

Republic of Iraq
Ministry of Higher Education & Scientific Research
Supervision and Scientific Evaluation Directorate
Quality Assurance and Academic Accreditation

Academic Program Specification Form For The Academic

University: Middle Technical
College : Technical Kut
Department : Surveying Techniques

Date Of Form Completion : / /

Dean's Name

Dr. mahdi farhan

Date : / /

الاستاذ الدكتور
مهدي فرحان بليتر
عميد المعهد التقني - كوت

Dean's Assistant For
Scientific Affairs

Dr. Khalied yassen zakair

Date : / /

Signature

KW

Head of Department

Hussein Hafudh Humaysh

Date : / /

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Hussein Hafudh Humaysh

Quality Assurance And University Performance Manager

Date : / /

Signature



TEMPLATE FOR PROGRAMME SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

PROGRAMME SPECIFICATION

This Programme Specification provides a concise summary of the main features of the programme and the learning outcomes that a typical student might reasonably be expected to achieve and demonstrate if he/she takes full advantage of the learning opportunities that are provided. It is supported by a specification for each course that contributes to the programme.

1. Teaching Institution	Central Technical University - Technical Institute Cote
2. University Department/Centre	Surveying Technologies Department
3. Programme Title	Diploma in Accounting / accounting department techniques techniques
4. Title of Final Award	Technical Diploma
5. Modes of Attendance offered	Semester first and second for the academic year 2020-2021
6. Accreditation	Global accounting standards Almndmat
7. Other external influences	The views of experts in the corresponding foreign universities Sectional
8. Date of production/revision of this specification	2021/6/1
9. Aims of the Programme	
<p>.Introduce the student to the most important foundations and principles of surveying Preparing graduates to work in the public and private sectors, characterized by high skill in the use of instrumentation, theodolite and total station. It includes laboratories: ground survey - aerial survey - geological laboratory. Map lab • Qualifying the student to obtain a technical diploma in surveying techniques, enabling him to work in the public and private sectors as a surveyor</p>	
10. Learning Outcomes, Teaching, Learning and Assessment Methods	

A. Knowledge and Understanding

- . A1- To know the most important principles and concepts of space.
- A 2- To identify the main functions of the surveyor.
- A 3- To explain the concepts of space
- A4- To apply the concepts of space with real examples and case studies.
- A 5- To analyze the validity of survey theories with practical reality.
- To A 6- express his opinion in terms of cadastral concepts

B. Subject-specific skills

- . B 1 - Interaction skills: Possessing the ability to communicate with the subject's professor and colleagues.
- B 2 - Diagnostic skills: the ability to diagnose spatial theories and their realistic applications.
- B 3 - Analytical skills: the ability to analyze cadastral concepts and the relationships between them.

Teaching and learning methods

- 1 - lectures.
- 2 - discussion and dialogue.
- 3 - Questions enrichment.
- 4 - direct questioning.

Assessment methods

- 1 - questions of right and wrong.
- 2 - multiple choice questions
- 3 - questions clarifications.
- 4 - duties.
- 5 - self-assessment.
- 6 - tests (monthly, quarterly, and the final).

C. Thinking Skills

- C1. Put forward new ideas on the subject by the student and provide the subject and give solutions.
- C2. Differentiate between the problems and explains and analyzes the phenomena and problems.
- C3. Simple thinking (the ability to examine and assess the topics).
- C4 Critical thinking: (the ability to critique and highlight topics and test them).
- C5. Creative thinking (the ability to produce new accounting ideas).

Teaching and Learning Methods

- 1 - Using the method of lecture and active participation of the students.
- 2 - Use the style of question and answer and form working groups to resolve accounting problems.
- 3 - student participation in the presentation of ideas for cases of accounting and

develop solutions to them.

Assessment methods

- 1 - a variety of tests (daily, monthly, quarterly, final)
- 2 - oral tests.
- 3 - Duties.
- 4 - graduation projects.

D. General and Transferable Skills (other skills relevant to employability and personal development)

- D1. The use of references and terminology skills.
- D2. Skills in data on the subject collection and analysis.
- D3. Collection and analysis of Abianat accounting concepts and how to use them in organizations skills.
- D4. Training and personal development on how to apply accounting concepts in various fields skills.
- D5 - The preparation of the appropriate accounting concepts for use in various fields skills.

Teaching and Learning Methods

- 1 -Use the direct method of lecture and discussion.
- 2 -Use the style of question and answer.
- 3 -Specialized reports through electronic accounting (online)

Assessment Methods

- 1 - Questions of objectivity and are divided into: a multi-test questions or questions of right and wrong and the interview questions.
- 2 - self-assessment and evaluation of the colleague.
- 3 - tests include:
 - A - achievement tests associated with the structural plans and teaching.
 - B - Final achievement tests include:
 - Final monthly tests at the end of each month semester.
 - Final tests quarterly end of the semester.
 - Final final tests at the end of the school year.

11. Programme Structure

Level/Year	Course or Module Code	Course or Module Title	Credit Rating	
first		Surveying	4	6
first		Aerial Photogrammetry	2	3
first		Mathematics and Spherical Trigonometry -	2	—

first		remote sensing 2 -	2	
first		Earth's surface science 1 -	1	-
first		Calculators	2	2
first		Quantitative Survey -	2	-
first		Workshop -		3
second		Human rights and democracy	2	-
second		surveying	2	6
second		Digital Photogrammetry 2 2	2	2
second		Map Technology	2	3
second		Engineering and cadastral survey	2	3
second		Computer Applications	-	3
second		Geographical information systems and ground control technologies 1 3	1	3
second		Project -	-	2

12. Awards and Credits

- 1 - Use of references and terminology skills.
- 2 - skills in data collection and analysis on topics.
- 3 - skills to exploit the available potential.
- 4 - skills make comparisons on the subject.
- 5 - skills to prepare own concepts on the subject.
- 6 - Students get Aladaoualozivi skills.

13. Personal Development Planning

- 1 - a central through User Acceptance issued by the Ministry of Higher Education and Scientific Research.

2 - direct submission through the presentation evening for the study.

14. Admission criteria .

- scientific department .
- Register
- Instructor

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW



استمارة وصف المقرر



د. محمد عبد الحميد (المادة / ا.م.ع.) صالح سليمان كنانة

د. حسن المنقر / د. حواء المعاصم



استمارة وصف المقرر



د. محمد عبد الحميد (المادة / ا.م.ع.) صالح سليمان كنانة

د. حسن المنقر / د. حواء المعاصم

Objective / The aim of the study of surveying is for the student to understand the basics of flat area and to find the relationship between the location of points near or above the surface of the earth and to be able to measure the horizontal and vertical distances of the observed target and measure directions. As well as conducting mathematical calculations to find the real measurements of distances, angles, and elevations, and calculate areas and volumes from field data, and the student obtains information in drawing maps that show the longitudinal and transverse sections of roads and channels, preparing contour maps, as well as calculating the coordinates of the locations of the ground points in order to sign them on paper with a specific drawing scale

Course outcomes, methods of teaching, learning, and assessment

- 1- Teaching the student the components of the calculator, studying the Windows 7 operating system, and getting to know the commands and windows of the system.
- 2- Teaching the student to write and prepare texts in Word 2010
- 3- Teaching the student to create tables, manage graphic objects and geometric shapes, and deal with databases in Excel 2010.
- 4- Teaching the student to prepare slides for text and graphic shapes, and to prepare an interactive presentation of the slides in the Power Point 2010 program.
- 5- Teaching the student to use the Auto CAD 2010 drawing program and familiarize himself with the program's interface, drawing and modification commands, writing commands, adding dimensions, slicing and creating layer

B - Skills of the objectives of the course

B1- To be able to design map

B2- To be able to calculate areas. positionin

B3 - Providing consultancy for strategic engineering project

Teaching and learning methods

1- The substantive questions and are divided into: multiple choice questions or end-of-year questions

2- Self-evaluation and evaluation of the colleague

3- The tests include

A - constructive achievement tests accompanying the teaching plan

b- Final achievement tests and include

***Monthly final exams at the end of each academic month**

***Semester final exams at the end of a semester**

***Final exams at the end of the academic year**

Evaluation method

1- Using achievement tests

-Daily

-Monthly

-Quarterly

Final-

Emotional and value goals

C1 - Presenting new ideas on the topic by the student

C2 - The student's ability to evaluate the topic and provide solution

C 3 - differentiate between problems

C4 - Explains and analyzes phenomena and problems

Teaching and learning method

Use the presentation and presentation method

Draw illustrations

Brainstorming method

Transferred general and qualifying skills (other skills related to employability and personal development

1-Skills of using references and terminolog

2- Skills in collecting and analyzing data on the subject

3- the skills of exploiting the available capabilities

4- Skills of making comparisons on the topic

Week	Vocabulary	Hours	Required Learning Outcomes	Week Unit Name/Subject	Method of Teaching	Method of Assessment
1-	Introduction to surveying and its definition and a summary of the various works provided by the survey departments (planar space, geodesic survey) and the definition of each. Explanation of the two	5	The practical part is getting to know the Instruments used	Introduction to surveying and the most	Blended education	electronic

	<i>hypotheses of planar and geodesic space, types of space according to the uses and purposes they provide (topographical surveying), cadastral, pictorial, aquatic, road surveying</i>					
2-	<i>Units of measurement (units of length, area, volume) in the metric systems (French) and feet (English) Conversion from one unit to another within the same system, conversion from one system to another, measuring angles in the sexagesimal, percentile and radial systems and conversion from one system to another Calculation of the area With the real estate registration system (dunams, oles, meters</i>		<i>The practical part is practical exercises for converting between measurement systems,</i>	<i>longitudinal units of measurement, and angle measurement system</i>	<i>Blended education</i>	<i>electronic</i>
3-	<i>Drawing scale, its types (the numerical scale with its two types, the fractional geometric representation). Converting from geometric to fractional form and vice versa Graphic scale (simple graphic scale, comparative linear scale, grid scale) Explanation of the design of the schematic scale, choosing the scale according to the type of survey, calculating the appropriate scale for the drawing and the unknown scale in several way</i>	5	<i>The practical part is practical exercises for how to draw the scale and determine the readings on the</i>	<i>scale</i>	<i>Blended education</i>	<i>electronic</i>
4-	<i>Measuring the distance on flat ground (flat and uneven), field measurement accuracy (relative accuracy), design accuracy), choosing the measurement method according to the required accuracy represented in a table (from the textbook). The distance in terms of other measured side</i>	5	<i>The practical part is practical and practical exercises for measuring distances on flat ground.</i>	<i>Measuring distances</i>	<i>Blended education</i>	<i>electronic</i>

5-	<i>Measurement of distance on inclined ground (regularly inclined, irregularly inclined, diagonal correction to the horizontal when the slope is in significance (angle of elevation or depression, difference in level between</i>	5	<i>The practical part is practical and practical exercises for measuring distances on an inclined ground.</i>	<i>Measuring distances</i>	<i>Blended education</i>	<i>electronic</i>
6	<i>Some engineering operations that take place during the tape measure, including erecting columns from points on the itinerary, lowering columns from external points of the itinerary, and setting the parallel to the itinerary.</i>	5	<i>The practical part is practical and practical exercises for setting up and The practical</i>	<i>dropping columns Setting up and dropping columns</i>	<i>Blended education</i>	<i>electronic</i>
7	<i>potential obstacles while measuring distance: 1- Orientation obstacles Not seeing the start and end from a midpoint. 2- Measurement obstacles (when the wrap is around the extended girder). 3- Obstacles to orientation and measurement.</i>	5	<i>part is practical and practical exercises for measuring distances in the presence of an</i>	<i>obstacle</i>	<i>Blended education</i>	<i>electronic</i>
8	<i>Erase the details of the area (polygon and padding) using the tape, draw the polygon (distribution of the locking line accepted by the tactile and mathematical method, drawing the details on the corrected polygon).</i>	5	<i>The practical part is practical and practical exercises for the tape</i>	<i>offset</i>	<i>Blended education</i>	<i>electronic</i>
9	<i>Leveling, definitions of basic terms (flat line, flat surface, horizontal line, comparison level, mean sea level, level, leveling number, and its types, differential phenomenon, clarification of the target image, line of sight, optical axis, line of application, plumb line, height Leveling device, level difference, back reading, forward reading, midpoint reading, turning or turning point, other necessary definitions, types of leveling, direct</i>	5	<i>The practical part is the leveling devices, their types and their leveling parts</i>	<i>leveling</i>	<i>Blended education</i>	<i>electronic</i>

	<i>leveling (by tape or by leveling device.</i>					
10	<i>Purpose of leveling, degrees of accuracy, leveling device, types, parts, setting up leveling device, types of leveling rulers, reading the leveling ruler, calculating the ratio difference between two points, calculating the level of an unknown point in terms of a known point, settlement methods, differential method, its definition, steps Work, calculation methods (method of finish height).</i>	5	<i>The practical part is practical and practical exercises for calculating the levels of points</i>	<i>leveling</i>	<i>Blended education</i>	<i>electronic</i>
11	<i>Completion of calculation methods (the method of rise and fall), comparison between them, settlement table, arithmetic investigation of the table, possible errors in the settlement process, methods of checking field work (finishing the settlement process on the starting point of work, ending the settlement process on another known point).</i>	5	<i>The practical part is practical and practical exercises for calculating the levels of points</i>	<i>leveling</i>	<i>Blended education</i>	<i>electronic</i>
12	<i>Vertical closing error, the permissible error, correction of the levels of the vertical closing error in proportion to the distance of the rotation point from the start, the effect of the sphericity of the earth and refraction on the reading of the ruler, checking the validity of the device to work by the wedge method.</i>	5	<i>The practical part is practical and practical exercises to calculate the levels and find the error</i>	<i>leveling</i>	<i>Blended education</i>	<i>electronic</i>
13	<i>1- Longitudinal and transverse sections, their definition, purpose, how they work in the field, designation of stations at regular and irregular distances, longitudinal section leveling, leveling table, for longitudinal and</i>	5	<i>The practical part is practical and practical exercises for drawing longitudinal sections</i>	<i>leveling</i>	<i>Blended education</i>	<i>electronic</i>

