Module (Course Syllabus) Catalogue

2023-2024

College/ Institute	Erbil Technical Engineering College	
Department	Highway Engineering Department	
Module Name	Engineering Survey-II	
Module Code	ENS401	
Degree	Technical Diploma ☐ Bachelor ✓ High Diploma ☐ Master ☐ PhD ☐	
Semester	Fourth	
Qualification	MSc. Civil and Survey Engineering	
Scientific Title	Ass. Lecturer	
ECTS (Credits)	7 ECTS	
Module type	Prerequisite ☐ Core ✓ Assist. ☐	
Weekly hours	5	
Weekly hours (Theory)	(2)hr Class	(80)Total hrs Workload
Weekly hours (Practical)	(3)hr Class	(50)Total hrs Workload
Number of Weeks	12	
Lecturer (Theory)	Razhan Sherwan M.Saleem	
E-Mail & Mobile NO.	Razhan.M.Saleem@epu.edu.Iq	
Lecturer (Practical)	Razhan Sherwan M.Saleem	
E-Mail & Mobile NO.		
Websites	https://moodle.epu.edu.iq/my/	

Course Book

<table>
<tr><td>Course Description</td><td colspan="5">Engineering Survey is an important disciplinary field that serves construction projects. The knowledge and skills that you will learn in this module will enable you to be able to work as an engineering surveyor, providing ground information for construction projects. You will also learn about angle measurements and using total station instrument.</td></tr>
<tr><td>Course objectives</td><td colspan="5">1. Getting an experience of angle measurements
2. Be familiar and get an experience with various methods of conducting surveying by Total station instrument.
3. Practice and conduct field measurements.
4. Setting out conducted data.
5. Setting out horizontal and vertical curves.</td></tr>
<tr><td>Student's obligation</td><td colspan="5">1. Class starts on time.NO entry after 15 minutes late.
2. Writing a report every week after practical lecture and submit it next week.
3. Quiz is expectable every week.
4. Participation in problem solving and class activities
5. Doing homework
6. Conducting projects
7. Presenting seminars
8. All students must bring all necessary tools for the lecture.</td></tr>
<tr><td>Required Learning Materials</td><td colspan="5">1. All lectures by PowerPoint.
2. Notes and questions are explained on white board.
3. Videos will be played during the lectures.
4. Direct questions to Students.</td></tr>
<tr><td rowspan="4">Evaluation</td><td colspan="2">Task</td><td>Weight (Marks)</td><td>Due Week</td><td>Relevant Learning Outcome</td></tr>
<tr><td colspan="2">Paper Review</td><td></td><td></td><td></td></tr>
<tr><td rowspan="2">Assignments</td><td>Homework</td><td>5%</td><td>Depending on activity given</td><td>Each activity will give storm braining and additional knowledge to the subject</td></tr>
<tr><td>Class Activity</td><td>2%</td><td></td><td></td></tr>
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		Reports	10%		
		Seminar			
		Essay			
		Project			
	Quiz		8%		
	Lab.		10%		
	Midterm Exam (Theory)		10%		
	Midterm Exam (Practical)		15%		
	Final Exam (Theory)		20%		
	Final Exam (Practical)		20%		
	Total		100%		

Specific learning outcome:	1. Students Learn how to use survey instruments (Total station). 2. You will learn conduct data on the earth survey 3. How to design horizontal alignment 4. How to set out designed curve(horizontal& Vertical), 5. How to use directions and coordinates
Course References:	1. Plan and Geodetic Surveying by late David Clark 2. Surveying By Frances H. Moffit 3. Surveying And Leveling by T.P. Kanetkar Engineering Surveying (6th Edition) by Schofield W. & Breach M. 4. Surveying Principles and Application (6th Edition) by Barry F. Kavanagh

Course topics (Theory)	**Week**	**Learning Outcome**
Basic Principles of angle measurement	1	Learning basics of angles in surveying
Theodolite and angle Measurement	2	How to measure a angle by theodolite
Traversing	3	Computation of angles and directions.
Total Station	4	Basic Principles on total station.

Components of Total Station & Types of total station	5	Different type of total station
Applications of Total station	6	The use of total station
Coordinates I	7	The principles of local and global coordinates
Coordinates II	8	Map projections
Horizontal curves	9	How to set out circular curve
Vertical Curves	10	How to set out Vertical curve
Practical Topics	**Week**	**Learning Outcome**
Theodolite	1	Angle Measurement
Total station	2	The parts and components of total station
Set Up total station	3	Levelling and centering of total station
Applications of total station	4	Measure distance, angle area and height by total station
Coordinate measurement by Total station	5	Measuring coordinates by total station
Data Collection by Total Station	6-7	Collect Survey points by Total Station
Setting out By Total Station	8	Set out designed data by total station
Setting out Horizontal Curve	9	
Setting out Vertical Curve	10	

Questions Example Design

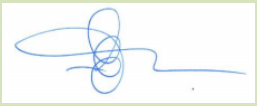
Will be handed out to students

Extra notes:

Students can access online resources and academic papers to acquire additional information, clarification, and supplementary examples.

External Evaluator

As an Assistant lecturer at Highway Department, I have revised the course-book regarding the subject of Engineering Surveying-2. I found that the course-book has described well enough the aim and objectives of the subject. Moreover, it covers all the required syllabus and contents of the course and describes satisfactorily the aspects related to the course.



Ali Jamal Nouri

Assistant Lecturer/Highway Engineering Department