Republic of Iraq
Ministry of higher education & scientific research
Supervision and scientific evaluation directorate
Quality assurance and academic accreditation

Academic Program Specification Form For The Academic

University : Northern Technical University
College or Institute: Kirkuk Technical Institute
Department: Surveying Techniques
Date of form completion: 14/1/2024

Assit.Prof. Dr. : Ashty Mahdi Aarif Dr. Sawash shaheen ibrahim

Dean`s Name	Dean`s Assistant for Scientific Affairs	Head of Department
		Nawal Kamal Khursheed
Date: 14/1/2024	Date: 11/1/2024	Date: 11/1/2024
Signature aShty	Signature	Signature

Ass:s. Prof. Zuhair Shakor
Quality Assurance and University performance manager

Date: 14/1/2024
Signature

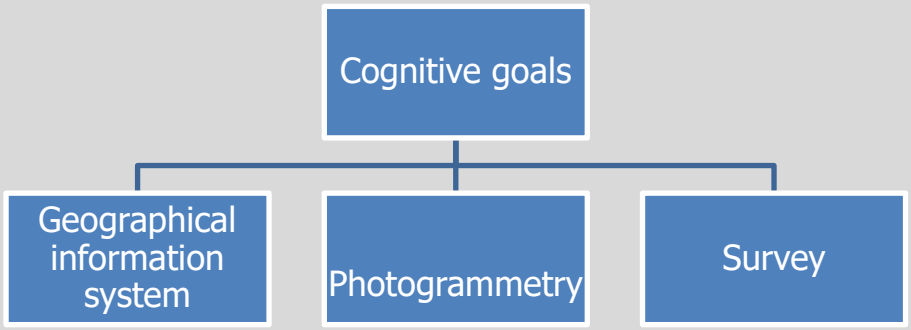
Academic Program Description

Academic Program Description

This description of the academic program provides a brief summary of the most important characteristics of the program and the learning outcomes expected of the student to achieve, demonstrating whether he has made maximum use of the available opportunities. It is accompanied by a description of each course within the program

1. Name of university	Northern Technical university
2. Name of Department	Kirkuk Technical Institute
3. Name of academic program	Surveying Techniques Department
4. Name of Final certificate	Technical Diploma
5. Study system	courses
6. Accredited Academic Program	ABET
7. Other external influences	There is a close relationship between the department's output and the labor market, and a market opinion is taken to create curriculum study
8. Description creation date	2024 /1/9
9. Academic Program Objectives:	
The Surveying Techniques department aims to graduate qualified technical staff with high skills and qualifications to carry out the following tasks:	
1- Calculating areas and determining properties.	
2- Triangulation, Traversing and level works.	
3- Preparing general survey maps also drawing maps according to Iraqi and international networking.	
4- preparing Maps using GIS program.	

10- Required program outcomes and teaching and learning methods:



B - Skills objectives of the program

B1 - How to conduct field surveys.

B2 - How to use modern surveying equipment.

B3 - Getting to know aerial photography devices and reading aerial photographs.

Teaching and learning methods

1. Electronic lectures method (blended education)
2- Conducting field surveys.
3. Giving lectures through the Google meet program.
4- Using computer programs to produce maps.
5. Conducting laboratory experiments
6. Summer training.
7. Training in specialized workshops .

Evaluation methods

1- Daily evaluation of electronic attendance
2- Reports
3- First semester exams electronically via Google form
4- Second semester exams electronically.
5- Surprise written exams.
6- Homework
7- Oral exams.
8- Final exams electronically.

C- Emotional and moral goals

C1 - linking computer programs with field data.
C2 - Using the computer to prepare the maps.
C3 - Using a GPS device to determine locations, elevations and coordinates
C4 - Analysis of aerial photographs.

Teaching and learning methods

1- The method of electronic lectures and attendance (blended education).
2- Qualitative ceremonies.
3- Applications of field surveys on the modern survey interface electronically and in person.
4- Using workshops (mechanical and civil).
5- Specialized laboratories.
6- computer apps.

Evaluation methods

1- Written exams electronically
2- Semester exams
3- Reports
4- Drawing boards
5-Testing the use of devices
6- Evaluate the use of surveying devices in the field.

D - General and transferable skills (other skills related to employability and personal development).

D1 - Using surveying software.
D2 - reading maps
D3 - Training in civil and mechanical workshops (for turning, welding, carpentry).
D4 - Filling the maps with the implemented modern urban development lab.

Teaching and learning methods

1- Scientific laboratories
2- Practical workshops
3- The ceremony
4- The lecture
5- Field training
6- Summer training

Evaluation methods

1-written exams.
2- Oral exams
3- Daily evaluation.
4- Field laboratory reports.
5- First semester exams.
6- Second semester exams.
7- Final exams.

