Course Description Form

1. Course Name:
Alteration and Leveling of land
2. Course Code:
ALLA236
3. Semester / Year:
2nd Semester /
4. Description Preparation Date:
1 / 2 / 2025
5. Available Attendance Forms:
Attendance
6. Number of Credit Hours (Total) / Number of Units (Total)
2 Theory + 3 practical / 3.5 units
7. Course administrator's name (mention all, if more than one name)
Name: Dr. Haees Sayel Jarjes Email: haees_sayel@uomosul.edu.iq Name: Hamid Ibrahim

8. Course Objectives

Theory : -Preparing agricultural cadres capable of dealing with the problems of land settleme and modification, especially the problems resulting from meanders, undulations, rise and fall, digging and backfilling . -Preparing qualified agricultural cadres to use scientific programs that contribute to removing plant materials from their roots, because their presence negatively affects t construction work subsequent to the level process, as the presence of these materials or backfilling on top of them leads to the la of the filled surface after a period of time. - Follow up on the performance of graduat in fields and lands and the extent to which graduates' specifications match the needs projects and the extent of implementation and application of what has been studied i the field of work.	Practical : Enabling the student to practically address the problems of la settlement and modification Preparing qualified cadres to use scientific programs and following up on the performance of graduates in fields and lands and the extent to which graduate specifications match the needs of projects and the extent of implementing and applying what has been studied in the field work.

9. Teaching and Learning Strategies

Strategy	-Interactive lecture -Brainstorming -Dialogue and discussion - Assigning tasks and reporting

10. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2Theory 3 Pract.	Theory: a1 Learns about concept settlement and l modification - w is the level - num - north point - ot definitions. Practical: a11 Familiar w general definitic including normalization methods for find relative relationsh between the heig of different points	Theory: The concept of settlement and adjustment - settlemer tables practical : General definitions include normalization methods for finding relative relationships between the heights o different points	Theory : In-person lectures Practical : In-person lectures w field visits	Discussions and interaction in the lect and a short test
2	2Theory 3 Pract	Theory: A2 is familiar with drawing natural longitudinal sectic practical : b3 Apply how to find levels using the sight line height method	Theory: Drawing natural longitudinal sections practical : Finding levels using height of sight line	Theory : In-person lectures Practical : In-person lectures w field visits	Quotes and interacti in the lecture Short test
3	2Theory 3 Pract	Theory: a 4 Learn about drawing design longitudinal sectic practical: b4 Apply how to fi levels using the ris and fall method	Theory: Drawing design longitudinal sections practical : Finding levels using method of rise and fall	Theory : In-person lectures Practical : In-person lectures w field visits	Short test Direct drawing
4	2Theory 3 Pract	Theory: c1 Backfill is calculated from longitudinal sectic practical : c4 Draw normal longitudinal sectic	Theory: Methods of calculating excavation and backfilling from longitudinal sections practical : Drawing natural longitudinal sections	Theory : In-person lectures w field visits Practical : In-person lectures w field visits	Field evaluation Direct drawing

5	2Theory 3 Pract	Theory: a6,c2 Identify cros sections and calculate earthwo practical : C5 draws the desi longitudinal sectic	Theory: Cross sections and earthwork calculation practical : Drawing design longitudinal sections	Theory : In-person lectures w field visits Practical : In-person lectures w field visits	Short test Direct drawing
6	2Theory 3 Pract	Theory: a 6 Understands what grid settleme is practical : c6 Calculates excavation and backfilling from longitudinal sectic	Theory: Soil building practical : Estimation of calcium carbonate in the soil	Theory : In-person lectures w field visits Practical : In-person lectures w field visits	rt test Direct drawing
7	2Theory 3 Pract	Theory: a 7 compares the first and second cases of grid regularization practical : C7 Draws cross- sections and methods of earthwork calculations there	Theory: soil temperature practical : determination carbonates bicarbonates in the soil	Theory : In-person lectures w field visits Practical : In-person lectures w field visits	Short test Direct drawing
8	2Theory 3 Pract	Theory: a9 Explains grid leveling - the seco case, the triangle method and the th case practical : C8 applies the squ method in grid leveling	Theory: Grid settlement - the second case is the triangle method - the third case is excavatio and backfilling at the same time practical : The method of square grid leveling	Theory : In-person lectures w field visits Practical : In-person lectures w field visits	Short test Direct drawing
9	2Theory 3 Pract	Theory: a3Determines the contour lines - the contour interval - factors on which t choice of the cont interval depends - the specifications the contour lines practical : a11 Learn about g	Theory: Contour lines - the contour interval - the factors on which the choice of the contour interval depends - specifications of the contour lines Grid leveling - the sec practical : case, the method	Theory : In-person lectures w field visits Practical : In-person lectures w field visits	Short test Direct drawing

