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| Course unit title: | Measurement and Costing of Construction Works | | |
| Course unit code: | CEC250 | | |
| Type of course unit: | Compulsory | | |
| Level of course unit: | Bachelor | | |
| Year of study: | 2 | | |
| Semester when the unit is delivered: | 3 (Fall) | | |
| Number of ECTS credits allocated : | 5 | | |
| Name of lecturer(s): | | | |
| Learning outcomes of the course unit: | <ol style="list-style-type: none"> 1. Understand the basics of Quantity Surveying, describe the building team members and their roles and explain the purpose and relevance of the Standard Method of Measurement. 2. Analyse Bills of Quantities, their types and advantages and disadvantages and understand methods of Preparing Bills of Quantities. 3. Understand the methods of setting down dimensions for Measurement or Taking Off, apply general principles for inserting dimensions and writing descriptions. 4. Understand examples of earthworks in trench foundations and measure examples of earth or other filling material, concrete, concrete formwork and any brick work related to foundations 5. Measure external brick and block walls including fires and vents, internal walls and internal finishes, internal floors, pitched and flat roofs and covering materials. 6. Measure external windows and doors and internal doors, and internal staircase and fittings. 7. Prepare the final Bills of Quantities for simple buildings and/or other projects and understand the importance of estimating in the construction industry and different uses for estimates. 8. Analyse the general concepts of estimating and methods and tools used to estimate construction costs | | |
| Mode of delivery: | Face-to-face | | |
| Prerequisites: | | Co-requisites: | None |
| Recommended optional program components: | | | |
| Course contents: | <p>Introduction to Measurement:</p> <p>Definition of Quantity Surveying and construction team members and their roles. Basics of Quantity Surveying and Standard Methods of Measurement for Construction Works.</p> <p>Methods of Measurement and Bills of Quantities Preparation:</p> <p>Definition of the Bill of Quantities. Presentation of the main types of Bills of Quantities, trade bills and elemental bills, and their advantages and disadvantages. Methods of Measurement or Taking Off. General principles for inserting dimensions and writing descriptions. Three main methods of preparing Bills of Quantities discussed: traditional method, cut and shuffle method and computer.</p> <p>Measurement of Substructure:</p> <p>Examples of measuring trench foundations including the amount of earth to be excavated and removed from a site, earth or other filling material required, concrete, concrete formwork and any brickwork related to such foundations.</p> <p>Measurement of Superstructure:</p> <p>Examples of measuring external brick and block walls including fires and vents. Measurement of internal walls and internal finishes, internal floors, pitched and flat roofs (in timber or concrete) and covering materials, windows, doors and internal staircase and fittings</p> | | |

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| | <p>Bill of Quantities Preparation:</p> <p>Examples of preparing the final Bills of Quantities for simple buildings and/or other projects.</p> <p>Estimating Construction Costs:</p> <p>Definition of estimating and the use of the Code of Estimating Practice. Examples of estimating, analysing and evaluating construction costs using the methods available in the industry</p> |
| Recommended and/or required reading: | |
| Textbooks: | <ul style="list-style-type: none"> • S. Lee, W. Trench & A. Willis, Willis's Elements of Quantity Surveying, 10th ed., Wiley Blackwell, 2005 • I.H. Seeley, Building quantities explained, 5th ed., Palgrave Macmillan, 1998 • M. Brook, Estimating and Tendering for Construction Work, 4th ed., Butterworth-Heinemann, 2008 |
| References: | <ul style="list-style-type: none"> • Standard Method of Measurement No.7 (SMM7), The Royal Institution of Chartered Surveyors (RICS) • SMM7 Explained, P. Keily and P. McNamara, 2003 • Code of Estimating Practice, |
| Planned learning activities and teaching methods: | <p>The course will be presented through formal theoretical lectures and tutorial sessions in class. Assignments will be given to students for practicing measurement methods. The lectures will present to the student the course content and also allow time for examples, questions and discussion. Notes shall be taken by the students in class during lectures. In addition, all of the course material will be made available through the class website and also through the university's own e-learning platform. Finally, the instructor will be available to students during office hours or by appointment in order to provide any necessary tutoring.</p> |
| Assessment methods and criteria: | <ul style="list-style-type: none"> • Assignments 20% • Tests: 20% • Final Exam 60% |
| Language of instruction: | English |
| Work placement(s): | No |