	<i>cross section, arithmetic investigation, field work and correction, measurement of cross section levels, construction line adjustment calculation, Side slopes, drawing the longitudinal section on which the construction line is installed.</i>					
14	<i>Drawing the section and calculating the cross-sectional area (calculating the volumes between identical stations (sections) using the mean of the two bases (as for the volumes between transformation stations, they are calculated by the pyramid law).</i>	5	<i>The practical part is practical and practical exercises to find the volumes of excavation and backfilling</i>	<i>leveling</i>	<i>Blended education</i>	<i>electronic</i>
15	<i>1- Contour period) Factors affecting the selection of the contour period, giving a table showing the relationship between the purpose and scale of preparing the map on the other hand and the contour period on the other hand, and a table showing the relationship of measurements and the contour period to the nature of the land</i>	5	<i>The practical part is practical exercises for contour maps</i>	<i>leveling</i>	<i>Blended education</i>	<i>electronic</i>
16	<i>1- Preparing the contour map by the indirect method (the square grid method, the radial method) and drawing the contour lines by the (arithmetic method, the estimation method).</i>	5	<i>The practical part is practical and practical exercises for contour mapping</i>	<i>leveling</i>	<i>Blended education</i>	<i>electronic</i>
17	<i>1- Theodolite devices and to identify its main parts and the function of each part, learn how to read the horizontal and vertical circles and record them in the field book.</i>	5	<i>The practical part is to identify the theodolite devices.</i>	<i>Theodolite device</i>	<i>Blended education</i>	<i>electronic</i>
18	<i>1- How to read and calculate the vertical angles and the marginal error (the inference or pointer error)</i>	5	<i>The practical part is practical and practical exercises on how to read on</i>	<i>vertical angle theodolite</i>	<i>Blended education</i>	<i>electronic</i>

	<i>and clarify the locations that benefit from it</i>		<i>the</i>			
19	<i>Learn the types of north (real, magnetic, virtual) and calculate the directions of the sides through the angles observed in the field.</i>	5	<i>The practical part is practical and practical exercises for observing the horizontal angles</i>	<i>horizontal angles</i>	<i>Blended education</i>	<i>electronic</i>
20	<i>The student learned the methods of observing the horizontal angles.</i>	5	<i>The practical part is practical and practical exercises for travers</i>	<i>travers</i>	<i>Blended education</i>	<i>electronic</i>
21	<i>Polygon types, usage and degrees (classification) with ribbing field work and angle types used in closed round polygons.</i>	5	<i>The practical part is practical and practical exercises for travers</i>	<i>travers</i>	<i>Blended education</i>	<i>electronic</i>
22	<i>(Closed Loop Trav., Closed Connected Trav.).</i>	5	<i>The practical part is practical and practical exercises for travers</i>	<i>travers</i>	<i>Blended education</i>	<i>electronic</i>
23	<i>Making corrections for angles of various kinds in closed circular polygons and calculating correct directions through them.</i>	5	<i>The practical part is practical and practical exercises for correcting rib angles</i>	<i>travers</i>	<i>Blended education</i>	<i>electronic</i>
24	<i>1- Calculation of horizontal and vertical components in closed round polygons and methods for their correction (compass and transit) (Compass Rule & Transit Rule).</i>	5	<i>The practical part is practical and practical exercises for calculating horizontal and vertical ribbing component</i>	<i>travers</i>	<i>Blended education</i>	<i>electronic</i>
25	<i>forward and reverse calculations for point positions.</i>	5	<i>The practical part is practical and practical exercises for the frontal accounts, the forward computation</i>	<i>forward computation</i>	<i>Blended education</i>	<i>electronic</i>
26	<i>Calculating coordinates (point locations) using corrected horizontal and vertical components and correcting coordinates using horizontal and vertical components that have a closing error in the compass and transit</i>	5	<i>The practical part is practical and practical exercises for calculating the coordinates</i>	<i>coordinates</i>	<i>Blended education</i>	<i>electronic</i>

	<i>methods.</i>					
27	1- The student learned how to select the points of a Connected Traverse and observe all angles (right and inflection angles).	5	The practical part is practical and practical exercises for selecting ribbing points	travers	Blended education	electronic
28	1- Learn how to correct the angles of a connecting polygon in two ways: Deflection angle - angle to the right	5	The practical part is practical and practical exercises for correcting rib angles		Blended education	electronic
29	1- Calculations Students learn how to perform a closed link polygon (horizontal and vertical components) and calculate coordinates	5	The practical part is practical and practical exercises of the closed-link	travers	Blended education	electronic
30	1- Making corrections in the compass and transit methods, how to overcome (correct) the locking error, and how to draw the closed link polygon.	5	The practical part is practical exercises on ribbing lock error	travers	Blended education	electronic

1- Required prescribed books	1- Rymond E .davis Joe Wkelly. Elementary plan surveying 2- Singh , Narindr Surveying _Tata MC Graw – Hill publishing Company limited – New Delhi 1982 3- زياد عبد الجبار البكر ، إبراهيم داود علوان المساحة العملي. 4- رزان ابراهيم 2011، اصول المساحة عمان –مكتبة المجتمع. 5- يوسف صيام 2001، المساحة – كلية الهندسة الجامعة الاردنية. 6- ياسين عبيد احمد 1990 المساحة الهندسية – كلية الهندسة جامعة البهو.
2- Main references (sources)	
Recommended books and references (.... ,(scientific journals, reports	
...B electronic references, websites	

Course Development Plan

Participation in various courses related to the subject

- 2See the latest developments in modern technology in this article
- 3The number of courses that develop the ability of trainers in the laboratory to be able to train students more efficiently.
- 4Providing laboratories with modern equipment that keeps pace with scientific development in developed countries.

The rapporteur described the name of the teacher of the subject

A.M. Awad Ali Saher

The goal is to be able to "identify the foundations and principles of remote sensing, identify sources of remote sensing information, identify the basic principles in correcting errors and distortions in space data and then analyze and interpret space data."

Educational Institution	Central Technical University - Technical Institute Kut
Scientific Department / Center	Space Technologies Department
Name/code decision	Remote sensing
Available attendance forms	Mandatory
Season/Year	First and second semester of the 2021-2020 academic year
Number of school hours (total)	(60) 2 hours per week
The date of preparation of this description	1/6/2021
Course goals: The student at the end of the school year will be able to	
1. Interpretation of space images	
2. Digital map production	
3. Use Erdas Digital Software & GIS	
4. The ability to analyze space images	
The work of your aerial mosaic and the classification of space images	

9. Course outputs and teaching, learning and evaluation methods

A- Knowledge objectives make the student able to access the paragraphs of the scientific curriculum through a variety of electronic presentation and urge him to quote the cognitive matters corresponding to the scientific material through the use of different methods of electronic presentation published in electronic sources on the Internet.

The course's skills objectives. The ability to deal with scientific material such as space images, interpret, categorize, isolate ground covers, improve space images and use digital software to process space images through the use of Erdas digital software.

Teaching and learning methods

- 1- Objective questions are divided into: multiple selection questions, right and wrong questions, or comparison questions 2 - self-assessment and colleague evaluation. 3- Tests include: A - structural collection tests accompanying teaching plans. B- Final collection tests include: monthly final tests at the end of each academic month. Quarterly final tests at the end of a semester. Final final tests at the end of the school year.

Evaluation methods

1 – Use of collection tests: final monthly monthly daily

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C- Emotional and value goals 1 - Introducing new ideas on the subject by the student. 2- The ability of the student to evaluate the subject and give solutions. 3- Tests between problems. 4- Explains and analyzes phenomena and problems.

Teaching and learning methods

- 1- Use the presentation and presentation method.
- 2- Drawing illustrations.
- 3- The method of brainstorming.

D. Transferred general and skills (other skills related to employability and personal development). 1- Skills to use references and terms. 2- Skills in collecting and analyzing data on the subject. 3- Skills to exploit the available potential. 4- Skills of conducting readings on the subject 5- Skills of preparing special concepts on the subject.

The week	Hours	Unit name/subject	Required learning outcomes	The way you teach	Evaluation method
1	2	Blood in remote sensing includes a history of remote sensing science, definition of remote sensing	<ol style="list-style-type: none"> 1. Interpretation of space images 2. Digital map production 3. Use Erdas Digital Software & GIS 4. The ability to analyze space images 5 Work air budget and classification of space images 	Learn online + my presence	Electronic correction + electronic evaluation through paperwork and electronic tests
2-3	2	The basic elements of the remote sensing system include the source of electromagnetic radiation (electromagnetic energy, electromagnetic spectrum), radiation transmission path (dispersion, absorption and access), monitored target, sensor	<ol style="list-style-type: none"> 1. Interpretation of space images 2. Digital map production 3. Use Erdas Digital Software & GIS 4. The ability to analyze space images 5 Work air budget and classification of space images 	Learn online + my presence	Electronic correction + electronic evaluation through paperwork and electronic tests
4	2	Digital image components	<ol style="list-style-type: none"> 1. Interpretation of space images 2. Digital map production 	Learn online + my presence	Electronic correction + electronic evaluation through paperwork and

			<p>3. Use Erdas Digital Software & GIS</p> <p>4. The ability to analyze space images</p> <p>5 Work air budget and classification of space images</p>		<p>electronic tests</p>
5-6	2	<p>Sources of information in remote sensing, first: photographic sources include (regular films white and black, infrared movies white and black, regular colored movies, near-red colored movies, multispectral images)</p>	<p>1. Interpretation of space images</p> <p>2. Digital map production</p> <p>3. Use Erdas Digital Software & GIS</p> <p>4. The ability to analyze space images</p> <p>5 Work air budget and classification of space images</p>	<p>Learn online + my presence</p>	<p>Electronic correction + electronic evaluation through paperwork and electronic tests</p>
7-9	2	<p>Sources of information in remote sensing, II: non-photographic sources include aerial means (multispectral pickup, infrared thermal linear pickup, microwave sensors). Space means (manned space means, unmanned space means)</p>	<p>1. Interpretation of space images</p> <p>2. Digital map production</p> <p>3. Use Erdas Digital Software & GIS</p> <p>4. The ability to analyze space images</p> <p>5 Work air budget and</p>	<p>Learn online + my presence</p>	<p>Electronic correction + electronic evaluation through paperwork and electronic tests</p>

			classification of space images		
10-11	2	Some of the terms used in remote sensing (resolution discriminatory accuracy), (spatial coverage), (satellite orbits), (accuracy control validity))	<ol style="list-style-type: none"> 1. Interpretation of space images 2. Digital map production 3. Use Erdas Digital Software & GIS 4. The ability to analyze space images 5 Work air budget and classification of space images 	Learn online + my presence	Electronic correction + electronic evaluation through paperwork and electronic tests
12-13	2	Satellite satellites include satellites (IKONOS, QUICK BIRD, NOAA, SPOT-5, LANDSAT-7) and future satellites	<ol style="list-style-type: none"> 1. Interpretation of space images 2. Digital map production 3. Use Erdas Digital Software & GIS 4. The ability to analyze space images 5 Work air budget and classification of space images 	Learn online + my presence	Electronic correction + electronic evaluation through paperwork and electronic tests
14-16	2	Preliminary processing of space data includes 1 Geometric correction engineering patch 2 Remove radiometric correction radiation deformities 3 Noise removal noise removal	<ol style="list-style-type: none"> 1. Interpretation of space images 2. Digital map production 	Learn online + my presence	Electronic correction + electronic evaluation through paperwork and

			<p>3. Use Erdas Digital Software & GIS</p> <p>4. The ability to analyze space images</p> <p>5 Work air budget and classification of space images</p>		<p>electronic tests</p>
17-18	2	<p>Image Enhancement Space Data Improvement</p>	<p>1. Interpretation of space images</p> <p>2. Digital map production</p> <p>3. Use Erdas Digital Software & GIS</p> <p>4. The ability to analyze space images</p> <p>5 Work air budget and classification of space images</p>	<p>Learn online + my presence</p>	<p>Electronic correction + electronic evaluation through paperwork and electronic tests</p>
19-20	2	<p>Image Merging and Image Mosaic integration</p>	<p>1. Interpretation of space images</p> <p>2. Digital map production</p> <p>3. Use Erdas Digital Software & GIS</p> <p>4. The ability to analyze space images</p> <p>5 Work air budget and</p>	<p>Learn online + my presence</p>	<p>Electronic correction + electronic evaluation through paperwork and electronic tests</p>

			classification of space images		
21	2	Image interpretation and analysis includes traditional analysis and interpretation: size, shape, color degree, style, shade, time per day and year, position, fabric	<ol style="list-style-type: none"> 1. Interpretation of space images 2. Digital map production 3. Use Erdas Digital Software & GIS 4. The ability to analyze space images 5 Work air budget and classification of space images 	Learn online + my presence	Electronic correction + electronic evaluation through paperwork and electronic tests
22-23	2	What do some phenomena look like on images (terrain, rocks and soils, natural plants, agricultural crops, transportation, cities and urban areas, archaeological sites)	<ol style="list-style-type: none"> 1. Interpretation of space images 2. Digital map production 3. Use Erdas Digital Software & GIS 4. The ability to analyze space images 5 Work air budget and classification of space images 	Learn online + my presence	Electronic correction + electronic evaluation through paperwork and electronic tests
24-25	2	Analysis and automated interpretation: includes <ol style="list-style-type: none"> 1 Supervised classification observer rating 2 Unsupervised classification 	<ol style="list-style-type: none"> 1. Interpretation of space images 2. Digital map production 	Learn online + my presence	Electronic correction + electronic evaluation through paperwork and

