

Course Description ENGINEERING SURVEYING

This description provides a brief summary of the most important characteristics of the course and the expected learning outcomes, indicating the maximum benefit from the provided learning methods. Those methods must be linked to the program description.

1. Educational Institution	University of Warith Al-Anbiyaa
2. Department / Center	CIVIL
3. Course Name/ Level	Engineering survey / second stage
4. Lecturer name:	Lect. YASIR NEAMAH
5. Teaching Methods	Theoretical and Practical Classes
6. Year/semester	2023-2024(SEMESTER System)
7. Number of teaching hours	50 hrs. (theoretical) + 30 hrs. (practical)
8. The date the description preparation	1/09/2023
9. Course objectives is to help students to:	
	a) a. Helping the student understand the nature of surveying devices and their uses. b) B. Helping the student understand the processes of quantitative surveying of materials. c) T. Helping the student understand the types of cadastral problems that he may encounter on the site and how to solve them.

10. Course outcomes and the teaching, learning and assessment methods.

A. Cognitive goals: the student has to be able to:

- 1- The student should mention, for example, quantitative surveying methods.
- 2- The student should know the difference between scanning methods and their special devices.

B. Acquired skills from the course

- 1- With an in-depth understanding of scanning operations.**
- 2- By understanding the practical and scientific applications of surveying devices**

C. Teaching and Learning methods

- C1. Classic theoretical classes.**
- C2. Practical classes and experimental measurements using laboratory equipment.**
- C3. E-learning**
- C3. Discussion and responding to students' questions.**

D. Evaluation Methods

- 1- Daily oral questions.**
- 2- Discussion and dialogue with students**
- 3- Attendance**
- 4- Bi-monthly oral exams.**
- 5- Monthly written tests.**
- 6- Semester exam (first + second)**

E. Disciplinary Objectives: Students have to learn:

- 1- The student's attendance at the lecture from the beginning.**
- 2- The student listens to the lecture and pays attention to what information is mentioned in it.**
- 3- The student must remain calm and interact with the lecture by paying attention and answering the teacher's questions.**
- 4- That the student believes in the importance of studying the engineering surveying subject and its great impact on his specialization.**

F. General and Qualifying Skills.

- 1- The student acquires important information about the subject of engineering surveying.**
- 2- The student's knowledge of the relationship of the topics of this subject with other subjects.**
- 3- The student's knowledge of the applied aspects of the subject topics.**
- 4- The student acquires knowledge of using different sources for subject topics.**

Course structure: (The theoretical part)

Notes	Subtitles	headline	week
	Theodolite, its parts, types and uses	Theodolite	1
			3-2
	direction Angles	Directions and angles	6-4
	❖ ? Polygons ❖ ? Correcting and locking polygons	Polygons	8-7
	❖ ? Horizontal ground control surveys	❖ ? Horizontal ground control surveys	11-9
	? Forward intersection and backward intersection, forward calculations and backward calculations	❖ ? Forward intersection and backward intersection, forward calculations and backward calculations	12
	Route serving	Route serving	14-13
	❖ ? Vertical curves	? Vertical curves	15
	❖ ? Simple horizontal curves	? Simple horizontal curves	17-16
	❖ ? Projection of horizontal curves	? Projection of horizontal curves	21-18
	❖ ? Types of transition curves and their characteristics	? Types of transition curves and their characteristics	23-22
	❖ ? Calculations of transition curves	? Calculations of transition curves	25-24
	❖ ? Projection of transition curves	? Projection of transition curves	28-26
	Vertical horizontal curves	Vertical horizontal curves	30-29

Sources and references

Engineering Surveying	1- Required prescribed books
Dr. Daoud Juma	2- Main references (sources)

Engineering Surveying

2- Recommended books and references (scientific journals, reports,.....)

3- -Electronic references, Internet sites...

Course development plan

- 1- Updating the material by no more than 20%, including:
- 2- -1Adding some devices to the curriculum.
- 3- -2Writing an electronic training package on the university's e-learning website for the surveying course, based on the course vocabulary.

The practical side

Subject vocabulary	week
introduction	1
Surveying devices	3-2
Theodolite device	4
Measuring horizontal angles	5
Verticality	7-6
Theodolite, its installation, and reading about it	9-8
Types of angles	11-10
Vectors	14-12
Coordinates	15
Errors and their correction	16
Distribution of correction percentages	17-18
Find the corrected coordinates	19-20
Analysis of horizontal and vertical arcs and curves	21-22