

Module (Course Syllabus) Catalogue

2022-2023

College/ Institute	ERBIL TECHNOLOGY	
Department	SURVYEING	
Module Name	Application of Surveying	
Module Code	APS401	
Semester	4 th	
Credits	8	
Module type	Prerequisite <input type="checkbox"/>	Core <input type="checkbox"/> Assist. <input type="checkbox"/>
Weekly hours		
Weekly hours (Theory)	()hr Class	()hr Workload
Weekly hours (Practical)	(6)hr Class	(72)hr Workload
Lecturer (Theory)		
E-Mail & Mobile NO.	Dalshad.kareem@epu.edu.iq	
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Course Book

Course Description

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. Surveying is the art and science of taking field measurements on or near the surface of the Earth. Survey field measurements include horizontal and slope distances, vertical distances, and horizontal and vertical angles. In addition to measuring distances and angles, surveyors can measure position as given by the northing, easting, and elevation of a survey station by using satellite-positioning and remote-sensing techniques. In addition to taking measurements in the field, the surveyor can derive related distances and directions through geometric and trigonometric analysis.

Each Application of Surveying subject lessons contains the concepts and principles of each surveying works features field techniques and instruments to provide you with the background and foundation of knowledge that you need to complete the surveying field techniques lessons. You then work through real world exercises data to reinforce your understanding and provide you with practice on common tasks that other professionals are performing with Surveying II subject in the workplace every day. When you complete all courses, you will be armed with the background and knowledge to apply Surveying instruments and field techniques to your job tasks, and become more effective and productive in your job. The subject Contents are:

1. Topographic Surveys, Field procedure to calculate (Distances, Difference elevations, Elevations & Coordinates of points), prepare topographic maps.

	<ol style="list-style-type: none"> 2. Establishing Horizontal control points X, Y (Traversing) and Vertical control points (Z) by using Digital level, then adjusted by Civil 3D. 3. Subdivided land for boundary survey, parcelling in civil 3D 4. As built survey (road, boundary, buildings,) 5. Estimation of materials for several projects.
<p style="text-align: center;">Course objectives</p>	<p>Application of Surveying subject lessons contains the concepts and principles of each surveying works features field techniques and instruments to provide you with the background and foundation of knowledge that you need to complete the surveying field techniques lessons. You then work through real world exercises data to reinforce your understanding and provide you with practice on common tasks that other professionals are performing with Application of Surveying subject in the workplace every day. When you complete all courses, you will be armed with the background and knowledge to apply Surveying instruments and field techniques to your job tasks, and become more effective and productive in your job. After completing courses, you will be able to:</p> <ol style="list-style-type: none"> 1. Topographic Survey by different techniques. 2. Construction Layout Using Total Stations and GNSS 3. Preparation of surveying and related mapping specifications. 4. Calculation, reduction, and plotting (manual and computer-aided) of survey data for use in engineering design.

	<ol style="list-style-type: none"> 5. Design and provision of horizontal and vertical control survey networks. 6. Execution of as-built surveys and preparation of related maps, plans, and profiles upon completion of the project. 7. The determination of the position of the boundaries of public or private land, including national and international boundaries, and the registration of those lands with the appropriate authorities. 8. Testing and calibration of instruments and systems for the above-mentioned purposes and for other surveying purposes. 9. The general requirements of handwritten field notes with type and kind of field books.
<p>Assessment scheme</p>	<p>25% Mid Term (practical) 35% Assignment (report, paper, Quiz, homework, seminar..) 20% final practical 20% final theory</p>
<p>Specific learning outcome:</p>	<p>After completing Surveying II courses, you will be able to:</p> <ol style="list-style-type: none"> 1- Topographic Survey by Stadia method. 2- Topographic Survey by Total Station techniques. 3- Topographic Survey by GNSS techniques. 4- Construction Layout Using Total Stations. 5- Construction Layout Using GNSS. 6- Preparation of surveying and related mapping specifications. 7. Calculation, reduction, and plotting (manual and computer-aided) of survey data for use in engineering design. 8. Design and provision of horizontal and vertical control survey networks. 9. Execution of as-built surveys and preparation of related maps, plans, and profiles upon completion of the project. 10. The determination of the position of the boundaries of

	<p>public or private land, including national and international boundaries, and the registration of those lands with the appropriate authorities.</p> <p>11. Testing and calibration of instruments and systems for the above- mentioned purposes and for other surveying purposes.</p> <p>12. The general requirements of handwritten field notes with type and kind of field books.</p>	
Course References:	<p>1. Chandra, Surveying Problem Solving with Theory Objective Type Questions, 2005 Ed.</p> <p>2. David A. Madsen, Civil Drafting Technology, 6th Ed.</p> <p>3. Kavanagh, Barry F. Surveying with construction applications _7th Ed.</p> <p>4. Mathias Lemmens, Geo-information, 2011.</p> <p>5. Paul R. Wolf, Charles D. Ghilani, Elementary surveying: an introduction to geomatics _ 13th Ed.</p> <p>6. R. Sathikumar & N. Madhu, Advanced Surveying: Total Station, GIS and Remote Sensing, 2010.</p> <p>7. Schofield, W. (Wilfred) Engineering surveying _6th Ed.</p>	
Course topics (Practical)	Week	Learning Outcome
Topographic Survey by different techniques. (Control map)	2	
Establishing Horizontal control points X, Y (Traversing) and Vertical control points (Z) by using Digital level, then adjusted by Civil 3D.	2	
Subdivided land for boundary survey, parceling in civil 3D	2	

As built survey (road, boundary, buildings,)	2	
Estimation of materials for several projects.	2	
Calculation, reduction, and plotting (manual and computer-aided) of survey data for use in engineering design.	2	
Questions Example Design		
Extra notes:		
External Evaluator		