

**Ministry of Higher Education and Scientific Research
Supervisory and Scientific Evaluation Body
Department of Quality Assurance and Academic
Accreditation
Accreditation Section**



Academic Program and Course Description Guide Academic2025

the introduction:

It is The program Educational As pack Coordinator and organization from Courses Study that Includes on procedures and experiences organize In a way Vocabulary Study Purpose basis From it building And polish skills graduates Which Make them Qualified To meet requirements market the job It is Review it And its evaluation annually Through procedures Internal or external audit programs such as the External Examiner Program.

He presents a description The program Academic summary summary For the features President For the program and its decisions Demonstrating the skills that It is the job on Gaining it For students Built on according to Goals The program The academic and manifests importance this Description Because he It represents Stone basis in Get on Accreditation The program and participates In his writing, the teaching staff is supervised by the scientific committees in the scientific departments..

It includes This guide, in its second edition, describes the academic program after updating the vocabulary and paragraphs of the previous guide in light of the latest developments and advancements in the Iraqi education system, which included a description

The program Academic In its form traditional system)annual, quarterly(Please on Approval a description The program

Academic The turban Under book circle Studies T m2906/3 in 2023/5/3 In the Regarding programs Which relies primarily on the Bologna Process for its work.

And in this Field no We can unless that We confirm on importance writing a description Programs Academics and Courses The study is to ensure the smooth running of the educational process..

Concepts and terms:

a description The program Academic: He provides a description The program Academic In brief Briefly To see him And his message and its goals

Including Description accurate **Targeted learning outcomes according to specific learning strategies.**

a description The course: He provides In brief Requiring For the most important features The course and outputs Learning Expected from student Achieving it

Proving About if He was may Achieved Benefit Maximum from Opportunities Learning Available. And it will be derivative from Program Description.

image Ambitious For the future The program Academic To be program advanced and inspiring and

visionThe
program:

motivator And in reality, it explains Goals and activities Necessary To achieve it In a way summary

and acceptable
For
the

as He specifies Paths development The program

applicatio

n. message
The
program:

and its trends.

Goals The program: she expressions Describe what He intends The program Academic Investigating it during a period Time Specific And it is

midwife For measurement And the observation.

Structure Curriculum: all Courses Study / Materials Study that It includes The program Academic on according to system Learning Approved)quarterly, annual, path Bologna(whether She was Requirement)ministry, university, college And the section scientific(With a number **Study units.**

outputs Learning: group Compatible from Knowledge and skills and values that Acquire it student after an end Academic Program Successfully And it is necessary that He specifies outputs Learning per Decision In the form that Investigates Goals The program Strategies education and learning: That she Strategies Used from before member body teaching To develop Teaching and learning student It is Plans It is Follow it To reach to Goals Learning. any Describe all Activities The classroom **Extracurricular activities to achieve the program's learning outcomes.**

وزارة التعليم العالي والبحث العلمي - جهاز
الأشراف والتقويم العلمي دائرة ضمان الجودة
والاعتماد الأكاديمي

استمارة وصف البرنامج الأكاديمي للكليات والمعاهد

الجامعة : النخبة الشمالية

الكلية/المعهد: كلية البوليتكنك/كركوك
القسم العلمي : تقنيات الحاسب

تاريخ ملء الملف :

٢٠٢٠/٤



التوقيع :

اسم المعلون العلمي : (أ.م.د.) زهير عبد محمد



التوقيع :

اسم رئيس القسم : أ.م.د. نهاد داود حسن

التاريخ : ٢٠٢٠ / ١٠ / ١٤

التاريخ : ٢٠٢٠ / ١٠ / ١٤

نقى الملف من قبل

شعبة ضمان الجودة والأداء الجامعي

اسم مسؤول شعبة ضمان الجودة والأداء الجامعي : أ.م.د. الأستاذ المساعد الدكتور

التاريخ : ٢٠٢٠ / ١٠ / ١٤

التوقيع :



مصلحة السيدة العبد
أ.د. ناشتي مهدي عارف

Ministry of higher education and scientific research
Scientific supervision and evaluation directorate
Quality assurance and academic accreditation

ACADEMIC PROGRAM SPECIFICATION FORM

University: Northern Technical University
College: Kirkuk polytechnic college
Department: Surveying Techniques
Date of form: 2025



Prof. Dr. Ashty M. Arif
The Dean

Date: 12/10/2025



Asist. prof. Zuhair shakur
Dean's Assistant for scientific Affairs

Date: 12/10/2025



Head of Department: Asst. Prof. Dr. Nihad Davut Hassan
Date: 12/10/2025



Asist. lecturer. Alaa AbdulWahhab Aziz
Quality Assurance And University Performance Manager
Date: 12/10/2025

vision The	1.
We look forward To develop the characteristics and skills of managerial creativity among future business leaders in line with the needs of the labor market.	

message	2.
qualification Students Accepted With skills cognitive and specializations Required in area to implement concept))from Institute to the field the job((Based on on Curricula academic Modern and technologies training Advanced in numbers Student training on Devices Surveying Training practical To gain their skills technique High Level and degree High from Efficiency And their release toThe labor market and ensuring access to suitable opportunities for them at the level of government	

Program	3.
He aimsThe department aims to prepare highly skilled technical personnel to carry out various field and office surveying tasks, whether in government departments or the private sector..... Among them: 1.Calculating areas and determining - ownership? Triangulation	

Accreditation	4.
according to system Learning Approved)quarterly, annual(whether She was Requirement (Minister) university, college And the section scientific(with number	

Effects Foreign	5.
groupThe learning outcomes for each course should be aligned with the knowledge, skills, and values acquired by the student upon	

6. Structure The program				
comments *	ratio centennial	Study unit	Number of courses	structure The program
8 Decision essential and2 non essential		22	10	requirements The Foundation)the university(
essential		5	2	requirements College
essential		79	22	requirements Section
			There is	Training Summer
				Other

* maybe that It includes Notes In the if He was The course essential or optional .

.7 Courses Study						
semester	Units	Hours Approved		name The course	Course code	Year / Level
		practic al	theoreti cal			
Chapter One	1	0	1	rights man	NTU100	Level Academic)the first(
	2	0	2	the language English 1	NTU101	
	3	2	1	principles computer 1	NTU102	
	2	0	2	the language Arabic	NTU104	
	2	0	2	mathematics 1	TIMO110	
	3	3	0	coefficient Mechanics	TIMO111	
	6	4	2	Area 1	SUT120	
	4	2	2	survey Air 1	SUT122	
	2	2	0	The drawing Engineering computer 1	SUT128	
	1	0	1	Sensing on after 1	SUT124	
the chapte rthe seco nd	1	0	1	Democracy	NTU106	
	3	2	1	principles computer 2	NTU103	
	2	1	1	Sports)optional(	NTU105	
	2	0	2	the language French)optional(	NTU107	
	2	0	2	triangles spherical	SUT130	
	6	4	2	Area Using Theodolite	SUT121	
	2	2	0	The drawing Using AutoCAD	SUT129	
	4	2	2	survey photographic	SUT123	
	1	0	1	Treatment The image	SUT125	
	1	0	1	science surface the earth	SUT126	
	2	2	0	Civil Engineering	SUT127	
Chapter One	2	0	2	crimes party The Baath	3NTU20	Level Academic)the second(
	2	0	2	the language English 2	NTU200	
	2	0	2	Ethics Profession	NTU201	
	4	2	2	survey photographic 2	SUT206	
	8	6	2	Area level	SUT202	
	5	3	2	survey Engineering	SUT203	
	5	0	2	principles maps	SUT204	
	2	0	2	Specifications And guessing	SUT208	
	4	3	1	system Positioning Global	SUT205	
	3	3	0	fee Al-Kharlat computer	SUT207	
the chapte rthe seco	4	2	2	survey digital	SUT213	
	8	6	2	Area Geodesy	SUT209	
	5	3	2	survey cadastral	SUT210	
	5	3	2	design And preparation maps	SUT211	
	2	0	2	survey Quantitative	SUT215	
	4	3	1	Organized Information Geography GIS	SUT212	

nd	3	3	0	design Roads computer	SUT214
	3	3	0	Project	SUT216

8. outputs Learning Expected For the program

Knowledge

outputs Learning cognitive she results Learning Expected that focus on acquisition Knowledge And understanding and skills Critical thinking It includes This is amazing Outputs ability on to remember The facts, And he understood Concepts, and application Knowledge, And analyzing information, Evaluate and configure it.

- .1 How to Doing Works surveys Field .2 How to Use Devices Surveying Modern
- .3 Identifying aerial photography equipment and reading aerial photographs .4 Linking computer programs with field data
- .5 Use computer For numbers maps
- .6 UseA device for determining locations, levels, and coordinates GPS
- .7 analysis the pictures Air

Skills

outputs Learning Marathi Expected she group from Abilities and skills that He should that He acquires it learner After completion practical Learning Successfully .This is amazing Skills maybe that be skills practical)like Use tool or Performing the operation() or skills Intellectual)like solution Problems or thinking Critical() or skills communication)like Writing Or speaking(

- .1 It aims to Preparation Angels technique Eligible to practice Activities Related By specifying Levels and coordinates For points Observed Promising maps Topography For the area the job Analysis Aerial photographAnd satellite imagery and converting it into maps
- .2 numbersHighly skilled technical personnel with expertise in surveying who are able to handle changes thatYou get it in your field of expertise
- .3 qualifies Section cadre effective To stand In operations Surveying from works Field and use Devices SurveyingModern
- .4 acquisition The cadre skills in Activities Business Surveying Field And the office And with Keep up Labor market requirements
- .5 skills Leadership And bear Responsibility And performance the job Required In a way

Values

outputs Values Learning Expected she what Expected from learner that He learns it or He acquires it from during practical Learning It is a phrase on results Specific, and expresses Level that He should that He is attic learner from Knowledge, skills, attitudes,After completing the learning process.

- .1 development Abilities Students on sharing Ideas
- .2 Evaluate Solutions Presented and choosing optimum And react Students inside The hall
- .3 For testsDaily, quarterly, and end-of-year reporting, and weekly and quarterly reporting. .4 ReportsScientific, student seminars, study circles, cultural and general events
- .5 The exam in beginning Lecture It includes topic For a lecture Previous, Exams Oral discussion during the lecture on the same topic as the lecture

9. StrategiesEducation and learning

- .1 to explain Material Scientific For students In a way detailed
- .2 Applications of field surveys on modern surveying equipment .3 Computer applications
- .4 Use means visible like show) (data
- .5 numbersWeekly and quarterly reports and scientific visits
- .6 strategy education interactive And direct and development Abilities students To help them in receipt Material Scientific acquisition student capacity on to learn Self and skill in employment what to learn in New fields
- .7 Using workshopsMechanical and Civil Engineering Laboratories and Specialized Laboratories .8 TrainingSummer

10 Methods Evaluation

- .1 Weekly, monthly, daily, and end-of-year exams .2 Testing the use of surveying equipment in the field
- .3 paintings The drawing

11. The Authority teaching

Members body teaching (He mentions) All faculty members in the scientific department, including external and internal lecturers.

numbers Authority teaching		RequirementsS pecial skills)that I found (	Speciali zation		Rank Scientific
lecturer	angel		private	general	
	angel		engineering Area	engineering Area	Mr assistant
	angel		Ideal	mathematics	teacher
	angel		Geomatics	Geomatics	teacher
	angel		geology Engineering	sciences the earth Applied	Assistant teacher
	angel		Gardening and engineering Gardens	Agriculture	Assistant teacher
	angel		imaging scan	engineering Area	Assistant teacher
	angel		to survey Air	engineering Area	Assistant teacher
lecturer			imaging scan	engineering Area	Mr assistant
lecturer			engineering AreaGeographic Information Systems	engineering Area	Assistant teacher
lecturer			engineering software Advanced	Software Engineering	Assistant teacher
lecturer			the law Civilian	law	Assistant teacher
lecturer			the language	the language Arabic	Assistant teacher

Development Professional

directing Members body teaching New

stay Courses Office Digital and development seminars Scientific and episodes The Arsia Their instructions And preparing them And their numbers

and strategy throw Lectures and publishing Research

Development Professional For members body teaching

- .1 stay Courses Office Digital and development seminars Scientific and episodes Study inside Institutions Higher education and scientific research, their guidance, preparation, and lecture delivery strategyPublishing research, developing and improving curricula in accordance with the development of the new curriculum.
- .2 Training workshops .3 Scientific conferences
- .4 sessions an offer Updates Scientific

It is development The course Academic from during tracking last Releases Books And devices and tools and programs Modern surveying Related In the section Technologies Area Research Scientific and reports and projects and Books References that Recommended

In it /Magazines Scientific Research Regarding to divide Technologies Area

12 standard Acceptance

And he accepts Section graduates the study Preparatory With its two branches Scientific And literature And it is competition between Sections Technology According to Grades and the average Addition to desire student

13 Most important sources Information onThe program

- .1 Books The scheduled Required / books methodology**
- .2 Recommended books and referencesJournals: Al-Taqni Journal – Issues of the University Journal in Kirkuk – Technological UniversityUniversity of Baghdad, University of Tikrit**
- .3 Sourcespaper)what existing from booksSources in the Institute Library(**
- .4 SourcesElectronic)what existing from books in Library Electronic For the institute(**
- .5 SourcesAvailable in the virtual library of the Ministry of Higher Education and Scientific Research .6 SitesThe specialized**

14 plan development

- .1 UseWhat's new in modern electronic devices, modern surveying software, and the linking between them? PartThe theoretical and practical aspects of the course are covered through the student project component.**
- .2 Developing the curriculum by keeping up with the latest publications in the field of surveying techniques. ResearchScientific reports and projects**
- .3 the reviewerElectronic/Website belonging to the departmentThe institute's area and website .4 Studies to develop curricula through recommendations from sectoral committees**

a plan skills The program															
Learning outcomes required from the program															
Values				Skills				Knowledge				essential or optional	name The course	Course code	Year / Level
4J	3J	2J	1J	4b	3b	2b	1b	4a	3a	2a	1a				
		✓	✓					✓			✓	essential	rights man	NTU 100	Level the first 2024-2025
						✓	✓			✓	✓	essential	the language English 1	NTU 101	
						✓	✓		✓		✓	essential	Principles computer 1	NTU 102	
							✓			✓	✓	essential	the language Arabic	NTU 104	
							✓			✓	✓	essential	mathematics 1	TIMO 110	
					✓	✓	✓		✓			essential	Mechanical engineering	TIMO 111	
				✓		✓	✓		✓		✓	essential	Area 1	SUT 120	
					✓	✓	✓		✓		✓	essential	survey Air 1	SUT 122	
				✓		✓	✓		✓		✓	essential	The drawing Engineering computer 1	SUT 128	
					✓	✓	✓		✓		✓	essential	Sensing on after 1	SUT 124	
		✓	✓					✓		✓	✓	essential	Democracy	NTU 106	
				✓		✓	✓		✓		✓	essential	principles computer 2	NTU 103	
	✓		✓			✓	✓					optional	Sports)optional (	NTU 105	
						✓	✓			✓	✓	optional	the language French)optional (	NTU 107	
						✓	✓			✓	✓	essential	triangles spherical	SUT 130	
					✓	✓	✓		✓		✓	essential	Area Using Theodolite	SUT 121	
				✓		✓	✓		✓		✓	essential	The drawing Using AutoCAD	SUT 129	
				✓	✓	✓	✓		✓	✓	✓	essential	imaging scan	SUT 123	
				✓	✓	✓	✓		✓	✓	✓	essential	Treatment The image	SUT 125	
						✓	✓	✓		✓	✓	essential	science surface the earth	SUT 126	

				✓	✓	✓	✓	✓	✓			essential	Civil Engineering	SUT 127	
--	--	--	--	---	---	---	---	---	---	--	--	-----------	--------------------------	---------	--

a plan skills The program															
outputs Learning Required from The program															
Values				Skills				Knowledge				essential or optional	name The course	Course code	Year / Level
4J	3J	2J	1J	4b	3b	2b	1b	4a	3a	2a	1a				
						✓	✓			✓	✓	essential	the language English 2	NTU200	Level the second 2025-2024
	✓	✓	✓					✓				essential	Ethics Profession	NTU201	
				✓	✓	✓	✓		✓	✓	✓	essential	survey photographic 2	SUT206	
				✓		✓	✓		✓		✓	essential	Area level	SUT202	
					✓	✓	✓		✓		✓	essential	survey Engineering	SUT203	
						✓	✓				✓	essential	principles maps	SUT204	
						✓	✓	✓			✓	essential	Specifications And guessing	SUT208	
						✓	✓		✓		✓	essential	system Positioning Global GPS	SUT205	
				✓		✓	✓		✓		✓	essential	fee maps computer	SUT207	
					✓	✓	✓		✓		✓	essential	survey digital	SUT213	
						✓	✓		✓		✓	essential	Area Geodesy	SUT209	
						✓	✓		✓		✓	essential	survey cadastral	SUT210	
						✓	✓		✓		✓	essential	design And preparation maps	SUT211	
						✓	✓		✓		✓	essential	survey Quantitative	SUT215	
						✓	✓		✓		✓	essential	Organized Information Geography GIS	SUT212	
				✓		✓	✓		✓		✓	essential	design Roads computer	SUT214	

✓	✓	✓	✓	✓	✓	✓	✓					essential	Project	SUT216
		✓	✓					✓		✓	✓	essential	crimes party The Baath	NTU203

Courses Study For the stage First

1. name The course:	
flat area	
2. code The course:	
SUT120	
3. the chapter Academic / Year	
2024/2025	
4. date numbers Description	
/ 2025/	
5 shapes the audience Available	
daily My presence	
6. Number Hours Approved Total / number Units Total	
15 x 4 weeks = 60 hours (per semester) as per the course	
7. name responsible The course Mention allNames, if there is more than one name(	
the nameNihadDawood Hassan Hussein - Shilan immortal Raouf	
shelan_khald@ntu.edu.iq- nihadhassan@ntu.edu.iq : EmailMail	
8. Goals The course	
-1 Acquisition student Skills Basic Doing Works Trinity and ribbing and settlement	Goal s
-2 Recognition on UseSurveying equipment (levels and theodolites) available in the department	
-3 Equipping the student with the necessary skillsTo prepare contour maps indirectly using leveling tools	
-4 RecognitionOn some engineering operations that take place during tape measurement	
-5 Education student How to Calculation spacesDetermining ownership	
9. Strategies teaching and learning	
the explanation Theory (Lecture:) simplification Concepts And he explained Tools And the issues Using photo and videos Explanatory. Exercises The process: Exit For the field and application what Learn it practically Using devices like The scale and theodolite. Projects The small: He had the students work on simple projects, such as surveying a plot of land or drawing a map. So that they may learnBy experience.	strategy

Problem solving: an offer Problems Real and encouragement Students on thinking and finding Solutions she has Using what	
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Learn it. Use Technology: like Use ProgramsEngineering drawing for analyzing and surveying data. Evaluation Continuous: giving Tests short Questions Applied To follow to understand Students And guiding them.	
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structure The course .10					
Evalu ation Metho d	road education	name Unity / or the topic	Required learning outcomes	Hours	Week
Oral and practic al exams	theoretical My work	introduction on Area and units Measurement and recognition onScale drawing, its types, and measuring distances on the ground	Identifying the area Definition and summary of works	4 hours per week	6-1
oral exams My work	theoretical My work	procedureCalculations for horizontal and vertical components inClosed circular polygons, methods of correcting them, and finding coordinates	to get to knowThe student is required to perform calculations related to horizontal components. and the headClosed circular polygons, methods of correcting them, and finding coordinates	hours 4 per week	9-7
oral exams My work	theoretical My work	How toSelecting points for a closed link polygon, how to correct polygon angles Deflection angle - angle) My way to the right	educationThe student learned how to select points of a closed linking polygon, and how to correct the angles of the linking polygon	4 hours per week	12-10

			using my method. Deflection angle -) angle to the right		
oral exams My work	theoretical My work	How to Procedure for closed linking polygonHorizontal vehicles and the head(and account Coordinates and procedureCorrections using the compass and crossing methods, and how Overcoming on)revision(mistake lock	identificationThe student learns how to construct a closed linking polygon with horizontal and vertical components.(An d calculating the corrections based on coordinates)My method of compass and crossing, and how to overcome)revision(mistake lock	4 hours per week	15-13
evaluation The course					11
Grade distributionfrom100 according to the tasks assigned to the student such as daily preparation, daily oral tests, TestsMonthly or written reports...etc..					

