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: Civil Techniques

Date of form completion: 24/1/2024

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Dean`s Name	Dean`s Assistant for Scientific Affairs	Head of Department
Date: 24/1/2024	Date: 11/1/2024	Date: /1/8
Signature ashty	Signature	Signature

Assis.Prof. Zuheir Shakor

Quality Assurance and University performance manager

Date: 14/1/2024

Signature

Academic Program Description

This description of an academic program provides a brief overview of its key features and learning objectives. It highlights what students are expected to achieve and how they can make the most of the opportunities available to them. The program description is also accompanied by detailed information about each course within the program.

1. Name of university	Northern Technical university
2. Name of Department	Civil Techniques / (Construction and Building Branch, Road Construction and Computer-Drawing)
3. Name of academic program	Civil Techniques
4. Name of Final certificate	Technical Diploma / Study period is two calendar years equivalent to three academic years
5. Study system	Courses /Semester
6. Accredited Academic Program	ABET
7. Other external influences	1. The department's output is closely linked with the labor market. To create a curriculum study, the department seeks the market's opinion. 2. The curricula of the industry prep are continuously monitored to match its outputs and ensure that they fit the section's vocabulary.
8. Description creation date	30/5/2021

9. Academic Program Objectives:

1. Road project works, monitoring the execution of road projects and carrying out field surveying activities, conducting asphalt, soil, and concrete tests, completing mixes for road surface layers with quality control, and quantifying the amounts for road layers.
2. Implementing various civil work segments, conducting laboratory and field tests, carrying out mapping and surveying works, quantifying the amounts of work, materials, and measurements for civil projects, managing construction machinery operations, and calculating their productivity.
3. Performing tasks of drawing various engineering plans, manufacturing architectural models and mock-ups, executing artistic outputs for project plans, drawing structural, electrical, and mechanical plans, and using computers for the tasks.

10. Required program outcomes and methods of teaching, learning and assessment

A. Cognitive aims

1. **Foundational Knowledge in Civil Engineering**: Acquire a foundational understanding of civil engineering principles, focusing on essential techniques used in construction and infrastructure development.
2. **Practical Skills in Construction Techniques**: Develop hands-on skills in key construction techniques, such as road building, surveying, and basic material testing (asphalt, soil, concrete).
3. **Basic Analytical and Problem-Solving Skills**: Cultivate the ability to analyze and solve fundamental problems encountered in civil engineering projects, using both theoretical knowledge and practical skills.
4. **Introduction to Quality Control Processes**: Gain a basic understanding of quality control and assurance in civil construction, emphasizing the importance of safety and standards in project execution.
5. **Competence in Computer-Aided Drafting (CAD)**: Achieve proficiency in computer-aided drafting tools to create and interpret simple civil engineering drawings and plans.
6. **Project Management Fundamentals**: Learn the fundamentals of project management specific to civil engineering, including material quantification, cost estimation, and basic supervisory skills.

B. The skill objectives of the program

1. **Practical Construction Skills**: Master practical construction skills, focusing on essential techniques in road building, basic surveying, and materials testing. This includes hands-on experience with tools and equipment commonly used in civil engineering projects.
2. **CAD and Technical Drawing Proficiency**: Develop proficiency in computer-aided design (CAD) and technical drawing, essential for visualizing, planning, and executing civil engineering projects. This skill set should include the ability to interpret and create accurate civil construction plans and schematics.
3. **Basic Project Management and Collaboration Abilities**: Acquire foundational skills in project management, tailored to civil engineering contexts. This includes understanding project lifecycles, resource allocation, and cost estimation, as well as developing effective communication and teamwork skills for collaborating on diverse projects.

11. Teaching and learning methods

1. **Theoretical Lectures**: Utilizing diverse explanation methods, including:
   A. Google Classroom and YouTube for digital resources.
   B. Various other teaching methods to cater to different learning styles.
4. **Practical Lectures**: Offering hands-on learning experiences with various explanatory techniques.
5. **Workshops**: Conducting interactive sessions, employing multiple means of explanation to enhance practical skills.
6. **Presentation of Scientific Films**: Utilizing educational films to provide visual and engaging learning experiences.
7. **Seminars for Students**: Organizing seminars to encourage student participation and in-depth discussion on relevant topics.
8. **Student Research**: Promoting student-led research projects to develop critical thinking and research skills.
9. **Scientific Reports**: Encouraging the preparation and presentation of scientific reports for practical learning and assessment.
10. **Scientific Visits**: Arranging visits to relevant sites and institutions for experiential learning.
11. **Summer Training**: Offering structured summer training programs to provide real-world experience and practical skills application.

Evaluation methods

The work of the year, which includes:

1. The exam at the beginning of the lecture uses Google Forms and includes the topic of the previous lecture, oral exams during the lecture with the same topic as the lecture, scientific reports, student seminars, and student research. 2. the first-semester exam. 3. the second-semester exam. 4. The final exam in turn.

C. Affective and Value Objectives:

1 .To acquire concepts and fundamentals of field and laboratory work.
2 .Analyze problems faced by practitioners and how to devise necessary solutions.
3. Evaluate proposed solutions and choose the optimal one.
4. Supervise engineering project implementation sites.

D. General and Transferable Skills (Other skills related to employability and personal development)

1. Teamwork skills.
2. Computing and Internet skills.
3.Communication skills such as English language and presentation.
4.Leadership skills and responsibility.
5. Self-learning skills and lifelong learning

Teaching and Learning Methods

1. In-person lectures, summer and professional training, and graduation projects.
2. Scientific visits.

Assessment Methods

1. Daily, midterm, and final exams.
2. Submission of weekly reports.

12. Program Structure

Academic Year	Educational Stage	Course or Module Name	Credit hours	
			Theoretical Hours	Practical Hours
2022 - 2023	First Year	Road Construction Branch - First Semester	15	13
2022 - 2023	First Year	Road Construction Branch - Second Semester	15	13

2022 - 2023	First Year	Building and Construction Branch - First Semester	15	13
2022 - 2023	First Year	Building and Construction Branch - Second Semester	15	13
2022 - 2023	First Year	Computer-Drawing Design Branch - First Semester	14	14
2022 - 2023	First Year	Computer-Drawing Design Branch - Second Semester	14	14
2023 - 2024	Second Year	Road Construction Branch - First Semester	14	15
2023 - 2024	Second Year	Road Construction Branch - Second Semester	14	15
2023 - 2024	Second Year	Building and Construction Branch - First Semester	12	18
2023 - 2024	Second Year	Building and Construction Branch - Second Semester	12	18
2023 - 2024	Second Year	Computer-Drawing Design Branch - First Semester	11	21
2023 - 2024	Second Year	Computer-Drawing Design Branch - Second Semester	11	21

13. Planning for personal development

Specialized courses, scientific symposiums, seminars, scientific developments, research, and scientific conferences

14. Acceptance standard (setting regulations related to college or institute enrollment)

1. The total score obtained by the student after passing the general exams for the sixth grade (Biological, Applied, or Vocational).
2. The applicant must be a graduate of the Scientific or Industrial branch (specialising in Building and Construction or Engineering Drawing).
3. Medical examination results: the student must be healthy and fit for study in the department.
4. Desire.

15. The most important references of information about the program

1. Concrete Technology / Jalal Bashir Sarsam.
2. Surveying / William Irvan.
3. Construction Materials / Youssef Al-Dawaf.
4. Construction Machinery / Mohammad Ayoub Al-Azzi.
5. Quantity Surveying / Madhat Fadil Fathallah.
6. Resources available in the institute's library.
7. Resources available in the institute's electronic library.

8. Resources available in the virtual library of the Ministry of Higher Education and Scientific Research.
9. Specialized websites on the Internet.
10. Shade and Perspective / Emad Mohammed Azhar.
11. Introduction to Interior Design / Engineer Mu'tasim Azmi Al-Karablieh.
12. Building Construction / Zuheir Sako.
13. Building Construction / D. Sharma.

Curriculum Skills Chart (for three branches)

Please place a mark in the boxes corresponding to the individual learning outcomes of the program that are subject to assessment.

Educational Stage/Year	Semester code	Course or Module Name	Mandatory or Elective Course Name	Required Learning Outcomes of the Program															
				Academic Program Objectives				Required program outcomes and methods of teaching, learning and assessment				Affective and Value Objectives			General and Transferable Skills (Other skills related to employability and personal development)				
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	D1	D2	D3	D4
First Academic Level 2023-2024	CITB125	Engineering Mechanics	Specialized	*		*	*			*		*		*			*		*
	TIK110	Mathematics	Institute		*					*				*				*	
	CITB120	Building material	Specialized				*	*			*				*				*
	NTU102	Computer Principles	university		*					*				*				*	
	TIK111	Mechanical workshop	Institute	*		*	*			*		*		*			*		*
	CITB122	Engineering drawings	Specialized	*	*			*	*		*	*	*		*	*			
	NTU101	English language	university	*		*	*			*		*		*			*		*
	NTU104	Arabic language	university		*				*				*			*			
	NTU100	Human rights	university																
	NTU105	Sports Curriculum	university	*		*	*			*		*		*			*		*
	CITB121	Surveying	Specialized		*					*				*				*	
	NTU106	Democracy	university	*	*			*	*		*	*	*		*	*			
	CITB127	Building and fabricating units	Specialized		*					*				*				*	
	CITH127	Road construction	Specialized				*	*			*		*		*		*		
	CITC126	Mechanical Drawing	Specialized	*		*	*			*		*		*			*		*
	CITC128	Descriptive Engineering	Specialized	*	*			*	*		*	*	*		*	*			
	CITC127	Electrical drawing	Specialized		*					*				*				*	
Second Academic Level 2024-2025	CITB221	Concrete	Specialized	*	*			*	*		*	*	*		*	*			
	CITB222	Soil Mechanics	Specialized		*				*	*		*			*		*		
	CITB229	Quantity Surveying	Specialized		*					*				*				*	
	CITB228	Computer application	Specialized	*		*	*			*	*		*	*	*		*	*	
	CITB230	Civil Drawing	Specialized	*	*			*	*		*	*	*		*	*			
	CITB242	Building Maintenance	Specialized	*		*	*			*		*		*			*		*
	NTU201	Ethics	university		*					*				*				*	
	CITB231	Construction Drawing	Specialized	*	*			*	*		*	*	*		*	*			
	CITB233	Constriction Equipment's	Specialized	*		*	*			*		*		*			*		*

	CITB232	Construction Technics	Specialized		*					*				*				*	
	CITH233	Traffic and Highway Engineering	Specialized	*			*			*				*					*
	CITH231	Road Construction Equipment's	Specialized		*	*	*	*			*	*		*	*	*		*	*
	CITH242	Map Drawing	Specialized	*	*			*	*		*	*	*		*	*			
	CITH229	Estimation and Specifications	Specialized	*		*	*			*		*		*			*		*
	CITH230	Highway Drawing	Specialized		*					*				*				*	
	CITH232	Railway and Airport Engineering	Specialized	*		*	*			*		*		*			*		*
	CITC221	Architectural Drawing	Specialized	*	*			*	*		*	*	*		*	*			
	CITC231	Sanitary Drawing	Specialized		*					*				*				*	
	CITC225	Architectural Rendering	Specialized	*		*		*	*	*	*			*	*			*	*

Academic Program Description for the Academic Year 2023-2024
This academic program description provides a concise summary of the essential features of the program and the expected learning outcomes for students, indicating whether they have maximized the available opportunities. Each course within the program is accompanied by its description.

1.Educational Institution	Northern Technical University / Kirkuk Technical Institute
2.Academic Department	Civil Technologies
3.Academic Program Name	Construction and Building Branch
4.Final Certificate	Two-year Technical Diploma, equivalent to three academic years
5.Study System	Courses /Semester
6.Other External Factors	There is a close relationship between the department's outcomes and the job market. The job market's feedback is incorporated into the academic curriculum based on graduate follow-up forms.

