Academic Program Description Form

University Name: Al-Furat Al-Awsat Technical University

Faculty/Institute: Technical Institute of Babylon

Scientific Department: Department of Civil Technologies

Academic or Professional Program Name: Civil Technology Diploma

Final Certificate Name: Technical Diploma

Academic System: Yearly

Description Preparation Date: 14-2-2024

File Filling Date: 14-2-2024

Signature:

Scientific Assistant Name:

Assoc. Prof. Dr. Oras Khudair Obbais

Date:

Signature:

Head of Department: Assis. Prof. Shereen Qasim Abdulridha

Date:

Check the file before

Division of Quality Assurance and University Performance

Name of the Director of the Quality Assurance and University Performance Division: Khansaa Azeez Obayes

Date

Signature

Approval of the Dean

Prof. Dr.
Eman Mohammed Abdullah
Dean of
Babylon Technical Institute

1

1. Program Vision

This academic program description provides a brief summary of the most important characteristics of the program and the learning outcomes expected of the student to achieve, proving whether he or she has made the most of the available opportunities.

2. Program Mission

It is mainly focused on preparing technical staff to be a link between the civil engineer and the skilled worker and training and preparing the graduate by providing him with theoretical, applied and practical information to be able to carry out the work entrusted to him, as the Department of Civil Technologies seeks to provide scientific services through which it acquires a distinguished position as a leading department that provides engineering and technical programs and high-quality services while providing a recognized distinguished educational environment so that graduates have high professionalism and basic technical education through which they can contribute Effectively in serving their community.

.

3. Program Objectives

The specialization of the building and construction branch aims to graduate qualified technical staff to carry out the implementation of civil works

Conducting laboratory and field tests, implementing maps and surveys, and calculating quantities and arms of projects

Civil works.

As for the road construction branch, it aims to prepare and graduate technical staff specialized in road projects

Such as monitoring the implementation of road projects and field survey works and conducting asphalt, soil and mixtures tests

of road layers with quality control.

4. Program Accreditation

There isn't any

5. Other external influences

There isn't any

6. Program Structure

Reviews*	Percentage	Unit of study	Number of Courses	Program Structure
	27.27	44	12	Requirements of the institution
				College Requirements
	72.73	222	32	Department Requirements
				Summer Training
				Other

* It can include notes whether the course is basic or optional.

7. Program Description

Credit Hours		Course Name	Course or Course Code	Year/Level
practical	theoretical			
2	2	Construction Materials		First / building and construction
1	2	Engineering Mechanics		
2	2	Surveying (1)		
2	1	Concrete Materials		
-	3	Mathematics		
2	1	Computer Applications (1)		
6	-	Engineering Drawing		
3	-	Workshops		
-	2	Technical English Language		
-	1	Human Rights and democracy		
2	2	Concrete technology		Second / Building and construction
4	-	Technology of Construction		
2	2	Soil mechanics		
5	1	Civil Drawing		
2	1	Surveying (2)		
-	2	Construction Equipments		
2	1	Computer Applications (2)		
2	1	Quantity Surveying		
-	2	Buildings & Fabricated Building		
2	-	Project		
	1	Crimes of the defunct Baath Party		
-	1	English Language		

Credit Hours		Course Name	Course or Course Code	Year/Level
practical	theoretical			
3	2	Construction materials and asphalt		First / road construction
2	2	Surveying (1)		
1	2	Engineering Mechanics		
6	-	Engineering Drawing		
-	3	Mathematics		
2	1	Computer Applications (1)		
3	--	Workshops		
-	1	Human Rights and Democracy		
-	2	Technical English Language		
2	1	Highway Construction		Second / construction of roads
2	1	Traffic and Highway Engineering		
2	2	Soil mechanics		
2	2	Concrete technology		
3	1	Surveying (2)		
3	-	Highway Drawing		
2	1	Highway Construction Equipments		
1	1	Airports and Railways Engineering		
2	1	Computer Applications (2)		
2	1	Quantity Surveying		
2	-	Project		
	1	Crimes of the defunct Baath		

		Party regime		
-	**1**	**English Language**		

8. **Expected learning outcomes of the program**
Knowledge
1- Knowing how to draw and read structural maps in civil disciplines. 2- Knowing the types and uses of construction machinery and equipment used in the implementation of projects. 3- Knowing the types and characteristics of construction materials used in the implementation of projects. 4- Know how to analyze the engineering and economic factors of projects.
Skills
1 - Field experience and skill in the field of work for planning, surveying and construction work. 2 - Practical experience in laboratory tests for all civil specialties. 3 - Applied experience in computer laboratories to turn the idea into reality. 4 - Office experience for the preparation of bills of quantities and costs for projects.
Values
1- The student should pay attention to the calm and order of the class. 2- The student should not interrupt his colleagues while discussing an issue. 3- The student should learn about the impact of science and scientists on life. 4- The student should be careful not to fail to attend the lecture.

9. **Teaching and Learning Strategies**
Lecture, workshop, laboratory, methodological training, summer training.

10. **Evaluation methods**
1. Daily oral tests.

2. Quarterly and annual tests.

11. Faculty

Faculty Members

Preparation of the teaching staff		Special Requirements/Skills (if applicable)	Specialization		Academic Rank
lecturer	Employees		Special	General	
There isn't any	(1)	There isn't any	Water Resources	Engineering Geology	Professor
There isn't any	(4)	There isn't any	Structure Construction Materials Water Resources	Civil Engineering	Assistant Professor
There isn't any	(5)	There isn't any	Structure Irrigation and drainage	Civil Engineering	Lecturer
There isn't any	Number (3)	There isn't any	Roads & Transportation Energy	Civil Engineering Chemical Engineering	Assistant Lecturer

Professional Development

Mentoring new faculty members

They are guided through the meeting and clarifying the controls and instructions for university

service employees.
Professional development of faculty members
Lecturers participate in courses, workshops and seminars of general and subspecialties.

12. **Acceptance Criterion**
The Department of Civil Technologies receives graduates of the preparatory / scientific branch and graduates of vocational preparatory (industrial) according to the central admission requirements every year.

13. **The most important sources of information about the program**
1. Internet. 2. Textbooks.

14. Program Development Plan
Developing 10% of the curricula according to the Ministry's directive to keep pace with the labor market.

Curriculum Skills Outline																		
Please tick the boxes corresponding to the individual learning outcomes from the program under evaluation.																		
Learning outcomes required from the program																		
General and qualifying skills transferred (other skills related to employability and personal development)				Emotional and value goals				Program Skills Objectives				Cognitive goals				fundamental Or optional	Course Name	Course Code	Year/Level
D4	D3	D2	D1	C4	C3	C2	C1	B4	B3	B2	B1	A4	A3	A2	A1				
√	√	√	√	√			√			√	√	√	√			Specialist	Construction Materials		First / building and construction
√			√	√					√		√	√			√	Specialist	Engineering Mechanics		
√			√	√		√	√				√		√	√	√	Specialist	Surveying (1)		
√	√	√	√	√			√		√	√	√	√	√	√		Specialist	Concrete Materials		

√			√	√				√	√		√				√	**Specialist**	**Mathematics**		
√				√		√		√	√		√				√	**Help**	**Computer Applications**		
√			√	√		√			√		√	√			√	**Specialist**	**Engineering Drawing**		
√	√	√		√				√			√	√	√	√		**Help**	**Workshop**		
																Help	**English Language**		
																General	**Human Rights and Democracy**		
√			√	√			√			√	√	√	√			**Specialist**	**Concrete technology**		**Second / Building and construction**
√			√	√		√	√	√		√	√	√	√	√		**Specialist**	**Construction Techniques**		
√			√	√		√				√	√		√	√		**Specialist**	**Soil mechanics**		
√			√	√		√			√		√	√			√	**Specialist**	**Civil Drawing**		
√			√	√		√	√				√	√			√	**Specialist**	**Surveying (2)**		
√	√	√	√	√							√	√	√	√	√	**Specialist**	**Construction Equipment**		

√			√	√		√			√		√	√			√	**Help**	**Computer Applications**		
√		√	√	√		√		√			√		√	√		**Specialist**	**Quantity Surveying**		
√		√	√	√		√		√		√	√	√	√			**Specialist**	**Buildings & Fabricating Building**		
																Specialist	**Project**		
																Help	**English Language**		
																General	**Crimes of the defunct Baath**		
√		√	√	√			√			√	√	√	√	√		**Specialist**	**Construction materials and asphalt**		**First / road construction**
√			√	√	√						√	√				**Specialist**	**Engineering Mechanics**		
√			√	√	√	√	√				√	√		√		**Specialist**	**Surveying (1)**		
√			√	√				√	√		√				√	**Help**	**Mathematics**		
√				√		√		√	√		√				√	**Help**	**Computer Applications**		

√			√	√		√			√		√	√			√	**Specialist**	**Engineering Drawing**		
√		√		√	√			√			√	√	√	√		**Help**	**Workshop**		
																General	**Human Rights and Democracy**		
√	√	√	√	√		√	√			√	√	√	√	√		**Specialist**	**Road construction**		**Second / construction of roads**
√			√	√		√			√		√	√			√	**Specialist**	**Traffic and Highway Engineering**		
√			√	√		√				√	√		√	√		**Specialist**	**Soil mechanics**		
√			√	√			√			√	√	√				**Specialist**	**Concrete technology**		
√			√	√		√	√				√	√			√	**Specialist**	**Surveying (2)**		
√	√		√	√		√			√		√	√			√	**Specialist**	**Highway Drawing**		
√	√	√	√	√	√		√			√	√	√	√	√		**Specialist**	**Highway Construction Equipment**		
√	√	√		√	√					√	√		√			**Speciali**	**Airport and**		

															st	**Railway Engineering**		
√		√	√	√		√		√			√		√	√		**Specialist**	**Quantity Surveying**	
																Specialist	**Project**	
																General	**Crimes of the defunct Baath**	

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	1. Educational institution
Department of Civil Technologies / Building and Construction Branch / First Phase	2. Scientific Department / Center
English Language	3. Course Name/Code
Lecture	4. Available Attendance Forms
Annual	5. Semester / Year
2 hours per week	6. Number of Credit Hours (Total)
14/2/2024	7. The history of preparation of this description
8. Course Objectives	
This course aims to review the simplified basic grammar of the English language that he has previously studied in	
The previous stages, but in a lengthy manner, as well as the gradual introduction of the student to the atmosphere of technical terms related to	
Civil specialization in its various branches.	

10.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives A1- Identify the terms used in civil engineering. A2- Understanding English sentences in terms of their structure and connotations. A3- Being able to write scientific technical reports in his field of competence.
B - Skills objectives of the course. B1 – Identify the elements of the sentence and its structure. B2 – Identify the parts of speech and the correct pronunciation style. B3- Identify the classification of verbs, nouns and prepositions. B4- Being able to form sentences and paragraphs in the field of civil engineering.
Teaching and learning methods
Lecture
Evaluation methods
1. Daily oral tests. 2. Quarterly and annual tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture
Evaluation methods
3. Daily oral tests. 4. Quarterly and annual tests.

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

D1- The ability to read technical terms in his specialization.