12 Resources Learning Education	
Raymond E.Davis Joe Welly. Elementary plan surveying	Required textbooksTextbo oks, that I found(
Library virtual affiliated Ministry education High Research Scientific	the reviewerMain(Sources)

Area level – authorship: d. Ibrahim slave God The carpenter Elementary Surveying: An Introduction to Geomatics – Written by: Charles D. Ghilani & Paul R. Wolf Area Applied – authorship: d. Younes slave The Most Merciful	Books and references Recommended Scientific journals and reports(...
LibraryThe virtual library of the Ministry of Higher Education and Scientific Research contains books available in the institute's electronic library.	the reviewer Electronic and websites

1. name The course:	
Area Using device Theodolite	
2. code The course:	
SUT 121	
3. the chapter Academic / Year	
2024/2025	
4. date numbers Description	
/ 2025/	
5 shapes the audience Available	
daily My presence	
6. Number Hours Approved Total / number Units Total	
15 x 3 weeks = 45 hours (per semester) as per the syllabus	
7. name responsible The course Mention all Names, if He was there more from name one(	
the name: NihadDawood Hassan Hussein	
_ nihadhassan@ntu.edu.iq electronicMail	
8. Goals The course	
-1 Equipping the student with skillsThe basics of understanding surveying work that requires the use of a theodolite.	Goals
-2 Recognition on device Theodolite and its parts and job all partLearn to read horizontal and vertical circles	
-3 Equipping the student with the necessary skills to observe anglesHorizontal and vertical dimensions, learning about north and north, and identifying types of polygons.	
-4 RecognitionBased on coordinatesPoint locationsUsing corrected vertical and horizontal components and coordinate correction	
-5 EducationThe student learns how to select points for a closed link polygon, observe all angles, correct the angles of the closed link polygon, and how to draw it.	
9. Strategies teaching and learning	
the explanation Theory: - identificationDevice components and functions. - to explain steps Monument The device And he controlled it. And how reading corners horizontal and vertical. .the offer practical In the video And the pictures:	strategy

• Use Instructional videos or illustrative images to explain how to use the device step by step. • Facilitation Understanding Visual aid for students before practical application. The application Field practical: • training Students in The square On setting up the device and using it to measure real angles. • to encourage the job collective and exchange Roles inside The group. Problem-solving: • Presentation Issues Applied, like measurement corner between two points or to set direction deviation. • training Students on thinking Logical in Use The device To reach For the solution. Use Technology: • link Data Field With programs like AutoCAD. • Use Simulation programs that demonstrate the device's functions and operating principle. Evaluation The stage: • Tests short around parts Device and operating steps. • note Evaluation Performance practical in The field.					
.10 structure The course					
Evaluation Method	road education	name Unity / or the topic	Required learning outcomes	Hours	Week
Oral and practical exams	theoretical My work	identification on device Theodolite Its main parts The function of each part is to learn how to read horizontal and vertical circles and the types of north. Polygons And make all corrections to the horizontal angles of the polygon	Gain The student needs basic skills to understand business. The surveying area that requires the use of a theodolite and getting to know each other on Polygons of all types	3 hours per week	6-1

oral exams My work	theoretical My work	procedureCalculations for horizontal and vertical components inClosed circular polygons, methods of correcting them, and finding coordinates	to get to know student On conducting private calculationsHorizontal and vertical components in closed circular polygons and methods Correct itFinding the coordinates	3 hours per week	9-7
oral exams My work	theoretical My work	How toSelecting points for a closed link polygon, how to correct polygon angles Deflection angle - angle) My way to the right	educationThe student learned how to select points of a closed linking polygon, and how to correct the angles of the linking polygon using my method.	3 hours per week	12-10

			Deflection angle - angle to the right		
oral exams My work	theoretical My work	How toProcedure for closed linking polygonHorizontal vehicles and the head(and account Coordinates and procedureCorrections using the compass and crossing methods, and how Overcoming on)revision(mistake lock	identificationThe student learned how to construct a polygon. Link Closed horizontal and vertical vehicles(And calculating the corrections based on coordinates)My method of compass and crossing, and how to overcome)revision(Lock error	3 hours per week	15-13

evaluation The course

11

Grade distributionfrom100 according to the tasks assigned to the student such as daily preparation, daily oral tests, Tests**Monthly or written reports...etc..**

Raymond E.Davis Joe Welly. Elementary plan surveying	Required textbooksTextbooks, that I found(
Library virtual affiliated Ministry education High Research Scientific	the reviewerMain(Sources)
Area Applied –Author: d. Younes slave The Most Merciful Reports Ministries and bodies Engineering)like ministry Reconstruction Housing or Circles Roads and bridges(	Books and references Recommended Scientific journals and reports(...
LibraryThe virtual library of the Ministry of Higher Education and Scientific Research contains books available in the institute's electronic library.	the reviewer Electronic and websites

1. name The course:	
survey photographic	
2. code The course:	
SUT 123	
3. the chapter Academic / Year	
2025/2026	
4. date numbers Description	
2026/ /	
5 shapes the audience Available	
daily My presence	
6. Number Hours Approved Total / number Units Total	
x4 15 weeks = 60 hours (For the chapter) Academic(According to The course	
7. name responsible The course Mention all Names, if He was there more from name one(	
the name: NihadDawood Hassan Hussein - Susan AtaBakr Mustafa	
Suzan-atta@ntu.edu.iq - nihadhassan@ntu.edu.iq electronicMail	
8. Goals The course	
Gain student Al-Maha Art Basic To understand the pictures Air, And satellite	Goal s
-2 Recognition on.. on B Armj Modern like program Imaginc Erdas	
Gain student Al-Maha Art Necessary For the sake of the procedure Correction Engineering For photos and ways to cut the pictures In a way regular and other regular	
-4 Education student to gather Visuals satellite in program Imagine Erdasالموازنك Air	
9. Strategies teaching and learning	
the explanation Theory interactive: • presentation Concepts Basic likeImage types, image scale, displacement, and parallax. • UseDisplay devices– (PowerPointphoto–maps(To clarify)Differences between Vertical and oblique images. The application practical In pictures Air: • training Students on reading the pictures Airand its analysis. • to implement exercises To extract gaugeImage, distances, and heights from it. Learning Standing on Project: • assignmentStudents with an applied project such as creating a map from a pair of aerial photographs using Customized programs.	strategy

Use software Specialized: Photomod and Agisoft Metashape and Erdas Imagine are input programs like • in Training practical. • clarification How to Digital image processing and 3D model production. to watch Lessons Photographer materials Interactive: • an offer Videos It explains road Capture the pictures Air, numbers Cameras, Analysis Results. Learning Cooperative: • to divide Students to Groups Treatment photo Real and comparison Results. • exchange Roles inside all group To promote to understand Steps different. Evaluation practical Theoretically: • Tests short And assignments on basic concepts. • evaluation Projects and technical reports resulting from working on real images.					
.10 structure The course					
Evaluation Method	road education	name Unity / or the topic	Required learning outcomes	Hours	Week
Theory exams My work	theoretical+My work	General introduction to the programs used in survey Air Definition With programs user And his method How it works and an introduction to image types satellite And methods for retrieving images in the program ERDAS And preparation Matrix Digital	identification On aerial photographs and their types	hours 4 per week	6-1
Theoretical and practical exams	theoretical+My work	Correction Engineering Improvement radiometric For satellite image Image edge enhancement for satellite imagery	identification How to Engineering correction and image enhancement satellite	hours 4 per week	9-7
Theoretical and practical exams	theoretical+My work	Classification Types of classification methods, visual analysis, and how to extract the map	identification On types of weather maps and how	hours 4 per week	12-10

			Extracting it		
Theoretical and practical exams	theoretical+My work	TypesGeometric correction of visual images and addressing all its types	identification On different types Geometric correction and its types	hours 4 per week	15-13

11 evaluation The course					
distributionDegrees from100According to the tasks assigned to the student such as daily preparation, daily oral tests, monthly or written tests, reports...etc..					
12 Resources Learning Education					
Manual of photogrammetry-American society of-1 photogrammetry by Moffitt Elements of photogrammetry –poulR.wolf 2Edition-2 Erdas Imagine TourGuides Lecia Geosystems Geospatial-3 Imaging 2006 survey Air photographic –Labib NassifTechnical Education Authority, Second Edition1999				Required textbooksTextbooks, that I found(	
Library virtual affiliated Ministry education High Research Scientific				the reviewerMain(Sources)	
Photogrammetry, Vol. 1: Fundamentals – Karl Kraus Introduction to Modern Photography – Edward M. Mikhail, James Bethel				Recommended books and referencesScientific journals and reports...	
Library The virtual library of the Ministry of Higher Education and Scientific Research contains books available in the institute's electronic library.				Electronic references and websites Electronic	

1. name The course:	
Air 1	survey
Course code: 2.	
SUT 122	
the chapter Academic / Year 3.	
2026/2025	
date numbers Description 4.	
2026/ /	
shapes the audience Available 5.	
daily My presence	
6. Number Hours Approved Total / number Units Total	
x4 15 weeks = 60 hours (For the chapter) Academic(According to The course	
7. name responsible The course Mention all Names, if He was there more from name one(	
the nameAisha Kol Shahin Najm Al-Din	
ayshagul91@ntu.edu.iq ElectronicM a i l	
Goals The course 8.	
-1 Acquisition student Al-Maha Art Basic To understand principles survey photographic And you know on Types the pictures Air	Goals
-2 Recognition on Types the pictures Air and digital And deal With them	
-3 Acquisition student The oryx Art Necessary To analyze. and interpretation the pictures Air and digital	
-4 Education student How to The drawing etc. from the pictures Air and digital	
9. Strategies teaching and learning	
the explanation Theory interactive: - identification survey Air, Its types, Its importance in the job Engineering. - to explainPrinciples of aerial photography, such as flight altitude, image scale, displacement, interference, and coverage.. Use the pictures Air The real: - training Students on explanationAerial photographs and their analysis, such as identifying features, shadows, and variations.	strategy

Learning from during software: Use Programs like Imagine Erdas, Mapper Global, or ENVIT treatment the pictures Air and its analysis. The app practical In the field: - an offer Models For aircraft drones or Cameras Air, With an explanation of how to plan and schedule flights Photography. - to organize Field visits or simulations of photography trips. Projects The small: - assignment Students prepare a map from an aerial photograph, or compare photographs of different regions and analyze the changes.. to watch Videos Educational: - Videos It explains The workings of aerial cameras and imaging systems, and digital processing techniques. Evaluation Continuous: - Tests short and exercises Applied On reading and analyzing images. - Reports evaluation on projects Individual or group aerial survey.					
.10 structure The course					
Evaluation Method	road education	name Unity / or the topic	Required learning outcomes	Hours	Week
Theoretical and practical exams	theoretical+My work	Introduction and Historical Overview About the history of aerial surveying, vertical aerial photographs, and projections for calculation gauge the pictures Air Vertical and terrestrial coordinates from aerial photographs and stereoscopic view Its foundations and its conditions	Introduction to vertical images, image types, and methods Calculation and Stereoscopic Vision	4 hours per week	6-1
Theoretical and practical exams	theoretical+My work	Image scale Slanted, finding coordinates, and analysis Geometric image design and types of imaging equipment Air and field angles Vision, its	scale Slanted images and types of aerial and space photograph	4 hours per week	9-7

		classification and types, and rotational guidance.	y equipment		
exams Theory and Practice	theoretical+My work	Mosaic, its advantages and disadvantages, relative orientation, and device movements the offer	Mosaic and orientation	4 hours per week	12-10
exams Theory and Practice	theoretical+My work	movements Transitional, rotational, and aerial photographs	Image movement and images	4 hours per week	15-13

		Captured Airborne digital sensors	Digital		
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11 evaluation The course

Grade distribution from 100 according to the tasks assigned to the student such as daily preparation, daily oral tests, Tests Monthly or written reports...etc..

12 Resources Learning Education

survey Air photographic –Labib Nassif Technical Education Authority, Second Edition 1999	Required textbooks Textbooks, that I found(
Library virtual affiliated Ministry education High Research Scientific	the reviewer Main(Sources)
Remote Sensing - MDPI Journal of Applied Remote Sensing - SPIE Aerial Photography and Image Interpretation – David P. Paine & James D. Kiser	Books and references Recommended Scientific journals and reports(...

Library The virtual library of the Ministry of Higher Education and Scientific Research contains books available in the institute's electronic library.

Electronic references and websites Electronic

1. name The course:	
English 1	the language
Course code:	
2.	
NTU101	
the chapter Academic / Year	
3.	
2026-2025	
date numbers Description	
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shapes the audience Available	
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My presence	
6. Number Hours Approved Total / number Units Total	
Study 2 × 15 week = 30 hour (For the chapter) Academic(	
7. name responsible The course Mention all Names, if He was there more from name one(	
the name: Mohammed Othman Hassan	
mohammed.othman25@ntu.edu.iq	
ElectronicMail	
Goals The course	
8.	
-1 Acquisition studentSkills: Speech, reading, listening, and conversation	Goal s
-2 Rehabilitation student So that He is able on Use Sections Previous and the suffix	
-3 Understanding Vocabulary Basic time and places and others	
9. Strategies teaching and learning	
education the language Communication: focusUsing English in real-life situations. to encouragePair work, role-playing, and group discussionsLearningTask-based: CostStudents are given tasks such as writing emails, preparing short presentations, or conducting interviews in English.. It is to learn the language from during completion Activities purposeful.	strategy

Listening and speaking practice: use Audio materials, podcasts, and videos to improve listening skills Practice pronunciation and conversation by practicing dialogue. Storytelling. Reading Building Vocabulary: Supply students With texts or Articles or stories short Listed. Teach them Reading strategies Reading Rapid, scanning, and contextual guessing (Introduce new words in) Contextualize it and review it regularly.. development skills Writing: never By writing The guide)like: Filling Models, Writing paragraphs short.(Move Towards free writing Letters Email, reports, articles (Use Peer review and feedback techniques. Use Technology Educational: use PowerPoint , and clips The video, and the blackboards Interactive To involve learners. Evaluation Continuous Nutrition Returning: use Tests Short, And the offers Introduction Oral, and records Vocabulary, and containers the language.					
.10 structure The course					
Evaluation Method	road education	name Unity / or the topic	Required learning outcomes	Hours	Week

Oral and written exams	theoreticalPractical (oral)	Introduce Yourself (Hello) - conversation -Vocabulary: objects, and food -every day English (numbers) - exercises -your world (where are you from) -pronunciation (countries and cities)		2 hours per week	1-4
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		- reading (they're from), listening (this is Carmen) - every day English (singular and plural exercise -			
Oral and written exams	theoreticalPractical (oral)	personal information (your address, phone number) - jobs (what is your job?) - Grammar (Negative) - Reading and speaking (An international team) -Listening (A conversation with Kirsty) - Pronunciation (word stress) Translation -Every day - English (social expressions) - Exercises		2 hours per week	5-8

Oral and written exams	theoretical Practical (oral)	Family and friends - Vocabulary: Jobs, countries, families Grammar (has/have) Reading (My friend Andy), Speaking (My best friend) Every day English (on the (phone) Exercises Life (it's my life) Grammar (present simple) - question) preferences (Things I like) - Vocabulary: food, sport - drinks pronunciation: Languages - and nationalities Reading (Gordon Wilson), Listening (At the party) Every day English (prices -		2 hours per week	12-9
		and currencies) Exercises -			

