Course Descriptor
[CNMN405 Building Information Modeling]

Proposed Academic Year	2017-2018	Last Reviewed Academic Year	2020-2021
Course Code	CNMN4005	Course Title	Building Information Modeling
Credit hours	3	Level of study	Undergraduate
College / Centre	College of Engineering	Department	Civil & Environmental Engineering
Co-requisites		Pre-requisites	

1.   COURSE OUTLINE

[The course will introduce students to innovative concepts and processes of Building Information Modeling (BIM) and give students practical hands on Autodesk's BIM software, Revit Architecture as used in professional applications and analysis of current and future trends in BIM design. The course will be focusing on the processes involved in developing a full 3D design object model, not for the purpose of visualization alone, but more importantly as a tool for understanding and documenting how a proposed building design fits together and how it will perform during use]

2.   AIMS

[The course will enable students to understand recent development in Building Information Modeling and be able to translate this knowledge into their own professional background. Further students will gain hands-on modelling and analysis skills and are able to use a range tools to conduct BIM modelling and analysis work as well as team collaboration practices]

3.   LEARNING OUTCOMES, TEACHING, LEARNING and ASSESSMENT METHODS

Learning Outcomes (Definitive) Upon successful completion of this course, students will be able to:	Teaching and Learning methods (Indicative)	Assessment (Indicative)
1. Understand the concepts and processes of Building Information Modelling and a wide range of BIM applications used in the architecture, engineering and construction industry	Lectures	in-class tests, quizzes
2. Confidently use Building Information Modelling systems for the design, documentation and visualization of buildings	Group work, lab work	in-class tests, quizzes, Case Study report
3. Assess the benefits of using BIM to support design collaboration and	Lectures, lab work	Class Presentation, Written Examination

	team based decision making		
4.	Explain the evolving nature of CAD technologies, particularly the current shift towards the notion of building information modelling, and the implications of that for design and documentation processes in the future	Lectures, Group work	Class Presentation, Written Examination

4.   ASSESSMENT WEIGHTING

Assessment	Percentage of final mark (%)
In Class tests	15
Quiz	15
Mid-term Examination	20
Case Study	20
Final Examination	30
TOTAL	**100%**

5.   ACHIEVING A PASS

Students will achieve 3 credit hours for this course by passing ALL of the course assessments [Assignments, Quiz, Midterm and Final examinations *] and achieving a minimum overall score of 50%

NB *Ensure that ALL learning outcomes are taken into account

6. COURSE CONTENT (Indicative)	
LECTURE TOPIC	TIME (HOURS)
Introduction to the principles of BIM	2
Introducing Revit as a BIM tool	2
User interface tour, project navigation and view creation	2
Element selection and manipulation	2
Visibility control and categorization	2
Model development methodology	2
Wall creation and manipulation	2
Floors, roofs and ceilings	2
Window, door and component use	2
System family editing	2

Basic schedules and legends	2
Geometry formation and in-place families	2
Massing tools and the building maker	2
Stairs, ramps and railings	2
Basic curtain walls	2
Room Data and Colour-Fill	2
2D draughting and annotation	2
Sheet compilation and publication	2
Basic sub-division and collaboration	2
Introduction to the principles of family editing	2
Case Study	5
TOTAL HOURS	**45**
Plus **RECOMMENDED INDEPENDENT STUDY HOURS**	**90**
TOTAL COURSE HOURS	**135**

7.   RECOMMENDED READING

Core text/s:

Phil Read, Eddy Krygiel and James Vandezande (2012) Mastering Autodesk Revit Architecture 2013, John Wiley & sons, Inc.

Yusuf Arayici (2015) Building Information Modeling-1st Edition, Bookboon.com

Library + online resources: