

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: Technical Engineering College - Kirkuk  
Department: Surveying Technical Engineering  
Date of Form Completion: 7/1/2024

Dean's Name

Sami.R. Aslan

Dean's Assistant for Scientific Affairs

Dr. Muntadher.A.Sharaf

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د. دلير عبدالله عمر

Date: 1/24 / 3 / 2024

S.R. Aslan

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Date: 24 / 3 / 2024

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Date: 3/24/2024

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Dr. Ayoub Ali Hussein

Quality Assurance and University performance manager

Date: / /

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# TEMPLATE FOR PROGRAMME SPECIFICATION

## HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

### PROGRAMME SPECIFICATION

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

<b>1. Teaching Institution</b>	Northern Technical University/ Technical College of Kirkuk
<b>2. University Department/Centre</b>	Surveying Technical Engineering
<b>3. Programme Title</b>	Surveying Technical Engineering
<b>4. Title of Final Award</b>	Bachelor of Surveying Technical Engineering
<b>5. Modes of Attendance offered</b>	Annual and Courses
<b>6. Accreditation</b>	Ministry of Higher Education Scientific Research
<b>7. Other external influences</b>	Non
<b>8. Date of production of this specification</b>	7/1/2024
<b>9. Aims of the Programme</b>	
Graduating qualified personnel to carry out the work of the field surveying, aerial surveying, remote sensing techniques, leveling works of the natural land surface features, including the modern industrial zone and modern devices (complete station, full station) and equipment, the global navigation and surveying (GPS, DGPS) and being able to maintain and maintain the devices. In addition, the preparation and mapping of topographical, cadastral, thematic, and detail. As well as the use of geographical information systems (GIS) in order to build a database and produce digital messages in various fields. Striving to develop the skills, scientific and scientific capabilities of the department's engineers and technicians, and put them in developmental courses in a way that makes them positive for surgical tools.	

**10. Learning Outcomes, Teaching, Learning and Assessment Methods**

**A. Knowledge and Understanding**

- Ability and knowledge to work on all aspects of surveying

**B. Subject-specific skills**

**B1. Work on surveying projects.**

**B2. Creating networks of ground control points.**

**B3. Making cadastral maps.**

**Teaching and learning Methods**

Theoretical and practical lectures, field training, laboratory operation, workshops and summer training during the summer vacation period.

**Assessment method**

Daily, Monthly, Final examination, weekly reports and discussing graduation research projects.

**C. Thinking Skills**

**C1. Preparing educational cadres that can be relied upon in state institutions within the specialty.**

**C2. Developing solutions to the problems faced by institutions and systems specialized in the field of surveying.**

**Teaching and Learning Methods**

**Courses and seminars**

**Assessment methods**

**Daily , Monthly , and Final examination .**



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

**D1. Team works skills**

**D2. Computing and Internet skills**

**D3. English Lagrange skills**

**D4. Leadership and taking the responsibility skills**

**D5. Self learning and lifelong learning**

**Teaching and Learning Methods**

Theoretical and practical lectures, field training, laboratory operation, workshops and summer training during the summer vacation period.

**Assessment Methods**

Daily, Monthly, and Final examination

**Program Structure**

Semester	No .	Module Code	Module Name in English	اسم المادة الدراسية
One	1	SUE101	Surveying Fundamentals	اساسيات المساحة
	2	TECK10 3	Workshop	المعامل (الورش)
	3	SUE102	Geology of Minerals and Rocks	جيولوجيا المعادن والصخور
	4	SUE103	Descriptive Engineering	الهندسة الوصفية
	5	NTU101	English Language	اللغة الانكليزية
	6	NTU100	Human Right	الديمقراطية وحقوق الانسان

Semester	No .	Module Code	Module Name in English	اسم المادة الدراسية
Two	1	SUE105	Plane Surveying	المساحة المستوية
		TECK10 4	Physics	الفيزياء
	3	TECK10 2	Drawing Engineering	الرسم الهندسي
	4	TECK10 1	of calculus Principles	مبادئ تفاضل وتكامل
	5	NTU102	Computer Fundamentals	مبادئ الحاسوب
	6	NTU104	Arabic Language	اللغة العربية

Semester	No .	Module Code	Module Name in English	اسم المادة الدراسية
Three	1	SUE201	Survey Methods	الطرق المساحية
	2	TECK201	Differential Equations	معادلات تفاضلية
	3	SUE203	Engineering surveying	المسح الهندسي
	4	SUE202	Fundamentals of Photogrammetry	اساسيات المسح التصويري
	5	SUE104	Geological Engineering	الجيولوجيا الهندسية
	6	NTU104	Arabic Language	اللغة العربية
			NTU102	Computer Fundamentals

Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية
Four	1	SUE206	Topographic Surveying	المساحة الطبوغرافية
	2	SUE207	Digital Photogrammetry	المسح التصويري الرقمي
	3	SUE204	Cartography	علم الخرائط
	4	SUE205	Statistical Engineering	الاحصاء الهندسي
	5	SUE208	Principles of Civil Engineering	مبادئ الهندسة المدنية
	6	NTU201	Professional Ethics	اخلاقيات المهنة

Semester	No .	Module Code	Module Name in English	اسم المادة الدراسية
Five	1	SUE301	Digital maps	الخرائط الرقمية
	2	TECK300	Engineering and Numerical Analysis	التحليلات الهندسية والعنصرية
	3	SUE302	Cadastral Surveying	المسح الكادستراني
	4	SUE303	Programing with python	البرمجة بلغة البايثون
	5	SUE304	Errors Theory and Adjustments	نظرية الاخطاء والتصحيح
	6	NTU300	English Language	اللغة الانكليزية



Semester	No	Module Code	Module Name In English	اسم المادة الدراسية
Six	1	SUE309	Engineering Transportation and design	هندسة الطرق و التصميم
	2	SUE305	Quantitative Surveying and Specifications	المسح الكمي و المواصفات
	3	SUE306	Geographic Information Systems	نظم المعلومات الجغرافية
	4	SUE307	Applications of programming	تطبيقات البرمجة
	5	SUE308	Image processing and intelligent systems	المعالجة الصورية والانتظمة الذكية
	6	TECK302	Summer Training 2	التدريب الصيفي 2

Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية
Seven	1	NTU410	Scientific Research Methodology	منهجية البحث العلمي
	2	SUE409	Engineering Project Management	ادارة المشاريع الهندسية
	3	SUE403	Geodetic surveying	المساحة الجيوديسية
	4	SUE402	Optical Remote sensing	التحسس النائي المرئي
	5	SUE404	Instruments Calibration	معايرة الأجهزة
			NTU400	English Language

Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية
Eight	1	SUE410	Final Graduation Project	مشروع التخرج النهائي
	2	SUE405	Global Navigation Satellite System (GNSS)	النظم العالمية للملاحة
	3	SUE406	Surveying Instruments Maintenance	صيانة الاجهزة المساحية
	4	SUE407	Radar Remote sensing	التحسس النائي الراداري
	5	SUE408	City Planning & Traffic	تخطيط المدن والمرور

**13. Personal Development Planning**

- 1- Self learning
- 2- Scientific seminars and symposium
- 3- Scientific researching and publishing papers
- 4- Trainee courses outside and inside the country

**14. Admission criteria**

- High school section
- The average degree

**15. Key sources of information about the programme**

- 1- Book and textbook
- 2- Scientific catalogues
- 3- Scientific research and publishing paper
- 4- Internet

## TEMPLATE FOR COURSE SPECIFICATION

### HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

#### COURSE SPECIFICATION

This Course Specification provide a concise summary of the main features course and the learning outcomes that a typical student might reasonably expected to achieve and demonstrate if he/she take advantage of the learning opportunities that are provided. It should be cross-referenced with the specification

1. Teaching Institution	Northern Technical University/ Technical College of Kirkuk
2. University Department/Center	Northern Technical University
3. Course title/code	Town planning
4. Programme (s) to which it contributes	
5. Modes of Attendance offered	
6. Semester/Year	2023-2024
7. Number of hours tuition(total)	
8. Date of production/revision of this specification	7/1/2024
9. Aims of the Course	
The concept of city planning and basic designs, types and levels of planning, preparing and surveying land uses and types of surveys, city planning, urban renewal and environmental planning, types of roads, parking lots and intersections, railways and airports, the role of cadastral work in developing basic city designs, planning theories and planning schools and Stages of the planning process, the emergence of cities and types of cities, developing the general plan of the city, concepts and basics of transportation and traffic engineering, and source and destination studies.	



**10. Learning Outcomes , Teaching, Learning and Assessment Methods**

**A. Knowledge and Understanding**

Town planning concept and basic designs

**B. Subject-specific skills**

Preparing and surveying land uses and types of city planning surveys.

**Teaching and Learning Methods**

Theoretical and practical lectures, field training, laboratory operation, workshops and summer training during the summer vacation period.

**Assessment methods**

Daily, Monthly, Final examination and weekly reports

**C. Thinking Skills**

Dealing with maps and developing the general plan of the city

**Teaching and Learning Methods**

Theoretical and practical lectures, field training, laboratory operation, workshops and summer training during the summer vacation period.