Oral and written exams	theoreticalPractical (oral)	The time - Listening (Anna's day), - Writing (Your day) - Grammar (Questions, negatives) - Every day English (Days of - the weeks) - Exercises - - Traveling - - Speaking (Places I like, - Listening (An interview with Dan) - Grammar (Object pronouns, why/because, this / that) - Reading (A post card from from San Francisco) - Question words - Translation - Vocabulary: Adjectives - Every day English (can I?) - Exercise -		2 hours per week	15-13
evaluation The course 11					
Grade distributionfrom100 according to the tasks assigned to the student such as daily preparation, daily oral tests, TestsMonthly or written reports...etc..					
resources Learning Education 12					
new HEADWAY PLUS Beginner Student Book Audio + Video https://elt.oup.com/student/headway/beg/download?cc=us&sellLanguage=en				Required textbooksTextbooks, that I found(	
Oxford Word Skills – Ruth Gairns & Stuart Redman ELT Journal				the reviewerMain(Sources)	
Library virtual affiliated Ministry education High Research Scientific				Books References Recommended Scientific journals	

	and reports(...
-The library virtual affiliated Ministry education High Research Scientific what existing from books in Library Electronic For the institute	the reviewer Electronic and sites Electronic

1. name The course:	
man	rights
Course code:	2.
NTU100	
the chapter Academic / Year	3.
2026-2025	
date numbers Description	4.
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shapes the audience Available	5.
My presence	
6. Number Hours Approved Total / number Units Total	
Study 2 × 15 week = 30 hour (For the chapter) Academic(	
7. name responsible The course Mention all Names, if He was there more from name one(	
the name : Asan Juma Fadel	
asan.jf@ntu.edu.iq ElectronicM a i l	
Goals The course 8.	
identification student By advertising Global rights man Issued general 1948 .	Goals
identification student By laws that deduces from Constitution From it law sanctions and the law Civilian ..	
identification on Agreements International Related By the hawk and freedoms Civil politics social.	
identification student Intended By the constitution gesticulate It contains from principles legal And how deduction Laws From it.	
identification student rights the people The surroundings With him And teaching him How to GovernorateRegarding his rights and not harming people.	
9. Strategies teaching and learning	
the explanation Theory • presentation Concepts Basic like: Freedom, Equality, Dignity, right Expression,and the rule of law. • identificationDemocracy, its types and principles)the chapterBetween authorities, elections, majority rule With respect for minorities.(discussion Advertisements and the charters International: • Explanation of principlesThe Universal Declaration of Human Rights and the two International Covenants (Civil Rights) politics –Economic and social.(• discussion how Reflected This is amazing Charters on lifeIndividuals and communities.	strategy

Learning Standing on discussion: • Presentation Questions like: ◦ Do Freedom divorced Is it possible? ◦ Do Democracy Alone Enough To ensure Rights? ◦ what the difference between State Democracy and the state Authoritarianism? analysis cases Realism: • discussion Examples Real human rights abuses or democratic successes. • study A case study from a specific country and its analysis from a human rights and democratic perspective.. Student presentations and projects: • assignment Students By presenting Offers around: ◦ rights Women, children's rights, freedom of expression, or fair elections. ◦ numbers Reports or awareness posters about fundamental rights. Watch educational and documentary videos: • an offer Short films or documentaries about peoples' struggles for freedom, or about organizations human rights. Use simulation(Simulation): • procedure court Image or A student parliament to practice the values of debate, voting, and freedom of opinion. Evaluation Continuous: • Questions Short, discussions Written Reports Personal, or reflective memoirs on individual rights and democracy.					
.10 structure The course					
Evalu ation Metho d	Teach ing metho d	name Unity / or the topic	Required learning outcomes	Hours	Week

Theory exams	theoretical	rights man , Definition , Its goals Human rights in ancient civilizations, especially Mesopotamian civilizationHuman rights in lawsHeavenly with a focus on human rights inIslam.Human rights in contemporary history And the hadithInternational recognition of human rights since War Global First and the gang / nations United, ConfessionRegional Human RightsAgreement		4 hours per week	6-1
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		European rights man 1950 , Agreement American rights man , 1969 CharterAfrican Human Rights 1981,Charter Arab Organization for Human Rights 1994. Human Rights inIraqi constitutions: between theory and realitySocial sciences and Islamic jurisprudence. Categories of crimes, crime. International,Political crime, social crimes crimesPower and government, psychological crimes. CorporalCrimes against freedom of religion and belief, and the corporal The crimes of confiscating funds and of forced displacement. and crimes environmental statement violations rights man, crimesThe Ba'ath regime, according to documentation and court law criminalIraqi Supreme 2005m.TypesCrimes International, crimes genocide collective.			
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Theory exams	theoretical	Manat and respect for the protection of human rights on the level National, guarantees in the constitution and laws, guarantees in the principle of the rule of law. Guarantees In constitutional oversight, safeguards in Freedom of the press and public opinion, the role of organizations not Government in respect Protection rights man, Democracy Definition .Types. Concepts of democracy; democratic systems in the world.		4 hours per week	9-7
Theory exams	theoretical	freedoms Basic Intellectual freedoms, freedoms Economicsocial. Freedom of education is freedom Press freedom The gathering freedom education freedom		4 hours per week	12-10
		Press, freedom of assembly Prisons are for some regimes. Environmental crimes of the regime The Baath. War and radioactive pollution and landmine explosions. destruction of cities and villages (Land policy burnt Crimes of draining the marshes by the regime. The Baath. The bulldozing of palm groves, trees, and crops Mass grave crimes. Events cemeteries genocide collective. events general 1963 • Events of the Iran-Iraq War, events of the year 1983 and its relation to mass graves			

Theory exams	theoretical	Freedom of association Freedom to work. Right to own property. Freedom of Trade and Industry Women's freedom and political parties Political freedoms, scientific and technological progress and freedoms public . future freedoms public.		4 hours per week	13-15
evaluation The course					11
Grade distribution from 100 according to the tasks assigned to the student such as daily preparation, daily oral tests, Tests Monthly or written reports...etc..					
resources Learning Education					12
Lectures Include Vocabulary The scheduled from before ministry education High Research Scientific				Books Required studies)books Curricula academic, that I found(	
rights man: Concepts and the foundations authorship: d. Mohammed happy Al-Ashmawi				Main References(Sources)	
Library virtual affiliated Ministry education High Research Scientific				Recommended books and references Scientific journalsand reports(...	
-The library The virtual arm of the Ministry of Higher Education and Scientific Research-what Available from the Institute's electronic library				Electronic references and websites Electronic	

name The course:	1.
Democracy	
Course code:	2.
NTU106	
the chapter Academic / Year	3.

2026-2025		
date numbers Description		4.
2026\		\
shapes the audience Available		5.
My presence		
6. Number Hours Approved Total / number Units Total		
Study 2 × 15 week = 30 hour (For the chapter) Academic(		
7. name responsible The course Mention all Names, if He was there more from name one(		
the name : Asan Juma Fadel		
asan.jf@ntu.edu.iq ElectronicM a i l		
Goals The course		8.
identification student Principles Democracy Basic Like freedoms public Participation Political.	Goal s	
Strengthening Awareness Importance Democracy As a system to rule Investigates Justice social.		
analysis Experiments Democracy in the world and comparison Systems different.		
to understand role Constitutions and the elections and institutions in Strengthening The ruling Democratic.		
link Concepts Theory In reality from during analysis events and developments democracy in the world.		
9. Strategies teaching and learning		
- the explanation Theory • :presentation Concepts Basic like Freedom, Participation, The election, sovereignty the law. - discussionAdvertisements and Charters• RecognitionOn international covenants related to public freedoms democratic systems. - LearningDiscussion-based• PresentationQuestions like:Is democracy sufficient to achieve justice? ChallengesWhich one are you facing? - analysis cases Realism • :study Organized democracyThe reality and obstacles to democracy in some Systems. - Offersstudent• :presentationProjects on political systems, elections, local government, or censorshipPopularity. - Simulation • :parliament My students or elections student fake For application principles Democracy practically.	strategy	
Videos Documentary • :an offer stories Transformation Democratic and events Elections Revolutions	Popularity	

y					
structure The course					.10
Evalu ation Metho d	Teach ing metho d	name Unity / or the topic	Required learning outcomes	Hours	Week
Theory exams	theoreti cal	Understanding the concepts of democracy, its evolution, and its types and its applicationsIntroduction to Democracy Concepts, history, and applications		4 hours per week	6-1
Theory exams	theoreti cal	Studying democratic institutions,The rule of law and constitutions orderDemocratic–Authorities, laws, Participation Political.		4 hours per week	9-7
Theory exams	theoretic al	knowledgeFundamental freedoms and rights in democratic systems Public freedoms – freedom of opinion, freedom of the press,Education, work		4 hours per week	12-10
Theory exams	theoreti cal	HalilThe future of democracy, the role of technology, and implementation challenges Challenges of democracyMedia, TechnologiesModern manipulation		4 hours per week	13-15
evaluation The course					11
Grade distributionfrom100 according to the tasks assigned to the student such as daily preparation, daily oral tests, TestsMonthly or written reports...etc..					
12 Resources Learning Education					

Lectures Include Vocabulary The scheduled from before ministry education High Research Scientific	BooksRequired studies)books Curricula academic, that I found(
principles Democracy – d. Mohammed happy Al-Ashmawi	Main References(Sources)
Library virtual affiliated Ministry education High Research Scientific	Recommended books and references Scientific journalsand reports(...
-The libraryThe virtual arm of the Ministry of Higher Education and Scientific Research-whatAvailable from the Institute's electronic library	Electronic references and websites Electronic

name The course:	1.
mathematics1	
Course code:	2.
TIMO110	
the chapter Academic / Year	3.
Level the first 2025/20265	
date numbers Description	4.
2026/	/
shapes the audience Available	5.
daily My presence	
6. Number Hours Approved Total / number Units Total	
15x2 weeks = 30 hour (For the chapter) Academic(As per the schedule)	
7. name responsible The course Mention all Names, if He was there more from name one(	
the name:Amal Nashaat Shaker Zainal	
MailelectronicUmayaa75@ntu.edu.iq :	

Goals The course		8.		
-1 To equip the student with the basic skills to understand and apply equationsAnd its use in the fields of surveying engineering	Goals			
-2 Recognition on vectors and operations On it and matricesDeterminants and trigonometric equations				
-3 Acquisition student Skills Necessary For application Laws Used With equations Al-Fadhiliya and the triangular				
-4 Principle The course Accreditation on Laws Basic To apply itIn the fields of geodetic surveying				
-5 Education student For equations Private For use in Fields spaces ground				
9. Strategies teaching and learning				
(Conceptual Teaching): Conceptsteaching - the focusUnderstanding the concept, not just memorizing the rules. - to explain "Why?" We useThe law, and not just"how". Problem Solving - training Students on thinking in steps the solution. - Use Issues My life connects mathematics In reality.	strategy			
(Active Active Learning)Learning - Involvement student in the solution, Clarification,And the interpretation. - to organizeGroup activities and in-class sports competitions. Use means visual Fees The graph: - simplificationAbstract concepts are conveyed through diagrams, models, or interactive programs.. - example:Representing functions graphically, or using cubes in linear algebra. (Spiral Learning):Graduallyteaching - review ConceptsPrevious before introducing the new. - Strengthening Understanding via repetition In ways different And on levels hardest gradually. Use Technology: - Use Programs like GeoGebra, Desmos, MATLAB, or god Calculator The graph. - an offer LessonsThrough videos or interactive simulations. Evaluation The builder Continuous: - procedureShort quizzes and instant exercises. - presentationQuick feedback to improve understanding.				
.10 structure The course				

Evaluation Method	road education	name Unity / or the topic	Required learning outcomes	Hours	Week
oral exams or Editorial	theoretical	–Vectors – resolution of vector vector equation of a line – matrices and determinants	Knowledge With vectors and matrices and the determinants	4 hours per week	6-1
oral exams My work	theoretical	–Straight line equation perpendicular- parallel linesdistance between two pointstriangles- trigonometric equation	Knowledge By the equation of the straight line and perpendicularity Triangles and trigonometric equations	4 hours per week	9-7
oral exams or editorial	theoretical	The circle and its properties- finding its area and circumference – solution of sector	Knowledge The circle and its properties Finding the space And the ocean and the sweet sector	4 hours per week	12-10
oral exams or Editorial	theoretical	Differential equation- trigonometric differentiation	Knowledge of differential equations and equations Triangula r	4 hours per week	15-13

11 evaluation The course	
Grade distribution from100 according to the tasks assigned to the student such as daily preparation, daily oral tests, TestsMonthly or written reports...etc..	
12 Resources Learning Education	
CALCULUS, George B. Thomas	Required textbooks Textbooks, that I found(

Library virtual affiliated Ministry education High Research Scientific	the reviewerMain(Sources)
book mathematicsApplied Sciences, by Yaqub Sabbagh	Books and references Recommended Scientific journals and reports(...
LibraryThe virtual library of the Ministry of Higher Education and Scientific Research contains books available in the institute's electronic library.	the reviewer Electronic and websites

name The course:		1.
science surface the earth		
Course code:		2.
SUT 126		
the chapter Academic / Year		3.
2026/2025		
date numbers Description		4.
2026/		/
shapes the audience Available		5.
daily My presence		
6. Number Hours Approved Total / number Units Total		
15 x 1 week = 15 hours (per semester) as per the course		
7. name responsible The course Mention all Names, if He was there more from name one(		
the name: Zeina Hussein Thank you Mohammed		
zeena-hussin@ntu.edu.iq Email		
Goals The course		8.
-1 AcquisitionStudents gain the fundamental skills to understand various topics in earth science and their important applications in different aspects of life.	Goals	
-2 Recognition on Branches different For knowledge the earth Its importance in life Humanity		
-3 Acquisition student Skills Necessary To distinguish Types rocks		
-4 Teaching the student how to benefitEarth science is a subject used in surveying and civil engineering.		
9. Strategies teaching and learning		
the explanation Theory: - presentation Concepts Basic like: - Operations tectonics - FactorsErosion and sculpting - formation Mountains valleys and rivers and plains - Use maps and pictures Explanatory during Lecture.	strategy	

Use Models drawings: • an offerVideos or 3D graphics explaining surface formation over time. • clarification Differences between Shapes ground from during Comparison visual. Learning from during maps And the pictures Air: • analysis photo satellite maps Topography To determine Shapes ground. • training Students on reading Appearances superficiality from maps. Trips FieldTrips): (Field • visit Sitesreal geology)likeValleys, caves, mountain ranges(To observe phenomena directly. • procedure Reports Field ComparisonsBetween theory and practice. Learning Standing on Projects: • assignment Students Prepared by studies on region specific and determining manifestationsThe surface in it. • an offerPhoto projects)video, maps, Models.(Use Technology and programs Geography: • Input Programs like Earth Google, and ArcGISTo determine Analysis topography. • training Students on TrackNatural phenomena and their impact on the Earth's surface. Evaluation Continuous: • Tests theory, Reports Field, and discussions Safia. • to encourage student on thinking in relationshipHuman beings with natural changes.					
.10 structure The course					
Evalu ation Metho d	road education	name Unity / or the topic	Required learning outcomes	Hours	Week
Oral and practic al exams	theoretical My work	conceptEarth science and its relationship to surveying, knowledge the components Basic For the land And getting to knowThe surrounding envelopes	identificationO n the main features of the Earth's crust	1 hour per week	6-1
oral exams My work	theoretical My work	identificationOn the types of minerals and rocks found in nature and understanding the concepts of erosion and weathering	Discrimination Between rocks and minerals	1 hour per week	9-7
oral exams My work	theoretical My work	identificationOn the soil and the factors that control it, with	How toControl	1 hour per	12-10

		knowledge of soil types.	of soil formation	week	
oral exams My work	theoretical My work	To knowOn the geomorphological phenomena resulting from erosion and sedimentation	Distinguishing between phenomena different For stripping	1 hour per week	15-13

11 evaluation The course	
Grade distributionfrom100 according to the tasks assigned to the student such as daily preparation, daily oral tests, TestsMonthly or written reports...etc..	
12 Resources Learning Education	
1-Principles of Engineering Geology and its Applications,Written by Majid Aboud Jassim Al-Tai, university Basra2001 2- Engineering Geology, Miqdad Hussein Ali, Basim Rushdi Hijab, Sinan Hashim Al-Jassar University of Baghdad1990 3- Foundations Geology For engineers ,Kinana Muhammad Thabit, Mohammed age random , university Mosul 1993 4-Principles of Geology and Geomorphology,Ghada Mohamed Selim,Mohammed Mahdi Abbas,Fadel-5 Noumas Al-Saadouni, Technical Institutes Foundation, 1984	BooksRequir ed studiesTextb ooks, if available
Library virtual affiliated Ministry education High Research Scientific	the reviewerMain(Sources)
Process Geomorphology – Dale F. Ritter the earth and its resources – d. Mohammed Mahmoud Nasserite	Recommended books and references In itScientific journals and reports...
LibraryThe virtual library of the Ministry of Higher Education and Scientific Research contains books available in the institute's electronic library.	the reviewer Electronic and websites

name The course:		1.
principles computer1		
Course code:		2.
NTU102		
the chapter Academic / Year		3.
2026-2025		
date numbers Description		4.
2026\		\
shapes the audience Available		5.
My presence		
6. Number Hours Approved Total / number Units Total		
×2 15 week = 30 hour (For the chapter) Academic(According to headquarters		
7. name responsible The course Mention all Names, if He was there more from name one(		
the nameShilan immortal Raouf MohammedRashid		
Email: shelan_khald@ntu.edu.iqM a i l		
Goals The course		8.
Gain student Skills Basic To understand basics computer and system Operation and programs Related In it		Goal s
identificationOn computers and their peripherals(keyboard– mouse–headphones– USB – a screen - CDs/DVDs and devices laptop According to all generation from generations computers		
Gain student Skills Necessary in Programs Office Office power – Excel – Word point (and recognition on Orders and windows order.		
education student ingredients Calculator and study system Operation 10 and 7 Windows And learn on Orders and windows order		
9. Strategies teaching and learning		

the explanation practical Theoretically presentation Concepts Basic theoretically, with application direct on computer. Learning Standing on Project assignment Students With tasks like construction an offer PowerPoint, or release document textual. (LaboratoryPractical Laboratory Work	1. 2. 3.	strategy
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○ application directFor software, operating systems, and basic computer skills. 4. Offers Explanatory and videos ○ Use Videos Simplified To explainComputer components or how the internet works. 5. Rating Continuous ○ TestsShort, classroom activities, simple projects such as designing a resume usingWord.	
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.10	structure The course
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Evalu ation Metho d	road education	name Unity / or the topic	Required learning outcomes	Hours	Week
Theory and practica l exams	theoretical+My work	introduction General on Basics The computer and its hardware componentsHardware and office supplies Software and familiarization with the basic menusin Computer and its contents, and creating folders and files Word programs, page template creation and formatting Education Printing	identificationO n computer parts	2 hours per week	1-6
Theory and practical exams	theoretical+My work	Excel and Word And I confronted herHow to write and format texts and prepare tables education student on writing Text, text preparation, and adding symbolsAnd how to draw basic shapes and tablesAnd teaching the student how to use the program ExcelLearn on the main interface and create Excel spreadsheets	identification on The programWord Excel And I confronted her And howWriting, formatting , and preparing tables	2 hours per week	7-9