7.Academic Program Objectives
The specialization aims to produce technically proficient individuals capable of: 1. Conducting various civil works tasks. 2. Performing laboratory and field tests. 3. Executing mapping and surveys. 4. Quantifying labor, materials, and equipment for civil works projects. 5. Managing construction machinery operations and calculating their productivity. 6. Expected Learning Outcomes and Teaching and Learning Methods 7. Knowledge and Understanding 8. Construction Materials 9. Surveying 10. Concrete Technology 11. Soil Mechanics 12. Civil Drafting 13. Quantity Surveying

14. Specialized Skills
15. Executing sections of civil works projects.
16. Conducting laboratory and field tests for construction materials.
17. Performing engineering surveys for civil works projects.
18. Skill in drafting construction details manually.
19. Skill in computer-aided design (CAD) applications.
20. Internet skills.
21. Teaching and Learning Methods
22. Lectures.
23. Training workshops.
24. Scientific labs.
25. Summer training.
26. Curriculum-based training.
27. Field visits.
28. Scientific film presentations.
29. Assessment Methods
30. Oral examinations.
31. Daily evaluations.
32. Daily drawings.
33. Laboratory reports.
34. Surprise written tests.

8.Assessment Methods
Midterm exams for the first and second semesters and final exams.

9.Thinking Skills
1. Supervising the implementation of engineering projects through map reading and understanding. 2. Surveying work. 3. Calculating quantities and resources for civil works projects. 4. Student graduation projects. 5. Skill in detailed structural drawing.

10.Personal Development Planning

1. Seminars
2. Lectures
3. Developmental courses
4. Workshops
5. Competitions
6. Sports activities
7. Participation in student research
8. Scientific visits
9. Presentations

11. General and Transferable Skills (Other skills related to employability and personal development)

1. **Computing**: Use of computers in map drawing and applying software for quantity calculations.
2. **Laboratory**: Learning how to perform engineering tasks and tests.
3. **Contract Management**: Organizing contracts for subcontracting.
4. **Machinery Work Records**: Managing logs for construction machinery.
5. **Mechanical Workshops**: Operations including sheet metal work, carpentry, plumbing, welding, turning, and forging.

12.Teaching and Learning Methods

1. Lab.
2. Workshop.
3. Drafting.
4. Lecture.
5. Summer training.

13.Evaluation Methods

1. Written exams.
2. Oral exams.
3. Daily evaluations.
4. Laboratory reports.
5. Midterm exams.

14.Scientific Updates and Study Circles

- Scientific research.

15.Admission Criteria (Systems related to enrollment in the college or institute)

1. High school graduation rate.
2. Type of high school specialization (Applied, Biological, Vocational / Construction).
3. The physical condition of the student according to medical examination.

16.Key Sources of Information about the Program

1. Concrete Technology / Jalal Bashir Sarsam.
2. Surveying / William Irvin.
3. Construction Materials / Yusuf Al-Dawaf.
4. Construction Machinery / Mohammed Ayub Al-Azzi.
5. Quantity Surveying / Medhat Fadil Fathallah.
6. Resources are available in the institute library.
7. Resources available in the institute's electronic library.
8. Resources are available in the virtual library of the Ministry of Higher Education and Scientific Research.
9. Specialized websites on the Internet.

1.Educational Institution	Northern Technical University / Kirkuk Technical Institute
2.Academic Department	Civil Technologies
3.Academic Program Name	Road Construction Branch
4.Final Certificate	Two-year Technical Diploma, equivalent to three academic years
5.Study System	Courses /Semester
6.Other External Factors	A close relationship exists between program outcomes and the job market, incorporating market feedback into the curriculum.

7.Academic Program Objectives

1. Road project execution monitoring.
2. Conducting field survey work.
3. Conducting asphalt, soil, and concrete tests.
4. Creating specific mixes for road surfaces with quality control.
5. Quantification for road layers.