11. Program Structure:

Credit hours		Name department	code	year
practical	theoretical			
13	13	Surveying Techniques	Two branches	2023-2024
20	15	Surveying Techniques	Two branches	2023-2024

12- Personal development planning

1- provide training courses outside Iraq
2- provide training courses inside Iraq.
3- Organizing specialized seminars.
4- Training workshops
5- Scientific conferences.
6- Sessions for presenting scientific developments.
7- Scientific research.

13. Admission Standard (setting rules for admission to a college or institute)

1- rate condition
2- A graduate of the scientific branch (applied, biological).
3- The physical fitness of the student.

14. The most important sources of information about the program

- Engineering Geology, Miqdad Hussein Ali, Bassem Rushdi Hijab, Sinan Hashem Al-Jassar, University of Baghdad, 1990.

- Foundations of Geology for Engineers, Kenana Muhammad Thabet, Muhammad Omar Al-Ashho, University of Mosul, 1993

- Principles of Engineering Geology and its applications, authored by Majeed Aboud Jassim Al-Tai, University of Basra, 2001

- Principles of Geology and Geomorphology, Ghada Muhammad Salim, Muhammad Mahdi Abbas, Fadel Nomas Al-Saadouni, Institute of Technical Institutes, 1984

- Dr. Hashem Yahya Al Masraf, Principles of Cartography, First Edition, 1982, Baghdad

- Dr. Hashem Yahya Al Masraf, applied exercises in cartography, 1986. Baghdad86

- Dr. Khader Al-Abadi, Cartography, Maps, 1980, Baghdad

- Robinson, J, S.,"Elements of cartography", 5th Ed., 1980

- Keats, J, S.,"Cartography Design and Production", 3rd Ed., 1980

Paper sources (what books and resources are available in the institute's library).

- Electronic resources (what is available from books in the electronic library of the institute)

- The resources available in the virtual library of the Ministry of Higher Education and Scientific Research.

-Specialized sites on the Internet (Internet).

Curriculum Skills Outline

Department of Surveying Techniques / First Stage

Learning outcomes required of the program																		
General and Transferable Skills (or) Other skills related to employability and personal development					Emotional and value goals			Program specific objectives				Cognitive goals				Basic or optional	Subject Name	code	Year
D٤	D٣	D ٢	D ١	C ٤	C ٣	C ٢	C ١	B ٤	B ٣	B ٢	B 1	A 4	A ٣	A ٢	A ١				
✓		✓	✓		✓	✓	✓			✓	✓				✓	Basic	١/Survey		2023 - 2024
✓		✓	✓	✓	✓		✓		✓		✓			✓		Basic	Photogrammetry		
✓		✓	✓	✓	✓	✓	✓			✓	✓				✓	Not basic	Mathematics and Spherical Trigonometry		
✓		✓	✓		✓		✓		✓		✓			✓		Basic	Remote sensing		
✓		✓	✓	✓	✓	✓	✓			✓	✓				✓	Not Basic	Geology		
✓		✓	✓		✓		✓		✓		✓			✓		Not Basic	computer applications		
✓		✓	✓	✓	✓	✓	✓			✓	✓				✓	Basic	Quantitative survey		
✓		✓	✓		✓		✓		✓		✓			✓		Not Basic	Workshop		
✓		✓	✓	✓	✓	✓	✓			✓	✓				✓	Not Basic	Human rights and democracy		
✓		✓	✓	✓	✓	✓	✓			✓	✓				✓	Not Basic	English		

Curriculum Skills Outline

Department of Surveying Techniques / Second Stage

Learning outcomes required of the program																		
General and Transferable Skills (or) Other skills related to employability and personal development					Emotional and value goals			Program specific objectives				Cognitive goals				Basic or optional	Subject Name	code	Year
٤D	٣D	D ٢	D ١	C ٤	C ٣	C ٢	C ١	B ٤	B ٣	B ٢	B 1	A 4	A ٣	A ٢	A ١				
✓		✓	✓		✓	✓	✓			✓	✓				✓	Basic	Survey (2)		2023 - 2024
✓		✓	✓	✓	✓		✓		✓		✓			✓		Basic	Photogrammetry		
✓		✓	✓	✓	✓	✓	✓			✓	✓				✓	Basic	Map technology		
✓		✓	✓		✓		✓		✓		✓			✓		Basic	Engineering and Cadastral Survey		
✓		✓	✓	✓	✓	✓	✓			✓	✓				✓	Basic	computer applications		
✓		✓	✓		✓		✓		✓		✓			✓		Basic	GIS		
																	ground control techniques		
✓		✓	✓		✓		✓		✓		✓			✓		Basic	Projects		
✓		✓	✓		✓	✓	✓			✓	✓				✓	Not Basic	English language		

Course description:

This course description provides a brief summary of the most important characteristics of the course and the learning outcomes expected of the student to achieve, demonstrating whether he has made maximum use of the available opportunities. It must be linked to the description of the program.