Theory and practical exams	theoretical+My work	Add a new page, delete it, move it, or Copy it And the creation Functions manually And how administration Data From the writing Symbols and changes to cell content format And deal With rules and data to import from the net	How to Using Excel to perform calculations	2 hours per week	10 – 12
Theory and practical exams	theoretical+My work	Learn about the program point power and how to employment The program, its identification, and the preparation of slides And the shapes Addition movements And the voice To her	to learn on How to prepare slides PowerPoint And how Fo rmatt ing it And its presentation	2 hours per week	15-13

11 evaluation The course	
Grade distribution from 100 according to the tasks assigned to the student such as daily preparation, daily oral tests, Tests Monthly or written reports...etc..	
12 Resources Learning Education	
book basics computer By the author Ahmed Mohammed Ibrahim Mohammed) PDF) - book to learn and professional 10 Windows - 2010 Office by Ihsan Mohammed Abdullah Al-Haisami - http://www.4shared.com/document/kyygWceL/Excel_2010_Learning_in_arabic_.html - http://www.4shared.com/document/5r_zEuZ/word_2010_Learning_in_arabic_.html - http://www.4shared.com/document/UZR9pxgM/_Learning_PowerPoint10 in_arabic_.html	Books Study Required)books Curricula, that I found(
principles computer Dr. Ammar Yasser Al-Samarrai introduction in computer and technology Information – d. Bashir Al-Alaq	the reviewer Main(Sources)

Library virtual affiliated Ministry education High Research Scientific	Recommended books and referencesScientific journals and reports...
-The library virtual affiliated Ministry education High Research Scientific -What books are available in the institute's electronic library?	the reviewer Electronic and sites Electronic

name The course:		1.
triangles spherical		
Course code:		2.
SUT 130		
the chapter Academic / Year		3.
2026/2025		
date numbers Description		4.
2026/		/
shapes the audience Available		5.
daily My presence		
6. Number Hours Approved Total / number Units Total		
15x2 weeks = 30 hour (For the chapter) Academic(As per the schedule)		
7. name responsible The course Mention all Names, if He was there more from name one(		
the name:Amal Nashaat Shaker Zainal		
MailelectronicUmayaa75@ntu.edu.iq :		
Goals The course		8.
-1 Equipping the student with skillsFundamentals for understanding, applying, and using spherical triangles in the field of surveying engineering.	Goals	
-2 Recognition on triangles spherical Statistics and integration		
-3 Acquisition student Skills Necessary For application Laws Private With triangles spherical		
-4 Principle The course Accreditation on Laws Basic To apply itIn the fields of geodetic surveying		
5 Education student For equations Private For use in Fields spaces ground		
9. Strategies teaching and learning		
1. Explanation Theory In comparison: - Start Review ConceptsPlane triangles. - to explain the difference between triangle level The triangle spherical from where comers The total The whole she has. - presentation Concepts Basic: half Qatar, corners Spherical, arches. 2. Use drawings and models: - Use ball 3D model or Programs trilogy Dimensions To represent triangle spherical.	strategy	

- clarification how It consists of ribs from Arcs of great circles on the surface of the sphere. 3. Solution Issues Applied Realism: - linkThe topic includes practical applications such as calculating distances between two cities on Earth, or determining SitesGeography. - solution Issues Using laws pocket PocketCompletion of spherical triangles. 4. Learning Standing on Steps: - education steps solution triangles spherical gradually: - data)threeAngles or two sides and an angle(... o to chooseThe appropriate law - the solution UsingScientific calculator. 5. Use software Geography And sports: - To displaySpherical Trigonometry CalculatorsorGeoGebra 3DlikeUsage programs Solutions visually. 6. Evaluation Continuous and training The process: - exercisesClassroom and short quizzes to solve various problems. - revision collective and strengthening Steps Correct.	
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.10 structure The course					
Evalu ation Metho d	road education	name Unity / or the topic	Required learning outcomes	Hours	Week
oral exam s or Editorial	theoretical	Integration- application of integration – tangent – area under the curve – numerical integration and determinants	Knowledge Integration Its applications, spaces and integration numerical	4 hours per week	6-1
oral exams My work	theoretical	Statistical – mean – median – range standard deviation of ungrouped and grouped data	Knowledge Statistics arithmetic mean and the mediator And the range and standard deviation	4 hours per week	9-7

oral exams or editorial	theoretical	Spherical triangles- inclined spherical triangle – sine and cosine rules	To find out With spherical triangles The oblique triangle And the laws of sine and cosine Okay	4 hours per week	12-10
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oral exams or Editorial	theoretical	Introduction to matlab programsolving equation by MATLAB program	Introduction to MATLAB software, its applications, and diagramsgrap hical using program MATLAB	4 hours per week	15-13
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evaluation The course					11
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Grade distributionfrom100 according to the tasks assigned to the student such as daily preparation, daily oral tests, TestsMonthly or written reports...etc..					
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resources Learning Education					12
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Trigonometry, P. Abbott, BA				Required textbooksTextb ooks, that I found(	
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Library virtual affiliated Ministry education High Research Scientific				the reviewerMain(Sources)	
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book triangles spherical , Composition Yaaqoub dyeing				Books and references Recommended Scientific journals and reports(...	
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LibraryThe virtual library of the Ministry of Higher Education and Scientific Research contains books available in the institute's electronic library.				the reviewer Electronic and websites	
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name The course:		1.
the language Arabic		
Course code:		2.
NTU104		
the chapter Academic / Year		3.
2024/2025		
date numbers Description		4.
2025/ /		
shapes the audience Available		5.
daily My presence		
6. Number Hours Approved Total / number Units Total		
15x2 weeks = 30 hours (For the chapter) Academic(According to The course		
7. name responsible The course Mention all Names, if He was there more from name one(		
the name: Saman Ali Ehsan		
Mail Electronic: saman.aboaryan.ahmed@ntu.edu.iq		
Goals The course		8.
1. DefinitionThe student should use the language correctly and avoid mistakes..	Goal s	
-2 His educationDistinguishing between nouns, verbs, and particles, and the proper way to use punctuation marks for them.		
-3 MasteryCorrect and proper phrasing in writing and correspondence is fundamental to language study..		
9. Strategies teaching and learning		
LecturesThe classroom:Providing a simplified theoretical explanation of Arabic language concepts with practical examples.. ExercisesClassroom and homework:Training students to apply grammar and spelling rules through guided exercises. OffersPresentations and classroom discussions:Engaging students in presenting and discussing linguistic topics within groups. Correcting linguistic errorsUsing texts containing common	strategy	

errorsTo correct and interpret it.	
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UseEducational media:Using videos, audio recordings, and electronic presentation tools to support understanding. small projectsPreparationArticles, reports, or formal letters to practically apply language skills. evaluationMy stage:Organizing short tests, written assignments, and oral discussions to measure progress and achievement..	
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structure .10 The course					
Evaluation Method	Teaching method	name Unity / or the topic	Required learning outcomes	Hours	Week
Exams and discussions	theoretical	Writing the hamza and punctuation marks	Mastery writing Hamza in Its locations Different and knowledge of the use of punctuation marks correctly	hours2 per week	6-1
Exams and discussions	theoretical	the name The verb and the distinction between them are the objects.	Discrimination between the name And the verb Understanding the characteristics of each involves identifying the objects, their types, and their uses.	hours2 per week	9-7
Exams and discussions	theoretical	number And its applications: common linguistic errors	to learn Rules of Number and Count: Correcting Common Grammatical Errors in Writing	hours2 per week	12-10

Exams and discussions	theoretical	The closed and long taa Nun And the nunation (tanween) is the meaning of the prepositions.	knowledgeThe difference between Noon and Tanween and their uses Understanding the meanings and uses of prepositions DiscriminationThe difference between the closed and open "taa" letters and their correct usage	hours2 per week	15-13
evaluation The course					11
Grade distributionfrom100 according to the tasks assigned to the student such as daily preparation, daily oral tests, TestsMonthly or written reports...etc..					
Education resources Learning					12
.book the language Arabic For the classes University, Issue ministry education High			TextbooksRequiredText books, if available		
Library virtual affiliated Ministry education High Research Scientific			Main References(Sources)		
- Liberation Arabic – authorship: d. Badr Religion Al-Qasimi - DictationPunctuation marks– authorship: d.Abdul Aziz Sharaf - skills Writing –authorship: d. MohammedYusef			Recommended books and referencesScientific journals and reports...		

LibraryThe virtual library of the Ministry of Higher Education and Scientific Research contains books available in the institute's

Electronic references and websites

1. name The course:		
	Using computer	The drawing
Course code:		2.
SUT128		
the chapter Academic / Year		3.
2026/2025		
date numbers Description		4.
2026/ /		
shapes the audience Available		5.
daily My presence		
6. Number Hours Approved Total / number Units Total		
15x2 weeks = 30 hours (For the chapter) Academic(According to The course		
7. name responsible The course Mention all Names, if He was there more from name one(		
the name:Amal Nashaat Shaker Zainal		
Mail electronicUmayaa75@ntu.edu.iq :		
Goals The course		8.
He is able student from Mastery program AutoCAD	Goal s	
He is able student from Use AutoCAD in all Fields The drawing		
He is able student from fee maps In detail the details Using AutoCAD		
9. Strategies teaching and learning		

Lectures The classroom: presentation to explain theoretical For orders and facades program AutoCAD. The apppractical work in the laboratory:Training students to create drawings using computers. Offers Introduction: an offer projects and models Ready Using AutoCAD. Problem-solving training:Applying realistic design and drawing scenarios using appropriate tools. UseEducational media:Explanatory videos and screen recordings to explain the commands. projects small: assignment Students Drawing plans Engineering or Architecture Simple.	strategy
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evaluation continuous: Tests Applied and tasks fee patrol. evaluationMy stage:Organizing short tests, written assignments, and oral discussions to measure progress and achievement..					
structure The .10 course					
road Evaluation	Teach ing metho d	name Unity / or the topic	Required learning outcomes	Hours	Week
Exams- evaluation practical	Theo retica l and practi cal	Introduction to AutoCAD: Advanced Drawing Tools	Familiarization with the program interface and basic drawing tools	hours2 per week	6-1
Exams- evaluation practical	Theoretic al and practical	orders amendment and its applications	to implementEditing commands such as copy, shift, duplicate, And symmetry	hours2 per week	9-7
Exams- evaluation practical	Theoretic al and practical	ApplicationsIn architectural and engineering drawing	feethree-dimensional geometric shapes	hours2 per week	12-10

		And surveyors			
Exams- evaluation practical	Theoretic al and practical	Comprehensive applied project	to implement project fee tripartite Integrated This includes the use of layers, dimensions, and patterns.	hours2 per week	15-13
evaluation The course					11
Grade distribution from 100 according to the tasks assigned to the student such as daily preparation, daily oral tests, Tests Monthly or written reports...etc..					
12 Resources Learning Education					
AutoCAD 2023 for Beginners – by CadArtifex				Textbooks Required Text books, if available	
Library virtual affiliated Ministry education High Research Scientific				Main References (Sources)	
AutoCAD Instructor – by James A. Leach Technical Drawing with Engineering Graphics – by Frederick E. Giesecke Computer engineering – authorship: d. Fuad The hanger				Recommended books and references Scientific journals and reports...	
Library The virtual library of the Ministry of Higher Education and Scientific Research contains books available in the institute's electronic library.				Electronic references and websites	

name The course:		1.
Sensing on after1		
Course code:		2.
SUT124		
the chapter Academic / Year		3.
2026/2025		
date numbers Description		4.
2026/ /		
shapes the audience Available		5.
daily My presence		
6. Number Hours Approved Total / number Units Total		
15x1 week = 15 hours (For the chapter) Academic(According to The course		
7. name responsible The course Mention all Names, if He was there more from name one(		
the name: Susan Ata Bakr Mustafa		
Suzan-atta@ntu.edu.iq : EmailMail		
Goals The course		8.
identification student In the concept Sensing on after and fields Its use.	Goal s	
Enabling student from reading Analysis the pictures satellite		
Use Technologies Sensing on after in Applications environmental Geography Engineering.		
9. Strategies teaching and learning		

Classroom lectures:Providing theoretical content on sensing concepts and imaging devices. Analysispractical:Study and analysis of satellite images using image processing software. Offers Introduction: an offer cases Study Applied on Technologies Sensing. UseEducational media:Satellite videos and images, and real data. projectsApplied:Preparing analytical reports on environmental or geographical problems using sensing techniques. Evaluation Continuous: to organize Tests short and exercises analytical.	strategy
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structure The course .10					
Evalu ation Metho d	Teach ing metho d	Unit name/ or the topic	Required learning outcomes	Hours	Week
Exams	theoreti cal	Introduction to Remote Sensing	identificationThe concept of remote sensing, its components, and its types	hours1 week	6-1
Exams	theoreti cal	Sensor systems and typesData	Identifying the types of sensors Platforms, and understanding visual systems thermal radar	hours1 week	9-7
Exams	theoreti cal	Digital image processing and its analysis	analysisSatellite images, and distinguishing between terrestrial phenomena	hours1 week	12-10
Exams	theoreti cal	Applicationsremo te sensing	application Sensing on after in Agriculture, environment, and resource management fieldsnatural	hours1 week	15-13
evaluation The course					11
Grade distributionfrom100 according to the tasks assigned to the student such as daily preparation, daily oral tests, TestsMonthly or written reports...etc..					

resources Learning Education		12
Fundamentals of Remote Sensing – by George Joseph	TextbooksRequiredText books, if available	
Library virtual affiliated Ministry education High Research Scientific	Main References(Sources)	
Remote Sensing and Image Interpretation – by Thomas• M. Lillesand Introduction to Remote Sensing – by James B. Campbell•NASA Earthdata (https://earthdata.nasa.gov) USGS Earth Explorer (https://earthexplorer.usgs.gov)	Recommended books and referencesScientific journals and reports...	
LibraryThe virtual library of the Ministry of Higher Education and Scientific Research contains books available in the institute's electronic library.	Electronic references and websites	

name The course:	1.
principles computerII	
Course code:	2.
NTU103	
the chapter Academic / Year	3.
2026-2025	
date numbers Description	4.
2026\	\
shapes the audience Available	5.
My presence	
6. Number Hours Approved Total / number Units Total	
×2 15 week = 30 hour (For the chapter) Academic(According to headquarters	
7. name responsible The course Mention allNames, if there is more than one name(	
the nameShilan immortal Raouf MohammedRashid	
Email: shelan_khald@ntu.edu.iqM a i l	
Goals The course	8.
Gain student Skills Basic To understand basics computer and system Operation and programs Related In it	Goals
identificationOn computers and their peripherals(keyboard- mouse-headphones- USB - Screen - and discs (CD/DVD and devices)	
laptop According to all generation from generations computers	
Gain student Skills Necessary in Programs Office Office) – Excel – Word point power (and recognition on Orders and windows order.	
education student ingredients Calculator and study system Operation 10 and 7 Windows And learn on Commands and windows order	
9. Strategies teaching and learning	
1. the explanation practical Theoretically o presentation Concepts Basic theoretically, with application direct on computer.	strategy
2. Learning Standing on Project	

- assignment Students With tasksFor example, creating a PowerPoint presentation, or editing a document textual. (Laboratory Work) Practical Laboratory 3. - application direct For programs And organizedOperations and basic computer skills. 4. Offers Explanatory and videos - Use Videos Simplified To explain ingredients computer or How to a job Internet.5 EvaluationContinuo us - TestsShort, classroom activities, simple projects such as designing a resume SelfUsingWord.	
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.10 structure The course					
road Evaluation	road education	name Unity / or the topic	Required learning outcomes	Hours	Week
Theory and practical exams	theoretical+My work	General introduction to computer basics and its components Materialism Hardware And the officeSoftware and getting to know it Lists Basic In the computer and its contents Creating folders and files Word programs and page template creationand its coordination Education Printing	identification On computer parts	2 hours per week	1-6
Theory and practical exams	theoretical+My work	Excel and Word And I confronted herHow to write and format texts and prepare tables educationThe student will learn to write and prepare text, add symbols, and how to draw basic shapes and tables. The student will also be taught how to	identification On the program Word d Excel And I confronted her And howWriting, formatting	2 hours per week	7-9

		use the software. Excel and learn on the main interface And the creation Tables Excel	, and preparing tables		
Theory and practical exams	theoretical+My work	Add, delete, and move a new pageor Copy it And the creation Functions manually And how administration Data fromWriting symbols and changing the cell content format	How toUsing Excel to perform calculations	2 hours per week	10 – 12