D2- The ability to form sentences correctly grammatically and grammatically.

D3- Ability to write and read reports.

11. Course Structure					
Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Daily oral, quarterly and annual tests.	Lecture	A/ pronunciation: voiceless consonants B/ elements of sentence structure C/ patterns of sentences	Understanding and applying the lecture	2	The first
Daily oral, quarterly and annual tests.	Lecture	A/pronunciation : voiceless consonants (ii) B/ the part of speech: 1. Nouns 2.verbs 3. Adjectives 4. adverbs	Understanding and applying the lecture	2	Second
Daily oral, quarterly and annual tests.	Lecture	A/ pronunciation : voiced consonants (I) B/ the parts of speech : 1. articles 2. Demonstratives 3. Pronouns 4. Prepositions 5. Conjunctions 6. Interjections	Understanding and applying the lecture	2	Third
Daily oral, quarterly and annual tests.	Lecture	A/ pronunciation: voiced consonants (ii) B/ classification of verbs	Understanding and applying the lecture	2	Fourth
Daily oral, quarterly and annual tests.	Lecture	A/ pronunciation : pure vowels B/ pronouns (I)	Understanding and applying the lecture	2	V
Daily oral, quarterly and annual tests.	Lecture	A/pronunciation :diphthongs B/pronounce (II)	Understanding and applying the lecture	2	Sixth
Daily oral, quarterly and annual tests.	Lecture	A/ types of questions B/genitives	Understanding and applying the lecture	2	Seventh
Daily oral, quarterly and annual tests.	Lecture	A/ the present simple tense B/the present continuous tense C/ the present perfect tense	Understanding and applying the lecture	2	Eighth
Daily oral, quarterly and annual tests.	Lecture	A/ the past simple tense B/ the past perfect tense C/ future	Understanding and applying the lecture	2	Ninth

Daily oral, quarterly and annual tests.	Lecture	A/ active and passive voice B/ the number system in English	Understanding and applying the lecture	2	X
Daily oral, quarterly and annual tests.	Lecture	A/punctuation	Understanding and applying the lecture	2	Eleventh
Daily oral, quarterly and annual tests.	Lecture	A/business letters B/tenders	Understanding and applying the lecture	2	Twelfth
Daily oral, quarterly and annual tests.	Lecture	Comprehensive paragraphs about the branches of civil engineering	Understanding and applying the lecture	2	XIII-XXX

12.Infrastructure	
Basic texts and curricula	1 Required textbooks
Websites	2 Main references (sources)
	Recommended books and references (scientific journals, reports ,....)
	B Electronic references, websites ....

13.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	9. Educational institution
Department of Civil Technologies / Building and Construction Branch / First Phase	10. Scientific Department / Center
Surveying (1)	11. Course Name/Code
Lecture	12. Available Attendance Forms
Annual	13. Semester / Year
4 hours per week	14. Number of Credit Hours (Total)
14/2/2024	15. The history of preparation of this description
16. Course Objectives	
Teaching the student the basics of space and its use for civil engineering purposes and making calculations related to it.	
As well as teaching the student how to measure horizontal distances, establish and drop columns, calculate the appropriate in addition to	
Drawing longitudinal and transverse sections of the road.	

14.Course Outcomes and Methods of Teaching, Learning and Assessment
A- Cognitive objectives A1- Awareness of the location and Surveying. A2- Classification of cadastral issues. A3- Learn to write reports. A4- Participation in teamwork.
B - Skills objectives of the course. B1 – Use of surveying devices and tools. B2 – Use the compass. B3- Use of scanning and leveling devices. B4- Extracting and calculating trends.
Teaching and learning methods
Lecture
Evaluation methods
3. Daily tests. 4. Quarterly and annual tests. 5. Practical tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture
Evaluation methods
5. Daily tests. 6. Quarterly and annual tests. 7. Practical tests.

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

D1- The ability to observe the governing points in the space.

D2- The ability to determine the best place for monitoring.

D3- The ability to standardize the results of the work.

15. Course Structure					
Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Daily, quarterly, annual and practical tests	Lecture	Definition of Surveying, its fields, its divisions, its uses, and units of measurement.	Understanding and applying the lecture	4	The first
Daily, quarterly, annual and practical tests	Lecture	Measuring horizontal distances, routing process, measuring horizontal distance on irregular slope ground.	Understanding and applying the lecture	4	Second
Daily, quarterly, annual and practical tests	Lecture	Measuring the horizontal distances on the lands with regular slopes (if the height difference is known, if the degree of slope of the earth is known, if the angle of slope of the earth is known).	Understanding and applying the lecture	4	Third
Daily, quarterly, annual and practical tests	Lecture	Erection and projection of columns (erection methods and dropping methods), how to overcome obstacles to guidance, measurement and guidance.	Understanding and applying the lecture	4	Fourth
Daily, quarterly, annual and practical tests	Lecture	Scanning with tape and lifting (cases of filler when lifting).	Understanding and applying the lecture	4	V
Daily, quarterly, annual and practical tests	Lecture	The planar panel has its parts, the methods of lifting the planar panel, the method of rays.	Understanding and applying the lecture	4	Sixth
Daily, quarterly, annual and practical tests	Lecture	The method of lifting with the front cross, the method of rotation, the error of the lock and how to correct it, the advantages of wiping with the flat plate and the disadvantages of wiping it.	Understanding and applying the lecture	4	Seventh
Daily, quarterly,	Lecture	Settlement definitions related to its purposes.	Understanding and applying the	4	Eighth

annual and practical tests			lecture		
Daily, quarterly, annual and practical tests	Lecture	How to calculate the levels of points by the method of the balance surface and solve examples.	Understanding and applying the lecture	4	Ninth
Daily, quarterly, annual and practical tests	Lecture	How to calculate the levels of points by the method of rise and fall and solve examples.	Understanding and applying the lecture	4	X
Daily, quarterly, annual and practical tests	Lecture	Double leveling The effect of the earth's spherical and optical refractions on the leveling work.	Understanding and applying the lecture	4	Eleventh
Daily, quarterly, annual and practical tests	Lecture	Inverted settlement Mutual settlement (reverse) with solving examples.	Understanding and applying the lecture	4	Twelfth
Daily, quarterly, annual and practical tests	Lecture	Sources of errors in the settlement work, degree of accuracy, amount of error allowed.	Understanding and applying the lecture	4	Thirteenth
Daily, quarterly, annual and practical tests	Lecture	Longitudinal sections, drawing the longitudinal section.	Understanding and applying the lecture	4	Fourteenth
Daily, quarterly, annual and practical tests	Lecture	cross sections, finding the levels of cross section points, drawing the cross section.	Understanding and applying the lecture	4	Fifteenth
Daily, quarterly, annual and practical tests	Lecture	Construction line Calculate the slope of the construction line, find the levels of the construction line if the slope is known, draw the proposed line for the project.	Understanding and applying the lecture	4	Sixteenth
Daily, quarterly, annual and practical tests	Lecture	How to calculate land Surveyings and cross sections using demarcation methods, mathematical laws and coordinates.	Understanding and applying the lecture	4	Seventeenth
Daily, quarterly,	Lecture	Calculate the volumes of the earth quantities for digging	Understanding and applying the	4	Eighteenth

annual and practical tests		and backfilling.	lecture		
Daily, quarterly, annual and practical tests	Lecture	Checking and adjusting the leveling device, balancing the settlement lines (leveling balancing).	Understanding and applying the lecture	4	Nineteenth
Daily, quarterly, annual and practical tests	Lecture	Contour lines, their properties, contour period, factors on which the contour period depends, contour space.	Understanding and applying the lecture	4	20th
Daily, quarterly, annual and practical tests	Lecture	Methods of setting contour lines (indirect methods), section method, checkpoint method, squares method (grid leveling).	Understanding and applying the lecture	4	Twenty-first
Daily, quarterly, annual and practical tests	Lecture	Drawing contour lines (calculation method and difference division method).	Understanding and applying the lecture	4	Twenty-second
Daily, quarterly, annual and practical tests	Lecture	Regressions Calculate the volumes of tanks (tanks) Drawing sections of contour lines.	Understanding and applying the lecture	4	Twenty-third
Daily, quarterly, annual and practical tests	Lecture	Calculation of Surveyings using the planometer.	Understanding and applying the lecture	4	Twenty-fourth
Daily, quarterly, annual and practical tests	Lecture	Local gravity abbreviated circular deviations.	Understanding and applying the lecture	4	Twenty-fifth
Daily, quarterly, annual and practical tests	Lecture	Scanning (lifting) using the compass and practical exercises on how to calculate the survey with the compass.	Understanding and applying the lecture	4	Twenty-sixth
Daily, quarterly, annual and practical tests	Lecture	Curves Horizontal curves of all kinds (circular and gradient) Elements of a simple circular curve.	Understanding and applying the lecture	4	Twenty-seventh
Daily, quarterly,	Lecture	Simple circular curve design (equations).	Understanding and applying the	4	Twenty-eighth

annual and practical tests			lecture		
Daily, quarterly, annual and practical tests	Lecture	Vertical curves .	Understanding and applying the lecture	4	Twenty-ninth
Daily, quarterly, annual and practical tests	Lecture	General Review.	Understanding and applying the lecture	4	Xxx

16.Infrastructure	
Course Books، Other	1 Required textbooks
Websites	2 Main references (sources)
	Recommended books and references (scientific journals, reports ,....)
	B Electronic references, websites ....

10.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	17. Educational institution
Department of Civil Technologies / Building and Construction Branch / First Phase	18. Scientific Department / Center
Workshop	19. Course Name/Code
Lecture- Workshops	20. Available Attendance Forms
Annual	21. Semester / Year
3 hours per week	22. Number of Credit Hours (Total)
14/2/2024	23. The history of preparation of this description
24. Course Objectives	
Acquire manual skill in the use of hand tools, measuring tools and operating machines necessary to prepare the student	
As a technician in the field of building and construction.	

11.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives A1- Basic principles of carpentry, maps, chips, shankara, alloys, structural steel and reinforcement. A2- Connecting the various pipes with their accessories (sanitary foundations). A3- Use of measuring tools.
B - Skills objectives of the course. B1 - Use of band saw, disc, grinder machine and press. B2 - The use of chips, shankara and piercing tools. B3- Use lathes. B4- The use of gas and electric welding tools.
Teaching and learning methods
Lecture (theoretical and practical)
Evaluation methods
Daily tests and an annual rate according to those practical daily exams.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture (theoretical and practical)
Evaluation methods
Daily tests and an annual rate according to those practical daily exams.
d. General and rehabilitative skills transferred (other skills related to employability and personal development). D1- Skill in dealing with building blocks and occupational safety. D2- Skill in the use of measuring instruments. D3- Accident prevention. D4- Skill in cutting and smoothing construction materials, punching and connecting steel with welding and screws.