1- Educational Institution	Northern Technical University / Kirkuk Technical Institute
2. University Department / Technical	Surveying technology department
3. Course name/code	Survey 1
4. Forms of attendance available	Blended Learning (Presented + Online)
5. The semester / year	courses
6. Number of study hours (total)	One hour for each course
7. The date this description was prepared	9/1/2024
8. Course objectives	
The survey course aims to educate and train students to:	
1- Carry out triangulation, traversing and leveling work.	
2- Using the survey equipment currently available in the department.	
3- How to calculate areas and determine properties.	

9. Course outcomes and methods of teaching, learning and assessment

A - knowledge goals

A1- Field and cadastral surveys
A2- Projecting engineering drawings
A3- Raising buildings and geographical features
A4- Use of surveying equipment
A5- Calculations for curves, areas and volumes

B- The objectives and skills of the program

B1 - Using modern surveying equipment.
B2 - Projecting curves, structures and engineering works.
B3 - Read maps of all kinds.

Teaching and learning methods

1- Electronic lectures.
2- Attended field training.
3- Use of surveying equipment.
4- Student projects.

Evaluation methods

1- First semester exams presented and electronically.
2- Second semester exams presented and electronically.
3- Written and electronic written exams.
4- Oral and electronic exams.
5- Reports.
6- Field applications.
7- Final exams presented and electronically.

C- Emotional and moral goals

C1- Using the Gap device to determine the coordinates
C2 - Transferring information to the calculator.
C3 - Projecting data on maps.

Teaching and learning methods

1- The style of presented and electronic lectures.
2- Field training
3- summer training

Evaluation methods

1- First semester exams presented and electronically.
2- Second semester exams presented and electronically.
3- Written exams presented and electronically.
4- Oral exams presented and electronically.
5- Reports
6- Field applications
7- Final exams presented and electronically.

D - General and transferable skills (other skills related to employability and personal development).

D 1- Using surveying equipment
D2 - reading maps
D 3- Dropping and lifting engineering works
D4-Field surveys.

10- Infrastructure	
5- Required prescribed books	Applied Mathematics book, written by Jacob Sabbagh. Spherical triangles book, written by Jacob Sabbagh.
6- Main references (sources)	CALCULUS, George B. Thomas. TRICONOMETRY, P. ABBOTT, B.A..
C- Books and references that he recommends (scientific journals, reports, ...)	**Technical Magazine - Publications of the University Journal in Kirkuk - University of Technology - University of Baghdad - Tikrit University** **The virtual library of the Ministry of Higher Education and Scientific Research**
D- Electronic references, websites, ...	**1- The virtual library of the Ministry of Higher Education and Scientific Research** **2- What books are available in the institute's electronic library**

Study plan 2023-2024

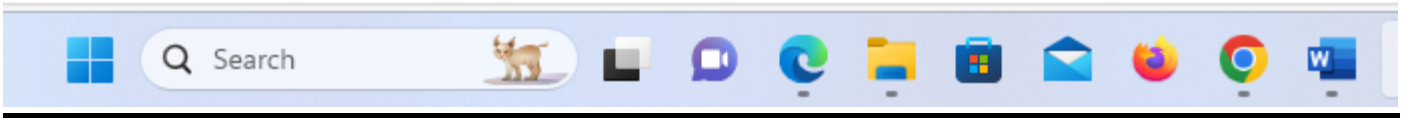
level one

المســـتوى الدراســـي (الاول) – الفصل الأول

الرمز	الممهد ان وجد	عدد الوحدات	عدد الساعات العملية	عدد الساعات النظرية	اسم المقرر		نوع المطلب
					باللغة الانكليزية	باللغة العربية	
NTU 100		1	0	1	Human Rights	حقوق الانسان	متطلبات الجامعة (اجباري)
NTU 101		2	0	2	English Language 1	اللغة الانكليزية 1	
NTU 102		3	2	1	Principles of Computer 1	مبادئ الحاسوب 1	
NTU 104		2	0	2	Arabic language	اللغة العربية	
TIMO 110		2	0	2	Mathematics 1	الرياضيات 1	متطلبات المعهد (اجباري)
TIMO 111		3	3	0	Mechanical Workshops	معامل الميكانيك	
SUT 120		6	4	2	Surveying 1	المساحة 1	متطلبات القسم (اجباري)
SUT 122		4	2	2	Aerial Photogrammetry 1	المسح الجوي 1	
SUT 128		2	2	0	Computer Engineering Drawing 1	الرسم الهندسي بالحاسوب 1	
SUT 124		1	0	1	Remote Sensing 1	الاستشعار عن بعد 1	
		26	13	13	مجموعة وحدات الفصل الدراسي الاول		