			<p>3. Use Erdas Digital Software & GIS</p> <p>4. The ability to analyze space images</p> <p>5 Work air budget and classification of space images</p>		<p>electronic tests</p>
26-27	2	<p>Various applications in remote sensing:</p> <p>1 Urban applications: include (detailed mapping of cities, study of traffic and parking, planning and distribution of parks and parks, study of land use, urban sprawl and direction, study of industrial complexes)</p>	<p>1. Interpretation of space images</p> <p>2. Digital map production</p> <p>3. Use Erdas Digital Software & GIS</p> <p>4. The ability to analyze space images</p> <p>5 Work air budget and classification of space images</p>	<p>Learn online + my presence</p>	<p>Electronic correction + electronic evaluation through paperwork and electronic tests</p>
28	2	<p>2 Agricultural applications: include (study of the types of agriculture and crops, study of natural plants, study of plant diseases)</p>	<p>1. Interpretation of space images</p> <p>2. Digital map production</p> <p>3. Use Erdas Digital Software & GIS</p> <p>4. The ability to analyze space images</p> <p>5 Work air budget and</p>	<p>Learn online + my presence</p>	<p>Electronic correction + electronic evaluation through paperwork and electronic tests</p>

			classification of space images		
29	2	3 Military applications: include (intelligence and enemy control, pilot training)	<ol style="list-style-type: none"> 1. Interpretation of space images 2. Digital map production 3. Use Erdas Digital Software & GIS 4. The ability to analyze space images 5 Work air budget and classification of space images 	Learn online + my presence	Electronic correction + electronic evaluation through paperwork and electronic tests
30	2	Other applications: (Study of environmental pollution, study of natural disasters)	<ol style="list-style-type: none"> 1. Interpretation of space images 2. Digital map production 3. Use Erdas Digital Software & GIS 4. The ability to analyze space images 5 Work air budget and classification of space images 	Learn online + my presence	Electronic correction + electronic evaluation through paperwork and electronic tests

1 Required textbooks	.
2 Main references (sources)	<p>1 Murad Al-Sheikh, Makram Anwar, (1991), "Remote Allergy Science", Technical Institutes Authority, Ministry of Higher Education and Scientific Research, Iraq.</p> <p>2 Dagestani, Nabil Sobhi, (2003), "Remote Sensing and Application", Balqa University.</p> <p>3. Swain , P.f Davis S.M. , (1978) " Remote sensing the Quantities approach " ,New York .</p> <p>4. Sabin's , F.F.Jr. (1987), " Remote sensing Principles and Interpretation " ,2nd Ed. , New York .</p> <p>5.Lillesand , T.M. & Kiefer , R.W. (2000) , " Remote sensing and Image Interpretation " , 4th ed , New York .</p>
Recommended books and references (scientific journals, reports,....)	Juma Daoud Remote Allergy Gate
B Electronic references, websites....	USGS Geological Survey

10 Course Development Plan

The rapporteur described the name of the teacher of the subject

A.M. Awad Ali Saher

The goal is to be able to identify the principles of graphic aerial survey and types of aerial images and cameras and find the scale of aerial images of their types and the composition of the stereoscopic model and calculate the levels of the earth landmarks.

Educational Institution	Central Technical University - Technical Institute Kut
Scientific Department / Center	Space Technologies Department
Name/code decision	Pictorial aerial survey
Available attendance forms	Mandatory
Season/Year	First and second semester of the 2021-2020 academic year
Number of school hours (total)	(120) study hours (4) hours per week
The date of preparation of this description	1/6/2021

Course goals: The student at the end of the school year will be able to

- 1. Interpretation of aerial images**
- 2. Production of topographical maps**
- 3. Use optical stereoscopic devices**
- 4. Learn about drawing metrics**

Airline production

9. Course outputs and teaching, learning and evaluation methods

Cognitive goals

Make the student able to access the paragraphs of the scientific curriculum through a variety of electronic presentation and urge him to quote the cognitive matters corresponding to the scientific material by using the different methods of electronic presentation published in electronic sources on the Internet.

The course's skills objectives.

The ability to deal with scientific material such as aerial images and interpretation, to develop airlines, to create plans for field work of the flight plan, to find different drawing measures of maps produced from aerial images and to measure the height of beams through the use of optical devices to interpret aerial images and the use of digital software to process space and aerial images.

Teaching and learning methods

- 1- Objective questions are divided into: multiple selection questions or questions of right and wrong or comparative questions
- 2- Self-assessment and colleague evaluation.
- 3- Tests include:
 - A- Structural collection tests accompanying teaching plans.
 - B- Final collection tests include:
 - Monthly final tests at the end of each academic month.
 - Quarterly final tests at the end of a semester.
 - Final final tests at the end of the school year.

Evaluation methods

- 1- Use of collection tests:
 - Daily
 - Monthly
 - Quarterly
 - Final

C- Emotional and value goals

- 1- Introducing new ideas about the subject by the student.
- 2- The ability of the student to evaluate the subject and give solutions.
- 3- Differentiates between problems.
- 4- Explains and analyzes phenomena and problems.

Teaching and learning methods

- 1- Use the presentation and presentation method.
- 2- Drawing illustrations.
- 3- The method of brainstorming.

General skills and rehabilitation transferred (other skills related to employability and personal development).

- 1- Skills to use references and terms.
- 2- Skills in collecting and analyzing data on the subject.
- 3- Skills to exploit the available potential.
- 4- Skills of conducting readings on the subject
- 5- Skills to prepare special concepts on the subject.

The week	Hours	Unit name/subject	Required learning outcomes	The way you teach	Evaluation method
1	4	A brief history of the history of aerial surveying and sensitivity to dimension, its development and its uses at present and the relationship of aerial surveying to sense of dimension, types of catchers and types of images .	<ol style="list-style-type: none"> 1. Interpretation of aerial images 2. Production of topographical maps 3. Use optical stereoscopic devices 4. Learn about drawing metrics 5 Airline production 	Learn online + my presence	Electronic correction + electronic evaluation through paperwork and electronic tests
2	4	The difference between aerial and map images and some important terms in the subject of aerial survey of the image and information shown on aerial images.	<ol style="list-style-type: none"> 1. Interpretation of aerial images 2. Production of topographical maps 3. Use optical stereoscopic devices 4. Learn about drawing metrics 5 Airline production 	Learn online + my presence	Electronic correction + electronic evaluation through paperwork and electronic tests
3	4	Vertical aerial images, engineering relationships, coordinate systems, vertical aerial image scale over flat ground and above different levels and medium-sized scale.	<ol style="list-style-type: none"> 1. Interpretation of aerial images 2. Production of topographical maps 	Learn online + my presence	Electronic correction + electronic evaluation through paperwork and

			<p>3. Use optical stereoscopic devices</p> <p>4. Learn about drawing metrics</p> <p>5 Airline production</p>		<p>electronic tests</p>
4	4	<p>Other ways to calculate the vertical aerial image scale, the ground coordinates of vertical aerial images and the calculation of horizontal and slanted distances between points. Displacement resulting from terrain and altitude calculation</p>	<p>1. Interpretation of aerial images</p> <p>2. Production of topographical maps</p> <p>3. Use optical stereoscopic devices</p> <p>4. Learn about drawing metrics</p> <p>5 Airline production</p>	<p>Learn online + my presence</p>	<p>Electronic correction + electronic evaluation through paperwork and electronic tests</p>
5	4	<p>Stereoscopic vision and its foundations, depth perception using the eyes together stereoscopic vision by images, conditions and ways of seeing the stereoscopic model using images. Use the mirrored stereoscope in the base line way of the two images. Sadistic distancing, anchor amplification.</p>	<p>1. Interpretation of aerial images</p> <p>2. Production of topographical maps</p> <p>3. Use optical stereoscopic devices</p> <p>4. Learn about drawing metrics</p> <p>5 Airline production</p>	<p>Learn online + my presence</p>	<p>Electronic correction + electronic evaluation through paperwork and electronic tests</p>
6	4	<p>Airline design, flight height, local scale, longitudinal interference and lateral interference, baseline</p>	<p>1. Interpretation of aerial images</p>	<p>Learn online +</p>	<p>Electronic correction +</p>

		<p>calculation of the total number of images of an area .</p>	<p>2. Production of topographical maps 3. Use optical stereoscopic devices 4. Learn about drawing metrics 5 Airline production</p>	<p>my presence</p>	<p>electronic evaluation through paperwork and electronic tests</p>
7	4	<p>Stereoscopic distancing, the relationship between distance and high points, distance difference, cult tag, methods of measuring distance, strometer and how to work with it.</p>	<p>1. Interpretation of aerial images 2. Production of topographical maps 3. Use optical stereoscopic devices 4. Learn about drawing metrics 5 Airline production</p>	<p>Learn online + my presence</p>	<p>Electronic correction + electronic evaluation through paperwork and electronic tests</p>
8+9	4	<p>Finding the two basis points away for two successive aerial images, the equations of distance, and finding the relationship between distance and high points.</p>	<p>1. Interpretation of aerial images 2. Production of topographical maps 3. Use optical stereoscopic devices 4. Learn about drawing metrics</p>	<p>Learn online + my presence</p>	<p>Electronic correction + electronic evaluation through paperwork and electronic tests</p>

			5 Airline production		
10	4	Types of aerial cameras "Digital and Analogue " The angle of the field of vision and the classification of aerial imaging mechanisms for the angle of the field of vision and its uses, parts of the aerial imaging mechanism.	1. Interpretation of aerial images 2. Production of topographical maps 3. Use optical stereoscopic devices 4. Learn about drawing metrics 5 Airline production	Learn online + my presence	Electronic correction + electronic evaluation through paperwork and electronic tests
11+12	4	Aldorane-guided aerial images in the tilt, detour, deviation, tilt axles system, oblique image scale, ground coordinates from slanted images, geometric analysis of slanted aerial images.	1. Interpretation of aerial images 2. Production of topographical maps 3. Use optical stereoscopic devices 4. Learn about drawing metrics 5 Airline production	Learn online + my presence	Electronic correction + electronic evaluation through paperwork and electronic tests
13	4	Slanted aerial image calendar/calendar foundations/calendar methods.	1. Interpretation of aerial images 2. Production of topographical maps	Learn online + my presence	Electronic correction + electronic evaluation through paperwork and electronic tests

			<p>3. Use optical stereoscopic devices</p> <p>4. Learn about drawing metrics</p> <p>5 Airline production</p>		
14	4	<p>Mosaic, its advantages, disadvantages and uses – its types.</p>	<p>1. Interpretation of aerial images</p> <p>2. Production of topographical maps</p> <p>3. Use optical stereoscopic devices</p> <p>4. Learn about drawing metrics</p> <p>5 Airline production</p>	Learn online + my presence	Electronic correction + electronic evaluation through paperwork and electronic tests
15	4	<p>The foundations of the stereoscopic aerial survey using the snive devices. Internal guidance – steps to implement it:</p> <p>1. Preparing the positive glass image</p> <p>2– Compensation for distortion resulting from the lens of the imaging mechanism</p> <p>3– Positioning the positive glass image in the projector.</p> <p>4– Put the correct base distance in the monitor.</p>	<p>1. Interpretation of aerial images</p> <p>2. Production of topographical maps</p> <p>3. Use optical stereoscopic devices</p> <p>4. Learn about drawing metrics</p> <p>5 Airline production</p>	Learn online + my presence	Electronic correction + electronic evaluation through paperwork and electronic tests
16	4	<p>Relative guidance, possible movements of the monitor (movements of the transmission</p>	<p>1. Interpretation of aerial images</p>	Learn online +	Electronic correction +

		<p>father andrania), distribution of points used in guiding the stereoscopic model, and studying the effect of transitional and rotational movements on the movement of projected images in the footnote.</p>	<p>2. Production of topographical maps 3. Use optical stereoscopic devices 4. Learn about drawing metrics 5 Airline production</p>	<p>my presence</p>	<p>electronic evaluation through paperwork and electronic tests</p>
17	4	<p>Methods of conducting relative guidance using the different elements of the visceral device and focusing on conducting relative guidance using only rotational elements.</p>	<p>1. Interpretation of aerial images 2. Production of topographical maps 3. Use optical stereoscopic devices 4. Learn about drawing metrics 5 Airline production</p>	<p>Learn online + my presence</p>	<p>Electronic correction + electronic evaluation through paperwork and electronic tests</p>
18	4	<p>Absolute guidance: – Choose the form drawing scale – Adjust the model scale – Settlement of the form</p>	<p>1. Interpretation of aerial images 2. Production of topographical maps 3. Use optical stereoscopic devices 4. Learn about drawing metrics</p>	<p>Learn online + my presence</p>	<p>Electronic correction + electronic evaluation through paperwork and electronic tests</p>