12. Course Structure					
Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Practical daily tests	Lecture	Industrial Security: General rules for the prevention of accidents and health care equipment and methods of use.	Understanding and applying the lecture	3	The first
Practical daily tests	Lecture	Carpentry: Basic principles in the carpentry of models and the use of hand tools (cutting saw, punching saw, hammer, abrasion, trap, radiator).	Understanding and applying the lecture	3	Second and the third
Practical daily tests	Lecture	The use of band saw, disc, grinding machine, piston.	Understanding and applying the lecture	3	Fourth and the fifth
Practical daily tests	Lecture	Chips: Training the student on the work of chips and the use of measuring tools and files, automatic publishing devices, shankara and hole.	Understanding and applying the lecture	3	Sixth and the seventh
Practical daily tests	Lecture	Turning: the use of different lathes, operations for turning (planar, internal hardening, work of different teeth).	Understanding and applying the lecture	3	Eighth and ninth
Practical daily tests	Lecture	Plumbing: Industrial security by casting, molding, forming molds and plumbing work steps.	Understanding and applying the lecture	3	X
Practical daily tests	Lecture	Welding: a. Occupational safety and security precautions. B. Tools used and industrial security equipment. c. Types of welding (gaseous, ultrasound, pressure welding, arc welding).	Understanding and applying the lecture	3	Eleventh and twelfth and thirteenth
Practical daily tests	Lecture	Cutting and bending metals: devices and machines used	Understanding and	3	Fourteenth

		in cutting and bending metal sheets and rebar bars.	applying the lecture		
Practical daily tests	Lecture	Plumbing: Training the student on the rolling machine and the planning process on the sheets.	Understanding and applying the lecture	3	Fifteenth
Practical daily tests	Lecture	Measurements and tools used (tape, vernier, micrometer).	Understanding and applying the lecture	3	Sixteenth
Practical daily tests	Lecture	Practical applications for carpentry works for civil facilities, including:	Understanding and applying the lecture	3	Seventeenth
Practical daily tests	Lecture	Function: wooden doors (press doors, filling doors).	Understanding and applying the lecture	3	Eighteenth
Practical daily tests	Lecture	Action: Wooden molds.	Understanding and applying the lecture	3	Nineteenth
Practical daily tests	Lecture	Applications on reinforcing steel, roof reinforcement, bridge and column reinforcement (iron cutting, iron bending and welding cutting).	Understanding and applying the lecture	3	20th and the twenty-first
Practical daily tests	Lecture	Exercises on cutting and tying structural steel using rivets, screws and welding.	Understanding and applying the lecture	3	Twenty-second and the twenty third
Practical daily tests	Lecture	Stone and stone works: cutting, sawing, smoothing, perforation.	Understanding and applying the lecture	3	Twenty-fourth and the twenty fifth
Practical daily tests	Lecture	Connecting pipes for water foundations, teething (using knives), types of accessories for pipes and methods of connecting them, sanitary sewer installations, connecting methods.	Understanding and applying the lecture	3	Twenty-sixth and the twenty-seventh and twenty eighth

Practical daily tests	Lecture	Different types of pipes with their accessories, the work of a network of water installations and sewers for a residential house.	Understanding and applying the lecture	3	Twenty-ninth Thirty

13.Infrastructure	
Websites	1 Required textbooks
Websites	2 Main references (sources)
	Recommended books and references (scientific journals, reports ,....)
	B Electronic references, websites ....

10.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	25. Educational institution
Department of Civil Technologies / Building and Construction Branch / First Phase	26. Scientific Department / Center
Computer Applications (1)	27. Course Name/Code
Lecture	28. Available Attendance Forms
Annual	29. Semester / Year
3 hours per week	30. Number of Credit Hours (Total)
14/2/2024	31. The history of preparation of this description
32. Course Objectives	
General Objective: Introducing the student to the Computer Applications (1) with an idea of its prospects and use in different fields and about	
Principles of programming and providing him with skill in using the Computer Applications (1) to implement programs prepared previously for application in his field of specialization.	
Course Objective: Introduce the student to the use of the Windows operating system and the Auto CAD drawing program	
Microsoft Word printing software and Excel.	

11.Course Outcomes and Methods of Teaching, Learning and Assessment
A- Cognitive objectives A1- Knowing the tools of accuracy in drawing. A2- Know the tools used in the toolbar. A3- Know the commands in the editing toolbar. A4- Knowledge of classes.
B - Skills objectives of the course. B1 - Identify the parts of the program interface B2 – Drawing circles and lines with known dimensions. B3- Make 2D diagrams. B4- Knowledge of writing within the charts.
Teaching and learning methods
Lecture
Evaluation methods
6. Daily oral tests. 7. Written tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture
Evaluation methods
1. Daily oral tests. 2. Written tests.

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

D1- The student will be able to make two-dimensional diagrams in AutoCAD.

D2- The student will be able to work on the Computer Applications (1) interface.

D3- The student should be able to work on the applied programs.

12. Course Structure					
Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Oral and written exams	Lecture	Windows operating system: the concept of the Windows system, its basic features and requirements, the operation of the system, the components of the home screen of the desktop, the concept of the icon, the method of dealing with mouse activities, the importance and components of the taskbar, taking advantage of Start to enter programs, exit the system and turn off the Computer Applications (1) (Shut Down).	Understanding and applying the lecture	3	The first
Oral and written exams	Lecture	The concept of the window for any program and identify its main components, dealing with desktop icons such as: (My Documents; My Computer ; Recycle Bin).	Understanding and applying the lecture	3	Second
Oral and written exams	Lecture	Learn about (My Computer) in terms of disks, folders and file and how to deal with the initialization of floppy disks and copy folders and files, benefit from cutting and pasting and know the characteristics of disks, folders and files, deal with the trash and how to delete and retrieve files through what the trash can provides in this aspect.	Understanding and applying the lecture	3	Third
Oral and written exams	Lecture	Autocad program, identify the program, where it was	Understanding and applying the	3	Fourth

		named, the importance of the program and the contents of the program window, and how to create and store a new file	lecture		
Oral and written exams	Lecture	Methods of selecting most AutoCAD orders	Understanding and applying the lecture	3	V
Oral and written exams	Lecture	Toolbars in AutoCAD and how to hide and show them and customize a special interface for the program	Understanding and applying the lecture	3	Sixth
Oral and written exams	Lecture	Status bar (Grid, Ortho, Snap, ...,etc.)	Understanding and applying the lecture	3	Seventh and eighth
Oral and written exams	Lecture	Auxiliary commands and panel limits (Limits, Units, Zoom)	Understanding and applying the lecture	3	Ninth and tenth
Oral and written exams	Lecture	Basic drawing commands Draw menu	Understanding and applying the lecture	3	XI-XV
Oral and written exams	Lecture	Modify Menu Modify commands	Understanding and applying the lecture	3	XVI-XX
Oral and written exams	Lecture	Text commands with Dimension commands	Understanding and applying the lecture	3	XXI-XXII
Oral and written exams	Lecture	Microsoft Word printing program how to run and write with it, how to store, change font types, modify the paper in terms of margins, or flip the paper, use tables and print inside it	Understanding and applying the lecture	3	Twenty-third – twenty-sixth
Oral and written exams	Lecture	Microsoft Excel program how to run it and download numerical values in columns and storage and add columns or new rows and apply some functions such as addition and other	Understanding and applying the lecture	3	XXVII – Thirtieth

		calculations			

13.Infrastructure	
Websites	1 Required textbooks
Websites	2 Main references (sources)
	Recommended books and references (scientific journals, reports ,....)
	B Electronic references, websites ....

14.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	33. Educational institution
Department of Civil Technologies / Building and Construction Branch / First Phase	34. Scientific Department / Center
Human Rights and Democracy	35. Course Name/Code
Lecture	36. Available Attendance Forms
Annual	37. Semester / Year
2 hours per week	38. Number of Credit Hours (Total)
14/2/2024	39. The history of preparation of this description
40. Course Objectives	
This course aims to introduce the student to human rights, their objectives and development in different eras and the role of	
International organizations and public opinion in respecting and protecting human rights.	

15.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives A1- Identify the most important rights in various legislations. A2- Identifying human rights in Islam and man-made laws. A3- Identify the principle of equality in rights and duties. A4- Identify the concept of democracy and its types. A5- Identify the mechanism of separation in the democratic system A6- Identify the types of freedoms in the democratic system.
B - Skills objectives of the course. B1 – Identify the historical development of individual rights in various legislations. B2 – Identify the duties and rights of the individual. B3- Identify the various principles of human rights. B4- The democratic system and the mechanism of its implementation.
Teaching and learning methods
Lecture
Evaluation methods
8. Daily tests. 9. Quarterly and annual tests. 10. Style of discussion and dialogue.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture
Evaluation methods
1. Daily tests. 2. Quarterly and annual tests. 3. Style of discussion and dialogue.

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

D1- The ability to interact with the humanitarian community in accordance with the principles of human rights.

D2- The ability to apply the spirit and atmosphere of democracy in daily life.

16. Course Structure					
Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	Human rights, definition, objectives	Understanding and applying the lecture	2	The first
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	The roots and development of human rights in human history: human rights in antiquity and the Middle Ages	Understanding and applying the lecture	2	Second
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	Human rights in ancient civilizations, especially the civilization of Mesopotamia	Understanding and applying the lecture	2	Third
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	Human rights in divine laws with a focus on human rights in Islam	Understanding and applying the lecture	2	Fourth
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	Human rights in the Middle Ages: human rights in doctrines - schools and political theories - human rights in companies and their declarations - revolutions and constitutions (English documents - the American Revolution - the French Revolution - the Russian Revolution)	Understanding and applying the lecture	2	V
Daily Tests Quarterly and yearly	Lecture	The Right of Man in Contemporary and Modern History: International	Understanding and applying the lecture	2	Sixth

And the style of discussion and dialogue		Recognition of Human Rights since the First World War and the League/United Nations			
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	Regional recognition of human rights: European Convention on Human Rights 1950, American Convention on Human Rights 1969, African Charter on Human Rights 1981, Arab Charter on Human Rights 1994.	Understanding and applying the lecture	2	Seventh
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	NGOs and human rights (ICRC, Amnesty International, Human Rights Watch)	Understanding and applying the lecture	2	Eighth
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	National Human Rights Organizations	Understanding and applying the lecture	2	Ninth
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	Human rights in Iraqi constitutions between theory and reality.	Understanding and applying the lecture	2	X
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	The relationship between human rights and public freedoms 1- In the Universal Declaration of Human Rights 2- In regional charters and national constitutions	Understanding and applying the lecture	2	Eleventh and twelfth
Daily Tests Quarterly and yearly And the style of discussion	Lecture	Essential human rights and collective human rights	Understanding and applying the lecture	2	Thirteenth

and dialogue					
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	Economic, social and cultural human rights, civil and political rights	Understanding and applying the lecture	2	Fourteenth
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	Modern human rights: the right to development, the right to a clean environment, the right to solidarity, the right to religion	Understanding and applying the lecture	2	Fifteenth
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	Guarantees of respect and protection of human rights at the national level, guarantees in the Constitution and laws, guarantees in the principle of the rule of law	Understanding and applying the lecture	2	Sixteenth
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	Guarantees in constitutional oversight, guarantees in freedom of the press and public opinion, the role of non-governmental organizations in respecting and protecting human rights	Understanding and applying the lecture	2	Seventeenth
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	Guarantees, respect and protection of human rights at the international level: - The role of the United Nations and its specialized agencies in providing guarantees	Understanding and applying the lecture	2	Eighteenth
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	- Role of regional organizations (Arab League, European Union, African Union, Organization of American States, ASEAN) - The role of international, regional non-governmental	Understanding and applying the lecture	2	Nineteenth

		organizations and public opinion in respecting and protecting human rights			
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	- The general theory of freedoms: the origin of rights and freedoms, the position of the project on the declared rights and freedoms, the use of the term public freedoms	Understanding and applying the lecture	2	20th
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	The functional nature of the concept of public freedoms: philosophical considerations of the functional right, structural considerations of positive right, economic considerations and public freedoms	Understanding and applying the lecture	2	Twenty-first
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	The legal basis of the rule of law	Understanding and applying the lecture	2	Twenty-second and twenty-third
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	Regulation of public freedoms by public authorities	Understanding and applying the lecture	2	Twenty-fourth
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	Non-judicial litigation or grievance	Understanding and applying the lecture	2	Twenty-fifth
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	Judicial appeal, determining the responsibility of the state for its legitimate acts	Understanding and applying the lecture	2	Twenty-sixth
Daily Tests	Lecture	- The effect of dual	Understandin	2	Twenty-