		And dealWith rules and data to import from the net			
Theory and practical exams	theoretical+My work	identification on program power And howpoint employmentThe program, its identification, and the preparation of slides Shapes and adding movements and sound to them	to learn on How to prepare slides power And howpoint Formatting and displaying it	2 hours per week	15-13

evaluation The course					11
Grade distributionfrom100 according to the tasks assigned to the student such as daily preparation, daily oral tests, TestsMonthly or written reports...etc..					
resources Learning Education					12

book basics computer By the author Ahmed Mohammed Ibrahim Mohammed) PDF) - book to learn and professional10 Windows - 2010 Office by the author charity Mohammed Abdullah Al-Haysami - http://www.4shared.com/document/kyygWceL/Excel_2010_Learning_in_arabic_.html - http://www.4shared.com/document/5r_zEuZ/word_2010_Learning_in_arabic_.html - http://www.4shared.com/document/UZR9pxgM/_Learning_PowerPoint10_in_arabic_.html	TextbooksRequire dTextbooks, if available
principlescomputer Dr.Ammar Yasser Al-Samarrai introduction in computer and technology Information – d. Bashir Al-Alaq	the reviewerMain(Sources)
Library virtual affiliated Ministry education High Research Scientific	Recommended books and referencesScientific journals and reports(...
-The libraryThe virtual arm of the Ministry of Higher Education and Scientific Research- What books are available in the institute's electronic library?	Electronic references and websites Electronic

1. name The course:		
	Using AutoCAD	The drawing
Course code:		2.
SUT129		
the chapter Academic / Year		3.
2026/2025		
date numbers Description		4.
2025/ /		
shapes the audience Available		5.
daily My presence		
6. Number Hours Approved Total / number Units Total		
15x2 weeks = 30 hours (For the chapter) Academic(According to The course		
7. name responsible The course Mention all Names, if He was there more from name one(		
the name: Amal Nashaat Shaker		
umayaa75@ntu.edu.iq: electronic Mail		
Goals The course		8.
He is able student from Mastery program AutoCAD	Goal s	
He is able student from Use AutoCAD in all Fields The drawing		
He is able student from fee maps In detail the details Using AutoCAD		
9. Strategies teaching and learning		

Lectures The classroom: presentation to explain theoretical For orders and facades program AutoCAD. The apppractical work in the laboratory:Training students to create drawings using computers. Offers Introduction: an offer projects and models Ready Using AutoCAD. Problem-solving training:Applying realistic design and drawing scenarios using appropriate tools. UseEducational media:Explanatory videos and screen recordings to explain the commands. projects small: assignment Students Drawing plans Engineering or Architecture Simple.	strategy
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evaluation continuous: Tests Applied and tasks fee patrol. evaluationMy stage:Organizing short tests, written assignments, and oral discussions to measure progress and achievement..	
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structure The .10 course					
road Evaluation	Teach ing metho d	name Unity / or the topic	Required learning outcomes	Hours	Week
Exams – Practica l assessment	Theo retica l and practi cal	Introduction to AutoCAD: Basic Drawing Tools	Familiarization with the program interface and basic drawing tools	hours2 per week	6-1
Exams – Pra ctic al asse ssm ent	Theoretic al and practical	orders amendment and its applications	to implementEditing commands such as copy, shift, duplicate, And symmetry	hours2 per week	9-7
Exams – Pra ctic al asse	Theoretic al and practical	ApplicationsIn architectural and engineering	feeTwo-dimensional geometric shapes	hours2 per week	12-10

ssment		drawing			
Exams – Practical assessment	Theoretical and practical	Comprehensive applied project	to implement project fee bilateral The dimensions are integrated, including the use of layers and dimensions. and temperament	hours2 per week	15-13
evaluation The course					11
Grade distributionfrom100 according to the tasks assigned to the student such as daily preparation, daily oral tests, TestsMonthly or written reports...etc..					
12 Resources Learning Education					
AutoCAD 2023 for Beginners – by CadArtifex			TextbooksRequiredText books, if available		
Library virtual affiliated Ministry education High Research Scientific			Main References(Sources)		
- AutoCAD Instructor – by James A. Leach - Technical Drawing with Engineering Graphics – by Frederick E. Giesecke feeComputer engineering– authorship: d. Fuad The hanger			Recommended books and referencesScientific journals and reports...		
LibraryThe virtual library of the Ministry of Higher Education and Scientific Research contains books available in the institute's electronic library.			Electronic references and websites		

1. name The course:					
Treatment The image					
2. code The course:					
STU 125					
3. the chapter Academic / Year					
2026-2025					
4. date numbers Description					
\ 2026\					
5 shapes the audience Available					
My presence					
6. Number Hours Approved Total / number Units Total					
Study 1 × 15 week = 15 hour (For the chapter) Academic(					
7. name responsible The course Mention all Names, if He was there more from name one(					
the name Susan Atta Bakr					
suzan-atta@ntu.edu.iqElectronicMail					
8. Goals The course					
identification student Principles to treat the pictures Digital.					Goal s
Enabling student from application algorithms Basic in to improve the pictures.					
analysis the pictures To extract Information From it Using tools and technologies Treatment.					
9. Strategies teaching and learning					
Lectures Theory: to explain Concepts Basic Treatment the pictures like Preparation and improvement and transfers. Offers Explanatory: an offer results Applied For operations Treatment Analysis Its results. ProjectsShort:Implementing a small-scale project that processes digital images of real-life situations.Continuous assessment:Practical assignments and short quizzes.			strategy		
.10 structure The course					
Evalu ation	Teach ing	Unit name/ or the topic	Required learning outcomes	Hours	Week

Method	method				
oral exams	theoretical	Introduction to Image Processing Digital	to understand basics the pictures Digital, Types the pictures, and recognition on	1 hours	6-1

and theory			Formats Files The image	weekly	
Oral and written exams	theoretical	to improve Images and filtering techniques	Application Technologies to improve Contrast, Filtering, Adjusting the lighting in the photos	1 hours per week	9-7
exams Oral and theoretical	theoretical	analysis Images and feature extraction	identification on Technologies analysis Edges Segmentation and identification of organisms	1 hours per week	10 – 12
Oral and written exams	theoretical	Final review and applications analytical	review Comprehensive Evaluation to understand student For technologies Different in image processing	1 hours per week	15- 13

evaluation The course 11

Grade distribution from 100 according to the tasks assigned to the student such as daily preparation, daily oral tests, Tests Monthly or written reports...etc..

Education resources Learning 12

Digital Image Processing – by Rafael C. Gonzalez & Richard E. Woods

Textbooks Required Text books, if available

Lectures Decision from before ministry education High Research Scientific

Main References (Sources)

Fundamentals of Digital Image Processing – by Anil K. Jain
Practical Image Processing in C – by Craig Lindley

Recommended books and references Scientific journals and reports...

-The library
The virtual arm of the Ministry of
Higher Education and Scientific Research-
what
Available from the Institute's electronic
library

Electronic references and
websites

Courses Study For the stage Second

1. name The course:			
system Information Geography GIS			
2. code The course:			
SUT212			
3. the chapter Academic / Year			
2026-2025			
4. date numbers Description			
\ 2025			
5 shapes the audience Available			
daily My presence			
6. Number Hours Approved Total / number Units Total			
×4 15 week = 60 hour (For the chapter) Academic(According to headquarters			
7. name responsible The course Mention all Names, if He was there more from name one(			
the nameOmar Falah Mardan			
omer-falah@ntu.edu.iq:ElectronicMail			
8. Goals The course			
Gain student Skills Basic To understand basics a job program, GIS And how inauguration and activating it with to get to know onSoftware interface ArcMap and ArcCatalog And you know on WaysIts use, how to prepare a project, and how to identify the type of drop system.38N zone identification on principle a job The program gesticulate Its benefits from District analysis Data Conclusion decisions And he drew phenomena existing in map from points lines and spaces or polygons with possibility change Its properties And learn print maps . Gain student Skills Necessary To work revision maps Information Coordinates or not Information Coordinates and knowledge amount The mistake Permitted With him To repel Coordinates points / Sites) X,Y,Z (And how Transfer it to Programs GIS And treating it For production maps. education student on How to Use tape Tools and icons existing in ArcMap And how addition map And he worked a base Data point– line – polygon (specific phenomena for drawing)	Goals		
9. Strategies teaching and learning			
1. Explanation Theory Introductory: - identification Concepts GPS andGIS, and their differences and jobs all From them. - to explain ingredients system GPS The moons, stations The ground, devices reception. - clarification an idea Organized Information Geography, And how Stored And it analyzes Data. 2. Use Offers Explanatory and videos:		strategy	

• an offer VideosAbout how satellites work and positioning. • to explain appliedmapsGIS and types layers(layers). 3. Application practical Field(GPS): • training Students on Use devices GPS manually or via The phone Mobile. • take CoordinatesFrom reality and converting it into maps using softwareGIS. 4. Use software Geography(GIS): • education StudentsUsing programs such as: ○ ArcGIS ○ QGIS Open Source • Input Data, construction layers,Data analysis and map creation. 5. Student projects: • assignmentStudents create a map illustrating the distribution of services or environmental phenomena usingGPSandGIS together. • a job studies miniature)like: map For sites waste, Gardens, or Networks Roads.(6. Analysis maps Real: • And its analysis OpenStreetMap or Google Earth from mapsdownload • training Students on reading Coordinates and trends and standards. 7. Evaluation Continuous: • exercises short on to set Sites. • project practical Using GIS Evaluate in end the chapter.					
.10 structure The course					
road Evaluation	road education	name Unity / or the topic	Required learning outcomes	Hours	Week

Theory and practical exams	theoretical+My work	The concept of Geographic Information Systems and its components and its capabilities and related programs like return And learn ArcCatalog geographer Correction Geometric topographic map Knowing the acceptable margin of error And how to prepare New project and application tools point – line – drawing	basics program and ArcMap p ArcCatalogeGPS	4 hours to headquartersR	1-6
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		polygon			
Theory and practical exams	theoretical+My work	application tools The drawing Additional Copy – editor-tools- point – line-area features	Drawing and editing method Add and delete And it changed features tools	4 hours to headquartersR	9–7
Theory and practical exams	theoretical+My work	road Enlarging and reducing features and selection methods Landmarks The drawn one-in zoom And learn zoom out on Characteristics of the classes and preparation of descriptive tables And the method Insertion Data	possibility Edit and work with online maps	4 hours to headquartersR	10 – 12

Theoretical and practical exams	theoretical+My work	Final preparation of all elements Grid-Border-Map title-layout-index- scale-map source- Legend	road Map printing	4 hours per week	-13 15
evaluation The course					11
Grade distribution from 100 according to the tasks assigned to the student such as daily preparation, daily oral tests, Tests Monthly or written reports...etc..					
Education				resources Learning	12
GIS step by step -Foundations space Geodetic Walji with me S d. Friday Mohammed David-basics system to set the site Global /ministry education High Research -Scientific /universityconductor, centerremote sensitization/Prepared by Sabah Hussein Ali Geographic Information Systems (GIS): The Complete Scientific Guide to the ArcVIEW System by Dr. Eng. Haitham Youssef				Required textbooksTextbooks, if available	
Organized Information Geography: Foundations and applications– d. slave The Most Merciful Muhammad Al-Sadiq Getting to Know ArcGIS Pro – Michael Law & Amy Collins				the reviewerMain(Sources)	
Library virtual affiliated Ministry education High Research Scientific				Recommended books and referencesScientific journals and reports...	
-The libraryThe virtual arm of the Ministry of Higher Education and Scientific Research- whatAvailable from the Institute's electronic library				Electronic references and websites Electronic	

1. name The course:	
Positioning Global GPS	system
Course code:	2.

SUT 205	
the chapter Academic / Year	3.
2026-2025	
date numbers Description	4.
2026\\	
shapes the audience Available	5.
daily My presence	
6. Number Hours Approved Total / number Units Total	
×4 15 week = 60 hour (For the chapter) Academic(According to headquarters	
7. name responsible The course Mention all Names, if He was there more from name one(	
the name: age peasant Mardan Raouf	
ElectronicMail omer-falah@ntu.edu.iq	
Goals The course	8.
Gain student Skills Basic To understand basics system GPS And its typesIts components, methods, and programs used to find websites	Goals
• identificationBased on the principle of operationGPSUnderstanding the navigation device and its uses, and identifying sources of errors in the system.GPS and identificationOn the available satellites currently orbiting the Earth, the types of coordinates and coordinate systems are known.UTM .	
• Gain student Skills Necessary To repel Coordinates points / Sites (X,Y,Z)And how to transfer them to programsGIS And treating it For production maps.	
4 Education student For the components and parts GPS And its types And teaching him Applications existing in Phones smart To benefit From it To monitor Sites points specific	
9. Strategies teaching and learning	
1. Explanation Theory Introductory: • identification Concepts GPS andGIS, and their differences and jobs all From them. • to explain ingredientssystem(GPS The moons, stations The ground,receivers). • clarification an ideaGeographic Information Systems (GIS), and how data is stored and analyzed. 2. Use Offers Explanatory and videos: • an offer VideosAbout how satellites work and positioning.	strategy

- to explain applied maps GIS and types layers (layers). 3. Application practical Field (GPS): - training Students on Use devices GPS manually or via mobile phone. - take Coordinates From reality and converting it into maps using software GIS. 4. Use software Geography (GIS): - education Students Using programs such as: ArcGIS QGIS Open Source - Input Data, construction layers, Data analysis and map creation. 5. Student projects: - assignment Students create a map illustrating the distribution of services or environmental phenomena using GPS and GIS together. - a job Mini-studies) like: map For waste sites, parks, or road networks. (6. Analysis maps Real: - And its analysis OpenStreetMap or Google Earth from maps download - training Students on reading Coordinates and trends and standards. 7. Evaluation Continuous: - exercises short on to set Sites. - project practical Using GIS Evaluate in end the chapter.	
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.10 structure The course					
road Evaluation	road education	name Unity / or the topic	Required learning outcomes	Hours	Week
Theory and practical exams	theoretical + My work	identification GPS and identification Types Systems Available satellites and system components; learn about them. principle a job GPS Geodetic (geo – spheroid – Systems Coordinates (	to get to know On devices and applications GPS	4 hours to headquarters R	1-6
Theory and practical exams	theoretical + My work oral)	to explain Ways monitoring Using system GPS And he explained parts system And	How to Monitor ring	4 hours to headquarters R	9-7

		how a job Job	coordina tes		
Theory exams	theoretical+M y work	constructionGround control points in the field and processing	How to to treat points Observed	4 hours to headqu artersR	10 – 12

and process		Data Observed byGIS			
Theoreti cal and practical exams	theoretical+M y work	Finding the coordinates of a point with unknown coordinates X, Y, Z and their processing onHow to send it to Sites Correction via The Internet	FindingP oints and their treatme nt	4 hours per week	-13 15

evaluation The course 11

**Grade distributionfrom100 according to the tasks assigned to the student such as daily preparation,
daily oral tests, TestsMonthly or written reports...etc..**

resources Learning Education 12

GIS step by step - Foundations space geodes Wasiya Walji with me S d. FridayMohammed Dawood - basicsGlobal Positioning SystemMinistry of Higher Education and Scientific Research /university conductor , center Allergy The remote / numbers morning Hussein on			Books Study Required)books Curricula, that I found(		
Introduction to GPS: The Global Positioning System – Ahmed El- Rabbany			the reviewerMain(Sources)		
Library virtual affiliated Ministry education High Research Scientific			Books and references Recommended Scientific journals and reports(...		

