimobject.com">www.bimobject.com</a> BIM Object es una de las más potentes webs de descargas gratuitas de objetos BIM. Una vez registrado, puedes descargar todo lo que quieras. También puedes descargarte componentes BIM para ArchiCAD, Allplan, Rhinoceros, Sketchup, etc. polantis <a href="http://www.polanthis.com">www.polanthis.com</a> Polantis es una biblioteca BIM. En ella podrás encontrar multitud de objetos BIM en multitud de formatos, compatibles con los principales softwares de arquitectura actuales: Revit, Allplan, Rhinoceros, ArchiCAD, Autocad, Artlantis, Microstation, etc. Y por supuesto, en formato IFC. bimstore <a href="https://www.bimstore.co.uk/">https://www.bimstore.co.uk/</a> Es una librería BIM para Revit, además de una fábrica de objetos BIM. Bimstore Eye, su visor de realidad aumentada, te permite ver en 3D los componentes BIM de los fabricantes.</p>

## 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

Recomendacións Sostenibilidade Medio Ambiente, Persoa e Igualdade de Xénero. Ter en conta para a entrega dos traballos documentais que se realicen nesta materia: 1.1. Solicitarse en formato virtual e/ou soporte informático. 1.2. Realizarse a través do Campus Virtual, en formato dixital.

(\*)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.