			5 Airline production		
19-30	4	<p>Userdas-Imaginet to suit the student's needs to adapt to digital data, which is not to clarify the following addresses:</p> <ul style="list-style-type: none"> -The viewer -Image info - Histogram pixel data- Inquire cursor Measurement tools Inquire box Tile viewers- Link viewers Arrange layers viewer Flicker- Blend fed Swipe Raster attribute editor Image subset Geometric correction Filtering Mosaic Images- Vector- Raster to vector- Map composer 	<p>1. Interpretation of aerial images</p> <p>2. Production of topographical maps</p> <p>3. Use optical stereoscopic devices</p> <p>4. Learn about drawing metrics</p> <p>5 Airline production</p>	Learn online + my presence	Electronic correction + electronic evaluation through paperwork and electronic tests

1 Required textbooks	
2 Main references (sources)	<p>- Photographic Aerial Survey - Labib Nassif, Technical Education Authority, Second Edition, 1999.</p> <p>2-Manual of photogrammetry-American society of photogrammetry By Moffitt</p> <p>3- Elements of photogrammetry -poulR.wolf 2ndEdition .</p> <p>4-Erdas ImagineTourGuides ,LeicaGeosystems Geospatial Imaging,2006.</p>
Recommended books and references (scientific journals, reports,....)	Juma Dawad Principles of Space
B Electronic references, websites....	US Geological Survey

10 Course Development Plan

Course description: Earth's surface science

Name of the subject teacher: Baydaa ismail

The student will be able to "recognize the geomorphological phenomena that he surveys and draw and how to identify them in geological maps and aerial photographs, as well as identify the types of sediments, minerals, atmospheres and the movement of land masses and their prevention. In addition to the geology .of the sites of dams and reservoirs

Middle Technical University - Kut Technical Institute	1. Educational Institution
Department of Survey Technology	2. Scientific Department / Center
quantitative survey	3. Earth's surface science
built in	4. Forms of attendance available
The first and second semester of the academic year 2021-2020	5. Semester/year
(1) hours of study at a rate of (30) hours per week1	6. Number of hours of study (total)
//	7. The date this description was made
1. Course objectives: At the end of the academic year, the student should be able to 1- Understand geomorphological phenomena 2- Introducing students to the types of sediments and minerals. 3. Familiarize students with geological maps Recognize the Earth's masses - 4	

Cognitive goals

- A1- Know the concept of the earth's surface
- A2- Explain to the student the topographical maps
- A3- Shows the student the types of sediments
- A4- Explains to the student the types of minerals

A 5- Explains to the student the progress reached by double entry

B - the skill objectives of the course.

- B1 - Gather information about phenomena and problems
- B2 - The student should be able to distinguish between types of rocks and minerals.
- B3 - The student should be able to explain geomorphological phenomena.

B4- The student should be able to draw contour maps

teaching and learning methods

1 - Objective questions are divided into: multiple choice questions, true and false questions, or approximation questions

2 - Self-evaluation and evaluation of the colleague.

3- The tests include:

A - Constructive achievement tests accompanying the teaching plans.

B - Final achievement tests and include:

- **Monthly final exams at the end of each academic month.**
- **Semester final exams at the end of a semester.**

.Final final exams at the end of the academic year •

Evaluation methods

1- Using achievement tests:

- daily
- Monthly
- Quarterly

Final •

C- Emotional and value goals

C1 - Presenting new ideas about the topic by the student.

C 2- The student's ability to evaluate the topic and give solutions.

C 3 - differentiate between problems.

.C4- Explains and analyzes phenomena and problems

Teaching and learning method teaching and learning methods

1 - Use the presentation and presentation method.

2- Draw illustrations.

.3Brainstorming method

D - Transferred general and qualifying skills (other skills related to employability and D - Transferred general and qualifying skills (other skills related to employability and personal development)).

D 1- Skills of using references and terminology.

D 2 - Skills in collecting and analyzing data on the subject.

D 3 - the skills of exploiting the available capabilities.

D 4- Skills of making comparisons on the topic

Method of Assessment	Method of Teaching	Week Unit Name/Subject	Required Learning Outcomes	Hours	Week	d
electronic	blended education			1	An introduction to the subject of geoscience and its relationship to	1
electronic	blended education			1	.other sciences and surveying	2
electronic	blended education			1	.other sciences and surveying	3
electronic	blended education			1	Minerals, their physical properties .with examples	4
electronic	blended education			1	Rocks, their definition, types, their course in nature. igneous rocks0	5
electronic	blended education			1	Sedimentary rocks, their types, .clastic, chemical and biological	6
electronic	blended education			1	Metamorphosis, its types, metamorphic rocks, their texture and .types	7
electronic	blended education			1	Weathering, its types, mechanical, chemical, and the effect of climate, rock texture and mineral composition on weathering processes	8
electronic	blended education			1	Soil, cross section, factors controlling its composition, types, soil .classification triangle	9
electronic	blended education			1	Contour maps, drawing them, drawing profiles and interpreting the topographical phenomena from these .maps	10
electronic	blended education			1	Geological maps, their importance and drawing tilted layers on contour maps	11
electronic	blended education			1	Structural geology, types of rock structures, folds, faults and joints	12
electronic	blended education			1	The movement of land masses, their causes, prevention, slips and depressions	13
electronic	blended education			1	Natural resources in Iraq, oil, the .most important oil fields in Iraq	14
electronic	blended education			1	Geology of dams, reservoirs and .tunnels sites	15
electronic	blended education			1	Interpretation of geomorphological .phenomena from aerial photographs	16
electronic	blended education			1	An introduction to the subject of geoscience and its relationship to	17

					other sciences and surveying	
electronic	blended education			1	Main features of the Earth's crust, interior and atmosphere	18
electronic	blended education			1	Minerals, their physical properties .with examples	19
electronic	blended education			1	Rocks, their definition, types, their cycle in nature. igneous rocks	20
electronic	blended education			1	Metamorphosis, its types, metamorphic rocks, their texture and types	21
electronic	blended education			1	Weathering, its types, mechanical, chemical, and the effect of climate	22
electronic	blended education			1	process, geomorphological phenomena of the riverine sedimentation	23
electronic	blended education			1	process, geomorphological phenomena of the riverine sedimentation	24
electronic	blended education			1	process, river drainage systems	25
electronic	blended education			1	ontour maps, drawing them, drawing profiles and interpreting the topographical phenomena .from these maps	26
electronic	blended education			1	ontour maps, drawing them, drawing profiles and interpreting the topographical phenomena .from these maps	27
electronic	blended education			1	Geological maps, their importance and drawing oblique layers on contour maps	28
electronic	blended education			1	Structural geology, types of rock structures, folds, faults and joints	29
electronic	blended education			1	The movement of land masses, their causes, prevention, slips and .depressions	30

	1- Required prescribed books
<p>1- Principles of engineering geology and its applications, authored by Majeed Aboud Jassim Al-Tai, University of Basra, 2001.</p> <p>2- Engineering Geology, Miqdad Hussein Ali, Bassem Rushdi Hijab, Sinan Hashem Al-Jassar, University of Baghdad, 1990.</p> <p>3- Foundations of Geology for Engineers, Kenana Muhammad Thabet, Muhammad Omar Al-Ashho, University of Mosul, 1993</p> <p>Principles of Geology and Geomorphology, Ghada Muhammad -4 Salim, Muhammad Mahdi Abbas, Fadel Nomas Al-Saadouni, Institute of Technical Institutes, 1984</p>	2- Main references (sources)

	Recommended books and references (scientific journals, (... ,reports
	B electronic references, ...websites

Course Development Plan 10 10

Course description: Quantitative survey

Name of the subject teacher: . ahmed kareem

:Objectives of the general article

The student will be able to get acquainted with the principles of cartography and its integration with specialization topics such as surveying and aerial surveying in preparing maps and raising the student's efficiency (performance) in preparing, designing, drawing and producing maps

Middle Technical University - Kut Technical Institute	1. Educational Institution
Department of Survey Technology	2. Scientific Department / Center
Mapping Techniques	3. Course name/code
built in	4. Forms of attendance available
The first and second semester of the academic year 2021-2020	5. Semester/year
(150) hours of study at a rate of (5) hours per week	6. Number of hours of study (total)
//	7. The date this description was made
1. Course objectives: At the end of the academic year, the student will be able to:	
1- Teaching the student the components of the calculator, studying the Windows 7 operating system, and getting to know the commands and windows of the system.	
2- Teaching the student to write and prepare texts in Word 2010.	
3- Teaching the student to create tables, manage graphic objects and geometric shapes, and deal with databases in Excel 2010.	

Teaching the student the components of the calculator, studying the Windows 7 operating system, -1
.and getting to know the commands and windows of the system
.Teaching the student to write and prepare texts in Word 2010 -2
Teaching the student to create tables, manage graphic objects and geometric shapes, and deal with -3
.databases in Excel 2010
Teaching the student to prepare slides for text and graphic shapes, and to prepare an interactive -4
.presentation of the slides in the Power Point 2010 program
Teaching the student to use the Auto CAD 2010 drawing program and familiarize himself with the -5
program's interface, drawing and modification commands, writing commands, adding dimensions,
.slicing and creating layers

B - Skills of the objectives of the course.

B1- To be able to design map -

B2 To be able to calculate areas. positioning

B3 - Providing consultancy for strategic engineering projects

Teaching and learning methods

1 - The substantive questions and are divided into: multiple choice questions or end-of-year questions
 .Self-evaluation and evaluation of the colleague --2

:The tests include -3

.A - constructive achievement tests accompanying the teaching plans

:B - Final achievement tests and include

.Monthly final exams at the end of each academic month ●

.Semester final exams at the end of a semester ●

.Final final exams at the end of the academic year ● ●

Evaluation methods

:Using achievement tests -1

daily ●

Monthly ●

Quarterly ●

Final ●

C- Emotional and value goals

.C1 - Presenting new ideas on the topic by the student

.C2 - The student's ability to evaluate the topic and provide solutions

.C 3 - differentiate between problems

.C4 - Explains and analyzes phenomena and problems

Teaching and learning methods

.Use the presentation and presentation method - 1

.Draw illustrations - 2

.Brainstorming method - 3

D - Transferred general and qualifying skills (other skills related to employability and personal development).

.D 1- Skills of using references and terminology.

.D 2 - Skills in collecting and analyzing data on the subject.

.D 3 - the skills of exploiting the available capabilities.

D 4- Skills of making comparisons on the topic.

.D5- Skills of preparing special concepts on the topic.

Method of Assessment	Method of Teaching	Week Unit Name/Subject	Required Learning Outcomes	Hours	Week	d
electronic	blended education	- نظام التشغيل Windows 7	The practical part is practical exercises and a practical application on the computer of the vocabulary of the theoretical part.	4	- A general introduction to the basics of the computer and its hardware components and software	1
electronic	blended education	- نظام التشغيل Windows 7	The practical part is practical exercises and a practical application on the computer of the vocabulary of the theoretical part.	4	- Windows 7 operating system (operating the system, desktop components, the concept of icon icons, changing the desktop arrangement, controlling the size of the screen and the degree of screen resolution, the taskbar and its components, controlling the time, date and sound, exiting the system, turning off the computer)	2
electronic	blended education	- نظام التشغيل Windows 7	The practical part is practical exercises and a practical application on the computer of the vocabulary of the theoretical part.	4	The concept of a window for any program and identifying its main components, changing the size of windows, moving them, closing them, and moving between open windows	3
electronic	blended education	- نظام التشغيل Windows 7	The practical part is practical exercises and a practical application on the computer of the vocabulary of the theoretical part.	4	Getting to know the Start menu and its contents	4
electronic	blended education	برنامج Word 2010	The practical part is practical exercises and a practical application on the computer of the vocabulary of the theoretical part.	4	- Getting to know the My computer icon, its characteristics, and basic information about the computer (processor speed, processor type, memory size, operating system and version number)	5
electronic	blended education	برنامج Word 2010	The practical part is practical exercises and a practical application on the computer of the vocabulary of the	4	- Folders and files (create, move, clone, rename, delete, recover from recycle bin, empty recycle bin)	6

			theoretical part.			
electronic	blended education	برنامج Word 2010	The practical part is practical exercises and a practical application on the computer of the vocabulary of the theoretical part.	4	Use the Find command to select a file or folder	7
electronic	blended education	برنامج Word 2010	The practical part is practical exercises and a practical application on the computer of the vocabulary of the theoretical part.	4	The concept of file or folder compression and decompression	8
electronic	blended education	برنامج Excel 2010	The practical part is practical exercises and a practical application on the computer of the vocabulary of the theoretical part.	4	- Control the display options for files and folders Folder Option	9
electronic	blended education	برنامج Excel 2010	The practical part is practical exercises and a practical application on the computer of the vocabulary of the theoretical part.	4	Control Panel settings))[System and security, Network and internet,] [Appearance and personalization, User accounts and family safety,] [Programs(uninstall a program), Hardware and sound]	10
electronic	blended education	برنامج Excel 2010	The practical part is practical exercises and a practical application on the computer of the vocabulary of the theoretical part.	4	- print settings	11
electronic	blended education	برنامج Excel 2010	The practical part is practical exercises and a practical application on the computer of the vocabulary of the theoretical part.	4	Data management (write code, change cell content format, find value, replace values, Replace Sort, Filter, Freeze panes)	12
electronic	blended education	برنامج Power Point 2010	The practical part is practical exercises and a practical application on the computer of the vocabulary of the theoretical part.	4	- Dealing with databases (importing data from the Internet, importing data from databases, importing data from text files)	13
electronic	blended education	برنامج Power Point 2010	The practical part is practical exercises and a practical application on the computer of the	4	Managing Objects (Clip Art, Geometric Shapes, Text Box Addition, Word Effects, Smart Art, Statistical Chart, Header and Footer	14