-The library The virtual arm of the Ministry of Higher Education and Scientific Research- what Available from the Institute's electronic library	Electronic references and websites Electronic
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name The course:		1.
survey digital		
Course code:		2.
SUT 213		
the chapter Academic / Year		3.
2026/2025		
date numbers Description		4.
2026/		/
shapes the audience Available		5.
daily My presence		
6. Number Hours Approved Total / number Units Total		
15 x 3 weeks = 45 hours (per semester) as per the syllabus		
7. name responsible The course Mention all Names, if He was there more from name one(		
Name: Susan Atta Bakr		
suzan-atta@ntu.edu.iqElectronicM a i l		
Goals The course		8.
-1 Acquisition student Skills Basic To understand photo Air satellite channel	Goals	
-2 Recognition on survey The picture and reflections The image phenomena surface the earth		
-3 Acquisition student SkillsNecessary for aerial image analysis		
-4 principleThe course. to treat Digital For data satellite And its evaluation		
-5 EducationThe student learns about atmospheric and space sensors and how to create a digital model.		
9. Strategies teaching and learning		
Εξπλανάτιον Theory - identification basics Photography digital and types Cameras Used. - to explain principles Photography AirSatellite imagery. - clarification the difference between surveyDigital photography and traditional scanning. Οφφέρος Explanatory and videos - an offer Videos on How to Capture the pictures Air and use software To analyze the pictures. - to explainSteps for digital image processing using specialized software	strategy	

•Απλiχατιον practical Using software survey - training students onUsing programs such asPix4DorMetashape. Agisoft - to implementPractical projects:Processing aerial images and converting them into maps or 3D models. •Απλiχατιον Field - collection DataReal footage using digital cameras or drones. - application steps survey photographic digitalBased on field data. Προφεχτσ student - numbers projects like fee maps For the area Specific, or constructionDigital topographic model. - incentivize students on the job collective To analyze the picturesInterpretation of results. Επαλυατιον Continuous - exercises Applied onDigital image processing. - evaluation projectsStudents at the end of the semester.					
.10 structure The course					
Evalu ation Metho d	road education	name Unity / or the topic	Required learning outcomes	Hours	Week
Oral and practic al exams	theoretical My work	identification on tape tools Landmarks For the program stereo analyst feature toolbar and drawing And preparation maps from The model model digital and liberationdata GIS and proceduresTrinification processAir and process Calendar tripartite Dimensions for images and extractionAutomatic digital surface modeling the earth	identification On the phenome na of the Earth's surface	3 hours per week	6-1
oral exams My work	theoretical My work	Applications Use dtm in area Organized information geographer and formation The model The trio Dimensions Drawing lines Contouring And the sections Longitudinal from during application scene arc and alsoIn the field of other software applications such as global @ surfer mapper	identification On the picturesDigita l technology and how to choose and integrate it	3 hours per week	9-7

oral exams My work	theoretical My work	to choose the pictures Digital And how formation The model The guide, its integration, storage, and input of flight altitude and distanceIts focal point and verification of the digital stereoscope	How to choose imagesDigital and its storage	3 hours per week	12-10
oral exams My work	theoretical My work	Get on Information and measurements From the model model digital from during Stereoscopic vision, updating its coordinates, drawing lines, and determining their lengths	identification Based on the information and measurements from the model	3 hours per week	15-13

11 evaluation The course	
Grade distribution from100 according to the tasks assigned to the student such as daily preparation, daily oral tests, TestsMonthly or written reports...etc..	
12 Resources Learning Education	
1-stereo analyst .users guide .leica geospatial imagingUSA 2008 2-digital photogrammetry a practical course. wilfried linder. Springer.2009	Books Study Required)books Curricula, that I found(
Library virtual affiliated Ministry education High Research Scientific	the reviewerMain(Sources)
Digital Photogrammetry: A Practical Course – Wilfried Linder Introduction to Modern Photography – Edward M. Mikhail, James S. Bethel, J. Chris McGlone Remote Sensing and Image Interpretation – Thomas M. Lillesand, Ralph W. Kiefer Photogrammetric Computer Vision and Image Analysis – Wolfgang Förstner, Bernhard P. Wrobel	Recommended books and references In itScientific journals and reports...
Library virtual affiliated Ministry education High Research Scientific what existing from books in Library Electronic For the institute	the reviewer Electronic and sites

name The course:		1.
survey cadastral		
Course code:		2.
SUT 210		
the chapter Academic / Year		3.
2026/2025		
date numbers Description		4.
2026/ /		
shapes the audience Available		5.
daily My presence		
6. Number Hours Approved Total / number Units Total		
15x4 weeks = 60 hour (For the chapter) Academic(As per the schedule)		
7. name responsible The course Mention all Names, if He was there more from name one(		
the nameGhada Hassan Mohammedlight		
Mailelectronicghada66@ntu.edu.iq :		
Goals The course		8.
-1 To equip the student with the basic skills to understand surveying work for intersections or unknown measurements and its relationshipBy cadastral survey		Goal s
-2 identification on Analytical Engineering and rotationCoordinates, applications in road intersections and land division		
-3 To equip the student with the necessary skills to find unknown measurements (lengths or directions) in circular polygonsThe link using different intersections		
-4 Recognition on intersection Back And the opposite and division polygons and division lands		
-5 EducationThe student learned how to divide a polygon into two equal parts of area for a project and draw their longitudinal sections.		
9. Strategies teaching and learning		
the explanation Theory identificationCadastral survey and its legal and economic importance. to explain systems registration Lands and types maps cadastral. clarification Ways survey different Used in survey cadastral.		strategy
Offers Explanatory and media Multiple an offerVideos illustrating the steps of field cadastral surveyingUseReal cadastral maps to understand how boundaries are defined.		
Training practical Field training students on Use tools Area traditional(like Triangles, device(station). total		

to implement projects to survey field To determine border piece land Typical. Use Technologies GPS cadastral education Students learn how to use devices GPS High precision for boundary demarcation. comparison Results between traditional and modern methods. Analysis Documentation education How to Matching Data Field with Documents Legal. Preparing reports and cadastral maps according to official standards. projects students Preparing a complete cadastral survey project for a small area or plot of land. presentation A presentation explaining the steps and results. Evaluation Theory tests and a periodic process. evaluation Final project.					
.10 structure The course					
Evaluation Method	road education	name Unity / or the topic	Required learning outcomes	Hours	Week
oral exams and process	theoretical+My work	Intersections Unknown measurements in the process of ribbing and triangulation Use Laws of polygonality, analytical geometry, Using the triangle method	Equipping the student with basic skills To understand Intersection works Unknown measurements in Ribbing process Triangulation uses the laws of polygons and analytical geometry. Use road triangles	4 hours per week	6-1
oral exams My work	My wit+My work	Use Analytical geometry method, its applications in road intersections and land division triangles, Finding unknown measurements Lengths and directions Use Intersections Back And the Imam and division lands	to get to know The student will learn to use the analytical geometry method and its applications in road intersections and division. Triangular lands, Finding unknown measurements Lengths and trends (By using rear intersections The Imam and the division of lands	4 hours per week	9-7

oral exams My work	My wit+My work	to divide polygons: to divide The polygon is divided into two parts by a line This Two known points of interest with equal areas By line It starts from a point Information the site	educationThe student learned how to divide polygons.: to divide polygon to Two parts are separated by a line with known endpoints, where the locations are equal in area, by a line starting from a known point. .the site	4 hours per week	12-10
oral exams My work	My wit+My work	a jobA small project for dividing large plots of land using various calculations and intersections, drawing its horizontal plan and drawing its longitudinal section.	DefinitionThe student is working on a small project to divide large plots of land.	4 hours per week	15-13

			Using calculations and intersections different and Draw its horizontal outline and draw its longitudinal section.		
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evaluation The course					11
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Grade distributionfrom 100 according to the tasks assigned to the student such as daily preparation, daily oral tests, Tests Monthly or written reports...etc..					
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resources Learning Education					12
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book survey Engineering Y and cadastralFor Professor Abdul Jabbar Al-Bakr	Required textbooksTextbooks, that I found(				
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Library virtual affiliated Ministry education High Research Scientific	the reviewerMain(Sources)				
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Cadastral Surveying and Land Information Systems – DC Fraser					
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Principles of Cadastral Surveying – R. G. Williamson Cadastral Surveying: A Complete Guide – John O. Miller	Recommended books and references In itScientific journals and reports...
Organized Registration Real Estate And the survey Cadastry – d. Ahmed slave God	
Library virtual affiliated Ministry education High Research Scientific what existing from books in Library Electronic For the institute	the reviewer Electronic and sites Electronic

name The course:		1.
survey Engineering		
Course code:		2.
SUT 203		
the chapter Academic / Year		3.
2026/2025		
date numbers Description		4.
2026/		/
shapes the audience Available		5.
daily My presence		
6. Number Hours Approved Total / number Units Total		
15x4 weeks = 60 hour (For the chapter) Academic(As per the schedule)		
7. name responsible The course Mention all Names, if He was there more from name one(		
the nameGhada Hassan Mohammedlight		
Mailelectronicghada66@ntu.edu.iq :		
Goals The course		8.
-1 Acquisition student Skills Basic Doing Works R and measurement spaces and finding Volumes Quantities Tabiyah	Goal s	
-2 Recognition on Use device Area Total Station and deviceGPS Positioning Global		
-3 To equip the student with the skills to find the missing lengths and directions of land parcel boundaries and coordinatesIts pillars		
-4 Recognition on someEngineering operations: Calculating land plot areas using devices Advanced device station The complete and device Positioning Global		
5 EducationThe student learns how to calculate horizontal and vertical curves, project them onto the ground, and project structures.		
9. Strategies teaching and learning		
the explanation Theory	1.	strategy
identification survey Engineering Its importance in Projects Engineering.	○	
to explainTypes of engineering	○	
surveys:Topographical, executive, monitoringAn	○	
introduction to the scanning equipment used and its operating principles.	2.	
Offers Explanatory and videos	○	
Show practical videos on how to use the devicesStation Total and GPS in the field.	○	
Explanation of the steps for collecting and processing field data.	3.	
The app practical Field	○	
training students on procedure survey Topographic Using Devices different.		

- to implement Exercises practicalOn measuring distances and angles and determining heights. 4. Use software - education studentsUsing surveying data processing software such as3D Civil AutoCAD, GIS. - analysisResults and engineering mapping. 5 projects Applied - assignment students projects Applied like to survey location To build building or road. - numbersEngineering reports and execution plans. 6. Evaluation Continuous - TestsA practical and theoretical approach to assessing students' skills. - evaluationEnd-of-semester projects.					
.10 structure The course					
Evalu ation Metho d	road education	name Unity / or the topic	Required learning outcomes	Hours	Week
oral exam s and process	theoretical+My work	measurementEngineering survey, drawing scale used, and division Shape areasRegular and the use of coordinates in Calculating areas and for calculating the areas of cross-sections differentShapes and slopes of the surface the earth identification on works to survey Roads	identificationThe student is measured surveyGeometric shapes, the scale used, the division of areas of regular shapes, the use of coordinates in calculating areas, and identifying Road surveying works	4 hours per week	6-1
oral exams My work	My wit+My work	identificationOn the types of vertical and horizontal curves and how Dropping it Ali the earth and curves Horizontal, circular, composite, and inverted lines and their types, and calculating station coordinates Main and points on curves	identificationStude nts come in different types CurvesVertical and horizontal And how Dropping it to the groundand horizontal curves circularCompound and reversed forms and their types and Calculating station coordinates Main and points on Curves	4 hours per week	9-7

oral exams My work	My wit+My work	DroppingThe simple circular curve and the method of using columns in DroppingCurves and identification of transition curves or Helical systems: their types, uses, and calculation of station coordinates stations President And the points on curves	identificationThe student on how Droppingcircular curve The simpleand how to use columns in Curve projection and identification	4 hours per week	12-10
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			curves TransitionalOr spirals, their types, uses, and calculations Station coordinates Presidentand points on curves		
oral exams My work	My wit+My work	Calculating the cross-sectional areas and volumes of the project Quantitiesearth, Surveys related to building the house And the buildings The big oneAnd stabilizing their levels and ensuring the straightness of lines, canals, and waterways. and pipesElectric transport, long trenches, and stabilizing their levels	Student definition of section areas Project scope and quantity ranges earth, Surveyin g related to the construction of houses and large buildings and their installation Its levelsStraightnes s of lines, channels, conduits, pipes, and electrical transmission and trenchesLong and fixed Its levels	4 hours per week	15-13

evaluation The course					11
Grade distributionfrom100 according to the tasks assigned to the student such as daily preparation, daily oral tests, TestsMonthly or written reports...etc..					
resources Learning Education					12

book survey Engineering Y and cadastralFor Professor Abdul Jabbar Al-Bakr	Required textbooksTextbooks, that I found(
Library virtual affiliated Ministry education High Research Scientific	the reviewerMain(Sources)
Engineering SurveyingW. Schofield • Elementary Surveying: An Introduction to GeomaticsCharles D. Ghilani • Surveying for Engineers– RS Kanetkar •	Recommended books and references In itScientific journals and reports...
Principles and Practice of Engineering Surveying – WM Anderson •	
Library virtual affiliated Ministry education High Research Scientific what existing from books in Library Electronic For the institute	the reviewer Electronic and sites Electronic

1. name The course:	
English 2	the language
Code of the decision:	
NTU 200	
the chapter Academic / Year	
2026-2025	
date numbers Description	
2026\	
shapes the audience Available	
My presence	
6. Number Hours Approved Total / number Units Total	
Study 2 × 15 week = 30 hour (For the chapter) Academic(	
7. name responsible The course Mention all Names, if He was there more from name one(	
the name: Vision of Mahdi Zain Al-Abidin	
ruya.mehdi25@ntu.edu.iq ElectronicMail	
Goals The course	
-1 Acquisition student Skills pronunciation And readingListening and conversation	Goals
-2 Rehabilitation student So that He is able on Use Sections Previous and the suffix	
-3 Understanding Vocabulary Basic time and places and others	
9. Strategies teaching and learning	
education the language Communication: focusUsing English in real-life situations. to encouragePair work, role-playing, and group discussionsLearning Task-based: CostStudents are given tasks such as writing emails, preparing short presentations, or conducting interviews in English.. It is to learn the language from during completion Activities purposeful.	strategy

Listening and speaking practice: use Audio materials, podcasts, and videos to improve listening skills Practice pronunciation Conversation through dialogue and storytelling. Reading Building Vocabulary: Supply students With texts or Articles or stories short Listed. Teach them Reading strategies Reading Rapid, scanning, and contextual guessing.(foot Introduce new words in context and review them regularly.. development skills Writing: never By writing The guide)like: Filling Models, Writing paragraphs short.(Move Towards free writing Letters Email, reports, articles(Use Peer review and feedback techniques. Use Technology Educational: use PowerPoint , and clips The video, and the blackboards Interactive To involve learners. Evaluation Continuous Nutrition Returning: use Tests Short, And the offers Introduction Oral, and records Vocabulary, and containers the language.					
.10 structure The course					
Evaluation Method	road education	name Unity / or the topic	Required learning outcomes	Hours	Week
oral exams and theory	theoretical Practical (oral)	Rooms and furniture Grammar (There - is/are, prepositions) Pronunciation (Word - stress) Translations Speaking (How to have a good time in Sydney)		2 hours per week	4 - 1

		Reading and writing (-			
--	--	------------------------	--	--	--

		Our house) Every day English (- Directions Exercise Years Grammar (was/were, - past tense/irregular verbs) Writing (famous - people) Vocabulary: words - groups Every day English (- When's your Birthday?) -Exercises			
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oral exams and theory	theoreticalPractical (oral)	Past tense (We had a good - time) Grammar (past simple, - regular verbs, irregular verbs Listening (Mike's day), - Writing (Last Saturday) Pronunciation (Who were - they?) Vocabulary: Sports, MonthsQuestions(Where, what, - who.. etc) Every day English (fill in - forms) Exercises & Activities (We can do it!)- Listening (Can I be in your - pop group?) Pronunciation (can/can't)- Requests and offersVocabulary (odd one out) Every day English (What is - the problem?) --Exercises		2 hours per week	8 - 5
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oral exams and theory	theoreticalPractical (oral)	Asking politely (I want/I - would like) Speaking – in the restaurant - (food and drink) translationReading (you are what you - eat Every day English (Going - (shopping)Exercises Colors (Here and now)- Grammar (present simple, present continuous) translation - Reading (Summer in - Portugal) Vocabulary (Cloths) – Everyday English (What's - (the matter) Exercise-		2 hours per week	12-9
oral exams and theory	theoreticalPractical (oral)	Holidays (Time to go)- Grammar (present - continuous for the future) Listening (Hannah's diary)- pronunciation (shifting - sentence stress) Translation - Vocabulary: Transport and - travel Reading and Speaking (The - Smiths) Every day English (going - sightseeing) Exercises-		2 hours per week	15-13
11 evaluation The course					

Grade distribution from 100 according to the tasks assigned to the student such as daily preparation, daily oral tests, Tests Monthly or written reports...etc..

12 Resources Learning Education

new HEADWAY PLUS Beginner Student Book Audio + Video https://elt.oup.com/student/headway/beg/download?cc=us&sellLanguage=en	Books Required studies) books Curricula academic, that I found(
Oxford Word Skills – Ruth Gairns & Stuart Redman ELT Journal	the reviewer Main(Sources)
Library virtual affiliated Ministry education High Research Scientific	Recommended books and references Scientific journals and reports...
Library virtual affiliated Ministry education High Research Scientific - what existing from books in Library Electronic For the institute	Electronic references and websites Electronic

1. name The course:	
And preparation maps	design
Course code:	2.
SUT211	
the chapter Academic / Year	3.
2026/2025	
date numbers Description	4.
2026/	/
shapes the audience Available	5.
daily My presence	
6. Number Hours Approved Total / number Units Total	
5 15 weeks = 75 hours (For the chapter) Academic(According to The course	
7. name responsible The course Mention all Names, if He was there more from name one(	
the nameZeina Hussein Thank you Mohammed	
Email: zeena-hussin@ntu.edu.iqM a i l	
Goals The course 8.	
-1 Acquisition student The oryx Art Basic For the concept technique etc. and his relationship By area	Goals
-2 Recognition on Types etc.	
-3 Acquisition student Al-Maha Art Necessary To draw Types etc. And by standards different	
-4 Education student on Benefit from Coordinates Geography Arfiya and square	
9. Strategies teaching and learning	
1. the explanation Theory - identificationThe concept of map design and its importance. - to explain ingredients map Basic: the address, The scale The direction, key symbols. - DefinitionTypes of maps and their uses. 2. Offers Explanatory and videos - an offer Videos It explains steps design maps Using ProgramsGIS. - Explanation of successful map design models and practical examples. 3. Application practical Using software - training students on Use Programs like ArcGIS and QGIS Design maps. - to implementApplied projects)for example:Designing a population distribution map, an environmental map.(4 projects students - assignment studentsBy preparing a complete map with all design elements. - to encourageCreativity in the use of colors and symbols.	strategy

