Course unit title:	Building Information Modelling (BIM)		
Course unit code:	QSP435		
Type of course unit:	Compulsory		
Level of course unit:	Bachelor (1st cycle)		
Year of study:	4		
Semester when the unit is delivered:	8 (Spring)		
Number of ECTS credits allocated :	6		
Name of lecturer(s):	Dr. Christakis Onisiphorou		
Learning outcomes of the course unit:	1. Recognize the importance of virtual prototyping in construction projects. 2. Identify problems and challenges in the construction industry. 3. Analyze structural projects by applying building information modelling. 4. Implement BIM applications and evaluate the benefits for Quantity Surveying profession. 5. Assess the current state of software and their relevance for Quantity Surveying practice. 6. Practice BIM using current state of the art software.		
Mode of delivery:	Face-to-face		
Prerequisites:	None	Co-requisites:	None
Recommended optional program components:			
Course contents:	**VIRTUAL PROTOTYPING** Definition and review of current state. Components of a virtual prototype. Virtual prototyping vs. conventional engineering simulation. Future research. **INFORMATION SYSTEMS IN THE CONSTRUCTION INDUSTRY** Construction productivity and challenges. Organisation and communication in the construction industry. Drawing based information: main features and problems faced. The need for an integrated information system. **BUILDING INFORMATION MODELLING (BIM)** Definition of BIM. Examples of structural information flow. Sharing structured information. Bew-Richards 'wedge' diagram. Benefits of BIM. Case studies. **QUANTITY SURVEYING PRACTICE IN A BIM ENVIRONMENT** Application of BIM and potential benefits for quantity surveying practice. Current state and challenges. Effects on project cost planning, cost estimating, energy performance and sustainability management. **BIM SOFTWARE** Review of BIM Software and BIM-based cost estimating tools. Discussion. Presentation and use of Revit software. Main applications. BIM quantification, scheduling and cost estimating in Revit. Benefits of BIM for construction project management.		
Recommended and/or required reading:			
Textbooks:	• Eastman, C., Teicholz, P., Sacks, R., & Liston, K. (2011). *BIM Handbook: A Guide to Building Information Modeling*. New Jersey: John Wiley & Sons.		
References:	• Hardin, B. (2009). *BIM and Construction Management: Proven Tools, Methods, and Workflows*. Indianapolis: Wiley Publishing Inc. • Autodesk (2014) *Building Information Modeling for Sustainable Design.*		

	• Kymmell, W. (2008). *Building Information Modeling: Planning and Managing Construction Projects with 4D CAD and Simulations*. New York: McGraw Hill • McGraw-Hill (2010) *Green BIM. How Building Information modeling is contributing to green design and construction.* • Various scientific papers, technical reviews and RICS documents.
Planned learning activities and teaching methods:	The course is delivered through lectures using powerpoint presentations. The lectures will present to the student the course content and allow for questions. Relevant research papers are presented and discussed in class throughout the course. The learning process will be enhanced with the requirement from the student to carry in-class discussions, tackling of hypothetical scenarios and appropriate homework. Course assignments will also be undertaken for individual assessment. Besides from the notes taken by students in class, all of the course material will be made available through the class website available on the University e-learning platform. The instructor will be available to students during office hours or by appointment in order to provide necessary guidance.
Assessment methods and criteria:	• Coursework 40% • Final Exam 60%
Language of instruction:	English
Work placement(s):	No