Quarterly and yearly And the style of discussion and dialogue		elimination of public freedoms - Public freedoms under administrative jurisprudence	g and applying the lecture		seventh
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	Equality: the historical development of the administrative concept	Understandin g and applying the lecture	2	Twenty-eighth
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	The modern development of the idea of equality	Understandin g and applying the lecture	2	Twenty-ninth
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	- Gender equality - Equality between individuals according to their beliefs and race	Understandin g and applying the lecture	2	Xxx

17.Infrastructure	
Basic texts and curricula	1 Required textbooks
Websites	2 Main references (sources)
	Recommended books and references (scientific journals, reports ,....)
	B Electronic references, websites ....

18.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	41. Educational institution
Department of Civil Technologies / Building and Construction Branch / First Phase	42. Scientific Department / Center
Engineering Drawing	43. Course Name/Code
Lecture	44. Available Attendance Forms
Annual	45. Semester / Year
6 hours per week	46. Number of Credit Hours (Total)
14/2/2024	47. The history of preparation of this description
48. Course Objectives	
The general objective of the course is to teach the student the principles of preliminary engineering drawing and computer drawing programs efficiently and quickly	
To enable him to express his thoughts by him. The goal of the course is to qualify the student to draw and read maps	
Engineering with knowledge of architectural and structural terms used in maps.	

19.Course Outcomes and Methods of Teaching, Learning and Assessment
A- Cognitive objectives A1- Identify the basics of engineering drawing. A2- Identify the principles of projection and the method of placing dimensions. A3- Learn how to draw the isometric perspective. A4- Learn how to use the AutoCAD program in completing the drawing.
B - Skills objectives of the course. B1 – Drawing basic and composite shapes using engineering processes manually and computerly. B2 – Drawing projections of stereoscopic shapes and placing dimensions on them manually and using the Computer Applications (1). B3- Drawing stereoscopic shapes and drawing sections. B4- Drawing an integrated painting.
Teaching and learning methods
Lecture
Evaluation methods
11.Practical daily tests. 12.Quarterly tests. 13.Annual tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture
Evaluation methods
8. Practical daily tests. 9. Quarterly tests.

10.Annual tests.
d. General and rehabilitative skills transferred (other skills related to employability and personal development). D1- Ability to solve problems in the field of work. D2- The ability to form and propose experimental solutions to a problem. D3- The ability to compare between alternative solutions to face a specific problem for the purpose of choosing the best solution. D4- The ability to record data briefly to facilitate interaction with it.

20. Course Structure

Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Daily and quarterly practical tests	Lecture	Basics of engineering drawing, tools used, painting fixation, types of fonts, writing in geometric calligraphy	Understanding and applying the lecture	6	The first
Daily and quarterly practical tests	Lecture	Engineering processes, halving of a straight piece, halving of an angle, straightening with a circle with an arc, connecting two lines with an arc, drawing of an equilateral, pentagonal, hexagonal, straight tangent to two circles inside and out, tangent arc to the inside and outside of the circles	Understanding and applying the lecture	6	Second
Daily and quarterly practical tests	Lecture	Ellipse, application of drawing geometric shapes using basic geometric processes	Understanding and applying the lecture	6	Third
Daily and quarterly practical tests	Lecture	Principles of projection, method of placing dimensions on the drawing, exercises on projection	Understanding and applying the lecture	6	Fourth
Daily and quarterly practical tests	Lecture	Drawing the isometric perspective	Understanding and applying the lecture	6	V
Daily and quarterly practical tests	Lecture	Finding the Missing Projection with Isometric Perspective Drawing	Understanding and applying the lecture	6	Sixth
Daily and quarterly practical tests	Lecture	heckler	Understanding and applying the lecture	6	Seventh
Daily and quarterly practical tests	Lecture	AutoCAD applications, redefining the relationship between AutoCAD program and its use in the completion	Understanding and applying the lecture	6	Eighth

		of two-dimensional drawings (2D) and three-dimensional (3D) and opening a new page in the program, determining the drawing field (Limits), drawing a painting frame and a data table, with the application of writing inside the spreadsheet (Text)			
Daily and quarterly practical tests	Lecture	Identify the types of fonts and how to obtain and use them in the AutoCAD program by placing them in multiple layers (Layers), different colors and different thickness (Line weight)	Understanding and applying the lecture	6	Ninth
Daily and quarterly practical tests	Lecture	Draw basic geometric shapes, triangle, pentagon, hexagons and polygons in general, ellipse, connecting two lines with a circle sector, connecting two circles with an arc by instructing (((circle Ttr connecting a line with a circle with an arc in the same way	Understanding and applying the lecture	6	X
Daily and quarterly practical tests	Lecture	Drawing composite geometric shapes and mechanical parts (applications to engineering processes)	Understanding and applying the lecture	6	Eleventh and twelfth
Daily and quarterly practical tests	Lecture	Drawing projections of stereoscopic shapes and placing dimensions on them using multiple layers	Understanding and applying the lecture	6	Thirteenth and fourteenth
Daily and quarterly practical tests	Lecture	Drawing projections of stereoscopic shapes using different colors of lines and different thicknesses by changing properties	Understanding and applying the lecture	6	Fifteenth

Daily and quarterly practical tests	Lecture	Find the missing projection and continue drawing the projections	Understanding and applying the lecture	6	Sixteenth
Daily and quarterly practical tests	Lecture	Putting additions to the drawings (Hatch & gradient), and how to add additional inscriptions to the program from external sources	Understanding and applying the lecture	6	Seventeenth
Daily and quarterly practical tests	Lecture	Drawing the stereoscopic shape in the way of (Isometric snap)	Understanding and applying the lecture	6	Eighteenth and nineteenth
Daily and quarterly practical tests	Lecture	Drawing sections in the same way (Isometric snap)	Understanding and applying the lecture	6	20th
Daily and quarterly practical tests	Lecture	How to repeat shapes using the command (Polar array & array Rectangular)	Understanding and applying the lecture	6	Twenty one
Daily and quarterly practical tests	Lecture	How to work (Block) to repeat geometric shapes and the way to store and recall them	Understanding and applying the lecture	6	Twenty-second
Daily and quarterly practical tests	Lecture	Drawing an integrated board containing the types of drawings (2D) and (3D) and containing a spreadsheet and an explanation on the drawings.	Understanding and applying the lecture	6	Twenty-third and twenty-fourth
Daily and quarterly practical tests	Lecture	How to display shapes with different scenes on one screen using the command (view ports)	Understanding and applying the lecture	6	Twenty-fifth
Daily and quarterly practical tests	Lecture	How to transfer fees between files and how to open more than one file by the command window)	Understanding and applying the lecture		Twenty-sixth
Daily and quarterly practical tests	Lecture	Singling out geometric shapes (cube, prism, pyramid)	Understanding and applying the lecture		Twenty-seventh
Daily and	Lecture	Singling out geometric	Understandin		Twenty-

quarterly practical tests		shapes (cut pyramid, cone)	g and applying the lecture		eighth
Daily and quarterly practical tests		Work with scale and printing method using the plot command ()	Understandin g and applying the lecture	6	Twenty-ninth
Daily and quarterly practical tests		How to export drawings from (dwg) format to (pdf) as well as (psd) by creating virtual printers	Understandin g and applying the lecture	6	Xxx

21.Infrastructure	
Course Books، Other	1 Required textbooks
Websites	2 Main references (sources)
	Recommended books and references (scientific journals, reports ,....)
	B Electronic references, websites ....

22.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	49. Educational institution
Department of Civil Technologies / Building and Construction Branch / First Phase	50. Scientific Department / Center
Mathematics	51. Course Name/Code
Lecture	52. Available Attendance Forms
Annual	53. Semester / Year
3 hours per week	54. Number of Credit Hours (Total)
14/2/2024	55. The history of preparation of this description
56. Course Objectives	
Developing the student's ability to use mathematics in practical applications and benefit from it in engineering lessons	
Other.	
The student learned the different ways of representing equations, mathematical laws, and different data to form curves.	
In a graph and with different types of charts fit and purpose of drawing.	

23.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives A1- Identify the function, its statement and types. A2- Mastering the concept of purpose and how to find it. A3- Identify sequences and their types. A4- Identify logarithms, base, positive and negative graphs. A5- Know the concept of integration and the laws of integration. A6- Identify statistical processes and statistical methods.
B - Skills objectives of the course. B1 - Plots the function and determines the domain and range. B2 – Finds the end of algebraic and trigonometric functions. B3- Solves applied problems on numerical and geometric sequences. B4- Uses the laws of integration to solve problems.
Teaching and learning methods
Lecture
Evaluation methods
14.Oral daily tests. 15.Quarterly tests. 16.Annual tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture
Evaluation methods
11.Oral daily tests. 12.Quarterly tests. 13.Annual tests.
d. General and rehabilitative skills transferred (other skills related to employability and personal development). D1- The ability to solve problems in the field of work by taking advantage of logic and mathematical reasoning.

D2- The ability to form and propose experimental solutions to a problem.
D3- The ability to compare between alternative solutions to face a specific problem for the purpose of choosing the best solution.
D4- The ability to record data briefly to facilitate interaction with it.

