نموذج وصف المقرر

1. اسم المقرر	
المساحة 2	
2. رمز المقرر	
3. الفصل / السنة	
4. تاريخ إعداد هذا الوصف	
2024/4/29	
5. أشكال الحضور المتاحة	
6. عدد الساعات الدراسية (الكلي)/ عدد الوحدات (الكلي)	
عدد الساعات الدراسية (الكلي)/ 120	
7. اسم مسؤول المقرر الدراسي (اذا اكثر من اسم يذكر)	
الاسم: **مخلد علاء حسين جاسم جونى**	
8. اهداف المقرر	
اهداف المادة الدراسية	• تعريف الطالب بالأساسيات والأغراض والحسابات المطلوبة للمساحة التطبيقية وتأهيله لاستخدام الأجهزة المساحية بأنواعها في تصميم وتنفيذ مشاريع الهندسة المدنية
9. استراتيجيات التعليم والتعلم	
الاستراتيجية	أ -الأهداف المعرفية : أن يكون الطالب قارا على إن: 1- يتعرف الطالب على الادوات المستخدمة في هندسة المساحة 2 -يتعرف الطالب على الاخطاء اليدوية في قياس المسافات -3يتعرف الطالب على كيفية حساب الحجوم الترابية للحفر والردم -4يتعرف الطالب على قياس الزوايا والاتجاهات طرائق التقييم ب - الأهداف المهاراتية الخاصة بالمقرر :أن يكون الطالب قارا على ان: 1-يكتسب الطالب معرفة الادوات المستخدمة في هندسة المساحة 2-يكتسب الطالب معرفة الاخطاء اليدوية في قياس المسافات 3-يكتسب الطالب معرفة كيفية حساب الحجوم الترابية للحفر والردم 4-يكتسب الطالب معرفة قياس الزوايا والاتجاهات
10. بنية المقرر	

الأسبوع	الساعات	مخرجات التعلم المطلوبة	اسم الوحدة / أو الموضوع	طريقة التعليم	طريقة التقييم
1	1 نظري+ عملي3	يفهم الطالب الموضوع	THEODOLITE , PRINCIPLE OF CONSTRUCTION measuring horizontal angles	حضوري	حضور + امتحانات+ واجبات صفية
2	=	=	MEASURING horizontal ANGLES measuring vertical angles	=	=
3	=	=	MEASURING ANGLES IN VERTICAL PLANE construct close connected	=	=
4	=	=	DIRECTIONS ,WHOLE CIRCLE BEARING close circle traverses to survey small area	=	=
5	=	=	REDUCE BEARING computations of the coordinates of stations traverse	=	=
6	=	=	TRAVER SURVEYS , BEARINGS ,FORWARD &BACK BEARING traverse plotting a traverse	=	=
7	=	=	CLOSE CIRCLE TRAVERSE , COORDINATES CALCULATIONS problems in inverse computation	=	=
8	=	=	CLOSE CONNECTED TRAVERSE,COORDINATES CALCULATIONS measuring H. distances by using tachometer	=	=
9	=	=	TACHEOMETRY ,STADIA TACHEOMETRY ,INCLINED SIGHTS measuring vertical distances by using theodolite with sub tense _bar	=	=

=	=	ELECTROMAGNETIC DISTANCE MEASUREMENT (EDM),BASIC CONCEPT, SYSTEMS Measuring slope ,horizontal vertical distances by using EDM instrument .	=	=	10
=	=	TOTAL STATION ,FIELD TECHNIQUES, POINT LOCATION,MISSING LINE MEASUREMENTS			11
=	=	RESECTION,AZIMUTH, ELEVATION,LAYOUT POSITIONS AND AREA COMPUTATION measuring area by using total station	=	=	12
=	=	MOTORIZED TOTAL STATIONS,AUTOMATIC, REMOTE CONTROR, COMPUTERIZED solve problems ,standard deviation	=	=	13
=	=	HORIZONTAL CURVS KINDS,COMPUTATIONS setting out curves &calculation	=	=	14
=	=	HORIZONTAL CURVS KINDS,COMPUTATIONS setting out curves &calculation	=	=	15
=	=	VERTICAL CURVES,KINDS, COMPUTATIONS setting out small building& roadway	=	=	16
=	=	SETTING OUT CONSTRUCTION , SMALL& LARGE BUILDING practical problems in tunnel surveying	=	=	17
=	=	**BALANCING THERMAL FURNACES Practical problems in**	=	=	18