8.Required Learning Outcomes, Teaching and Assessment Methods

1. Knowledge and Understanding
2. Construction and asphalt materials
3. Surveying
4. Road construction
5. Soil mechanics
6. Traffic engineering
7. Road construction equipment
8. Concrete technology

9.Special Subject Skills
1. Laboratory tests for asphalt and construction materials, soil, and concrete 2. Using surveying devices and conducting roadwork surveys 3. Monitoring the operation of road equipment and calculating their efficiency and productivity 4. Computer drawing skills and Internet use.

10.Teaching and Learning Methods
Lectures, workshops, labs, summer training, methodological training, field visits, scientific films, scientific visits

11.General and Transferable Skills (Other skills related to employability and personal development)
1. Using computers in road map drawing 2. Learning to execute certain sections in road projects. 3. Organizing contracts for contractors 4. Organizing machine work logs 5. Mechanical workshops: work (sheet metal - carpentry - plumbing - welding - turning - milling)

12.Assessment Methods
Oral exams, daily evaluations, daily boards, laboratory reports, surprise written exams, midterm exams, final exams.

13.Evaluation Methods

1. Written exams.
2. Oral exams.
3. Daily evaluations.
4. Laboratory reports.
5. Midterm exams.

14.Scientific Updates and Study Circles

- Scientific research.

15.Admission Criteria (Systems related to enrollment in the college or institute)

1. High school graduation rate.
2. Type of high school specialization (Applied, Biological, Vocational / Construction).
3. The physical condition of the student according to medical examination.

16.Key Sources of Information about the Program

1. Concrete Technology / Jalal Bashir Sarsam.
2. Surveying / William Irvin.
3. Construction Materials / Yusuf Al-Dawaf.
4. Construction Machinery / Mohammed Ayub Al-Azzi.
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1.Educational Institution	Northern Technical University / Kirkuk Technical Institute
2.Academic Department	Civil Technologies
3.Academic Program Name	Computer-Drawing Branch
4.Final Certificate	Two-year Technical Diploma, equivalent to three academic years
5.Study System	Courses /Semester
6.Other External Factors	A close relationship exists between program outcomes and the job market, incorporating market feedback into the curriculum.

7.Academic Program Objectives
1. To produce skilled technicians capable of drafting various engineering plans. 2. Manufacture architectural models and mock-ups. 3. Execute artistic layouts for project plans. 4. Draft structural, electrical, and mechanical plans. 5. Utilize computers for the above-mentioned tasks.

8.Assessment Methods
Midterm exams for the first and second semesters and final exams.

9.Expected Learning Outcomes and Teaching Methods
1. Knowledge and Understanding: 2. Engineering drawing, architectural drawing, structural drawing, architectural rendering, descriptive engineering, sanitary drawing 3. Subject-specific Skills: 4. Drawing architectural, structural, sanitary, electrical, and mechanical plans 5. Creating architectural models for civil structures 6. Artistic layout of project plans 7. Computer skills in drawing and web skills

10.Personal Development Planning

1. Seminars
2. Lectures
3. Developmental courses
4. Workshops
5. Competitions
6. Sports activities
7. Participation in student research
8. Scientific visits
9. Presentations

11.General and Transferable Skills (Other skills related to employability and personal development)

1. **Computing**: Use of computers in map drawing and applying software for quantity calculations.
2. **Laboratory**: Learning how to perform engineering tasks and tests.
3. **Contract Management**: Organizing contracts for subcontracting.
4. **Machinery Work Records**: Managing logs for construction machinery.
5. **Mechanical Workshops**: Operations including sheet metal work, carpentry, plumbing, welding, turning, and forging.

12.Teaching and Learning Methods

1. Lab.
2. Workshop.
3. Drafting.
4. Lecture.
5. Summer training.

13.Evaluation Methods

1. 3D model creation
2. Daily evaluation
3. Daily boards
4. Midterm exams
5. Final exams

14.Scientific Updates and Study Circles

- Scientific research.

15.Admission Criteria (Systems related to enrollment in the college or institute)

1. High school graduation rate.
2. Type of high school specialization (Applied, Biological, Vocational / Engineering Drawing).
3. The physical condition of the student according to medical examination.

16.Key Sources of Information about the Program

1. Concrete Technology / Jalal Bashir Sarsam.
2. Surveying / William Irvin.
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