24. Course Structure					
Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Oral and written exams	Lecture	Matrices, determinants, properties.	Understanding and applying the lecture	3	The first
Oral and written exams	Lecture	Solving linear equations, Cramer method, applications to determinants, solving force analysis equations.	Understanding and applying the lecture	3	Second
Oral and written exams	Lecture	Vectors, vector analysis, vector and scalar quantities, vector algebra, vector arithmetic operations in space.	Understanding and applying the lecture	3	Third
Oral and written exams	Lecture	Unit of orthogonal vectors, vector scale, scalar and directional multiplication, applications of vectors, calculation of moment applications, work.	Understanding and applying the lecture	3	Fourth
Oral and written exams	Lecture	Function, trigonometric functions and trigonometric relations, logarithmic function.	Understanding and applying the lecture	3	V
Oral and written exams	Lecture	Exponential function, hyperbolic functions, their applications.	Understanding and applying the lecture	3	Sixth
Oral and written exams	Lecture	Ends, the end of algebraic and trigonometric functions, applications to the end.	Understanding and applying the lecture	3	Seventh
Oral and written exams	Lecture	Sequences .	Understanding and applying the lecture	3	Eighth
Oral and written exams	Lecture	Differentiation, derivative, derivative of algebraic	Understanding and	3	Ninth

		functions, chain rule.	applying the lecture		
Oral and written exams	Lecture	Curved functions, the derived standard function with higher orders.	Understanding and applying the lecture	3	X
Oral and written exams	Lecture	The derivative of trigonometric functions, the derivative of logarithmic functions.	Understanding and applying the lecture	3	Eleventh
Oral and written exams	Lecture	The derivative of the exponential function, the derivative of hyperbolic functions.	Understanding and applying the lecture	3	Twelfth
Oral and written exams	Lecture	Derivative applications, tangent and column equation, speed, acceleration and magnification.	Understanding and applying the lecture	3	Thirteenth
Oral and written exams	Lecture	Exponents and logarithms .	Understanding and applying the lecture	3	Fourteenth
Oral and written exams	Lecture	General physical and engineering applications, drawing functions.	Understanding and applying the lecture	3	Fifteenth
Oral and written exams	Lecture	Integral, indefinite integral, integration of algebraic functions, and logarithm.	Understanding and applying the lecture	3	Sixteenth
Oral and written exams	Lecture	Integration of exponential and trigonometric functions.	Understanding and applying the lecture	3	Seventeenth
Oral and written exams	Lecture	Definite integral, applications of definite integral, Surveying under the curve, Surveying between curves.	Understanding and applying the lecture	3	Eighteenth
Oral and written exams	Lecture	Rotational volumes, curved arc length.	Understanding and applying the lecture	3	Nineteenth

Oral and written exams	Lecture	Physical and engineering applications (work, momentum, momentum, inertial momentum).	Understanding and applying the lecture	3	20th
Oral and written exams	Lecture	General methods of integration include compensation and segmentation.	Understanding and applying the lecture	3	Twenty-first and the twenty second
Oral and written exams	Lecture	Use of partial, exponential and logarithmic fractions.	Understanding and applying the lecture	3	Twenty-third
Oral and written exams	Lecture	Numerical methods in integration, trapezoidal rule, base (calculation of the volume of earth quantities and the Surveying of longitudinal sections).	Understanding and applying the lecture	3	Twenty-fourth
Oral and written exams	Lecture	Solving discrete, homogeneous and linear differential equations with their different applications within the field of specialization.	Understanding and applying the lecture	3	Twenty-fifth
Oral and written exams	Lecture	Find the value of the highest or lowest point of the vertical curve.	Understanding and applying the lecture	3	Twenty-sixth
Oral and written exams	Lecture	Complex numbers, addition subtraction, multiplication, division.	Understanding and applying the lecture	3	Twenty-seventh
Oral and written exams	Lecture	Polar formula, conversion of the polar formula to algebra and vice versa, forces and roots, representation of roots by drawing.	Understanding and applying the lecture	3	Twenty-eighth
Oral and written exams	Lecture	Statistical operations, frequency distributions, histogram, frequency curve, arithmetic mean, range,	Understanding and applying the lecture	3	Twenty-ninth Thirty

		standard deviation, variance and relativity.			

25.Infrastructure	
	1 Required textbooks
Websites	2 Main references (sources)
	Recommended books and references (scientific journals, reports ,....)
	B Electronic references, websites ....

26.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	57. Educational institution
Department of Civil Technologies / Building and Construction Branch / First Phase	58. Scientific Department / Center
Construction Materials	59. Course Name/Code
Lecture	60. Available Attendance Forms
Annual	61. Semester / Year
4 hours per week	62. Number of Credit Hours (Total)
14/2/2024	63. The history of preparation of this description
64. Course Objectives	
Introducing the student to the properties of construction materials and methods of their production and introducing the student to the modern alternatives that currently exist	
And modern methods of production and then qualify the student to do standard tests to find out the conformity of materials	
Structural specifications and determine the possibility of using them in construction, which ensures strength, safety and economy.	

27.Course Outcomes and Methods of Teaching, Learning and Assessment
A- Cognitive objectives A1- Identify the scientific terms of structural materials science. A2- A general description of the brick material, methods of manufacture, classification, types and places of use. A3- Introducing the types of stone, methods of manufacturing it and methods of classifying it. A4- General description of non-moisture-resistant binders. A5- Identify the kashi, the method of its manufacture, its types, and the method of tiling the cashier. A6- Knowledge of moisture-inhibiting materials, their manufacturing method and types.
B - Skills objectives of the course. B1 – Knowing the types of clay bricks and their uses. B2 – Know the types and properties of plaster and light. B3- The student knows how to choose the stones available in the Surveying according to the type of applications.
Teaching and learning methods
Lecture
Evaluation methods
17.Daily oral tests. 18.Written tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture
Evaluation methods

1. Daily oral tests.
2. Written tests.

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

D1- The student should be familiar with the various types of construction materials in general and their physical properties.

D2- The student should be familiar with the various types of bricks and their different properties.

D3- The student should be familiar with the different types of stone and the way to build it.

D4- The skill of using the appropriate binder for each place of construction

28. Course Structure

Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Oral and written exams	Lecture	A general description of the physical properties and standard specifications of building materials and their uses in buildings.	Understanding and applying the lecture	4	The first
Oral and written exams	Lecture	Clay bricks and methods of manufacture.	Understanding and applying the lecture	4	Second
Oral and written exams	Lecture	Properties, uses and specifications of clay bricks.	Understanding and applying the lecture	4	Third
Oral and written exams	Lecture	Tests for clay bricks.	Understanding and applying the lecture	4	Fourth
Oral and written exams	Lecture	Lime bricks Glass bricks, properties and methods of manufacture.	Understanding and applying the lecture	4	V
Oral and written exams	Lecture	Concrete bricks Concrete blocks (properties and method of manufacture with an explanation of the difference between the two).	Understanding and applying the lecture	4	Sixth
Oral and written exams	Lecture	Thermostone, its properties, and methods of manufacture.	Understanding and applying the lecture	4	Seventh
Oral and written exams	Lecture	Discussion of the visit to the brick factory.	Understanding and applying the lecture	4	Eighth
Oral and	Lecture	Building stone classification and	Understanding and	4	Ninth

written exams		types.	applying the lecture		
Oral and written exams	Lecture	Uses of building stone according to its types.	Understanding and applying the lecture	4	X
Oral and written exams	Lecture	Binders and their types.	Understanding and applying the lecture	4	Eleventh
Oral and written exams	Lecture	Materials that resist moisture (cement mortar, Noura cement mortar), light, how to manufacture, properties	Understanding and applying the lecture	4	Twelfth
Oral and written exams	Lecture	Binders that are not resistant to moisture (plaster) properties and manufacture.	Understanding and applying the lecture	4	Thirteenth
Oral and written exams	Lecture	Gypsum products, their types and properties, secondary ceiling materials and types.	Understanding and applying the lecture	4	Fourteenth
Oral and written exams	Lecture	Application materials, cashews and slabs and their types.	Understanding and applying the lecture	4	Fifteenth
Oral and written exams	Lecture	Methods of manufacture Method of application joints .	Understanding and applying the lecture	4	Sixteenth
Oral and written exams	Lecture	Moisture suppressants, their types and reason for use.	Understanding and applying the lecture	4	Seventeenth
Oral and written exams	Lecture	High humidity prevention materials, types, methods of manufacture and uses.	Understanding and applying the lecture	4	Eighteenth
Oral and written exams	Lecture	Semi-elastic and elastic moisture suppressants, types, uses, methods of manufacture and liquid	Understanding and applying the lecture	4	Nineteenth

		moisture suppressants.			
Oral and written exams	Lecture	Epoxy, definition, properties, types, uses.	Understanding and applying the lecture	4	20th
Oral and written exams	Lecture	Wood origin, types used and methods of use.	Understanding and applying the lecture	4	Twenty-first
Oral and written exams		Methods of drying wood and wood defects.	Understanding and applying the lecture	4	Twenty-second
Oral and written exams		Metals (ferrous and non-ferrous materials) and their uses in buildings.	Understanding and applying the lecture	4	Twenty-third
Oral and written exams		Iron methods of manufacture, types and uses.		4	Twenty-fourth
Oral and written exams		Thermal insulation materials .		4	Twenty-fifth
Oral and written exams		Sound insulation materials.		4	Twenty-sixth
Oral and written exams		Dyes .		4	Twenty-seventh
Oral and written exams		Glass.		4	Twenty-eighth
Oral and written exams		Asphalt, properties of asphalt materials.		4	Twenty-ninth
Oral and written exams		Types of asphalt and its uses in construction works.		4	Xxx

29.Infrastructure

Construction materials / Galal Bashir Sarsam, Saeed Abdel Aal	1 Required textbooks
Construction materials / Galal Bashir Sarsam, Saeed Abdel Aal Building Construction / Zuhair Sako, Artin Levon	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
Websites	B Electronic references, websites.

10.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	65. Educational institution
Department of Civil Technologies / Building and Construction Branch / First Phase	66. Scientific Department / Center
Concrete Materials	67. Course Name/Code
Lecture	68. Available Attendance Forms
Annual	69. Semester / Year
3 hours per week	70. Number of Credit Hours (Total)
14/2/2024	71. The history of preparation of this description
72. Course Objectives	
Introducing the student to the materials that make up concrete and mastering the properties of these physical, mechanical and chemical materials	
and their effect on concrete. The practical part includes the necessary checks for these materials.	

11.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives A1- Knowing the components of concrete, its properties and terminology. A2- Knowing the types of Portland cement according to the Iraqi standard specifications. A3- Knowledge of the methods of making Portland cement and its physical and chemical properties. A4- Knowing the type of aggregate used in concrete and mechanical qualities. A5- Knowledge of the uses of silica, silica dust and fly ash in the production of concrete. A6- Knowing the types of concrete additives, their types, chemical composition and requirements.
B - Skills objectives of the course. B1 – Knowing the components and properties of concrete in order to obtain concrete with durability and resistance to loads. B2 – Know how to choose the type of cement according to the requirements of the site and the project. B3- Determining the properties of cement practically and judging its suitability for use. B4- Knowing the specifications of the water used in the concrete mixture.
Teaching and learning methods
Lecture
Evaluation methods
19.Oral daily tests. 20.Quarterly tests. 21.Annual tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture

Evaluation methods
14. Oral daily tests. 15. Quarterly tests. 16. Annual tests.
d. General and rehabilitative skills transferred (other skills related to employability and personal development). D1- The ability to know the type of cement and its suitability for use. D2- Learn how to monitor the quality of concrete on site. D3- Determine the suitability of water for mixing. D4- Determine the operability of the appropriate mixture.