		hydrographic surveying			
=	=	TUNNEL SURVEYING **Practical problems in hydrographic surveying**	=	=	19
=	=	ARIAL PHOTOGRAMMETRIC SURVEYING Applying exercises in computer lab	=	=	20
=	=	PHOTOGRAMMETRIC TRADITIONAL SURVEYING Applying exercises in computer lab	=	=	21
=	=	PHOTOGRAMMETRIC INSTRUMENTS& FLIGHT DESIGN Applying exercises in computer lab	=	=	22
=	=	GLOBAL POSITIONING SYSTEM(GPS) Applying measuring on arial photographs by using plotters such as wild b & s	=	=	23
=	=	FIELD MEASUREMENTS BY USING TOTAL STATION AND CALCULATION FOR CERTAIN PROJECT Field measurements or lab calculation for certain project	=	=	24
=	=	GEOGRAPHIC INFORMATION SYSTEM (GIS) Applying measuring on arial photographs by using plotters such as wild b & s	=	=	25

=	=	FIELD MEASUREMENTS BY USING TOTAL STATION AND CALCULATION FOR CERTAIN PROJECT Field measurements or lab calculation for certain project	=	=	26
=	=	FIELD MEASUREMENTS BY USING TOTAL STATION AND CALCULATION FOR CERTAIN PROJECT Field measurements or lab calculation for certain project	=	=	27
=	=	Field Measurements By Using Total Station And Calculation For Certain Project Field Measurements Or Lab Calculation For Certain Project	=	=	28
=	=	Field Measurements By Using Total Station And Calculation For Certain Project Field Measurements Or Lab Calculation For Certain Project	=	=	29
=	=	Field Measurements By Using Total Station And Calculation For Certain Project Field Measurements Or Lab Calculation For Certain Project	=	=	30

11. تقييم المقرر

توزيع الدرجة من 100 على وفق المهام المكلف بها الطالب مثل التحضير اليومي والامتحانات اليومية والشفوية والشهرية والتحريرية والتقارير .... الخ

12. مصادر التعلم والتدريس	
الكتب المقررة المطلوبة (المنهجية أن وجدت)	كتاب المساحة / ياسين عبيد احمد
المراجع الرئيسة (المصادر)	1- Elementary Surveying an introduction (2 المصادر) الرئيسية المراجع Geometrics by Charles D. Ghilani . Paul R. Wolf/Thirteen Edition 2012 2- Springer Handbook of Geographic Information Kresse Danko (Eds)and Springer-Verlag Berlin Heidelberg 2012 3- Planning Surveying/Fawzi Al-Khalis.
الكتب والمراجع الساندة التي يوصى بها (المجلات العلمية، التقارير....)	المجلات العلمية في الاختصاص
المراجع الإلكترونية ، مواقع الانترنيت	الانترنت

Course Description Form

13. Course Name:
Engineering surveying
14. Course Code:
15. Semester / Year:
2024−2023
16. Description Preparation Date:
Introducing the fundamentals, purposes & the required calculations of the applied surveying to t

students as well as qualifying him to use the different kinds of surveying instruments in design execution of civil engineering projects
17. Available Attendance Forms:
2024/4/29
18. Number of Credit Hours (Total) / Number of Units (Total)
Number of Credit Hours (Total) /120
19. Course administrator's name (mention all, if more than one name)
Name: Mokhalad Alaa Email:
20. Course Objectives

Course Objectives	Introducing the fundamentals, purposes & the required calculations of the applied surveying to th students as well as qualifying him to use the differen kinds of surveying instruments in design & executio of civil engineering projects

21. Teaching and Learning Strategies	
Strategy	A- Cognitive objectives: The student should be able to: A1- The student learns about the tools used in surveying engineering A2- The student recognizes manual errors in measuring distances A3- The student learns how to calculate the dirt volumes for excavation and backfilling A4- The student learns about measuring angles and directions. Evaluation methods B - Skills objectives for the course: The student should be able to: B1- The studen acquires knowledge of the tools used in surveying engineering B2- The student acquires knowledge of manual err in measuring distances B 3- The student acquires knowledge of how to calculate dirt volumes for excavation and backfilling B4- The student acquires knowledge of measuring angles and directions