5. Evaluation - evaluation Designs maps from where Accuracy Clarity And aesthetics. - TestsA theory about design components and principles.					
structure The .10 course					
Evalu ation Metho d	road education	name Unity / or the topic	Required learning outcomes	Hours	Week
oral exams	theoretical+My work	identificationDesigning, preparing, copying, printing, and summarizing cartographic drawings	identification student onHow to design maps	4 hours per week	6-1
oral exams	theoretical+My work	FeesGraphic maps and their types, digital maps, and errors in maps	identification student On the graphs	5 hours per week	9-7
oral exams	theoretical+My work	amendmentSpecifications for contour, digital, and cadastral maps	educationTh e student learned how to modify contour maps. and digital	5 hours per week	12-10
oral exams	theoretical+My work	Using itIn circles and renewing old maps And masteryWorking with cadastral maps	education The student should use it inCircles Government	5 hours per week	15-13
evaluation The course					11
Grade distributionfrom100 according to the tasks assigned to the student such as daily preparation, daily oral tests, TestsMonthly or written reports...etc..					
12 Resources Learning Education					

dHashim Yahya Al-Masraf, Principles of Cartography, First edition, 1982 Baghdad DHashim Yahya Al-Masraf, exercises Applied in cartography, Dr. Khader Al-Abadi, Cartography, Map Projections, 1980, Baghdad, 1986 Robinson, J.S., "Elements of cartography", 5th Ed., 1980 Keats, J.S., "Cartography Design and Production", 3rd Ed., 1980	Required textbooks Textbooks, that I found(
How to Lie with Maps– Mark Monmonier • Cartography: Visualization of Geospatial Data– Menno-Jan Kraak, Ferjan Ormeling • Fundamentals of Cartography– William A. Robinson, et al. •	the reviewer Main(Sources)
Library virtual affiliated Ministry education High Research Scientific	Recommended books and references
	Scientific journals and reports...
Library The virtual library of the Ministry of Higher Education and Scientific Research contains books available in the institute's electronic library.	Electronic references and websites Electronic

name The course:		1.
Principles of maps		
Course code:		2.
SUT 204		
the chapter Academic / Year		3.
2026/2025		
date numbers Description		4.
2026/ /		
shapes the audience Available		5.
daily My presence		
6. Number Hours Approved Total / number Units Total		
15 x 5 weeks = 75 hours (per semester) as per the syllabus		
7. name responsible The course Mention all Names, if He was there more from name one(		
the name: Zeina Hussein Shakour		
zeena-hussin@ntu.edu.iqElectronicMail		
Goals The course		8.
-1 Acquisition student Skills Basic For the concept technique maps and his relationshipBy area	Goals	
-2 Recognition on Types maps		
-3 Acquisition student Skills Necessary To draw Types maps And by standards different		
-4 educationThe student should utilize geographical and quadratic coordinates.		
9. Strategies teaching and learning		
-1 the explanation Theory - presentation Concepts Basic like identification map,The scale, symbols, and formatting are clear and organized.. - Use the languageSimple, everyday examples to make concepts easier to understand. -2 Use Media Multiple - an offerEducational videos explaining map components and design principles. - Use Offers PowerPoint Contains on photo mapsA variety illustrating the differences between map types.		strategy

-3 Interaction and dialogue - Presentation Questions Open To stimulate thinking)for example: Why We need to key The map?.(- discussionReal-life examples with students for analyzing map elements.					
-4 Learning Cooperative - assignmentStudents work on group projects to design simple maps illustrating a specific topic.)likemap of their school Or their neighborhood.(- exchange maps between Groups To analyze it Presentation Notes.					
-5 The app practical - trainingStudents to read different mapsTopographical Political, objectivity(and recognition on Its components. - Use tools measurement Distances on map To calculate Distances The real					
-6 Evaluation Continuous - exercises shortPeriodicity on map interpretation. - project design map As a test ultimate Reflects to understand students For principles.					
structure The course					.10
Evalu ation Metho d	road education	name Unity / or the topic	Required learning outcomes	Hours	Week
oral exams	theoretical My work	identificationKnowledge of map technology, scales and their types, and identification of geographical coordinates	identificationT he student on how to draw maps	5 hours per week	6-1
oral exams	theoretical My work	identificationMap projections, their classification and types, and the role and importance of colors in maps	identificationS tudents come in different types Projections	5 hours per week	9-7
oral exams	theoretical My work	identification And he drew symbols Topography and its classification	education studentHow to format maps	5 hours per week	12-10
oral exams	theoretical My work	design maps And its preparation	education The student onHow to zoom in and out maps	5 hours per week	15-13
evaluation The course					11

Grade distribution from 100 according to the tasks assigned to the student such as daily preparation, daily oral tests, Tests Monthly or written reports...etc..

12 Resources Learning Education

-1 dHashim Yahya Bank, principles science maps, Edition First, 1982 Baghdad -2 dHashim Yahya Bank ,exercises Applied in science maps, 1986 Baghdad - 3. Dr. Khader Al-Abadi, Cartography, Map Projections, 1980, Baghdad
Robinson, J.S., "Elements of cartography", 5th Ed., 1980-4 .Ed., 1980
Keats, J.S., "Cartography Design and Production", 3rd

Books Required studies) books
Curricula, that I found(

Library virtual affiliated Ministry education High Research Scientific

the reviewer Main(Sources)

Elements of Cartography – Arthur H. Robinson
 principles science maps –d. slave Al-Fattah Al-Banna **Fundamentals of Cartography** –dMagdi Abdo

Books References
The testator In it
Scientific journals and reports(...

Library virtual affiliated Ministry education High Research Scientific
 what existing from books in Library Electronic For the institute

the reviewer
Electronic and sites
Electronic

name The course:	1.
crimes system The Baath in Iraq	
Course code:	2.
NTU203	
the chapter Academic / Year	3.
2026-2025	
date numbers Description	4.
2026\	\
shapes the audience Available	5.
My presence	
6. Number Hours Approved Total / number Units Total	
Study 2×15 week = 30 hour (For the chapter) Academic(	
7. name responsible The course Mention all Names, if He was there more from name one(	
the name : Asan Juma Fadel	
asan.jf@ntu.edu.iq ElectronicM a i l	
Goals The course	8.
-1 Acquisition studentSkills: Speech, reading, listening, and conversation	Goals
-2 Definition rights man InjusticeWhich was signed by the Ba'ath regime on the rights of the citizen.	
-3 statement Rights and freedoms Basic For the citizen in Constitution	
-4 statementFundamental rights and freedoms of citizens in Iraqi legislation	
9. Strategies teaching and learning	
the explanation Theory: - to explainBackground of the Ba'athist regime and the nature of its rule. - presentation Most important Crimes that It happened like campaign The spoils of war, Halabja, The uprising Sha'baniyah. .an offer Real videos and documents: - UseDocumentaries, testimonies from victims, or scenes from trials.	strategy

- discussion Content To understand sizeCrimes and their impact. Discussion inside the line: - to openThe dialogue section on: - Why I got This is amazing Crimes? - howHow can we prevent it from happening again? - what sheThe responsibility of the state and society? Case studies Simplified: - to choose incidentSpecific and detailed study of each case, explaining the causes and effects.. - for example: What It happened in Halabja? And from responsible? .the job collective: - to divide Students to Groups,Each group researches a specific topic such as: - cemeteries collective - Trials of the leaders - effect CrimesOn the Iraqi components Evaluation Continuous: - UseSimple questions, short reports, or oral presentations. - to encourage Students on Expression on Their opinions Their positions.					
structure .10 The course					
Evalu ation Metho d	Teach ing metho d	name Unity / or the topic	Required learning outcomes	Hours	Week

Oral and written exams	theoretical	General overview of the subject of Ba'athist crimes, crimes of the regime The Baath according to law The court criminal Iraqi Upper 2005. The concept of crimes and their categories, definition of crime. Linguistically, the definition of crime in legal terminology, its definition in law, psychology, sociology, and Islamic jurisprudence. Categories of crimes, crime International, Political crime, social crimes crimes Power and government, psychological crimes Corporal Crimes against freedom of religion and belief.		2 hours per week	6-1
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		And the corporal The crimes of confiscating funds, forced displacement, and other crimes Environmental statement on human rights violations. crimes The Ba'ath regime, according to documentation and court law criminal Iraqi Supreme 2005m. Types Crimes International, crimes genocide collective.			
Oral and written exams	theoretical	crimes against Humanity, crimes War. to explain Decisions issued From the Supreme Criminal Court, my opinion. exams oral And my opinion Crimes Psychological and social effects. responsible State In achieving a balance between the public interest and the interests of individuals. violations order Baathist In Iraq, violation Laws Iraqi, photo Human rights violations Humanity and the Crimes of Power. Explanation of the causes of psychological crimes, and a statement of the effects of psychological crimes..		2 hours per week	9-7

		Corporal crimes social.			
Oral and written exams	theoretical	to explain some decisions violations Political and militaryFor some systems, and to identify places prisonsFor some system.Environmental crimes of the Ba'ath regime.War and radioactive pollution and landmine explosionsDestruction of cities and villages (Land Policy) burntCrimes of draining the marshes by the regime. The Baath.The bulldozing of palm groves, trees, and cropsMass grave crimes. Events mass gravesEvents of the year 1963 Events of the Iraq War Iranian, General events 1983 and its relation to mass graves		2 hours per week	12-10
Oral and written exams	theoretical	statement events The uprising Sha'baniyah. Classification Timeline of mass graves extending from -1963 2003 cemeteriesgenocide dating back to events 1963. Related genocide graves war Iraqi Iranian. graveyard genocide		2 hours per week	15-13
		collective For the KurdsBarzani for the year 1983 .mass graves of victims of the Anfal genocide for the period 1987 - 1988. Explanation of the events at the			

		mass grave of the victims of the genocide. Sha'ban Uprising 1991 .			
evaluation The course					11
Grade distribution from 100 according to the tasks assigned to the student such as daily preparation, daily oral tests, Tests Monthly or written reports...etc..					
Education			resources Learning		12
Lectures Decision from before ministry education High Research Scientific				Required textbooks Textbooks, that I found(	
Lectures Decision from before ministry education High Research Scientific				the reviewer Main(Sources)	
Library The virtual arm of the Ministry of Higher Education and Scientific Research reports on human rights organizations				Books and references Recommended Scientific journals and reports(...	
-The library The virtual arm of the Ministry of Higher Education and Scientific Research- what Available from the Institute's electronic library				the reviewer Electronic and websites	

name The course:		1.
survey digital		
Course code:		2.
SUT 213		
the chapter Academic / Year		3.
2026/2025		
date numbers Description		4.
2026/ /		
shapes the audience Available		5.
daily My presence		
6. Number Hours Approved Total / number Units Total		
15 x 3 weeks = 45 hours (per semester) as per the syllabus		
7. name responsible The course Mention all Names, if He was there more from name one(		
the name: Susan Atta Bakr		
suzan-atta@ntu.edu.iq ElectronicM a i l		
Goals The course		8.
-1 Acquisition student Skills Basic To understand photo Air satellite channel	Goal s	
-2 Recognition on survey The picture and reflections The image phenomena surface the earth		
-3 Acquisition student SkillsNecessary for aerial image analysis		
-4Principle of the course. to treat Digital For data satellite And its evaluation		
-5 EducationThe student learns about atmospheric and space sensors and how to create a digital model.		
9. Strategies teaching and learning		
Εξπλανατιον Theory - identification basicsDigital photography and types of cameras used. - to explain principles Photography AirSatellite imagery. - clarification the difference between surveyDigital photography and traditional scanning. Οφφερσ Explanatory and videos - an offer VideosOn how to capture aerial photographs and use software for analysis the pictures.	strategy	

- to explainSteps for digital image processing using specialized software. •Απλiχατιον practical Using software survey - training students on Use Programs like Pix4DorMetashape. Agisoft - to implementPractical projects:Processing aerial images and converting them into maps or 3D models Dimensions. •Απλiχατιον Field - collection Data Real Using Cameras Digital or Airplanes without pilot. - application steps survey photographic digitalBased on field data. Προφεχτσ student - numbers projects like fee maps For the area Specific, or constructionDigital topographic model. - incentivize students on the job collective To analyze the picturesInterpretation of results. Επαλυατιον Continuous - exercises Applied onDigital image processing. - evaluation projectsStudents at the end of the semester.	
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.10 structure

The course

Evalu ation Metho d	Teach ing metho d	name Unity / or the topic	Learning outcomes Required	Hours	Week
Oral and practic al exams	Theor etical and practi cal	identification on tape tools Landmarks For the program And preparation stereo analyst feature toolbar and drawing mapsFrom the digital 3D model and data editingGIS and procedures practical Trinity Air and process Calendar tripartiteDimensions of images and automatic extraction of the digital surface model the earth	identification On Earth's surface phenome na	3 hours per week	6-1
oral exams My work	Theor etical and practi cal	Applications Use dtm in area Organized information geographerand formation The model The trio Dimensions And he drew lines Contouring and longitudinal sections through application Scene ARC, as well as in other software applications such as @surfer mapper global	identification On the picturesDig ital and how to choose it And merge	3 hours per week	9-7

			it		
oral exams My work	Theoretical and practical	to choose the pictures Digital And how formation The model The guide And integrate it, store it, and input the heightFlight, focal length, and verification of the digital stereoscope	How to Image selection Digital And store it	3 hours per week	12-10
oral exams My work	Theoretical and practical	Get on Information and measurements From the digital 3D model through stereoscopic visionUpdating its coordinates and drawing lines	identification Based on information and measurements from	3 hours per week	15-13

		and determining Its lengths	The model		
evaluation The course					11
Grade distributionfrom100 according to the tasks assigned to the student such as daily preparation, daily oral tests, TestsMonthly or written reports...etc..					
resources Learning Education					12
stereo analyst .users guide .leica geospatial imagingUSA 2008-1 digital photogrammetry a practical course. wilfried linder. Springer.2009-2				TextbooksRequire d)books Curricula academic, that I found(	
Library virtual affiliated Ministry education High Research Scientific				the reviewerMain(Sources)	

Digital Photogrammetry: A Practical Course – Wilfried Linder Introduction to Modern Photogrammetry – Edward M. Mikhail, James S. Bethel, J. Chris McGlone Remote Sensing and Image Interpretation – Thomas M. Lillesand, Ralph W. Kiefer Photogrammetric Computer Vision and Image Analysis – Wolfgang Förstner, Bernhard P. Wrobel	Recommended books and references Scientific journals and reports...
Library The virtual library of the Ministry of Higher Education and Scientific Research contains books available in the institute's electronic library.	Electronic references and websites Electronic

1. name The course:	
survey photographic II	
2. code The course:	
SUT206	
3. the chapter Academic / Year	
2026/2025	
4. date numbers Description	
/ 2026/	
5 shapes the audience Available	
daily My presence	
6. Number Hours Approved Total / number Units Total	
x4 15 weeks = 60 hours (For the chapter) Academic(According to The course	
7. name responsible The course Mention all Names, if He was there more from name one(	
the name: Susan AtaBakr Mustafa	
Suzan-atta@ntu.edu.iq- ElectronicMail	
8. Goals The course	
-1 Acquisition student Al-Maha Art Basic To understand the pictures Air, And satellite	Goal s
-2 Recognition on.. on B Armj Modern like program Imaginc Erdas	
-3 Acquisition student Al-Maha Art Necessary For the sake of the procedure Correction Engineering For photos and ways to cut the pictures In a way regular and other regular	
-4 Education student to gather Visuals satellite in program Imagine Erdasالموازنك Air	
9. Strategies teaching and learning	
the explanation Theory interactive: - presentation Concepts Basic like Types the pictures,Image scale, displacement, and the parallax. - Using display methods– (PowerPoint images) Maps (to illustrate) DifferencesBetween vertical and slanted images. The application practical In pictures Air: - training Students on reading the pictures Airand its analysis. - to implement exercises To extract gaugeImage, distances, and heights from it. Learning Standing on Project: - assignmentStudents with an applied project such as creating a map from a pair of aerial photographs Using dedicated software.	strategy

Use software Specialized: • ,Agisoft Metashape,Erdas ImaginelikeInput programs and PhotomodinPractical training. • clarification How toDigital image processing and 3D model production. to watch Lessons Photographer materials Interactive: • an offerVideos demonstrating how to take aerial photographs and set up cameras. AnalysisResults. Learning Cooperative: • to divide Students to Groups Treatment photo Real and comparison Results. • exchange Roles inside all group To promote to understand Steps different. Evaluation practical Theoretically: • Tests shortAnd assignments on basic concepts. • evaluationProjects and technical reports resulting from working on real images.					
.10 structure The course					
Evalu ation Metho d	road education	name Unity / or the topic	Requir ed learnin g outco mes	Hours	Week
Theoret ical and practica l exams	theoretical+ My work	General introduction to the programs Used in Aerial surveyAnd an introduction to the software used and its method How it works and an introduction to image types satelliteAnd ways to retrieve imagesERDAS in the program And preparation Matrix Digital	identification On aerial photographs and their types	4 hours per week	6-1

Theoretical and practical exams	theoretical+ My work	Correction Engineering ImprovementRadiometric satellite imagery: Edge enhancement for satellite imagery	identification On how to correct Engineering and improving satellite images	4 hours per week	9-7
Theoretical and practical exams	theoretical+ My work	ClassificationTypes of classification methods, visual analysis, and how to extract the map	identification On types of weather maps and how Extracting it	4 hours per week	12-10
exams	theoretical+ My work	Types Correction Engineering	identification on	4 hours	15-13

Theory and Practice		For visualsOptical and addressing all its types	Types of correcti on Engineering And its types	weekly	
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evaluation The course					11
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Grade distributionfrom100 according to the tasks assigned to the student such as daily preparation, daily oral tests, Tests**Monthly or written reports...etc..**

resources Learning Education					12
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-Manual of photogrammetry-American society of1 photogrammetry by Moffitt -Elements of photogrammetry –poulR.wolf 2Edition2 -Erdas Imagine TourGuides Lecia Geosystems Geospatial3 Imaging 2006 survey Air photographic –Labib Nassif bodyTechnical Education, Second Edition1999					Books Study Required Textbooks, if available
Library virtual affiliated Ministry education High Research Scientific					the reviewerMain(Sources)

Photogrammetry, Vol. 1: Fundamentals – Karl Kraus Introduction to Modern Photography – Edward M. Mikhail, James Bethel	Recommended books and references Scientific journals and reports...
Library The virtual library of the Ministry of Higher Education and Scientific Research contains books available in the institute's electronic library.	Electronic references and websites Electronic

name The course:		1.
flat areall		
Course code:		2.
SUT102		
the chapter Academic / Year		3.
2026/2025		
date numbers Description		4.
2026/ /		
shapes the audience Available		5.
daily My presence		
6. Number Hours Approved Total / number Units Total		
15 x 4 weeks = 60 hours (per semester) as per the course		
7. name responsible The course Mention all Names, if He was there more from name one(		
the nameOmar Falah Mardan		
omer-falah@ntu.edu.iq Email		
Goals The course		8.
-1 Acquisition student Skills Basic Doing Works Trinity and ribbing and settlement	Goal s	
-2 Recognition on UseSurveying equipment (levels and theodolites) available in the department		
-3 To equip the student with the necessary skills to prepare contour maps indirectlyUsing the ignorance of settlement		
-4 RecognitionOn some engineering operations that take place during tape measurement		
-5 Education student How to Calculation spacesDetermining ownership		
9. Strategies teaching and learning		
the explanation Theory (Lecture:) simplification Concepts And he explained Tools And the issues Using photo and videos Explanatory. Exercises The process: Exit For the field and application what Learn it practically Using devices like The scale and theodolite. Projects The small: makeStudents work on simple projects, such as surveying a plot of land or drawing a map, to learn	strategy	

by doing..	
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Problem solving: an offerReal problems and encouraging students to think and find solutions to them using what they have learned. Use Technology: like Use ProgramsEngineering drawing for analyzing and surveying data. Evaluation Continuous: giving Tests short Questions Applied To follow to understand Students And guiding them.	
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structure The course .10					
Evalu ation Metho d	Teach ing metho d	name Unity / or the topic	Required learning outcomes	Hours	Week
Oral and practic al exams	Theor etical and practi cal	introduction on Area and units Measurement Understanding the scale of drawings, their types, and measuring distances on the ground.	Identifying the area Definition and summary of works	4 hours per week	6-1
oral exams My work	Theor etical and practi cal	procedureCalculations for horizontal and vertical components inClosed circular polygons and methods of correcting them and finding Coordinates	to get to knowThe student is required to perform calculations related to horizontal components. and the headIn closed circular polygons and methods Correct itFinding the coordinates	hours 4 per week	9-7

oral exams My work	Theoretical and practical	How toSelecting points for a closed link polygon, how to correct polygon angles Deflection angle -) My way angle to the right	educationThe student learned how to select points of a closed linking polygon, and how to correct the angles of the linking polygon using my method. Deflection angle -) angle to the right	4 hours per week	12-10
oral exams My work	Theoretical and practical	How toProcedure for closed linking polygonVehicleshorizontal and the head(and account Coordinates and procedureCorrections using the compass and crossing methods, and how Overcoming on)revision(mistake lock	identificationThe student learns how to construct a closed linking polygon with horizontal and vertical components.(And calculating the corrections based on coordinates)My method of compass and crossing, and how to overcome)revision(mistake lock	4 hours per week	15-13
evaluation The course					11
Grade distributionfrom100 according to the tasks assigned to the student such as daily preparation, daily oral tests, TestsMonthly or written reports...etc..					