12. Course Structure					
Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Oral and written exams	Lecture	General principles about concrete (definition, composition, terminology, properties).	Understanding and applying the lecture	3	The first The second
Oral and written exams	Lecture	Portland cement, its industry, chemical composition, types.	Understanding and applying the lecture	3	Third and the fourth and the fifth
Oral and written exams	Lecture	Other types of cement (natural cement, expanding cement, aluminous cement) and the specifications of each type.	Understanding and applying the lecture	3	Sixth
Oral and written exams	Lecture	Properties of cement: softness, weight loss by combustion, stability of cement, heat of hydration.	Understanding and applying the lecture	3	Seventh and eighth
Oral and written exams	Lecture	Complement cement properties: initial and final cohesion time, compressive durability, tensile strength.	Understanding and applying the lecture	3	Ninth and the tenth
Oral and written exams	Lecture	Aggregates: classification of aggregates, methods of modeling, shape of particles, surface texture of particles, durability of aggregates.	Understanding and applying the lecture	3	Eleventh
Oral and written exams	Lecture	Mechanical properties of aggregates: (specific weight, compact and non-stacked unit of weight, gradiency, porosity, absorbability, abrasive corrosion, sand inflation).	Understanding and applying the lecture	3	Twelfth and thirteenth and fourteenth and fifteenth and the sixteenth
Oral and written exams	Lecture	The percentage of salts, organic matter and clay	Understanding and applying the	3	Seventeenth

		materials in aggregates, especially sand, interaction with alkaline materials.	lecture		and eighteenth
Oral and written exams	Lecture	Light and heavy aggregates: Types of light weight aggg . (natural and industrial), the advantages and disadvantages of light aggregates compared to ordinary aggregates.	Understanding and applying the lecture	3	Nineteenth Twenty
Oral and written exams	Lecture	Specifications of light aggregates used in structural concrete, specifications of light aggregates used in insulating concrete and specifications of light aggregates used in the production of concrete blocks.	Understanding and applying the lecture	3	Twenty-first and the twenty second
Oral and written exams	Lecture	The uses of silica , silica fume and fly ash in concrete production in terms of specifications and effects.	Understanding and applying the lecture	3	Twenty-third
Oral and written exams	Lecture	Water used in concrete production: mixing water, maturation water, and specifications of each type.	Understanding and applying the lecture	3	Twenty-fourth
Oral and written exams	Lecture	Fibers used in concrete fibers (types, specifications).	Understanding and applying the lecture	3	Twenty-fifth
Oral and written exams	Lecture	Concrete additives admixtures: types and reasons for use of each type (mixing water reducing additives, delayed additives, accelerated additives, operational improvement additives, revised additives, freeze resistance additives).	Understanding and applying the lecture	3	Twenty-sixth and the twenty-seventh
Oral and written exams	Lecture	Chemical composition of additives, homogeneity of material, inspection of specific weight of additives, examination of residual	Understanding and applying the lecture	3	Twenty-eighth and the twenty ninth

		deposits by drying of liquid additives, examination of residual deposits by drying of solid additives, and specifications for that.			
Oral and written exams	Lecture	Physical requirements for concrete additives according to standard specifications (the permissible amount of delay of the cohesion time of the rear materials and the time allowed for acceleration of accelerated materials .....) .	Understanding and applying the lecture	3	Xxx

13.Infrastructure	
Concrete Technology / Moayad Nouri Khalaf Concrete Technology / Jalal Bassir Sarsam	1 Required textbooks
Websites	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
Websites	B Electronic references, websites ....

14.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	73. Educational institution
Department of Civil Technologies / Building and Construction Branch / First Phase	74. Scientific Department / Center
Engineering Mechanics	75. Course Name/Code
Lecture	76. Available Attendance Forms
Annual	77. Semester / Year
3 hours per week	78. Number of Credit Hours (Total)
14/2/2024	79. The history of preparation of this description

80. Course Objectives

Teaching the student to analyze the forces and loads applied to the bodies and extract the stresses and emotions as a result of these
Forces and their relationship to the materials that make up these bodies, analysis of installations and finding forces and stresses in their parts as a result of
Shedding external loads and its relationship to the dimensions of the different parts in engineering facilities to withstand stresses
Safely and economically ruled.

15.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives A1- Identify how to analyze and find the result of forces of all kinds. A2- Identify how to calculate the loads imposed on the bodies and extract stresses and strains. A3- Identify how to analyze the facilities and find the forces and stresses in their different parts. A4- Identify the types of bridges and draw graphs of shear forces and bending moments.
B - Skills objectives of the course. B1 - Analysis and calculation of the outcome of forces of all kinds. B2 - Calculation of loads on bodies and extraction of stresses and strains. B3- Analysis of facilities and finding forces and stresses in their different parts. B4- Drawing graphs of shear forces and bending moments.
Teaching and learning methods
Lecture
Evaluation methods
22.Oral daily tests. 23.Quarterly tests. 24.Annual tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture
Evaluation methods
17.Oral daily tests. 18.Quarterly tests. 19.Annual tests.

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

D1- Ability to solve problems in the field of work.

D2- The ability to form and propose experimental solutions to a problem.

D3- The ability to compare between alternative solutions to face a specific problem for the purpose of choosing the best solution.

D4- The ability to record data briefly to facilitate interaction with it.

16. Course Structure

Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Oral and written exams	Lecture	Definition of mechanics, general review of physics topics related to the subject, trigonometric ratios of angles, vector and non-vector quantities.	Understanding and applying the lecture	3	The first
Oral and written exams	Lecture	Analysis and composition of forces, the law of triangle of forces and polygon of forces.	Understanding and applying the lecture	3	II and III
Oral and written exams	Lecture	The determination of the forces.	Understanding and applying the lecture	3	Fourth
Oral and written exams	Lecture	Doubles .	Understanding and applying the lecture	3	V
Oral and written exams	Lecture	The result of converging, non-converging and parallel forces.	Understanding and applying the lecture	3	Sixth and the seventh
Oral and written exams	Lecture	Scattered weights.	Understanding and applying the lecture	3	Eighth
Oral and written exams	Lecture	Equilibrium, drawing a free body diagram, equilibrium equations, equilibrium in the case of converging, non-convergent and parallel forces.	Understanding and applying the lecture	3	Ninth and the tenth
Oral and written exams	Lecture	Types of tributaries, types of supports, balance in tributaries.	Understanding and applying the lecture	3	Eleventh
Oral and written exams	Lecture	Gables, analysis of gables by joint and section methods.	Understanding and applying the lecture	3	Twelfth and thirteenth

Oral and written exams	Lecture	Friction, nature of friction, theory of friction, laws of friction, types of friction, general applications.	Understanding and applying the lecture	3	Fourteenth and fifteenth
Oral and written exams	Lecture	Centers of gravity of simple and complex geometric shapes and their applications.	Understanding and applying the lecture	3	Sixteenth and seventeenth
Oral and written exams	Lecture	The moment of inertial of simple and composite geometric shapes and their applications.	Understanding and applying the lecture	3	Eighteenth and nineteenth
Oral and written exams	Lecture	Introduction to material resistance, definition of stresses and their types, safety coefficient.	Understanding and applying the lecture	3	20th
Oral and written exams	Lecture	Applications on stresses.	Understanding and applying the lecture	3	Twenty-first
Oral and written exams	Lecture	Emotion, Hooke's law, the relationship of emotion to stress.	Understanding and applying the lecture	3	Twenty-second
Oral and written exams	Lecture	Lateral strain, Poisson ratio, applications on strain and stress.	Understanding and applying the lecture	3	Twenty-third
Oral and written exams	Lecture	Shear diagrams and bending moments for bridges, how to form equations of shear change and bending moment.	Understanding and applying the lecture	3	Twenty-fourth
Oral and written exams	Lecture	Applications on drawing shear equations and bending moment of bridges	Understanding and applying the lecture	3	Twenty-fifth
Oral and written exams	Lecture	Bending stress for bridges and their applications.	Understanding and applying the lecture	3	Twenty-sixth and the twenty-

					seventh
Oral and written exams	Lecture	Shear stress for bridges and their applications.	Understanding and applying the lecture	3	Twenty-eighth
Oral and written exams	Lecture	Bridges made of two different materials and their applications.	Understanding and applying the lecture	3	Twenty-ninth Thirty

17.Infrastructure	
Course Books	1 Required textbooks
Websites	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
Websites	B Electronic references, websites ....

18.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.**;**

Babylon Technical Institute	81. Educational institution
Department of Civil Technologies / Building and Construction Branch / Phase II	82. Scientific Department / Center
Civil Drawing	83. Course Name/Code
Lecture	84. Available Attendance Forms
Annual	85. Semester / Year
3 hours per week	86. Number of Credit Hours (Total)
14/2/2024	87. The history of preparation of this description
88. Course Objectives	
The student learned the structural details and details of all construction works to be qualified to understand the executive maps and transfer	
Its information to the work site and work to implement it as well as the student learns the proven foundations in the preparation of groups	
Executive maps.	

19.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives A1- Reading the types of structural plans. A2- Understand shop drawings and diagrams. A3- Drawing structural details for all types of plans. A4- Preparing and sequencing elements of linking plans.
B - Skills objectives of the course. B1 – The ability to draw all types of charts B2 - Transfer of construction details to the work site B3 - Change, modify and discuss plans B4- Calculation of some quantities of construction materials
Teaching and learning methods
Lecture
Evaluation methods
25. Daily tests. 26. Quarterly and annual tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture
Evaluation methods
20. Daily tests. 21. Quarterly and annual tests.
d. General and rehabilitative skills transferred (other skills related to employability and personal development). D1- The ability to calculate quantities. D2- The ability to calculate economic feasibility.

D3- Linking the theoretical and practical aspects in the workplace.
D4- Refer to scientific sources on some issues and work problems.