22. Course Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	2+3	. The student understands the topic	THEODOLITE , PRINCIPLE OF CONSTRUCTION measuring horizontal angles	In presence	presence+ Exams + class assignments
2	=	=	MEASURING horizontal ANGLES measuring vertical angles	=	=
3	=	=	MEASURING ANGLES IN VERTICAL PLANE construct close connected	=	=
4	=	=	DIRECTIONS ,WHOLE CIRCLE	=	=
			BEARING close circle traverses to survey small area		
5	=	=	REDUCE BEARING computations of the coordinates of stations traverse	=	=
6	=	=	TRAVER SURVEYS , BEARINGS ,FORWARD &BACK BEARING traverse plotting a traverse	=	=
7	=	=	CLOSE CIRCLE TRAVERSE , COORDINATES CALCULATIONS problems in inverse computation	=	=
8	=	=	CLOSE CONNECTED TRAVERSE,COORDINATES CALCULATIONS measuring H. distances by using tachometer	=	=

9	=	=	TACHEOMETRY ,STADIA TACHEOMETRY ,INCLINED SIGHTS measuring vertical distances by using theodolite with sub tense _bar	=	=
10	=	=	ELECTROMAGNETIC DISTANCE MEASUREMENT (EDM),BASIC CONCEPT, SYSTEMS Measuring slope ,horizontal	=	=
11			TOTAL STATION ,FIELD TECHNIQUES, POINT LOCATION,MISSING LINE MEASUREMENTS vertical distances by using EDM instrument	=	=

12	=	=	RESECTION,AZIMUTH, ELEVATION,LAYOUT POSITIONS AND AREA COMPUTATION measuring area by using total station	=	=
13	=	=	MOTORIZED TOTAL STATIONS,AUTOMATIC, REMOTE CONTROR, COMPUTERIZED solve problems ,standard deviation	=	=
14	=	=	HORIZONTAL CURVS KINDS,COMPUTATIONS setting out curves &calculation	=	=

15	=	Students' attendance in the classroom along with PDFs to benefit from in understanding and comprehending the 3ds Max program.	HORIZONTAL CURVES KINDS, COMPUTATIONS Curves field work surveying	In presence	presence+ Exams + class assignments
16	=	=	VERTICAL CURVES,KINDS, COMPUTATIONS setting out small building& roadway	=	=
17	=	=	VERTICAL CURVES,KINDS, COMPUTATIONS setting out small building & roadway	=	=
18	=	=	SETTING OUT CONSTRUCTION , SMALL& LARGE BUILDING practical problems in tunnel surveying	=	=
19	=	=	**BALANCING THERMAL FURNACES**	=	=

			Practical problems in hydrographic surveying		
20	=	=	TUNNEL SURVEYING **Practical problems in hydrographic surveying**	=	=
21	=	=	ARIAL PHOTOGRAMMETRIC SURVEYING Applying exercises in computer lab	=	=

22	=	=	PHOTOGRAMMETRIC TRADITIONAL SURVEYING Applying exercises in computer lab	=	=
23	=	=	PHOTOGRAMMETRIC INSTRUMENTS& FLIGHT DESIGN Applying exercises in computer lab	=	=
24	=	=	COMPUTER PROGRAMS basic measurements of photograph using pocket stereo-scope	=	=
25	=	=	GLOBAL POSITIONING SYSTEM(GPS) using mirror stereoscope	=	=
26	=	=	GLOBAL POSITIONING SYSTEM(GPS) Applying measuring on arial photographs by using plotters such as wild b & s	=	=
27	=	=	GLOBAL POSITIONING SYSTEM(GPS) Applying measuring on arial photographs by using plotters such as wild b & s	=	=
28	=	=	FIELD MEASUREMENTS BY	=	=

			USING TOTAL STATION AND CALCULATION FOR CERTAIN PROJECT Field measurements or lab calculation for certain project		

29	=	=	FIELD MEASUREMENTS BY USING TOTAL STATION AND CALCULATION FOR CERTAIN PROJECT Field measurements or lab calculation for certain project	=	=
30	=	=	FIELD MEASUREMENTS BY USING TOTAL STATION AND CALCULATION FOR CERTAIN PROJECT Field measurements or lab calculation for certain project	=	=

23. Course Evaluation

احمد عبيد ياسين / المساحة كتاب

24. Learning and Teaching Resources

Required textbooks (curricular books, if any)	1- Elementary Surveying an introduction (2 Geometrics by Charles D. Ghilani . Paul R. Wolf/Thirteen Edition 2012 2- Springer Handbook of Geographic Information Kresse Danko (Eds)and Springer-Verlag Berlin Heidelberg 2012 3- Planning Surveying/Fawzi Al-Khalis.
Main references (sources)	الاختصاص في العلمية المجلات
Recommended books and references (scientific journals, reports...)	الانترنت
Electronic References, Websites	Comprehensive educational books for Autodesk programs are available in virtual libraries, on th internet, and through educational videos.