المســـتوى الدراســـي (الاول) – الفصل الثاني

الرمز	الممهد ان وجد	عدد الوحدات	عدد الساعات العملية	عدد الساعات النظرية	اسم المقرر		نوع المطلب
					باللغة الانكليزية	باللغة العربية	
NTU 106		1	0	1	Democracy	الديمقراطية	متطلبات الجامعة/اجباري
NTU 103	NTU 102	3	2	1	Principles of Computer 2	مبادئ الحاسوب 2	
NTU 105		2	1	1	Sport	الرياضة (اختياري)	
NTU 107		2	0	2	French Language	اللغة الفرنسية (اختياري)	
SUT 130		2	0	2	Spherical Triangles	المثلثات الكروية	متطلبات القسم (اجباري)
SUT 121		6	4	2	Surveying using Theodolite	المساحة باستخدام الثيودولايت	
SUT 129		2	2	0	Drawing using AutoCAD	الرسم باستخدام الأوتوكاد	
SUT 123		4	2	2	Photogrammetry	المسح التصويري	
SUT 125		1	0	1	Image Processing	المعالجة الصورية	
SUT 126		1	0	1	Geomorphology	علم سطح الارض	
SUT 127		2	2	0	Civil Workshops	معامل مدني	
		24	12 - 13	11 – 12	مجموعة وحدات الفصل الدراسي الثاني		



Second Level:

المســـتوى الدراســـي الثاني – الفصل الأول

الرمز	الممهد ان وجد	عدد الوحدات	عدد الساعات العملية	عدد الساعات النظرية	اسم المقرر		نوع المطلب
					باللغة الانكليزية	باللغة العربية	
NTU 200		2	0	2	English Language 2	اللغة الانكليزية 2	متطلبات الجامعة (اجباري)
NTU 201		2	0	2	Profession Ethics	أخلاقيات المهنة	
SUT 206		4	2	2	Photogrammetry 2	المسح التصويري 2	متطلبات القسم (اجباري)
SUT 202		8	6	2	Plane Surveying	المساحة المستوية	
SUT 203		5	3	2	Engineering Surveying	المسح الهندسي	
SUT 204		5	3	2	Principles of Cartography	مبادئ الخرائط	
SUT 208		2	0	2	Estimation and Specifications	المواصفات والتخمين	
SUT 205		4	3	1	Global Position system (GPS)	نظام التموضع العالمي	
SUT 207		3	3	0	Computer drawing of maps	رسم الخرائط بالحاسوب	
		35	20	15	مجموعة وحدات الفصل الدراسي الاول		

المســـتوى الدراســـي الثاني – الفصل الأول

الرمز	الممهد ان وجد	عدد الوحدات	عدد الساعات العملية	عدد الساعات النظرية	اسم المقرر		نوع المطلب
					باللغة الانكليزية	باللغة العربية	
NTU 200		2	0	2	English Language 2	اللغة الانكليزية 2	متطلبات الجامعة (اجباري)
NTU 201		2	0	2	Profession Ethics	أخلاقيات المهنة	
SUT 206		4	2	2	Photogrammetry 2	المسح التصويري 2	متطلبات القسم (اجباري)
SUT 202		8	6	2	Plane Surveying	المساحة المستوية	
SUT 203		5	3	2	Engineering Surveying	المسح الهندسي	
SUT 204		5	3	2	Principles of Cartography	مبادئ الخرائط	
SUT 208		2	0	2	Estimation and Specifications	المواصفات والتخمين	
SUT 205		4	3	1	Global Position system (GPS)	نظام التموضع العالمي	
SUT 207		3	3	0	Computer drawing of maps	رسم الخرائط بالحاسوب	
		35	20	15	مجموعة وحدات الفصل الدراسي الاول		

Curriculum development plan

1- Studies to develop curricula through the recommendations of the sectoral committees.
2- Take advantage of the virtual library of the Ministry of Higher Education and Scientific Research.
3- Making use of scientific websites in developing the course by showing scientific films and developments in the field of the course.
4- Linking the theoretical and practical part of the course through the student project.