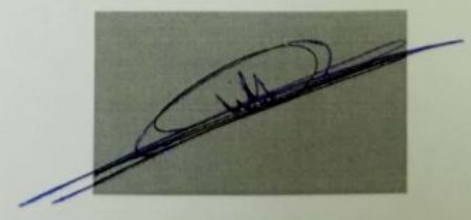
		leveling - the seco case, the triangle method - contour lines	triangles - contour line		
10	2Theory 3 Pract	Theory: b1 will work and draw the contour lines in the direct way practical : a12 Familiarizes with the specifications of contour lines	Theory: Preparing contour ma first the direct method practical : Specifications of cont lines	Theory : In-person lectures w field visits Practical : In-person lectures w field visits	Short test Direct drawing
11	2Theory 3 Pract	Theory: b2 is used and dra contour lines indirectly practical : d1 means prepar contour lines - direct method	Theory: Preparing contour ma second, the indirect method practical : Preparing contour lin the direct method	Theory : In-person lectures w field visits Practical : In-person lectures w field visits	Short test Direct drawing
12	2Theory 3 Pract	Theory: a8 It is suggested t pad contour lines practical : d2 is used to prep contour lines - indirect method	Theory: Filling contour lines practical : Preparation of cont lines - indirect method	Theory : In-person lectures w field visits Practical : In-person lectures w field visits	Short test Direct drawing
13	2Theory 3 Pract	Theory: e1 justifies paddin of contour lines practical : b5 Applies the Contour Lines - Fi Contour Lines sett	Theory: Uses and benefits of contour lines practical : Setting up contour lin filling contour lines	Theory : In-person lectures w field visits Practical : In-person lectures w field visits	Short test Direct drawing
14	2Theory 3 Pract	Theory: c3 Draw contour maps practical : d3,b6 uses and applies contour li	Theory: Contour mapping with homogeneous gradien Calculating normalization from contour lines Practical:: Applications and uses contour lines practical	Theory : In-person lectures w field visits Practical : In-person lectures w field visits	Short test Direct drawing
15	2Theory 3 Pract	Theory: A10 Learn how to evacuate lands for	Theory: Evacuating lands for th purposes of leveling a	Theory : In-person lectures w field visits	Semester exam 2, f exam

		the purposes of settlement work practical : a13 Learn about leveling and adjustment equipment - bulldozers - scrap - graders - graders	leveling - leveling and leveling equipment - bulldozers - scrapers - graders - graders Practical: Leveling and adjustme equipment - bulldozer scrapers - graders - graders practical :	Practical : In-person lectures w field visits	

11. Course Evaluation				
	Evaluation Methods	Evaluation Date	Degree	Relative weight %
	Final report theory + pract. Report	Theory 15 weeks Pract. 1-15 week	7 Theory + 6 pract.	% 13
	Short exam (1)	Week (3)	4 Theory + 2 pract.	% 6
	Half exam (theory + pract.)	Week (9)	10 Theory + 5 pract.	% 15
	Short exam (2)	Week (12)	4 Theory + 2 pract.	% 6
	Final exam (practical)	Exam pract.	20	% 20
	Final exam (theory)	Exam theory	40	% 40
			100	% 100

12. Learning and Teaching Resources	
Required textbooks (curricular books, if any	
Main references (sources)	Principles of plane space and topographic Surveying by Riyadh Saleh Al-Khafaf Muhji Book - Dar Al-Kutub for Printing and Publishing - University of Mosul 2000
Recommended books and references (scientific journals, reports...)	The book Principles of Plane Surveying and Topograp written by Dr. Mahmoud Hosni Dr.. Muhammad Rashad Al-Din - Knowledge Establishment
Electronic References, Websites	https://www.geographyknowledge.com/2017/09/Principl of-plane-and-topography-surveying.html

جامعة الموصل
كلية الزراعة والغابات
قسم علوم التربة والموارد المائية



مدرس المادة النظري : د. هايس صايل جرجيس Dr. Haees Sayel Jarjes

رئيس قسم التربة والموارد المائية
أ.م. د خالد أنور خالد

رئيس اللجنة العلمية : د. عبدالقادر عبش سباك