			vocabulary of the theoretical part.			
electronic	blended education	برنامج Power Point 2010	The practical part is practical exercises and a practical application on the computer of the vocabulary of the theoretical part.	4	Word 2010	15
electronic	blended education	برنامج Auto CAD 2010	The practical part is practical exercises and a practical application on the computer of the vocabulary of the theoretical part.	4	- Introduction to the program, invoking the program, getting to know the main interface and its elements (command bar, ribbons, tools, name of the default work file, change of name, change of scale of vision, store a new file for the first time)	16
electronic	blended education	برنامج Auto CAD 2010	The practical part is practical exercises and a practical application on the computer of the vocabulary of the theoretical part.	4	- Main text Word Art (insert text, change text, rotate text, change font size, Format ribbon)	17
electronic	blended education	برنامج Auto CAD 2010	The practical part is practical exercises and a practical application on the computer of the vocabulary of the theoretical part.	4	General Settings (Flip page from portrait to landscape, Frame page, Ruler show, Page numbering, Header & Footer, Print preview, Typography)	18
electronic	blended education	برنامج Auto CAD 2010	The practical part is practical exercises and a practical application on the computer of the vocabulary of the theoretical part.	4	- Texts } 1- Direct text (writing text, text settings, adding symbols and mathematical equations Equation)	19
electronic	blended education	برنامج Auto CAD 2010	The practical part is practical exercises and a practical application on the computer of the vocabulary of the theoretical part.	4	2- text box, keyboard shortcuts {	20
electronic	blended education	برنامج Auto CAD 2010	The practical part is practical exercises and a practical application on the computer of the vocabulary of the theoretical part.	4	- Graphics (Shapes, Pictures, Cartoons, Clip Art, Illustrations and Statistics)	21
electronic	blended education	برنامج Auto CAD 2010	The practical part is practical exercises and a practical application on the	4	Tables (drawing a table, changing the scale of a table, cramming a line or column into a table, merging multiple cells in a table, splitting a cell, ascending and descending order of table lines, deleting lines and	22

			computer of the vocabulary of the theoretical part.		columns)	
electronic	blended education	برنامج Auto CAD 2010	The practical part is practical exercises and a practical application on the computer of the vocabulary of the theoretical part.	4	Excel 2010	23
electronic	blended education	برنامج Auto CAD 2010	The practical part is practical exercises and a practical application on the computer of the vocabulary of the theoretical part.	4	- Run the program, get to know the main interface and bars	24
electronic	blended education	برنامج Auto CAD 2010	The practical part is practical exercises and a practical application on the computer of the vocabulary of the theoretical part.	4	Create a table (enter values for cells, move between cells, increase and decrease cells, merge cells, select cells, lines and columns, select all page, move cells, jam a line or column, delete a line or column)	25
electronic	blended education	برنامج Auto CAD 2010	The practical part is practical exercises and a practical application on the computer of the vocabulary of the theoretical part.	4	- store the file	26
electronic	blended education	برنامج Auto CAD 2010	The practical part is practical exercises and a practical application on the computer of the vocabulary of the theoretical part.	4	Modify the text format from the Home ribbon	27
electronic	blended education	برنامج Auto CAD 2010	The practical part is practical exercises and a practical application on the computer of the vocabulary of the theoretical part.	4	Draw a frame for the Borders cells and modify the settings for the frame	28
electronic	blended education	برنامج Auto CAD 2010	The practical part is practical exercises and a practical application on the computer of the vocabulary of the theoretical part.	4	- Change the name of a page, add a new page, delete a page, move or copy a page, protect a page from modifications, hide the page	29

<p>-1 - كتاب اساسيات الحاسوب للمؤلف احمد محمد ابراهيم محمد(PDF))</p> <p>-2 -2 كتاب Windows 7 By Shereen Elmasry</p> <p>-3 -3 كتاب تعلم واحتراف Windows 7 للمؤلف محمد نزيه محمد</p> <p>-4 -4 للمؤلف احسان محمد عبد الله الهيصمي Office 2010</p> <p>-5 -5 كتب Microsoft Office على الموقع www.kutub.info/library/category/47</p> <p>-6 -6 مجموعة ملازم تعليم Windows 7 و Office 2010 بطريقة سهلة</p> <p>-7 -7 التحميل على الروابط التالية:</p> <p>-8 -8 http://www.4shared.com/document/TCXX0vb/Windows_7_Learning_in_Arabic_.html</p> <p>-9 -9 http://www.4shared.com/document/5r_zEuZ/Learning_word_2010_in_Arabic_.html</p> <p>-10 -10 http://www.4shared.com/document/kyygWce/L/Excel_2010_Learning_in_Arabic_.html</p> <p>-11 -11 http://www.4shared.com/document/UZR9pxg/M/Learning_PowerPoint_2010_.html</p> <p>-12 -7 ملزمة اساسيات اوتوكاد 2010 اعداد المدرس المساعد علي مهدي مفتن / جامعة النهريين</p> <p>-13 -8 كتاب اوتوكاد 2009 للمؤلف المهندس جورج مواس, التحميل على الرابط http://www.kutub.info/Library/book/6686</p>	<p>1- Required prescribed books</p>
<p>-1</p>	<p>2- Main references (sources)</p>
	<p>Recommended books and references (scientific journals, (... ,reports</p>
	<p>B electronic references, ...websites</p>

Course Development Plan 10 10

Course description: Quantitative survey

Name of the subject teacher: Dr. Hussein Hafez Himish

:Objectives of the general article

The student should be able to identify the types of materials, machines, equipment and methods of implementation for various engineering .(projects (buildings, roads, railways, tunnels, canals, and airports

Middle Technical University - Kut Technical Institute	1. Educational Institution
Department of Survey Technology	2. Scientific Department / Center
quantitative survey	3. Course name/code
built in	4. Forms of attendance available
The first and second semester of the academic year 2021-2020	5. Semester/year
(60) hours of study at a rate of (2) hours per week	6. Number of hours of study (total)
//	7. The date this description was made
1. Course objectives: At the end of the academic year, the student will be able to:	
1.-Knowledge of the types of materials, machines and equipment	
2.-Knowledge of the different engineering implementation methods	
3.- Knowing the implementation of buildings, roads, rails, tunnels, canals and airports	

Course outcomes, methods of teaching, learning, and assessment
Engineering implementation of building projects, roads, railways, tunnels, canals and airports
B - Skills of the objectives of the course. B1. The method of executing engineering projects, calculating quantities and classifying materials
Teaching and learning methods
1 - The substantive questions and are divided into: multiple choice questions or end-of-year questions .Self-evaluation and evaluation of the colleague --2 :The tests include -3 .A - constructive achievement tests accompanying the teaching plans :B - Final achievement tests and include .Monthly final exams at the end of each academic month ● .Semester final exams at the end of a semester ● .Final final exams at the end of the academic year ● ●
Evaluation methods
:Using achievement tests -1 daily ● Monthly ● Quarterly ● Final ●
C- Emotional and value goals .C1 - Presenting new ideas on the topic by the student .C2 - The student's ability to evaluate the topic and provide solutions .C 3 - differentiate between problems .C4 - Explains and analyzes phenomena and problems
Teaching and learning methods
.Use the presentation and presentation method - 1 .Draw illustrations - 2 .Brainstorming method - 3
D - Transferred general and qualifying skills (other skills related to employability and personal (development .D 1- Skills of using references and terminology .D 2 - Skills in collecting and analyzing data on the subject .D 3 - the skills of exploiting the available capabilities D 4- Skills of making comparisons on the topic .D5- Skills of preparing special concepts on the topic

Method of Assessment	Method of Teaching	Week Unit Name/Subject	Required Learning Outcomes	Hours	Week	d
electronic	blended education	Learn about the types of materials	Engineering implementation methods for projects	2	Introduce the student to the types of construction materials used in engineering projects	1
electronic	blended education	Learn about the types of materials	Calculation of the quantities of cement, sand and live in concrete mixtures	2	Raw materials: cement (its properties and types), sand and gravel. Calculation of quantities of cement, sand and gravel in concrete mixtures	2
electronic	blended education	Learn about the types of materials	Engineering implementation methods for projects	2	Bricks (types, properties) and calculation of quantities	3
electronic	blended education	Learn about the types of materials	Engineering implementation methods for projects	2	Types of mortar (calculating the volume of mortar used in construction), blocks (its features and calculating quantities)	4
electronic	blended education	Learn about the types of materials	Engineering implementation methods for projects	2	Al-Kashi (types, calculating the number of cashes in the floors), the sticker	5
electronic	blended education	Learn about the types of materials	Engineering implementation methods for projects	2	Moisture-blocking materials (types, uses), iron, wood	6
electronic	blended education	Learn about the types of materials	Engineering implementation methods for projects	2	Plaster (its uses, calculating the amount of plaster needed to whiten the walls, calculating the amount of cement and sand needed to spray walls)	7
electronic	blended education	Learn about the types of materials	Engineering implementation methods for projects	2	Construction machinery, its use, and its efficiency, (drilling machines, bulldozers, cranes, transport machines, stacking machines and rollers, mixers)	8
electronic	blended education	Learn about the types of materials	Engineering implementation methods for projects	2	Estimate (definition, purpose, types), bills of quantities, units of measurement used for all construction paragraphs	9
electronic	blended education	Learn about the types of materials	Engineering implementation methods for projects	2	Calculating the amount of earthworks for the foundations of buildings and explaining its schedule of quantities	10
electronic	blended education	Learn about the types of materials	Engineering implementation methods for projects	2	Calculation of the amount of structural vertebrae below the level of moisture blocker (squaring, foundation concrete, brickwork below the level of moisture blocker)	11
electronic	blended education	Learn about the types of materials	Engineering implementation methods for projects	2	.Continuation of the previous week	12
electronic	blended education	Learn about the types of materials	Engineering implementation methods for projects	2	Calculate the amount of moisture-proof concrete, calculate the amount of paragraphs above the level of moisture inhibitor, and explain the schedule of quantities for it	13

electronic	blended education	Learn about the types of materials	Engineering implementation methods for projects	2	.Continuation of the previous week	14
electronic	blended education	Learn about the types of materials	Engineering implementation methods for projects	2	Calculation of the quantities of reinforced roof concrete and reinforced lace concrete	15
electronic	blended education	Learn about the types of materials	Engineering implementation methods for projects	2	.Continuation of the previous week	16
electronic	blended education	Learn about the types of materials	Engineering implementation methods for projects	2	Calculate the amount of finishing works (ficus, white, scattering, dye) and explain the schedule of quantities	17
electronic	blended education	Learn about the types of materials	Engineering implementation methods for projects	2	Calculation of the amount of flooring works, the cache, the shoring, and the table of quantities	18
electronic	blended education	Learn about the types of materials	Engineering implementation methods for projects	2	Applying the above paragraphs using the computer	19
electronic	blended education	Learn about the types of materials	Engineering implementation methods for projects	2	Types of foundations for buildings, their forms and uses	20
electronic	blended education	Learn about the types of materials	Engineering implementation methods for projects	2	.types of roads	21
electronic	blended education	Learn about the types of materials	Engineering implementation methods for projects	2	Estimating and velocity for road works, methods of calculating volumes of earthworks.	22
electronic	blended education	Learn about the types of materials	Engineering implementation methods for projects	2	Various exercises to calculate the volumes of earthworks.	23
electronic	blended education	Learn about the types of materials	Engineering implementation methods for projects	2	Extension of the previous week.	24
electronic	blended education	Learn about the types of materials	Engineering implementation methods for projects	2	Types of joints in the roads.	25
electronic	blended education	Learn about the types of materials	Engineering implementation methods for projects	2	Estimating and paddling for canal work (for irrigation and drainage).	26
electronic	blended education	Learn about the types of materials	Engineering implementation methods for projects	2	Railways, tunnels, estimate the cost of completing the tunnels.	27
electronic	blended education	Learn about the types of materials	Engineering implementation methods for projects	2	Types of airports.	28
electronic	blended education	Learn about the types of materials	Engineering implementation methods for projects	2	Traffic signs.	29
electronic	blended education	Learn about the types of materials	Engineering implementation methods for projects	2	.Show movies	30

1- Estimate and specifications of construction works / Ghanem Abdul Rahman Bakr, 1985	1- Required prescribed books
1- Quantitative survey / Muwaffaq Nasser Al-Saour / Ministry of Education / Institution of Technical Institutes The quantitative survey / Sami Miri Kazem, Abd al-Karim al-Shamma / Ministry of Education / Technical Institutes Authority, .1994 Structural materials / Jalal Bashir Sarsam / Ministry of Education -3 ./ Technical Institutes Authority, 1992	2- Main references (sources)
	Recommended books and references (scientific journals, (... ,reports
	B electronic references, ...websites

Course Development Plan 10 10

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: **English Language**

COURSE SPECIFICATION

Enable the student to master the English language

1. Teaching Institution	Middle Technical University - Kut Technical Institute
2. University Department/Centre	Surveying Department
3. Course title/code	English Language
4. Programme(s) to which it contributes	theory
5. Modes of Attendance offered	Students in first stage
6. Semester/Year	2nd semester 2020 / 2021
7. Number of hours tuition (total)	30 hours (2 hours per week)
8. Date of production/revision of this specification	2021
9. Aims of the Course	
<p>The student's review of the simplified basic rules of the English language, which he had previously studied in the previous stages, but in a lengthy manner, as well as the gradual introduction of the student into the atmosphere of technical terms related to civil jurisdiction in its various branches.</p>	

10. Learning Outcomes, Teaching ,Learning and Assessment Methode

A- Knowledge and Understanding

A 1- Introduce the student to the rules of the English language.