**Assessment methods**

Daily , Monthly , Final examination and weekly reports

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

- D1. Team work skills
- D2. Computing and Internet skills
- D3. English Lagrange skills
- D4. Leadership and taking the responsibility skills
- D5. Self-learning and lifelong learning

**11. Course Structure**

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
Non	Non	Non	Non	Non	Non

**12. Infrastructure**

Required reading: - CORE TEXTS - COURSE MATERIALS - OTHER	Non
Special requirements (include for example workshops, periodicals, IT software, websites)	Research, the Internet, scientific journals
Community-based facilities (include for example, quest, lectures, internship, field studies)	Research, the Internet, scientific journals

**13. Admissions**

Per-requisites	High School section, outstanding student in the institute
Minimum number of students	15
Maximum number of students	35

## TEMPLATE FOR COURSE SPECIFICATION

### HIGHER EDUCATION PERFORMANCE REVIEW:PROGRAMME REVIEW

#### COURSE SPECIFICATION

This Course Specification provide a concise summary of the main features course and the learning outcomes that a typical student might reasonable expected to achieve and demonstrate if he/she take advantage of the learning opportunities that are provided. It should be cross-referenced with the specification

1.Teaching Institution	Ministry of higher education & scientific research
2.University Department/Center	Northern Technical University
3.Course title/code	Plane Surveying
4.Programme (s) to which it contributes	
5. Modes of Attendance offered	
6. Semester/Year	2023-2034
7. Number of hours tuition(total)	
8.Date of production/revision of this specification	7/1/2024
9. Aims of the Course	
The module aims to provide students with a comprehensive understanding of Plane Surveying, Depending on the purpose and scope of the survey	



**10. Learning Outcomes , Teaching, Learning and Assessment Methods**

**A. Knowledge and Understanding**

**A1- Concepts of different surveying devices**

**A2- Concepts of field survey work**

**B. Subject-specific skills**

**B1 - Preparing different survey reports for various practical experiments**

**B2 - Preparing cadastral calculations, ribbing, projecting, elevation, and others**

**Teaching and Learning Methods**

**E-learning, blended learning, teaching by means of in-person lectures**

**Assessment methods**

**Daily , Monthly , Final examination and weekly reports**

**C. Thinking Skills**

**Dealing with the basic principles of surveying and seeking to apply them**

**Teaching and Learning Methods**

**E-learning, blended learning, teaching by means of in-person lectures**

**Assessment methods**

**Daily , Monthly , Final examination and weekly reports**

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

D1- training

D2 - Student courses and seminars on modern space applications

D 3- Field visits to vital and construction facilities

D 4- Coordination with the various state departments to exchange skills

**11. Course Structure**

Week	Hours	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
Non	Non	Non	Non	Non	Non

**12. Infrastructure**

Required reading: - CORE TEXTS - COURSE MATERIALS - OTHER	Course Books
Special requirements (include for example workshops, periodicals, IT software, websites)	workshops
Community-based facilities (include for example, quest, lectures, internship, field studies)	Summer training, quits lechers

**13. Admissions**

Per-requisites	High School section , outstanding student in the institute
Minimum number of students	15
Maximum number of students	35

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1. Teaching Institution	Northern Technical University/ Technical College of Kirkuk
2. University Department/Center	Northern Technical University
3. Course title/code	Photogrammetry
4. Programme (s) to which it contributes	
5. Modes of Attendance offered	
6. Semester/Year	2023-2024
7. Number of hours tuition(total)	
8. Date of production/revision of this specification	7/1/2024
9. Aims of the Course	
Introduce the student to the science of photogrammetry and how to solve complex equations in analytical photogrammetry using the least squares method	
And learn about the techniques and photogrammetry software that have made analytical photogrammetry a commonly used technique.	



10. learning outcomes teaching, Learning and Assessment Methods

**A\ Knowledge and Understanding**

A1- Analytical photogrammetry concept

A2- The use of analytical photogrammetry in the production of maps

**B- Subject- specific skills**

B1 - Take measurements from aerial photographs

B2 - Using software to produce maps from aerial photographs

**Teaching and learning methods**

Giving theoretical and practical lectures, field training, running laboratories, workshops and summer training during the summer vacation period.

**Assessment Methods**

Daily exams, quarterly exams (theoretical + practical) - discussion of periodic reports, discussion of graduate research projects

**C- Thinking Skills**

C1 Able to draw and prepare maps by taking measurements from aerial photographs, solving complex mathematical equations, and applying software

**Teaching and learning methods**

Giving theoretical and practical lectures, field training, running laboratories, workshops and summer training during the summer vacation period.

**Assessment Methods**

Daily exams, quarterly exams (theoretical + practical) - discussion of periodic reports, discussion of graduate research projects

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

D1- Possess knowledge of photogrammetry and its practical applications in map production

<i>Infrastructure</i>	
<i>Required Course Books</i>	Course Books
Main references (sources)	reference books
Recommended books and references (scientific journals, reports,....)	Research, internet, scientific journals
B - Electronic references, Internet sites ...	Research, internet, scientific journals

Course Development Plan
field studies