12 Resources Learning Education	
Raymond E.Davis Joe Welly. Elementary plan surveying	BooksRequired studies)books Curricula academic, that I found(

Library virtual affiliated Ministry education High Research Scientific	Main References(Sources)
Area level – authorship: d. Ibrahim slave God The carpenter Elementary Surveying: An Introduction to Geomatics – Written by: Charles D. Ghilani & Paul R. Wolf Area Applied – authorship: d. Younes slave The Most Merciful	Recommended books and referencesScientific journalsand reports(...
LibraryThe virtual library of the Ministry of Higher Education and Scientific Research contains books available in the institute's electronic library.	Electronic references and websites

1. name The course:					
Area geodes Wasiya					
2. code The course:					
STU 209					
3. the chapter Academic / Year					
2026-2025					
4. date numbers Description					
\ 2025					
5 shapes the audience Available					
My presence					
6. Number Hours Approved Total / number Units Total					
Study 4×15 week = 60 hour (For the chapter) Academic(					
7. name responsible The course Mention all Names, if He was there more from name one(					
the name : Omar Falah Mardan					
omer-falah@ntu.edu.iq ElectronicMail					
8. Goals The course					
identification student On foundations and concepts Area Geodesy.					Goals
identification on systems Coordinates Geodesy And its use in Area minute.					
Enabling student from to implement Operations Measurement Using Devices Modern like Total Station and.GPS					
9. Strategies teaching and learning					
- Lectures Theory: to explain Foundations Sports Geography For the space Geodesy. - Applicationspractical: Training FieldOn the use of devicesGPS and total Station. - exercisesSafia: Applications CalculationOn conversions between coordinates and arc measurements and bending. - discussions and interpretation maps:Analysis of sample field data. - calendarcontinuous:Short quizzes and weekly exercises to measure understanding..					strategy
.10 structure The course					
Evalu ation Metho d	road education	Unit name/ or the topic	Required learning outcomes	Hours	Week

Exams, both theoretical and practical	theoretical+ My work	Introduction to Geodetic Surveying	identification on concept Area Geodesy, its importance and uses	4 hours per week	6-1
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exams Theory and practice	theoretical+ My work	Coordinate systems and transformations	to understand Geodetic coordinate systems and conversion between them	4 hours per week	9-7
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exams Theory and practice	theoretical+ My work	Arc, curvature, and reference surface calculations	Applications on Measurements Arcs, curves, and reference surfaces	4 hours per week	10 – 12
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Exams, both theoretical and practical	theoretical+ My work	Applications on GPS and total Station in the geodetic space	Use devices Measurement Modern Geodetic data analysis	4 hours per week	15-13
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11 evaluation The course

Grade distribution from 100 according to the tasks assigned to the student such as daily preparation, daily oral tests, Tests Monthly or written reports...etc..

12 Resources Learning Education

Area Geodesy – d. slave dear age	Books Required studies) books Curricula academic, that I found(
Fundamentals of Geodetic Surveying – by James R. Smith Geodesy for the Layman – by US Department of Defense	Main References (Sources)
- Geodesy Engineering – d. Hashim Al-Tai - science Geodesy – d. Kamal Mustafa	Recommended books and references Scientific journals and reports(...

-The library The virtual arm of the Ministry of Higher Education and Scientific Research- what Available from the Institute's electronic library	Electronic references and websites
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1. name The course:					
Specifications And guessing					
2. code The course:					
STU 208					
3. the chapter Academic / Year					
2026-2025					
4. date numbers Description					
\ 2026\					
5 shapes the audience Available					
My presence					
6. Number Hours Approved Total / number Units Total					
Study 2 × 15 week = 30 hour (For the chapter) Academic(					
7. name responsible The course Mention all Names, if He was there more from name one(					
the name Vision of Mahdi Zain Al-Abidin					
ruya.mehdi25@ntu.edu.iq ElectronicMail					
8. Goals The course					
identification student Principles SpecificationsEngineering Art.					Goals
Enabling student from numbers guesses Quantity Finance For projects.					
identification on TermsWork and standard specifications for each item.					
9. Strategies teaching and learning					
LecturesTheory:Explanation of standard specifications for various engineering items.Classroom discussions: exchange Destinations Looking around Ways numbers Guessing And most important Challenges. analysis studies condition: review projects Realism Analysis Tables Quantities Specifications..				strategy	
.10 structure The course					
Evalu ation Metho d	Teach ing metho d	Unit name/ or the topic	Required learning outcomes	Hours	Week

exams Oral and theoretical	theoretical	Introduction to Engineering Specifications	familiarity Specifications public and private Distinguishing between different engineering items	2 hours per week	6-1
exams	theoretical	Specifications Artistic For the items	numbers Specifications Detailed	2	9-7

Oral and theoretical			For the soldiers Various works according to standards	hours per week	
Oral and written exams	theoretical	Engineering estimation and quantity schedules	identification on ingredients Tables Quantities and application Foundations of guessing	2 hours per week	10 – 12
Oral and written exams	theoretical	application practical in numbers Specifications Guessing and final project	Preparing a comprehensive estimation study For the project Virtualization and Cost Analysis	2 hours per week	15-13

11 evaluation The course

Grade distribution from 100 according to the tasks assigned to the student such as daily preparation, daily oral tests, Tests Monthly or written reports...etc..

12 Resources Learning Education

Specifications public For business Civil – ministry Reconstruction Housing	Textbooks Required Text books, if available
Lectures Decision from before ministry education High Research Scientific	Main References (Sources)
- administration Projects And guessing Cost – d. Hassan Al-Bazzaz - Quantities Specifications – m. Tareq Al-Shammari	Recommended books and references Scientific journals and reports(...

-The library The virtual arm of the Ministry of Higher Education and Scientific Research- what Available from the Institute's electronic library	Electronic references and websites
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1. name The course:					
survey Quantitative					
2. code The course:					
STU 215					
3. the chapter Academic / Year					
2026-2025					
4. date numbers Description					
\ 2026\					
5 shapes the audience Available					
My presence					
6. Number Hours Approved Total / number Units Total					
Study 2×15 week = 30 hour (For the chapter) Academic(					
7. name responsible The course Mention all Names, if He was there more from name one(					
the name : Jenar Saleh Qader					
chinarsaleh@ntu.edu.iq ElectronicMail					
8. Goals The course					
identification student Principles SpecificationsEngineering Art.					Goals
Enabling student from numbers guesses Quantity Finance For projects.					
identification on Terms Business Specifications Standard per item.					
9. Strategies teaching and learning					
Lectures Theory:Explanation of standard specifications for various engineering items.Classroom discussions: exchange Destinations Looking around Ways numbers Guessing And most important Challenges. analysis studies condition: review projects Realism Analysis Tables Quantities Specifications..				strategy	
.10 structure The course					
Evalu ation Metho d	Teach ing metho d	Unit name/ or the topic	Required learning outcomes	Hours	Week

exams Oral and theoretical	theoretical	Introduction to Engineering Specifications	familiarity Specifications public and private Distinguishing between different engineering items	2 hours per week	6-1
exams	theoretical	Specifications Artistic For the items	numbers Specifications Detailed	2	9-7

Oral and theoretical			For the soldiers Various works according to standards	hours per week	
Oral and written exams	theoretical	Engineering estimation and quantity schedules	identification on ingredients Tables Quantities and application Foundations of guessing	2 hours per week	10 – 12
Oral and written exams	theoretical	application practical in numbers Specifications Guessing and final project	Preparing a comprehensive estimation study For the project Virtualization and Cost Analysis	2 hours per week	15-13

11 evaluation The course

Grade distribution from 100 according to the tasks assigned to the student such as daily preparation, daily oral tests, Tests Monthly or written reports...etc..

12 Resources Learning Education

Specifications public For business Civil – ministry Reconstruction Housing	Textbooks Required Text books, if available
Lectures Decision from before ministry education High Research Scientific	Main References (Sources)
- administration Projects And guessing Cost – d. Hassan Al-Bazzaz - Quantities Specifications – m. Tareq Al-Shammari	Recommended books and references Scientific journals and reports(...

-The library
The virtual arm of the Ministry of
Higher Education and Scientific Research-
what
Available from the Institute's electronic
library

Electronic references and
websites

1. name The course:					
design Roads Using computer					
2. code The course:					
STU 214					
3. the chapter Academic / Year					
2026-2025					
4. date numbers Description					
\ 2026\					
5 shapes the audience Available					
My presence					
6. Number Hours Approved Total / number Units Total					
Study 3×15 week = 45 hour (For the chapter) Academic(					
7. name responsible The course Mention all Names, if He was there more from name one(					
the name : Ghada Hassan Mohamed Fatih					
ghada66@ntu.edu.iq Email					
8. Goals The course					
Enabling student from Use Programs Computer Design Roads.					Goals
identification on Steps The process To prepare Paths Roads and its analysis Using computer.					
numbers plans Detailed For projects Roads A dish For standards Engineering Modern.					
9. Strategies teaching and learning					
- Hands-on software trainingFor example: 3D Civil or AutoCAD Civil or Programsalternative. - the jobBased on actual design projects that simulate reality. - Applications analyticalOn road paths, slopes, and curves. - evaluation continuous from duringStudents progressed through the project stages.				strategy	
.10 structure The course					
Evalu ation Metho d	Teach ing metho d	Unit name/ or the topic	Required learning outcomes	Hours	Week
Exams, both theoretic	practical	introduction in Design programsComp	identification on Interfaces program DesignCreating ground	3 hours per week	6-1

al and practical		uter-aided methods	points and data		
exams	practical	design The path horizontal	construction Paths horizontal and the head	3	9-7

Theor y and practi ce		and the vertical For the road	For the road and link Data Surveying	hours per week	
Exams, both theoretic al and practical	practical	design Curves and intersections Using software	analysisInclination, design of vertical and horizontal curves, and application of engineering design standards	3 hours per week	10 – 12
Exams, both theoretic al and practical	practical	Design project Integrated road using computer	numbers plans Executive FinalFor the road and exporting project files	3 hours per week	15-13

11 evaluation The course

Grade distributionfrom100 according to the tasks assigned to the student such as daily preparation, daily oral tests, TestsMonthly or written reports...etc..

12 Resources Learning Education

AutoCAD Civil orCivil 3D software user guide	TextbooksRequiredText books, if available
Highway Engineering – by Paul H. Wright ministry Reconstruction Housing – Manual Design Road •	• Main References(Sources)
design Roads Engineering Using Programs Modern – m. Ahmed Jaber	Recommended books and referencesScientific journals and reports...
-The libraryThe virtual arm of the Ministry of Higher Education and Scientific Research-whatAvailable from the Institute's electronic library	Electronic references and websites

1. name The course:					
fee maps computer					
2. code The course:					
STU 207					
3. the chapter Academic / Year					
2026-2025					
4. date numbers Description					
\ 2026\					
5 shapes the audience Available					
My presence					
6. Number Hours Approved Total / number Units Total					
Study 3×15 week = 45 hour (For the chapter) Academic(					
7. name responsible The course Mention all Names, if He was there more from name one(					
the name : Ghada Hassan Mohamed Fatih					
ghada66@ntu.edu.iq ElectronicMail					
8. Goals The course					
Enabling student from Use Programs Computer To draw maps Digital accurately and efficiency.					Goal s
acquisition Skills Necessary To convert Data Geography And spatial to maps Digital.					
identification on Types maps and symbols Used in Prepared by					
9. Strategies teaching and learning					
Εξπλανατιον Theory of map fundamentals and map-drawing techniques. Τραινινγ practical Using Programs like Map AutoCAD or .ArcGIS Προφεχτς Applied To convertConverting survey data into digital maps. Αναλψσις maps Ready and interpretation Its content. Δισχυσσιονς Safia aroundCommon mistakes in mapmaking. Επαλυατιον periodic from during Tests The process and duties.				strategy	
.10 structure The course					
Evalu ation Metho d	Teach ing metho d	Unit name/ or the topic	Required learning outcomes	Hours	Week

exams Theory and practice	practical	Introduction to Maps and Software Used	identificationOn map types and digital map components	3 hours per week	6-1
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exams Theory and practice	practical	Setting up layers, symbols, and scales	InputData analysis and layer drawing	3 hours per week	9-7
Exams, both theoretical and practical	practical	Coordinate systems and coordination Data	Dealing with coordinate systems and conversionData	3 hours per week	10 – 12
Exams, both theoretical and practical	practical	Final project for drawing a digital map	production map Integrated Contains onAccurate data and visual analysis	3 hours per week	15-13

11 evaluation The course

Grade distributionfrom100 according to the tasks assigned to the student such as daily preparation, daily oral tests, TestsMonthly or written reports...etc..

12 Resources Learning Education

AutoCAD Map or ArcGIS Usage Guide	TextbooksRequiredText books, if available
• principles fee Digital maps– d.Nasser Al-Zubaidi	Main References(Sources)
maps Digital And organized Information Geography – m. immortal Hassan	Recommended books and referencesScientific journals and reports...
-The library The virtual arm of the Ministry of Higher Education and Scientific Research-whatAvailable from the Institute's electronic library	Electronic references and websites

1. name The course:					
Ethics Profession					
2. code The course:					
STU 201					
3. the chapter Academic / Year					
2026-2025					
4. date numbers Description					
\ 2026\					
5 shapes the audience Available					
My presence					
6. Number Hours Approved Total / number Units Total					
Study 2 × 15 week = 30 hour (For the chapter) Academic(					
7. name responsible The course Mention all Names, if He was there more from name one(					
the name : Saman Ali Ehsan					
saman.aboaryan.ahmed@ntu.edu.iq ElectronicM a i l					
8. Goals The course					
Consolidation Concepts Ethics Related By profession in behavior Students.					Goal s
Awareness student With his responsibilities Professional social					
identification on laws behavior Professional and behavior in cases Contradiction Ethical					
9. Strategies teaching and learning					
• LecturesTheory. • discussions Safia around Positionsrealistic ethics. • studiesA case study on professional misconduct and its impact on society. • Offers Introduction from before Students. • to watch Videos awareness and educational. • writingAnalytical reports on selected ethical topics.					strategy
.10 structure The course					
Evalu ation Metho d	Teach ing metho d	Unit name/ or the topic	Required learning outcomes	Hours	Week

Exams and theory	theoretical	Introduction to Professional Ethics and rules behavior	to understandBasic ethical concepts in the professional field	2 hours per week	6-1
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Exams and theory	theoretical	Responsibility Individual and societal	analysis Positions Requires decisions Ethical and dealing with Ethical pressures	2 hours per week	9-7
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Exams and theory	theoretical	Integrity and transparency In professional performance	ApplicationEthical rules in the workplace and addressing conflicts of interest	2 hours per week	10 – 12
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Exams and theory	theoretical	EthicsDifferent specializations and professional behavior Year	StrengtheningEthical conduct in the profession and belonging to the professional identity	2 hours per week	15- 13
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evaluation The course					11
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Grade distributionfrom100 according to the tasks assigned to the student such as daily preparation, daily oral tests, TestsMonthly or written reports...etc..					
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Education resources Learning					12
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guide Ethics Profession Issued on ministry education High.				TextbooksRequiredText books, if available	
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Ethics Profession behavior Job – d. Kamal Hajj slave				Main References(Sources)	
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behavior Professional in Jobs public – authorship: d. Mohammed slave dear				Recommended books and referencesScientific journals and reports...	
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-The libraryThe virtual arm of the Ministry of Higher Education and Scientific Research-whatAvailable from the Institute's electronic library				Electronic references and websites	
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