A 2- Introducing the student to the most important vocabulary of the English language.

B. Subject-specific skills

B1 - The ability to speak English.

Teaching and Learning Methods

Theoretical lectures + practical discussion

Assessment methods

1- Monthly and final exams.

2- Short tests and participation in the classroom.

C. Thinking Skills

C1- Theoretical lectures.

C 2 - a discussion in the classroom.

Teaching and Learning Methods

1- Asking questions and inquiries that are distinguished by depth and accuracy.

2- Directing the student towards understanding the cause and reason.

3- Developing a digital sense of expression.

4- Brainstorming.

Assessment methods

1- Monthly and final exams.

2- Short tests and participation in the classroom.

D. General and Transferable Skills (other skills relevant to employability and personal development)

D 1- English speaking skills.

D2 - English language strengthening films.

11. Course Structure

Week	Hours	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	4	What is your name ? What is this in English ? Translation Every day English Plurals	theory	Monthly and final exams.
2	4	Countries Pronunciation Cities and countries Where are you from ? reading listening Tran station	theory	
3	4	Jobs ,negatives Address , trans pronunciation , listening , reading	theory	
4	4	The family possessive s listening vocabulary pronunciation translation	theory	
5	4	Sports present simple transation vocabulary and pronunciation	theory	
6	4	The time present simple negative translation vocabulary listening writing	theory	
7	4	Object pronouns listening vocabulary translation reading	theory	
8	4	Furniture pronunciation prepositions reading and writing translation directions	theory	
9	4	Saying yers writing past simple irregular verbs translation vocabulary word groups	theory	
10	4	Past simple regular verbs pronunciation irregular verbs listening translation vocabulary reading everyday English	theory	
11	4	Activities listening pronunciation reguests and offers translation vocabulary everyday English	theory	
12	4	Translation reading writing pronunciation every day English	theory	
13	4	Colours present continuos present simple and present continuous translation reading vocabulary everyday English	theory	
14-15	4	Present continuous for future listing pronunciation translation vocabulary reading and listening everyday English	theory	

12. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	
Special requirements (include for example workshops, periodicals, IT software, websites)	Head way
Community-based facilities (include for example, guest Lectures , internship , field studies)	

13. Admissions	
Pre-requisites	
Minimum number of students	30
Maximum number of students	80

Dr. Hussien Hafedh

Head of Dep.

Jabbar H. Hassoon

Teacher

Course description: surveying Name of the subject teacher: Ismaail Rasoul Abdel Moneim

:Objectives of the general article

The student should be able to make all measurements and calculations in the leveling and tachometric measurements and work on the implementation of surveying works such as raising and dropping and finding the coordinates of points through the complete station devices as well as carrying out all the work that can be provided by the complete

Middle Technical University - Kut Technical Institute	1. Educational Institution
Department of Survey Technology	2. Scientific Department / Center
surveying /2	3. Course name/code
built in	4. Forms of attendance available
The first and second semester of the academic year 2021-2020	5. Semester/year
hours of study, (8) hours per week, (2) (240) theoretical and (6) practical	6. Number of hours of study (total)
//	7. The date this description was made
1. Course objectives: At the end of the academic year, the student will be able to:	
1. Getting acquainted with all the old and modern surveying devices and tools in the field of land surveying.	
2. Carry out calculations and give the necessary technical solutions in the field work.	
3. Skill in using old and modern surveying techniques to implement projects in the field and in the office.	

**Getting acquainted with all the old and modern surveying devices and .1 -.1
 .tools in the field of land surveying**

**Carry out calculations and give the necessary technical solutions in the .2
 .field work**

**Skill in using old and modern surveying techniques to implement projects .3
 .in the field and in the office**

**Reading the plans in cooperation with the corresponding specializations to .4
 ..carry out the work in the field**

B - Skills of the objectives of the course.

B1- To be able to design map -

B2 To be able to calculate areas. positioning

B3 - Providing consultancy for strategic engineering projects

Teaching and learning methods

1 - The substantive questions and are divided into: multiple choice questions or end-of-year questions
 .Self-evaluation and evaluation of the colleague --2

:The tests include -3

.A - constructive achievement tests accompanying the teaching plans

:B - Final achievement tests and include

.Monthly final exams at the end of each academic month ●

.Semester final exams at the end of a semester ●

.Final final exams at the end of the academic year ● ●

Evaluation methods

:Using achievement tests -1

daily ●

Monthly ●

Quarterly ●

Final ●

C- Emotional and value goals

.C1 - Presenting new ideas on the topic by the student

.C2 - The student's ability to evaluate the topic and provide solutions

.C 3 - differentiate between problems

.C4 - Explains and analyzes phenomena and problems

Teaching and learning methods

.Use the presentation and presentation method - 1

.Draw illustrations - 2

.Brainstorming method - 3

D - Transferred general and qualifying skills (other skills related to employability and personal development)
.D 1- Skills of using references and terminology
.D 2 - Skills in collecting and analyzing data on the subject
.D 3 - the skills of exploiting the available capabilities
D 4- Skills of making comparisons on the topic
.D5- Skills of preparing special concepts on the topic

Method of Assessment	Method of Teaching	Week Unit Name/Subject	Required Learning Outcomes	Hours	Week	d
electronic	blended education	Surveying equipment classification	A review on how to monitor the horizontal angles by the directional method and the iterative method 0 as well as the measurement of vertical angles and how to calculate the indicator error 0	8	Classification of modern optical survey equipment	1
electronic	blended education	Methods for measuring horizontal and vertical angles	Create a closed circular polygon and its calculations	8	Introducing the methods of measuring horizontal and vertical angles through these devices (use them as theodolite)	2
electronic	blended education	Methods for measuring horizontal and vertical angles	Create a closed circular polygon and its calculations	8	Calibration and adjustment of optical surveying devices (field and laboratory)	3
electronic	blended education	Methods for measuring horizontal and vertical angles	Create a closed circular polygon and its calculations	8	Dealing with devices: (identification of the device .. general settings of the device .. concept of the project...)	4
electronic	blended education	Methods for measuring horizontal and vertical angles	Create a closed link polygon and its calculations	8	Surveying	5
electronic	blended education	Methods for measuring horizontal and vertical angles	Create a closed link polygon and its calculations	8	Stakeout	6
electronic	blended education	Distance measurement	Measuring distances by tachometric methods	8	Remote high measurement without reflector.	7
electronic	blended education	Measuring the level or	Measuring the level or difference in	8	Operations (Resection) and finding device coordinates through two or more points by (Free Station)	8

		the difference in altitude	altitude by tachometric methods			
electronic	blended education	Get to know the complete station hardware	Get to know the complete station hardware	8	Calculate the diagonal and vertical distances between two points (Tie Distance) in two ways:	9
electronic	blended education	How to configure full station أجهزة	How to configure the complete station equipment for field work	8	1- Polygon-2 Radial	10
electronic	blended education	Execution of surveying	Implementation of areal lifting by the complete station device	8	Finding the coordinates of a set of points (Reference Element) in two ways:	11
electronic	blended education	Execution of surveying	Implementation of areal lifting by the complete station device	8	1- If the reference is a line	12
electronic	blended education		Learn how to transfer the field-observed data from the device to the calculator	8	Drop one point.	13
electronic	blended education	Implementation of staking	Implementation of staking by coordinate method by the complete station device	8	Projection of a set of points in the form of a grid.	14
electronic	blended education	Implementation of staking	Implementation of staking by coordinate method by the complete station device	8	2- If the reference is a reference arc	15
electronic	blended education	Implementation of staking	Implementation of staking, i.e. staking, by the method of length and direction	8	Drop a point away from a curve.	16
electronic	blended education	Implementation of staking	Implementation of staking by full station device	8	Drop brackets at equal distances.	17
electronic	blended education	Reverse intersection with full station device	Finding a point of unknown coordinates using the reverse intersection with the complete station device	8	Dropping an arc given a chord.	18
electronic	blended education		Finding spaces with the complete station جهاز	8	Projection of an arc given the central angle.	19
electronic	blended education		Finding spaces with the complete station جهاز	8	Area & Volume Calculation	20
electronic	blended	Find spaces	Finding the volumes	8	Projection and areal lifting through the construction	21

	education		by the complete station device		line and in two ways:	
electronic	blended education	Find spaces	Finding far altitude with the complete station device	8	1- Layout.	22
electronic	blended education	Find the volumes	How to perform forward calculations using the complete station device	8	As Built .	23
electronic	blended education	Find a far ارتفاعheight	How to do back-calculation by full terminal device	8	Introducing the functions of CoGo, addressing its four details (overview). Then it was presented in detail in the following weeks, as follows:	24
electronic	blended education	How to do forward calculations	How to make the first intersection with the complete station device	8	Surveys of sewage networks, water, oil pipelines.	25
electronic	blended education	How to do back-calculation	How to make the second intersection with the complete station device	8	Dams and water resource surveys.	26
electronic	blended education	The first intersection	How to make the third intersection with the complete station device	8	Surveys of multi-storey buildings (and skyscrapers) Skyscraper.	27
electronic	blended education	second intersection	How to work with roads sign straight street sign horizontal curves	8	Pillars and foundation surveys.	28
electronic	blended education	for the third intersection	How to work with roads sign straight street sign horizontal curves	8	Topographic survey and contour maps.	29
electronic	blended education	Straight Street Sign Horizontal Curves Sign	How to work with roads sign straight street sign horizontal curves	8	1- Invers & Travers:	30

	1- Required prescribed books
	2- Main references (sources)
	Recommended books and references (scientific journals, (... ,reports
	B electronic references, ...websites

Course Development Plan 10 10

:Objectives of the general article

The student will be able to employ the principles of the Geographical Information System (GIS) by using spatial, descriptive, networked, and directed data for the purpose of preparing maps of all kinds (objective, topographical and cadastral) and outputting them in the final form as digital or paper maps with reports. And training students on how to use the DGPS system. And its

Middle Technical University - Kut Technical Institute	1. Educational Institution
Department of Survey Technology	2. Scientific Department / Center
GIS & GPS	3. Course name/code
built in	4. Forms of attendance available
The first and second semester of the academic year 2021-2020	5. Semester/year
(120) hours of study at a rate of (4) hours per week	6. Number of hours of study (total)
//	7. The date this description was made
1. Course objectives: At the end of the academic year, the student will be able to:	
1-Recognize the principles of cartography and its integration with specialty topics such as surveying and aerial surveying	
2.- Able to prepare maps and raise the student's competence (performance).	
3- Skill in preparing, designing, drawing and producing maps	

Geographical Information System (GIS) by using spatial, descriptive, networked, and directed data for the purpose of preparing maps of all kinds (objective, topographical and cadastral) and outputting them in the final form as digital or paper maps with reports. And training students on how to use the DGPS system And its applications

B - Skills of the objectives of the course.

