Module (Course Syllabus) Catalogue

2023-2024

College/ Institute	Erbil Technical Engineering College	
Department	Civil Engineering Department	
Module Name	Building Information Modelling (Revit)	
Module Code	BIM603	
Degree	Technical Diploma [ ] Bachelor [x] High Diploma [ ] Master [ ] PhD [ ]	
Semester	Third Stage – Six semester	
Qualification	B. Sc.	
Scientific Title	Engineer	
ECTS (Credits)	5	
Module type	Prerequisite [ ] Core [x] Assist. [ ]	
Weekly hours	4	
Weekly hours (Theory)	-	-
Weekly hours (Practical)	(4)hr Class	(4) Total hrs Workload
Number of Weeks	12	
Lecturer (Theory)	Dr. Aras Jalal JalyZada M. Dilveen Hassan Omar	
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Lecturer (Practical)	Dr. Aras Jalal JalyZada M. Dilveen Hassan Omar	
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Course Book

Course Description	▪ Understand BIM Basics & the Benefits ▪ Describe how BIM can be used for the whole lifecycle of the building ▪ Describe how BIM can be used in Structural engineering. ▪ Enable to create a full 3D project model that the majority of structural and architectural users need.
Course objectives	**The objective of this course is**: ▪ To teach students the concepts of Building Information Modelling ▪ To introduce tools for drawing structural and architectural plans, details and models using Revit software. ▪ To further develop skills in using computer software.
Student's obligation	**The students are required to:** ▪ Attend all the lectures and participate in the discussion and the class work; ▪ Reading and practicing on the problems given in previous lectures before attending a new one; ▪ Participate in all tests and exams.
Required Learning Materials	Data Show, Computer applications, Handout lecture notes and white board notes.

Evaluation	**Task**		**Weight (Marks)**	**Due Week**	**Relevant Learning Outcome**
	Paper Review		-	-	-
	Assignments	Homework	10	5	2,3
		Class Activity	2	10	
		Report	-	-	-
		Seminar	-	-	-
		Essay	-	-	-

	Project	8	5	3
	Quiz	8	10	2,3
	Lab.	-	-	-
	Midterm Exam	24	1	2
	Final Exam	40	1	2,3
	Total	100		
Specific Learning Outcome:	At the end of this module, students will be able to: 1. Understand the Benefits of BIM. 2. Draw and design a structural and architectural model using Revit software. 3. Draw and design a structural model using Revit software.			
Course References:	▪ BIM handbook, by Chuck Eastman. ▪ BIM framework for structural design, by Nawari O. Nawari, Michael Kuenstle. ▪ BIM planning and managing, by Willem Kymmell ▪ Autodesk Revit 2018 Structure Fundamentals – Metric: Autodesk Authorized Publisher.			

Course Topics (Theory)	**Week**	**Learning Outcome**

Practical Topics	**Week**	**Learning Outcome**
Introduction to BIM & Course book	1	1
Overview of the Interface	2	2
Basic Sketching and Modify Tools	3	2
Start a Model-based Architectural Project	4	2
Floor, Ceiling, Roof, Furniture	5	2
Stairs	6	2
Sheets, Schedules, Printing	7	1,2
Starting Structural Project (Levels, Grades)	8	3

Structural Columns, Foundations	9	3
Structural Framing, Structural Slabs, Shaft Openings	10	3
Structural Reinforcement (Slab Reinforcement)	11	3
Beam, Column, Foundation Reinforcement	12	3

Questions Example Design

Method of Evaluation:

Could include any of the following: problem solving exams, objective exams, essays, research papers, oral presentations, group projects, quizzes, homework.

Exam question:

Notes:

1) Save your solutions in: Ask your examiner.
2) Each branch has equally weight. 5*20%=100%)

Question: Draw the plans and levels as in the attached figures with the following properties for all levels:

a) Multi story concrete C25 building with all beams dimensions (350mm x 600mm) and all columns (350mm x 550mm) unless at (3-F) which is circular (Dia. 350mm) and the head of the semi-circle is square (300mm).

b) Draw the isolated footing for all columns base at the level (-4000mm) with thickness (500mm) and all sizes (1200mm x 1800mm) except at (3-F) which has (1200mm x 1200mm).

c) Draw the slab for all stories with thickness (300mm).

d) Draw the reinforcement for all foundations at the bottom with four dowels and stirrups (dia. 13 @100mm) except at the circular column which has six dowels.

e) Take a section at the foundation C-2 to show the reinforcement.

Extra notes:

We will not have time to discuss homework problems during class. This course will move quickly. We will need to cover approximately one section during each class meeting. Therefore, it is imperative that you read your textbook, as we will not be able to spend time during class on all of the material in a given section.

External Evaluator

The course program is covering all the required syllabus, contents and aspects of civil engineering drawing module. It satisfies and adequate for the third year of civil engineering department.

Asst. Prof. Dr. Bahman Omar Taha