20. Course Structure					
Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Daily, quarterly and annual exams	Lecture	Introduction to structural drawing, architectural and idiomatic symbols, lines in maps, drawing models for building and construction materials, scale, executive maps and types of building with bricks and blocks.	Understanding and applying the lecture	3	The first
Daily, quarterly and annual exams	Lecture	Drawing the horizontal plan of a residential house or small building and the plan of the first floor and determining the longitudinal and transverse sections and facades.	Understanding and applying the lecture	3	Second
Daily, quarterly and annual exams	Lecture	Drawing longitudinal and transverse sections and detailed sections of the finishing layers for floors, ceilings and flatness.	Understanding and applying the lecture	3	Third
Daily, quarterly and annual exams	Lecture	Introduction to the sanitary drawing and compositions of water and sanitary installations and sanitary furniture, and then drawing a network of water and sanitary installations for the previous horizontal plans.	Understanding and applying the lecture	3	Fourth
Daily, quarterly and annual exams	Lecture	Drawing the structural details of the inspection basins and linking them with the network of health establishments.	Understanding and applying the lecture	3	V
Daily, quarterly and annual exams	Lecture	Drawing the structural details of the rotting and storage basins (cesspool) attached to the Dar plan.	Understanding and applying the lecture	3	Sixth
Daily, quarterly and	Lecture	Introduction to concrete and construction principles,	Understanding and applying the	3	Seventh

annual exams		bearing concrete types and steel reinforcement necessary and types, and drawing symbols used in maps and structural details.	lecture		
Daily, quarterly and annual exams	Lecture	Concrete slabs are of all kinds, the transfer of loads through them and the necessary reinforcement, with drawing the structural details of the solid one-way slabs.	Understanding and applying the lecture	3	Eighth
Daily, quarterly and annual exams	Lecture	Drawing the structural details of two-way solid tiles.	Understanding and applying the lecture	3	Ninth
Daily, quarterly and annual exams	Lecture	Drawing the structural details of single- and bidirectional polygon tiles.	Understanding and applying the lecture	3	X
Daily, quarterly and annual exams	Lecture	Introduction / types of concrete joists and drawing the structural details of simple supports with sections.	Understanding and applying the lecture	3	Eleventh
Daily, quarterly and annual exams	Lecture	Drawing structural details of continuous joists and sections.	Understanding and applying the lecture	3	Twelfth
Daily, quarterly and annual exams	Lecture	Drawing the structural details of the monofilament joists with their sections.	Understanding and applying the lecture	3	Thirteenth
Daily, quarterly and annual exams	Lecture	Introduction with drawing the structural details of precast pre-cast joists.	Understanding and applying the lecture	3	Fourteenth
Daily, quarterly and annual exams	Lecture	Drawing a horizontal plan (key) for the joists of a skeleton building and fixing the tables and details of the joists.	Understanding and applying the lecture	3	Fifteenth
Daily, quarterly and annual exams	Lecture	Drawing the structural details of the types of concrete columns, drawing longitudinal and transverse sections and showing the	Understanding and applying the lecture	3	Sixteenth

		reinforcement of the columns.			
Daily, quarterly and annual exams	Lecture	Drawing structural details and vertical sections to illustrate the interconnection of reinforcing steel for the columns of successive floors.	Understanding and applying the lecture	3	Seventeenth
Daily, quarterly and annual exams	Lecture	Introduction to the foundations / types and the principle of their work, and drawing the structural details of the single foundation, common, foundations of walls.	Understanding and applying the lecture	3	Eighteenth
Daily, quarterly and annual exams	Lecture	Drawing the structural details of the continuous foundations and matting foundations.	Understanding and applying the lecture	3	Nineteenth
Daily, quarterly and annual exams	Lecture	Drawing the structural details of the foundations of the pillars and their types with the hat.	Understanding and applying the lecture	3	20th
Daily, quarterly and annual exams	Lecture	Identify concrete stairs and their types, straight ladder, half straight ladder, spiral ladder, with drawing structural details for them.	Understanding and applying the lecture	3	Twenty-first
Daily, quarterly and annual exams	Lecture	Drawing the structural details of the joints in buildings, expansion joints, structural joints.	Understanding and applying the lecture	3	Twenty-second
Daily, quarterly and annual exams	Lecture	Drawing the structural details of the reinforced walls of elevators and basement walls.	Understanding and applying the lecture	3	Twenty-third
Daily, quarterly and annual exams	Lecture	Introduction to factory and prefabricated construction and drawing structural details for the interconnection of walls with prefabricated ceilings.	Understanding and applying the lecture	3	Twenty-fourth
Daily, quarterly and	Lecture	Introduction to steel structures, sections, tables	Understanding and applying the	3	Twenty-fifth

annual exams		and how to obtain specifications and details of sections from them.	lecture		
Daily, quarterly and annual exams	Lecture	Drawing the structural details of the interconnection of steel parts according to their weight tolerance.	Understanding and applying the lecture	3	Twenty-sixth
Daily, quarterly and annual exams	Lecture	Interconnection of steel foundations and bases, interconnection of steel columns, interconnection of joists with each other.	Understanding and applying the lecture	3	Twenty-seventh
Daily, quarterly and annual exams	Lecture	Details of the drawing of the steel gable and the interconnection of its sides.	Understanding and applying the lecture	3	Twenty-eighth
Daily, quarterly and annual exams	Lecture	The use of computers and its applications in the structural drawing of reinforced concrete structures.	Understanding and applying the lecture	3	Twenty-ninth and thirty-ninth

21.Infrastructure	
Textbook + Other Books	1 Required textbooks
Websites	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
Websites	B Electronic references, websites ....

22.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	89. Educational institution
Department of Civil Technologies / Building and Construction Branch / Phase II	90. Scientific Department / Center
English Language	91. Course Name/Code
Lecture	92. Available Attendance Forms
Annual	93. Semester / Year
1 hour per week	94. Number of Credit Hours (Total)
14/2/2024	95. The history of preparation of this description
96. Course Objectives	
This course aims to teach the student sentence tenses in the English language and speech sections in addition to expressions	
Social and traits.	

23.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives A1- Identify the terms used in civil engineering. A2- Understanding English sentences in terms of their structure and connotations. A3- Being able to write scientific technical reports in his field of competence.
B - Skills objectives of the course. B1 – Identify the elements of the sentence and its structure. B2 – Identify the parts of speech and the correct pronunciation style. B3- Identify the classification of verbs, nouns and prepositions. B4- Being able to form sentences and paragraphs in the field of civil engineering.
Teaching and learning methods
Lecture
Evaluation methods
27.Daily oral tests. 28.Quarterly and annual tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture
Evaluation methods
22.Daily oral tests. 23.Quarterly and annual tests.
d. General and rehabilitative skills transferred (other skills related to employability and personal development). D1- The ability to read technical terms in his specialization. D2- The ability to form sentences correctly grammatically and grammatically.

D3- Ability to write and read reports.

24. Course Structure					
Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Daily oral, quarterly and annual tests.	Lecture	Tenses- Questions- Using a Bilingual Dictionary	Understanding and applying the lecture	1	First and second
Daily oral, quarterly and annual tests.	Lecture	Present Tenses-have/have got	Understanding and applying the lecture	1	Third and fourth
Daily oral, quarterly and annual tests.	Lecture	Past Tenses –Word Formation- Time Expressions	Understanding and applying the lecture	1	Fifth and sixth
Daily oral, quarterly and annual tests.	Lecture	Much/Many- Some/Any- a Few, a Little , a Lot of- articles- shopping- prices	Understanding and applying the lecture	1	VII-IX
Daily oral, quarterly and annual tests.	Lecture	Verb Patterns 1- Future Forms – Hot verbs- How do you feel?	Understanding and applying the lecture	1	Tenth and eleventh
Daily oral, quarterly and annual tests.	Lecture	What.... like?- Comparatives and Superlative – Synonyms and Antonyms- Directions	Understanding and applying the lecture	1	Twelfth and thirteenth
Daily oral, quarterly and annual tests.	Lecture	Present Perfect- For , Since- adverbs , word pairs – Short Answers	Understanding and applying the lecture	1	Fourteenth and fifteenth
Daily oral, quarterly and annual tests.	Lecture	Have(got)to – should/must- words that go together- at the doctors	Understanding and applying the lecture	1	XVI-XVIII
Daily oral, quarterly and annual tests.	Lecture	Time Clauses- if- Hot Verbs – in a hotel	Understanding and applying the lecture	1	Nineteenth and Twenty
Daily oral, quarterly and annual tests.	Lecture	Verb Patterns 2 – manage to, used to _-ed /-ing adjective – Exclamations	Understanding and applying the lecture	1	Twenty one and twenty second
Daily oral, quarterly and annual tests.	Lecture	Passives- Verbs and Nouns that go together- notices	Understanding and applying the lecture	1	Twenty-third and twenty-

					fourth
Daily oral, quarterly and annual tests.	Lecture	Second Conditional- might- phrasal verbs – social expressions2	Understanding and applying the lecture	1	Twenty-fifth and twenty-sixth
Daily oral, quarterly and annual tests.	Lecture	Present Perfect Continuous- word formation – adverbs- telephoning	Understanding and applying the lecture	1	Twenty-seventh and twenty-eighth
Daily oral, quarterly and annual tests.	Lecture	Past Perfect – Reported Statements- saying goodbye	Understanding and applying the lecture	1	Twenty-ninth and thirty-ninth

25.Infrastructure	
Basic texts and curricula	1 Required textbooks
Websites	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
Websites	B Electronic references, websites ....

26.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	97. Educational institution
Department of Civil Technologies / Building and Construction Branch / Phase II	98. Scientific Department / Center
Buildings and Fabricating Building	99. Course Name/Code
Lecture	100. Available Attendance Forms
Annual	101. Semester / Year
2 hours per week	102. Number of Credit Hours (Total)
14/2/2024	103. The history of preparation of this description
104. Course Objectives	
General Objective: To provide the student with the necessary information about the stages of implementation of traditional and manufactured buildings and works	
Which fall within each stage and the appropriate construction machines for each work.	
Course Objective: Enable the student to organize the site, direct the work, supervise its implementation, and teach the student	
Basic principles and supervision of fabricated Building.	

27.Course Outcomes and Methods of Teaching, Learning and Assessment
A- Cognitive objectives A1- Knowledge of the types of building with bricks and the types of binding. A2- Know the types and qualities of moisture suppressants. A3- Knowing the types of fabricating building systems and classifications. A4- Knowing the characteristics of low-cost construction.
B - Skills objectives of the course. B1 – The skill of how to implement brick construction according to the approved specifications. B2 – The skill of how to address water leakage problems to buildings. B3- The skill of implementing health establishments correctly.
Teaching and learning methods
Lecture
Evaluation methods
29.Daily tests. 30.Quarterly and annual tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture
Evaluation methods
24.Daily tests. 25.Quarterly and annual tests.

d. General and rehabilitative skills transferred (other skills related to employability and personal development). D1- The skill of how to heat insulating buildings. D2- The skill of how to use the appropriate method in construction. D3- The skill of how to implement secondary ceilings. D4- The skill of how to prevent moisture from leaking into buildings.

28.Infrastructure	
Building Construction Book / Zuhair Sako Warten Levon	1 Required textbooks
Websites	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
Websites	B Electronic references, websites ....

