

1. Course Name:	
Surveying	
2. Course Code:	
CIV21205	
3. Semester / Year:	
Semester	
4. Description Preparation Date:	
1-9-2025	
5. Available Attendance Forms:	
Weekly (Theory: 2hours, Practically: 2 hours)	
6. Number of Credit Hours (Total) / Number of Units (Total)	
ECTS/5	
7. Course administrator's name (mention all, if more than one name)	
Name: Dr. Adil N. Abed	
Email: adil.abed@muc.edu.iq	
8. Course Objectives	
Course Objectives	1. Understand Fundamental Surveying Principles 2. Perform Basic and Advanced Field Measurements 3. Apply Surveying Methods to Real-World Projects 4. Analyze and Adjust Survey Data 5. Use Modern Surveying Technologies 6. Produce Survey Maps, Plans, and Reports 7. Work Professionally and Ethically
9. Teaching and Learning Strategies	

Strategy	- Introduction to Surveying and Geomatics Engineering: Categories of Surveying, Types of Surveys, Brief History of Surveying, Definition of Geomatics, Direct and indirect observations, Errors and Mistak Precision and accuracy - Units of Measurement: Standards of Measurement, Length, Area, Volume, Angle - Map Elements: Definition of a map, Purpose of a map, Latitude and Longitude, Hemispheres, Compass, Scale, Map Legends, Scale and Distance, Large Scale & Small Scale - Distance Measurement: Methods of linear measurements: #, Taping Accessories, Taping Procedures, Sources of error in taping, Other Uses of the Tape, Problems on obstacles in Taping (4 hrs.). - Levelling: Principle of Levelling, leveling methods, Kinds of Levels, Level components, Field Work, Basic definitions, Methods of Reducing Levels - Some Types of Levelling: Differential leveling, Check levelling, Profile leveling, Curvature & Refraction Correction, Two Peg Test, Contouring - grid method - Solving additional problems: - 2 monthly exams
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1. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
Week 1	Th.:2 Pr.: 2	Introduction to Surveying and Geomatics Engineering	Introduction to Surveying and Geomatics Engineering Categories of Surveying, Types of Surveys, Brief History of Surveying, Definition of Geomatics,	Lect. & Lab.	Exam H.W Report
Week 2	Th.:2 Pr.: 2	Units of Measurement	Units of Measurement Standards of Measurement, Length, Area, Volume, Angle (4 hrs.).	Lect. & Lab.	Quiz H.W report
Week 3	Th.:2 Pr.: 2	Continue: Units of Measurement (i.e., solving problems)	Units of Measurement Standards of Measurement, Length, Area, Volume, Angle (4 hrs.).	Lect. & Lab.	Homework route selecti

Week 4	Th.:2 Pr.: 2	Map scale., solving problems	Scale, Map Legends, Scale and Distance, Large Scale & Small Scale (4 hrs.).	Lect. & Lab.	Exam report
Week 5	Th.:2 Pr.: 2	Distance Measurement	linear measurements: Taping Accessories, Taping Procedures, Sources of error in taping, Other Uses of the Tape, Problems on obstacles in Taping	Lect. & Lab.	Quiz
Week 6	Th.:2 Pr.: 2	Continue: Distance Measurement (solving problems)	Electronic Measurements and .laser.	Lect. & Lab.	H.W report
Week 7	Th.:2 Pr.: 2	Levelling	Principle of Levelling, leveling methods, Kind of Levels, Level components, Field Work Basic definitions, Methods of Reducing Levels	Lect. & Lab.	Exam
Week 8	Th.:2 Pr.: 2	Continue: Levelling (i.e., solving problems)	Differential leveling, Check levelling, Profile leveling, Curvature & Refraction Correction, Two Peg Test, Contouring - grid method	Lect. & Lab.	Quiz H.W report
Week 9	Th.:2 Pr.: 2	Types of Levelling	Reciprocal Levelling,	Lect. & Lab.	Exam
Week 10	Th.:2 Pr.: 2	Continue: Types of Levelling (solving problems)	Inverted Levelling	Lect. & Lab.	H.W report
Week 11	Th.:2 Pr.: 2	Areas and volumes	Areas of regular figure	Lect. & Lab.	Quiz
Week 12	Th.:2 Pr.: 2	Continue: Areas and volumes	Mean ordinate method Trapezoidal method Simpsons method	Lect. & Lab.	Homework
Week 13	Th.:2 Pr.: 2	Areas and volumes Solving problems	Simpsons rule for volume	Lect. & Lab.	Exam
Week 14	Th.:2 Pr.: 2		Midterm Exam	Lect. & Lab.	Quiz
Week 15	Th.:2 Pr.: 2	Preparatory week before the final Exam		Lect. & Lab.	report

2. Course Evaluation

The grade distribution is as follows:

Assessment: Formative 40 marks, Monthly exam 10 marks

Final exam: Theory 40 marks, Practical 10 marks

3. Learning and Teaching Resources

Required textbooks (curricular books any)	Elementary Surveying An Introduction Geomatics Thirteenth Edition CHARLES D. GHILANI, PAUL R. WOLF
Main references (sources)	Surveying for engineers 5th edition John Uren, Bill Price.
Recommended books and references (scientific journals, reports...)	Journal of Surveying Engineering (ASCE) Journal of Spatial Science Geomatics (MDPI, Open-Access)
Electronic References, Websites	FIG - International Federation of Surveyors

Course Description Form