B1- To be able to design map -

B2 To be able to calculate areas. positioning

B3 - Providing consultancy for strategic engineering projects

Teaching and learning methods

1 - The substantive questions and are divided into: multiple choice questions or end-of-year questions
.Self-evaluation and evaluation of the colleague --2

:The tests include -3

.A - constructive achievement tests accompanying the teaching plans

:B - Final achievement tests and include

.Monthly final exams at the end of each academic month •

.Semester final exams at the end of a semester •

.Final final exams at the end of the academic year • •

Evaluation methods

:Using achievement tests -1

daily •

Monthly •

Quarterly •

Final •

C- Emotional and value goals

.C1 - Presenting new ideas on the topic by the student

.C2 - The student's ability to evaluate the topic and provide solutions

.C 3 - differentiate between problems

.C4 - Explains and analyzes phenomena and problems

Teaching and learning methods

.Use the presentation and presentation method - 1

.Draw illustrations - 2

.Brainstorming method - 3

D - Transferred general and qualifying skills (other skills related to employability and personal development)

.D 1- Skills of using references and terminology

.D 2 - Skills in collecting and analyzing data on the subject

.D 3 - the skills of exploiting the available capabilities

D 4- Skills of making comparisons on the topic

.D5- Skills of preparing special concepts on the topic

Method of Assessment	Method of Teaching	Week Unit Name/Subj ect	Required Learning Outcomes	Hours	Week	d
electronic	blended education	Geographical information system concept	The practical part is an application of the vocabulary of the mentioned theoretical part	5	The concept of Geographic Information System (GIS), its components, capabilities, and related programs such as (Arc catalog Arc globe10, arc scene10, arc Gis Administrator)) and the types of data it deals with (spatial, metadata, network and vector data) and identifying the Program interface and installation	1
electronic	blended education	Data entry (recall) methods (aerial and satellite images)	The practical part is an application of the vocabulary of the mentioned theoretical part	5	Methods for entering (recalling) data (aerial and satellite images) through Add Data, methods of displaying data through the Extent Full icon or zoom to Layer, and using the Effects bar, which includes adjusting contrast, transparency, lighting, and sliding images horizontally and vertically (Layer Swipe & Flicker)	2
electronic	blended education	Geometric correction of the topographical map	The practical part is an application of the vocabulary of the mentioned theoretical part	5	Geometric correction of the topographic map and the determination of the permissible amount of error ((RMSE	3
electronic	blended education	Geometric Correction of the Satellite Image and RMSE	The practical part is an application of the vocabulary of the mentioned theoretical part	5	Geometric correction of the topographic map and the amount of permissible error (RMSE)	4
electronic	blended education	How to set up a new project using the Arc Catalog program and introduce it to the global projection system WGS1984	The practical part is an application of the vocabulary of the mentioned theoretical part	5	Geometric Correction of the Satellite Image and RMSE	5
electronic	blended education	Drawing tools app	The practical part is an application of the vocabulary of the mentioned theoretical part	5	How to prepare a new project using the Arc Catalog program and define it with the WGS1984 projection system, the appropriate projection and scope of the data used, and how to change the projection and scope	6
electronic	blended education	Advanced Editing Tools	The practical part is an application of the vocabulary of the mentioned theoretical part	5	Delineation of layers for the Earth's surface features (locational, linear, and area), nodes (Edit and delete Vertices), the method of storing layers and the project.	7
electronic	blended education	Methods for enlarging and reducing the features and methods for selecting the drawn	The practical part is an application of the vocabulary of the mentioned theoretical part	5	Application of drawing tools (trace tool, End point Arc segment, Point, Intersection tool, Midpoint tool, Split tool, Cut polygon tool).	8

		features				
electronic	blended education	Descriptive tables for the features of each layer drawn	The practical part is an application of the vocabulary of the mentioned theoretical part	5	Apply additional drawing tools (Advanced Editing Tools) such as (Copy Feature, Extent Tool, Trim Tool, Line Intersection, Generalized, Smooth).	9
electronic	blended education	Layers Properties window, including Labeling according to the distribution tables field data,	The practical part is an application of the vocabulary of the mentioned theoretical part	5	Methods for enlarging and reducing the features, and methods for selecting the drawn features: zoom to select, select feature, Pan to select Features, and cancel the selection (Delete Select).	10
electronic	blended education	Selection menu	The practical part is an application of the vocabulary of the mentioned theoretical part	5	Add and delete vertices	11
electronic	blended education	Preparing thematic maps (contour and field data).	The practical part is an application of the vocabulary of the mentioned theoretical part	5	Preparing descriptive tables for the features of each drawn layer (how to add fields to tables and delete fields) and data entry methods for tables.	12
electronic	blended education		The practical part is an application of the vocabulary of the mentioned theoretical part	5	Layers properties window, including Labeling according to the data of the fields of the distribution tables, Transparency, Seeing the image data source (Spatial reference), Viewing the specifications of any feature via (Show Map Tips, and Identify icon).	13
electronic	blended education	Final preparation of all map elements	The practical part is an application of the vocabulary of the mentioned theoretical part	5	reparing thematic maps (contour and field data).	14
electronic	blended education	Definition of GPS and GNSS System	The practical part is an application of the vocabulary of the mentioned theoretical part	5	Final setting of all map elements (Layout, Title, .Border, Grid, Scale, Legend, Index, Map source	15
electronic	blended education	Types of satellite systems	The practical part is an application of the vocabulary of the mentioned theoretical part	5	Selection menu, access to the parameter through the fields of the data table for the layers and by locations (Selection by attributes & by Location).	16
electronic	blended education	GPS system components	The practical part is an application of the vocabulary of the mentioned theoretical part	5	Preparing thematic maps (contour and field data).	17
electronic	blended education	GPS Navigation Device	The practical part is an application of the vocabulary of the mentioned	5	Components of the GPS system and an explanation of each part (the space part, control and control systems, (as well as the user system part	18

			theoretical part			
electronic	blended education	GPS working principle	The practical part is an application of the vocabulary of the mentioned theoretical part	5	Final setting of all map elements (Layout, Title, Border, Grid, Scale, Legend, Index, Map source.	19
electronic	blended education	GPS working principle	The practical part is an application of the vocabulary of the mentioned theoretical part	5	Definition of GPS and GNSS System	20
electronic	blended education	Understand the principles of geodesy (geo, spheroid, coordinate systems)	The practical part is an application of the vocabulary of the mentioned theoretical part	5	Learn about the types of satellite systems currently available and in the future	21
electronic	blended education	Monitoring methods using the GNSS system	The practical part is an application of the vocabulary of the mentioned theoretical part	5	Components of the GPS system and an explanation of each part (the space part, control and control systems, as well as the user system part)	22
electronic	blended education	Leica Viva)	The practical part is an application of the vocabulary of the mentioned theoretical part	5	Learn about GPS navigation and its uses	23
electronic	blended education	How to do (job) and configure device (GS10, GS15)	The practical part is an application of the vocabulary of the mentioned theoretical part	5	Identify sources of errors in the GPS system	24
electronic	blended education	How to configure (Base GS10) and (Rover GS15) to work in Post Processing method	The practical part is an application of the vocabulary of the mentioned theoretical part	5	Get to know the working principle of GPS	25
electronic	blended education	Create ground control points in the field by post-processing method	The practical part is an application of the vocabulary of the mentioned theoretical part	5	Understand the principles of geodesy (geo, spheroid, coordinate systems)	26
electronic	blended education	Configure (Base GS10) and (Rover GS15) to work in the RTK method	The practical part is an application of the vocabulary of the mentioned theoretical part	5	Explanation of monitoring methods using the GNSS system and an explanation of each method	27

electronic	blended education	Coordinates of an unknown point (X,Y,Z)	The practical part is an application of the vocabulary of the mentioned theoretical part	5	Explanation of the parts of the GNSS system (Leica Viva)	28
electronic	blended education	Configure the Base GS10 and Rover GS15 to work in the RTK method and raise the beams in this way	The practical part is an application of the vocabulary of the mentioned theoretical part	5	How to do (job) and configure device (GS10, GS15)	29
electronic	blended education	Configure the Base GS10 and Rover GS15 to work in the RTK method and raise the beams in this way	The practical part is an application of the vocabulary of the mentioned theoretical part		Finding the coordinates of an unknown point (X,Y,Z) and processing it by sending it to the correction sites via the Internet	30

	1- Required prescribed books
	2- Main references (sources)
	Recommended books and references (scientific journals, (... ,reports
	B electronic references, ...websites

Course Development Plan 10 10

Course description: Computer applications Name of the subject teacher: Ismaib Rasoul Abdel Moneim

:Objectives of the general article

The student will be able to use the (Land desktop) program for the purpose of representing the field-observed data in modern monitoring devices that deal with points such as (Total station, DGPS) and displaying them in the form of a map and according to the purpose of that work

Middle Technical University - Kut Technical Institute	1. Educational Institution
Department of Survey Technology	2. Scientific Department / Center
Computer applications	3. Course name/code
built in	4. Forms of attendance available
The first and second semester of the academic year 2021-2020	5. Semester/year
(90) hours of study at a rate of (3) hours per week	6. Number of hours of study (total)
//	7. The date this description was made
1. Course objectives: At the end of the academic year, the student will be able to:	
1.- Using the (Land desktop) program for the purpose of representing the field-observed data in modern monitoring devices	
2.-Identification that deals with points such as (Total station, DGPS)	
3.-Identify the shape of a map and according to the purpose of that work	

**Using the (Land desktop) program for the purpose of representing the -1
field-observed data in modern monitoring devices
(Identification that deals with points such as (Total station, DGPS--2
.Identify the shape of a map and according to the purpose of that work--3**

B - Skills of the objectives of the course.

B1- To be able to design map -

B2 To be able to calculate areas. positioning

B3 - Providing consultancy for strategic engineering projects

Teaching and learning methods

1 - The substantive questions and are divided into: multiple choice questions or end-of-year questions
.Self-evaluation and evaluation of the colleague --2

:The tests include -3

.A - constructive achievement tests accompanying the teaching plans

:B - Final achievement tests and include

.Monthly final exams at the end of each academic month ●

.Semester final exams at the end of a semester ●

.Final final exams at the end of the academic year ● ●

Evaluation methods

:Using achievement tests -1

daily ●

Monthly ●

Quarterly ●

Final ●

C- Emotional and value goals

.C1 - Presenting new ideas on the topic by the student

.C2 - The student's ability to evaluate the topic and provide solutions

.C 3 - differentiate between problems

.C4 - Explains and analyzes phenomena and problems

Teaching and learning methods

.Use the presentation and presentation method - 1

.Draw illustrations - 2

.Brainstorming method - 3

**D - Transferred general and qualifying skills (other skills related to employability and personal
(development**

.D 1- Skills of using references and terminology

.D 2 - Skills in collecting and analyzing data on the subject

.D 3 - the skills of exploiting the available capabilities

D 4- Skills of making comparisons on the topic

.D5- Skills of preparing special concepts on the topic

Method of Assessment	Method of Teaching	Week Unit Name/Subject	Required Learning Outcomes	Hours	Week	d
electronic	blended education	Comparison between normal AutoCAD and Landscape, main menus, file types	Introduction: Comparison between normal AutoCAD and Landscape, main menus, file types	3	Introduction: Comparison between normal AutoCAD and Landscape, main menus, file types	1
electronic	blended education	Introduction: Comparison between normal AutoCAD and Landscape, main menus, file types	Create a project draft within the design specification	3	Create a project draft within the design specification	2
electronic	blended education	Create a project draft within the design specification	Working with raster beams	3	Working with raster beams	3
electronic	blended education	Working with raster beams	Configure the points	3	Configure the points	4
electronic	blended education	Configure the points	Configure points	3	Configure points	5
electronic	blended education	Configure points	Organize points	3	Organize points	6
electronic	blended education	Organize points	import points	3	import points	7
electronic	blended education	import points	Written Supplement Label	3	Written Supplement Label	8
electronic	blended education	Written Supplement Label	Configure tag labels and tables	3	Configure tag labels and tables	9
electronic	blended education	Configure tag labels and tables	Working with Terrain Model Explorer	3	Working with Terrain Model Explorer	10
electronic	blended education	Working with Terrain Model Explorer	Surface model editing	3	Surface model editing	11

electronic	blended education	Surface model editing	contour lines industry	3	contour lines industry	12
electronic	blended education	contour lines industry	clip industry	3	clip industry	13
electronic	blended education	clip industry	clip industry	3	clip industry	14
electronic	blended education	clip industry	Calculation of volumes on the site	3	Calculation of volumes on the site	15
electronic	blended education	Calculation of volumes on the site	Integrity	3	Integrity	16
electronic	blended education	Integrity	Integrity	3	Integrity	17
electronic	blended education	Integrity	natural earth modeling	3	natural earth modeling	18
electronic	blended education	natural earth modeling	Civil Design / Sectional Representation	3	Civil Design / Sectional Representation	19
electronic	blended education	Civil Design / Sectional Representation	vertical straightening	3	vertical straightening	20
electronic	blended education	vertical straightening	template	3	template	21
electronic	blended education	template	Edit the template	3	Edit the template	22
electronic	blended education	Edit the template	syllables	3	syllables	23
electronic	blended education	syllables	clip editing	3	clip editing	24
electronic	blended education	clip editing	earthworks account	3	earthworks account	25
electronic	blended education	earthworks account	side road slopes	3	side road slopes	26
electronic	blended education	side road slopes	Move route route	3	Move route route	27
electronic	blended education	Move route route	Final print	3	Final print	28
electronic	blended education	Final print	Final print	3	Final print	29
electronic	blended education	Final print	Final print	3	Final print	30

	1- Required prescribed books
	2- Main references (sources)
<p>-1 Auto Cad Land Desktop Tutorial /Autodesk co./2009</p> <p>-2 المرجع العملي في برنامج Autodesk Land /Desktop سعد يحيى حنية/ شعاع للنشر والعلوم 2008/</p>	Recommended books and references (scientific journals, (... ,reports
	B electronic references, ...websites

Course Development Plan 10 10

Course description: Engineering and cadastral survey

. **Name of the subject teacher: Baydaa ismail**

Objective: Teaching and training students how to calculate and measure areas, find the volumes of soil quantities, make calculations for horizontal and vertical curves and project them on the ground, project the facilities and make the necessary calculations to find the lengths and missing directions of the boundaries of the plots of land and the coordinates of their corners and calculate their areas and	
Middle Technical University - Kut Technical Institute	1. Educational Institution
Department of Survey Technology	2. Scientific Department / Center
Engineering and cadastral surveying	3. Course name/code
built in	4. Forms of attendance available
The first and second semester of the academic year 2021-2020	5. Semester/year
(150) hours of study at a rate of (5) hours per week	6. Number of hours of study (total)
//	7. The date this description was made
1. Course objectives: At the end of the academic year, the student will be able to:	
1. Course objectives: At the end of the academic year, the student should be able to 1. Teaching and training students how to calculate and measure areas and volumes of soil quantities 2. Calculations for vertical and horizontal curves 3. Performing calculations to find unknown lengths and directions 4. Solve problems with all kinds of intersections and back intersections Division of lands using 5	
9 - Course outcomes and methods of teaching, learning and assessment A- Cognitive goals A 1. Teaching the student to find areas and volumes A2. Teach the student how to find calculations in curves of all kinds	

A 3. Teach the student to find directions and unknown lengths
A4. Teach students how to solve intersection problems
A 5 . Teaching the student how to divide the land with modern equipment
B - the skill objectives of the course.
B1. The student should be able to calculate areas and volumes
B2 The student should be able to make calculations of horizontal and vertical curves
B3 - To be able to find the missing lengths and directions
B-4 The student should be able to divide the land using modern equipment

Teaching and learning methods

1 - Objective questions are divided into: multiple choice questions, true and false questions, or comparison questions

2 - Self-evaluation and evaluation of the colleague.

