Module (Course Syllabus) Catalogue

2023-2024

College/ Institute	Erbil Technology College	
Department	Surveying	
Module Name	Construction Surveying	
Module Code	COS303	
Semester	Second	
Credits	5	
Module type	Prerequisite [ ] Core [\] Assist. [ ]	
Weekly hours	3	
Weekly hours (Theory)	(1)hr Class	( )hr Workload
Weekly hours (Practical)	(2)hr Class	( )hr Workload
Lecturer (Theory)	Muhsin Khalid Khdir	
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Lecturer (Practical)	Dlawer	
E-Mail & Mobile NO.		

Course Book

Course Description	The lectures are divided into three weekly hours. The subject is taught based on one hour of theoretical lecture and two hours of laboratory basics. This course gives students an opportunity to improve their experience about setting out any construction projects. The Surveying Department is one of the effective departments of the technology institute; It prepares and sends hundreds of graduates to governmental and non-governmental institutions and private sector agencies. Construction surveying is the transition of construction plans into physical points on the ground that can be used as a basis for the actual construction. The result of construction surveying is seen in almost any urban, suburban, and rural setting. Almost any roadway, building, or other man-made improvement probably had some amount of construction surveying involved. Construction surveying is the transition of construction plans into physical points on the ground that can be used as a basis for the actual construction. Construction surveying is the transition of construction plans into physical points on the ground that can be used as a basis for the actual construction. Construction surveying is the transition of construction plans into physical points on the ground that can be used as a basis for the actual construction. Horizontal and vertical control is developed to create a framework around which other surveys can be adjusted. These control surveys are used for accurate mapping projects in the construction of underground utility systems, roadways, power lines, tunnels, and many other high precision projects. Gresham and Associates, Inc. incorporates a complete range of Global Positioning technology including Static GPS, Real Time Kinematic (RTK) and OPUS control to provide high precision solutions for horizontal and vertical control documentation. Total Station Operations: Total Station Field Techniques (Layout or Setting-Out Positions and Area Computation), Field Procedures for Total Stations in Topographic Surveys, Construction Layout,
Course objectives	1. To understand the roles of the various different types of personnel who are in the construction field, and be able to refer to different types of plans that may be used during the construction. 2. To practice the procedure required to ensure that the horizontal and vertical control requirement of setting out operation to be met. 3. Setting out design points on site by a number of methods including angle and distance (polar), Intersection, offsetting from base line, 3-D coordinate method and GPS.

	4. To undertake all stage setting out operation such as pipe line, building, road, etc. and applying horizontal and vertical control techniques as erecting sight, batter boards, slope rails and locating columns positions, controlling verticality, transferring heights from floor to floor and setting out bridges and culverts. 5. To ensure quality performance and accuracy in surveying methods and setting out procedures according to the specifications..
Student's obligation	• Attendance of students to the lectures • Conducting assignments • Conducting exams
Required Learning Materials	- Tutorials are prepared in the form of PowerPoint presentation by using data show. - Using white board to explain examples and offer more details.
Assessment scheme	6% Mid Term (Theory) 10% Mid Term (Practical) 4% Quiz 14% Lab Activity (report, paper, homework, seminar..) 12% Class Activity (report, paper, homework, seminar..) 14% Homework 25% final practical 15% final theory
Specific learning outcome:	After completing construction surveying courses, you will be able to: 1- Read plans and drawings 2- To put the works in their correct relative and absolute poisons. 3- To ensure that they proceed smoothly. 4- For the construction to be located correctly on sit, accurate setting out procedure must be employed: these procedures include a range of horizontal and vertical control methods and positioning techniques. 5- Design and provision of horizontal and vertical control survey networks. 6- Stake out Buildings (Family house, structure building, formwork, column position, etc). 7- Stake out routes (horizontal circular curves and transition or spiral curves, vertical curves), methods of setting the horizontal & vertical curves By (tape and offset, theodolite, total station,GNSS 8- Stake out (Sewers, canal, bridge, etc).
Course References:	1. Surveying for Engineering, 5th edition By: John Uren & Bill Price. 2. Construction Surveying and Lay Out, 5rd edition

	By: Wesley G. Crawford 3. Surveying with construction application, 5th edition By: Barry F.

Course topics (Theory & Practical)	**Week**	**Learning Outcome**
Introduction: Definition, Aims of setting out, how to read the understanding stake out drawing.	1&2	
Stake Out Buildings Family House: Structure Buildings, Formwork, Column Positions, Controlling Verticality.	3 to 5	
Stake Out Routes Elements: Horizontal circular curves and transition or spiral curves Elements: Vertical curves Methods of setting the horizontal & vertical curves By(1- Tape and offset, 2- Theodolite, 3- Total Station, 4-GNSS)	6 to 10	
Special setting out surveying's (Sewers, Canals, Bridges, Pipelines, Dams)	11 & 12	
Practical Topics	**Week**	**Learning Outcome**

Questions Example Design

Extra notes:

External Evaluator

This course book is reviewed by (Ahmad R. Abdurrahman) as he is lecturer in Surveying department in Technology College. He assessed and approved all content of the Computer Essentials subject as he admitted the course book is almost covered the several terms of Computer principles in both theoretical and practical aspects. The course can be presented in the classes for entire curriculum year.

Ahmad R. Abdurrahman
signature