Course unit title:	Construction Economics		
Course unit code:	QSE360		
Type of course unit:	Compulsory		
Level of course unit:	Bachelor (1st Cycle)		
Year of study:	3		
Semester when the unit is delivered:	6		
Number of ECTS credits allocated :	6		
Name of lecturer(s):	Dr. Christakis Onisiphorou		
Learning outcomes of the course unit:	1. Identify economic concepts and solve financial problems, create cash flow diagrams and perform economic calculations. 2. Evaluate single cash flows using different forms of economic analysis. 3. Assess alternatives using present worth, annual worth and rate of return analyses. 4. Implement capitalised cost analysis for civil engineering projects. 5. Apply methods of economic analyses in the construction industry. 6. Analyse financial statements and use for decision making. 7. Compute asset depreciation using various methods.		
Mode of delivery:	Face-to-face		
Prerequisites:	None	Co-requisites:	None
Recommended optional program components:			
Course contents:	**INTRODUCTION** Economic transactions. Time value of money and interest rate. Equivalence. Simple and compound interest. Cash flows and cash flow diagrams. Examples. **ECONOMY FACTORS** Single payment series. Uniform series. Gradient and Unequal Series. Combination of Series. Shifted cash flow calculations. Worked examples using mathematical equations, economics tables and Excel spreadsheets. **PRESENT WORTH ANALYSIS** Present worth analysis and evaluation of independent cash flows. Net present value. Comparison and assessment of equal-life and different-life alternatives. Extensions of present worth analysis. Examples in the construction industry. Use of spreadsheets. **ANNUAL WORTH ANALYSIS** Annual worth analysis and evaluation of independent cash flows. Capital recovery method. Comparison of alternatives with equal and different life based on annual worth. Application and examples in the construction industry. **CAPITALISED COST ANALYSIS** Applications and use of Capitalized Cost analysis in civil engineering projects. Capitalised cost analysis method and calculations. Practical examples from the construction industry. **RATE OF RETURN ANALYSIS** Rate of return definition and calculations. Application of rate of return analysis.		

	Incremental rate of return analysis. Cautions and limitations. Evaluation of mutually exclusive alternatives. **BUSINESS & ACCOUNTING FOR CONSTRUCTION** Engineering and Construction firms and companies. Types of businesses and professional practice. Understanding financial state and financial statements. Assets and Liabilities. Balance sheet, profit and loss, cash flow statements. Depreciation definition and calculation methods. Examples. **COST ESTIMATING** Cost estimating approaches. Unit method. Cost Index. Cost capacity equations. Factor method. Direct and indirect costs. Examples.
Recommended and/or required reading:	
Textbooks:	• Blank, L. & Tarquin A., *Basics of Engineering Economy*, McGraw-Hill, 2007. • Sullivan, W. G., Bontadelli, J. A. and Wicks, E. M., *Engineering Economy*, 11th ed., Prentice Hall, 2001.
References:	• de Valence, G. (ed.), *Modern Construction Economics: Theory and Application*, Spon Press, 2011. • Myers, D., *Construction Economics: a new approach*, 2nd ed., Routledge, 2008. • Peterson, S. J., *Construction Accounting and Financial Management*, Pearson Education, 2005. • Gransberg, D. G., Popescu, C. M. and Ryan, R. C., *Construction Equipment Management for Engineers, Estimators, and Owners*, CRC/Taylor & Francis, 2006.
Planned learning activities and teaching methods:	The course is delivered through theoretical lectures using powerpoint presentations and practical exercises will also be solved in class. The lectures will present to the student the course content and allow for questions. Relevant papers are presented and discussed in class where necessary. 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 through 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