3- The tests include:

A - Constructive achievement tests accompanying the teaching plans.

B - Final achievement tests and include:

- **Monthly final exams at the end of each academic month.**
- **Semester final exams at the end of a semester.**

Final final exams at the •

B - Skills of the objectives of the course.

B1- To be able to design map -

B2 To be able to calculate areas. positioning

B3 - Providing consultancy for strategic engineering projects

Evaluation methods

1- Using achievement tests:

- daily
- Monthly
- Quarterly

Final •

النص المصدر

ja- al'ahdaf alwijdaniat walqiamia ju1- tarah afkar jadidat hawl almawdue min qibal altaalib . ju2-qudrat altaalib ealaa taqyim almawdue waeta' alhulul . ju3-yifaruq bayn almushkilat . ju4- yufasir wayuhalil alzawahir walmushkilat .

187 / 5000

نتائج الترجمة

C- Emotional and value goals

C1 - Presenting new ideas about the topic by the student.

C 2- The student's ability to evaluate the topic and give solutions.

C 3 - differentiate between problems. .C4 - Explains and analyzes phenomena and problems
Teaching and learning methods 1 - Use the presentation and presentation method. 2- Draw illustrations. Brainstorming met - 3
Transferred general and qualification skills (other skills related to employability and personal development). D 1- Skills of using references and terminology. D 2 - Skills in collecting and analyzing data on the subject. D 3 - the skills of exploiting the available capabilities. D 4- Skills of making comparisons on the topic .D 5 - Skills of preparing special concepts about the subject

Method of Assessment	Method of Teaching	Week Unit Name/Subject	Required Learning Outcomes	Hours	Week
electronic	blended education	An introduction to the geometric and cadastral survey and the scale used for each case, with an explanation of the different methods for calculating the areas in the field, including: the areas of regular shapes, and the division into regular geometric shapes such as triangles, squares, rectangles, trapezoids, circles and their parts	Solve practical exercises for calculating the areas in the field using different regular shapes and dividing the plot of land into triangles or regular shapes using different laws	5	1
electronic	blended education	erecting columns at equal intervals (in a trapezoidal and Simpson's method), erecting columns at unequal intervals on the survey line for a plot of land and calculating their areas by all the methods indicat	Solve practical exercises for calculating areas in the field using the trapezoidal and Simpson laws when using columns at equal intervals, then using the area law for columns at unequal intervals	5	2
electronic	blended education	Using the coordinates method in calculating the areas, the method of the longitude multiplier (D.M.D) method	Solve practical exercises for calculating the area of a closed polygon using the coordinate method and the longitudinal multiplier method (D.M.D.), their applications for equal and unequal periods	5	3

electronic	blended education	he different methods for calculating areas from the map include: dividing into regular geometric shapes such as triangles or squares or using graph papers, using slides, using an electronic planometer to calculate areas (when the fixation point is i	Adopting a specific map or piece of irregular shape and calculating its area using the planometer (when the fixation point is inside or outside the shape), calculating its area using division into triangles and using squares or graphs and slices - drawing a number	5		4
electronic	blended education	An introduction to the geometric and cadastral survey and the scale used for each case, with an explanation of the different methods for calculating the areas in the field, including: the areas of regular shapes, and the division into regular geometric shapes such as triangles, squares, rectangles, trapezoids, circles .and their parts	Solve practical exercises for calculating the areas in the field using different regular shapes and dividing the plot of land into triangles or .regular shapes using different laws	5		5
electronic	blended education	erecting columns at equal intervals (in a trapezoidal and Simpson's method), erecting columns at unequal intervals on the survey line for a plot of land and calculating their areas by all the methods indicat	Solve practical exercises for calculating areas in the field using the trapezoidal and Simpson laws when using columns at equal intervals, then using the area law for columns at unequal .intervals	5		6
electronic	blended education	Using the coordinates method in calculating the areas, the method of the longitude multiplier .(D.M.D) method	Solve practical exercises for calculating the area of a closed polygon using the coordinate method and the longitudinal multiplier method (D.M.D.), their applications for equal and .unequal periods	5		7
electronic	blended education	he different methods for calculating areas from the map include: dividing into regular geometric shapes such as triangles or squares or using graph papers, using slides, using an electronic planometer to calculate areas (when the fixation point is i	Adopting a specific map or piece of irregular shape and calculating its area using the planometer (when the fixation point is inside or outside the shape), calculating its area using division into triangles and using squares or graphs and slices - drawing a number	5		8
electronic	blended education	An introduction to the geometric and cadastral survey and the scale used for each case, with an explanation of the different methods for calculating the areas in the field, including: the areas of regular shapes, and the division into regular geometric shapes such as triangles, squares, rectangles, trapezoids, circles .and their parts	Solve practical exercises for calculating the areas in the field using different regular shapes and dividing the plot of land into triangles or .regular shapes using different laws	5		9
electronic	blended education	erecting columns at equal intervals (in a trapezoidal and Simpson's method), erecting columns at unequal intervals on	Solve practical exercises for calculating areas in the field using the trapezoidal and Simpson laws when using columns at equal intervals, then using the area law for columns at unequal	5		10

		the survey line for a plot of land and calculating their areas by all the methods indicat	.intervals			
electronic	blended education	Using the coordinates method in calculating the areas, the method of the longitude multiplier .(D.M.D) method	Solve practical exercises for calculating the area of a closed polygon using the coordinate method and the longitudinal multiplier method (D.M.D.), their applications for equal and .unequal periods	5		11
electronic	blended education	he different methods for calculating areas from the map include: dividing into regular geometric shapes such as triangles or squares or using graph papers, using slides, using an electronic planometer to calculate areas (when the fixation point is i	Adopting a specific map or piece of irregular shape and calculating its area using the planometer (when the fixation point is inside or outside the shape), calculating its area using division into triangles and using squares or graphs and slices - drawing a number	5		12
electronic	blended education	An introduction to the geometric and cadastral survey and the scale used for each case, with an explanation of the different methods for calculating the areas in the field, including: the areas of regular shapes, and the division into regular geometric shapes such as triangles, squares, rectangles, trapezoids, circles .and their parts	Solve practical exercises for calculating the areas in the field using different regular shapes and dividing the plot of land into triangles or .regular shapes using different laws	5		13
electronic	blended education	erecting columns at equal intervals (in a trapezoidal and Simpson's method), erecting columns at unequal intervals on the survey line for a plot of land and calculating their areas by all the methods indicat	Solve practical exercises for calculating areas in the field using the trapezoidal and Simpson laws when using columns at equal intervals, then using the area law for columns at unequal .intervals	5		14
electronic	blended education	An introduction to the geometric and cadastral survey and the scale used for each case, with an explanation of the different methods for calculating the areas in the field, including: the areas of regular shapes, and the division into regular geometric shapes such as triangles, squares, rectangles, trapezoids, circles .and their parts	Solve practical exercises for calculating the areas in the field using different regular shapes and dividing the plot of land into triangles or .regular shapes using different laws	5		15
electronic	blended education	erecting columns at equal intervals (in a trapezoidal and Simpson's method), erecting columns at unequal intervals on the survey line for a plot of land and calculating their areas by all the methods indicat	Solve practical exercises for calculating areas in the field using the trapezoidal and Simpson laws when using columns at equal intervals, then using the area law for columns at unequal .intervals	5		16
electronic	blended education	Using the coordinates method in calculating the areas, the method	Solve practical exercises for calculating the area of a closed polygon using the coordinate method	5		17

		of the longitude multiplier (D.M.D) method	and the longitudinal multiplier method (D.M.D.), their applications for equal and .unequal periods			
electronic	blended education	he different methods for calculating areas from the map include: dividing into regular geometric shapes such as triangles or squares or using graph papers, using slides, using an electronic planometer to calculate areas (when the fixation point is i	Adopting a specific map or piece of irregular shape and calculating its area using the planometer (when the fixation point is inside or outside the shape), calculating its area using division into triangles and using squares or graphs and slices - drawing a number	5		18
electronic	blended education	An introduction to the geometric and cadastral survey and the scale used for each case, with an explanation of the different methods for calculating the areas in the field, including: the areas of regular shapes, and the division into regular geometric shapes such as triangles, squares, rectangles, trapezoids, circles .and their parts	Solve practical exercises for calculating the areas in the field using different regular shapes and dividing the plot of land into triangles or .regular shapes using different laws	5		19
electronic	blended education	erecting columns at equal intervals (in a trapezoidal and Simpson's method), erecting columns at unequal intervals on the survey line for a plot of land and calculating their areas by all the methods indicat	Solve practical exercises for calculating areas in the field using the trapezoidal and Simpson laws when using columns at equal intervals, then using the area law for columns at unequal .intervals	5		20
electronic	blended education	Using the coordinates method in calculating the areas, the method of the longitude multiplier (D.M.D) method	Solve practical exercises for calculating the area of a closed polygon using the coordinate method and the longitudinal multiplier method (D.M.D.), their applications for equal and .unequal periods	5		21
electronic	blended education	he different methods for calculating areas from the map include: dividing into regular geometric shapes such as triangles or squares or using graph papers, using slides, using an electronic planometer to calculate areas (when the fixation point is i	Adopting a specific map or piece of irregular shape and calculating its area using the planometer (when the fixation point is inside or outside the shape), calculating its area using division into triangles and using squares or graphs and slices - drawing a number	5		22
electronic	blended education	An introduction to the geometric and cadastral survey and the scale used for each case, with an explanation of the different methods for calculating the areas in the field, including: the areas of regular shapes, and the division into regular geometric shapes such as triangles, squares, rectangles, trapezoids, circles .and their parts	Solve practical exercises for calculating the areas in the field using different regular shapes and dividing the plot of land into triangles or .regular shapes using different laws	5		23

electronic	blended education	erecting columns at equal intervals (in a trapezoidal and Simpson's method), erecting columns at unequal intervals on the survey line for a plot of land and calculating their areas by all the methods indicat	Solve practical exercises for calculating areas in the field using the trapezoidal and Simpson laws when using columns at equal intervals, then using the area law for columns at unequal intervals	5		24
electronic	blended education	Using the coordinates method in calculating the areas, the method of the longitude multiplier (D.M.D) method	Solve practical exercises for calculating the area of a closed polygon using the coordinate method and the longitudinal multiplier method (D.M.D.), their applications for equal and unequal periods	5		25
electronic	blended education	An introduction to the geometric and cadastral survey and the scale used for each case, with an explanation of the different methods for calculating the areas in the field, including: the areas of regular shapes, and the division into regular geometric shapes such as triangles, squares, rectangles, trapezoids, circles and their parts	Solve practical exercises for calculating the areas in the field using different regular shapes and dividing the plot of land into triangles or regular shapes using different laws	5		26
electronic	blended education	erecting columns at equal intervals (in a trapezoidal and Simpson's method), erecting columns at unequal intervals on the survey line for a plot of land and calculating their areas by all the methods indicat	Solve practical exercises for calculating areas in the field using the trapezoidal and Simpson laws when using columns at equal intervals, then using the area law for columns at unequal intervals	5		27
electronic	blended education	Using the coordinates method in calculating the areas, the method of the longitude multiplier (D.M.D) method	Solve practical exercises for calculating the area of a closed polygon using the coordinate method and the longitudinal multiplier method (D.M.D.), their applications for equal and unequal periods	5		28
electronic	blended education	he different methods for calculating areas from the map include: dividing into regular geometric shapes such as triangles or squares or using graph papers, using slides, using an electronic planometer to calculate areas (when the fixation point is i	Adopting a specific map or piece of irregular shape and calculating its area using the planometer (when the fixation point is inside or outside the shape), calculating its area using division into triangles and using squares or graphs and slices - drawing a number	5		29-30

-1	1- Required prescribed books
<p>1- Engineering and cadastral survey (systematic) / written by Ziyad Abdul-Jabbar Al-Bakr / Dar Al-Kutub and Publishing / Mosul University 1993.</p> <p>2- Al-Masa'ah (part one) / written by B. CZ Penemia / Translated by Ziyad Abdul-Jabbar Al-Bakr (in press since 1988)</p> <p>3- Geometric Survey (parts one and two) / authored by W.P. Scofield / translated by Riyadh Shaan 1983</p> <p>4- Surveying Vol.1 & Vol. 2) / B.C. Punmi a/Standard Book House, Delhi, India. 1978.</p> <p>5- Engineering Surveying (Vol. I & Vol.2)/ W.Scho field / Newness – Butter Woths/ London / Britain. 1978.</p> <p>6- Surveying for Engineers / J. Uren. & W.F. Price / MacMillan / London/ Britain. 1985.</p> <p>manual of GPS, Total station, Autocad disk land, Auto -7 disk Civil 3D</p>	2- Main references (sources)
	Recommended books and references (scientific journals, (... ,reports
	B electronic references, ...websites