29.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

10. Course Structure					
Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Daily, quarterly and annual exams	Lecture	Introduction to the methods of implementing construction projects and related parties The tasks of each of the members of the construction projects team, especially technicians.	Understanding and applying the lecture	2	The first
Daily, quarterly and annual exams	Lecture	Organization and planning of the work site and the factors that affect it with the preparation of a work site plan for a specific project	Understanding and applying the lecture	2	Second
Daily, quarterly and annual exams	Lecture	Earth excavations, Excavation side support methods, Basement excavation	Understanding and applying the lecture	2	Third
Daily, quarterly and annual exams	Lecture	Techniques used in groundwater withdrawal during construction	Understanding and applying the lecture	2	Fourth
Daily, quarterly and annual exams	Lecture	Dirt spelling and the correct ways to make it Layers of roads and methods of implementation	Understanding and applying the lecture	2	V
Daily, quarterly and annual exams	Lecture	Moisture neutral layers for basements and walls, flatness	Understanding and applying the lecture	2	Sixth
Daily, quarterly and annual exams	Lecture	Construction of walls with bricks, types of bricks, connecting methods, seams	Understanding and applying the lecture	2	Seventh
Daily, quarterly and annual exams	Lecture	Construction of walls with stone (types of stone preparation, types of bonding, joints)	Understanding and applying the lecture	2	Eighth
Daily, quarterly and annual exams	Lecture	Building walls with structural blocks (types of blocks and their specifications).	Understanding and applying the lecture	2	Ninth
Daily,	Lecture	Techniques for finishing	Understandin	2	X

quarterly and annual exams		walls from the inside of all kinds.	g and applying the lecture		
Daily, quarterly and annual exams	Lecture	Techniques for finishing walls from the outside of all kinds.	Understandin g and applying the lecture	2	Eleventh
Daily, quarterly and annual exams	Lecture	Methods of finishing the floors of the ground floor and other floors and ceilings.	Understandin g and applying the lecture	2	Twelfth
Daily, quarterly and annual exams	Lecture	Thermal insulation technologies	Understandin g and applying the lecture	2	Thirteenth
Daily, quarterly and annual exams	Lecture	Concrete formwork (types, requirements, components)	Understandin g and applying the lecture	2	Fourteent h
Daily, quarterly and annual exams	Lecture	Lifting formwork, causes of mold breakdown, sliding molds and related techniques	Understandin g and applying the lecture	2	Fifteenth
Daily, quarterly and annual exams	Lecture	Scaffolding (types, components, safety factors)	Understandin g and applying the lecture	2	Sixteenth
Daily, quarterly and annual exams	Lecture	Secondary ceilings (types and methods of installation) and installation of air ducts	Understandin g and applying the lecture	2	Seventeen th
Daily, quarterly and annual exams	Lecture	Sanitary installations (clear water, sewage) types of pipes used for each of them and methods of connection and fixation.	Understandin g and applying the lecture	2	Eighteent h
Daily, quarterly and annual exams	Lecture	Doors and windows (types, requirements, components)	Understandin g and applying the lecture	2	Nineteent h
Daily, quarterly and annual exams	Lecture	Joints in buildings (structural joints, expansion joints) details of each type and methods of implementation	Understandin g and applying the lecture	2	20th
Daily, quarterly and annual exams	Lecture	Low-cost construction and cost rationalization methods (objectives, requirements,	Understandin g and applying the	2	Twenty-first and the

		construction methods).	lecture		twenty second
Daily, quarterly and annual exams	Lecture	Factory construction (properties, supplies)	Understanding and applying the lecture	2	Twenty-third
Daily, quarterly and annual exams	Lecture	The different varieties of factory construction and the characteristics of each type	Understanding and applying the lecture	2	Twenty-fourth
Daily, quarterly and annual exams	Lecture	Factory construction lab components and production method	Understanding and applying the lecture	2	Twenty-fifth
Daily, quarterly and annual exams	Lecture	Details of the structural members in the factory building and methods of their installation	Understanding and applying the lecture	2	Twenty-sixth Twenty-seventh
Daily, quarterly and annual exams	Lecture	Joints in factory construction (types, components, methods of implementation)	Understanding and applying the lecture	2	Twenty-eighth
Daily, quarterly and annual exams	Lecture	Methods of transportation in buildings, stairs, elevators (types, components, construction methods)	Understanding and applying the lecture	2	Twenty-ninth
Daily, quarterly and annual exams	Lecture	Fire resistance of buildings and fire control systems.	Understanding and applying the lecture	2	Xxx

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	105. Educational institution
Department of Civil Technologies / Building and Construction Branch / Phase II	106. Scientific Department / Center
Surveying (2)	107. Course Name/Code
Lecture	108. Available Attendance Forms
Annual	109. Semester / Year
4 hours per week	110. Number of Credit Hours (Total)
14/2/2024	111. The history of preparation of this description
112. Course Objectives	
This course aims to teach the student on the use of angle measuring devices (theodolite) and practical applications.	
The various for this device with raising polygons, beams, triangulation works, dropping curves and the rest of the works that	
He needs it in civil works.	

11.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives A1- Identify the surveying devices (theodolite) and how to install it. A2- Learn how to measure and correct angles. A3- Knowledge of theoretical applications in angle calculations for different polygons. A4- Knowledge of theoretical applications in the calculations of the elements of horizontal and vertical curves.
B - Skills objectives of the course. B1 – The use of theodolite devices in the work of surveying and lifting beams. B2 – The use of theodolite devices in measurements and ribbing works in roads. B3- Dropping and lifting roads. B4- Projecting vertical and horizontal curves.
Teaching and learning methods
Theoretical lecture and practical application
Evaluation methods
31. Daily tests. 32. Quarterly and annual tests. 33. Practical tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Theoretical lecture and practical application
Evaluation methods
1. Daily tests. 2. Quarterly and annual tests. 3. Practical tests.

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

D1- The skill of how to develop engineering works through advanced modern devices.

D2- The student's skill in using surveying equipment.

D3- The student's skill in working in engineering projects through learning in the field of surveying.

12. Course Structure					
Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Daily, quarterly, annual and practical tests	Lecture	Definitions of theodolite parts / parts, uses, types, installation of the device, reading the horizontal and vertical directions of different types.	Understanding and applying the lecture	4	The first
Daily, quarterly, annual and practical tests	Lecture	Checking and adjusting the theodolite device for all types of vertical and horizontal examinations and then finding the device constant.	Understanding and applying the lecture	4	Second
Daily, quarterly, annual and practical tests	Lecture	Methods of measuring angles with theodolite device.	Understanding and applying the lecture	4	Third
Daily, quarterly, annual and practical tests	Lecture	Ribbing, types of polygons, their purposes, uses.	Understanding and applying the lecture	4	Fourth
Daily, quarterly, annual and practical tests	Lecture	Measure and correct the internal horizontal angles of a closed polygon.	Understanding and applying the lecture	4	V
Daily, quarterly, annual and practical tests	Lecture	Methods of measuring the horizontal distances of the sides of a polygon.	Understanding and applying the lecture	4	Sixth
Daily, quarterly, annual and practical tests	Lecture	Draw closed and open polygons.	Understanding and applying the lecture	4	Seventh
Daily, quarterly, annual and practical tests	Lecture	Lifting the beams of the polygons with theodolite and tape device.	Understanding and applying the lecture	4	Eighth
Daily, quarterly, annual and	Lecture	calculate horizontal and vertical components of polygon sides and calculate	Understanding and applying the lecture	4	Ninth

practical tests		coordinates.			
Daily, quarterly, annual and practical tests	Lecture	Calculate horizontal components, vertical components and coordinates of an open polygon.	Understanding and applying the lecture	4	X
Daily, quarterly, annual and practical tests	Lecture	Methods of measuring vertical angles with theodolite device.	Understanding and applying the lecture	4	Eleventh
Daily, quarterly, annual and practical tests	Lecture	Find the height of a building (target) that can be reached using the theodolite device	Understanding and applying the lecture	4	Twelfth
Daily, quarterly, annual and practical tests	Lecture	Finding the height of a building (target) that cannot be reached using theodolite device	Understanding and applying the lecture	4	Thirteenth
Daily, quarterly, annual and practical tests	Lecture	Finding the height of a building (target) by measuring three angles of rise or fall in the theodolite device	Understanding and applying the lecture	4	Fourteenth
Daily, quarterly, annual and practical tests	Lecture	Curves / types, horizontal curves types (circle and fold)	Understanding and applying the lecture	4	Fifteenth
Daily, quarterly, annual and practical tests	Lecture	Elements of the horizontal curve (elements of a simple circular curve) and the equations used in the design of a simple circular curve	Understanding and applying the lecture	4	Sixteenth
Daily, quarterly, annual and practical tests	Lecture	Draw a path with its horizontal curves.	Understanding and applying the lecture	4	Seventeenth
Daily, quarterly, annual and practical tests	Lecture	Convex and concave main curves / their elements / calculation of the length of the vertical curve, calculations related to them	Understanding and applying the lecture	4	Eighteenth
Daily, quarterly, annual and practical tests	Lecture	Projection of the vertical curve on the ground	Understanding and applying the lecture	4	Nineteenth

Daily, quarterly, annual and practical tests	Lecture	Triangulation, its purposes, use, selection of triangulation points, triangulation networks.	Understanding and applying the lecture	4	20th
Daily, quarterly, annual and practical tests	Lecture	Measuring the base line for triangulation and making fortifications for tape measurement.	Understanding and applying the lecture	4	Twenty-first
Daily, quarterly, annual and practical tests	Lecture	Measuring the horizontal angles of the triangulation network, calculations and making the necessary fortifications for the triangulation network.	Understanding and applying the lecture	4	Twenty-second
Daily, quarterly, annual and practical tests	Lecture	Tachometric survey, types of tachometer devices.	Understanding and applying the lecture	4	Twenty-third
Daily, quarterly, annual and practical tests	Lecture	Ribbing by leveling with a tachiometric device	Understanding and applying the lecture	4	Twenty-fourth
Daily, quarterly, annual and practical tests	Lecture	Ribbing leveling with a pediatric device Telescope	Understanding and applying the lecture	4	Twenty-fifth
Daily, quarterly, annual and practical tests	Lecture	Identify electronic measuring devices and how to use them to measure horizontal and vertical distances of several types.	Understanding and applying the lecture	4	Twenty-sixth
Daily, quarterly, annual and practical tests	Lecture	Triangulation using side lengths of triangles measured by electronic devices	Understanding and applying the lecture	4	Twenty-seventh
Daily, quarterly, annual and practical tests	Lecture	A general project on the construction of a road with the horizontal and vertical curves necessary to complete it with its drawing.	Understanding and applying the lecture	4	Twenty-eighth, twenty-ninth and thirtieth

13.Infrastructure	
Textbook + Other Books	1 Required textbooks

Websites	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
Websites	B Electronic references, websites ....

14.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	113. Educational institution
Department of Civil Technologies / Building and Construction Branch / Phase II	114. Scientific Department / Center
Project	115. Course Name/Code
Lecture and application	116. Available Attendance Forms
Annual	117. Semester / Year
2 hours per week	118. Number of Credit Hours (Total)
14/2/2024	119. The history of preparation of this description
120. Course Objectives	
Teaching the student how to prepare scientific and applied research and projects in various fields of work. as well as teaching	
The student how to search for scientific sources and how to conduct research and projects with the help of specialized professors	
In the department and the use of the department's and institute's laboratory equipment and the use of state departments if required according to the nature of	
Project.	

15.Course Outcomes and Methods of Teaching, Learning and Assessment
A- Cognitive objectives A1- Identify the research problem, its causes and solutions. A2- Know how to search in specialized sources and websites. A3- Know how to direct research in a scientific way. A4- Know how to write the research in a scientific way.
B - Skills objectives of the course. B1 – The skill of conducting and implementing research in a scientific manner and according to specialization. B2 – The skill of employing laboratories and equipment available for the purpose of research. B3- The skill of using the computer in developing data and results. B4- Comparing the results with previous research in the same discipline.
Teaching and learning methods
Lecture
Evaluation methods
34.Oral tests. 35.Monthly and quarterly evaluation. 36.Annual discussion.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture
Evaluation methods
26.Oral tests. 27.Monthly and quarterly evaluation. 28.Annual discussion.

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

D1- Know how to develop scientific solutions to the problems facing him in civil disciplines.

D2- Knowing how to benefit from previous research in the same discipline.

D3- Know how to analyze factors and influences to solve problems in civil disciplines.

D4- Know how to conclude and analyze the reasons.

16. Course Structure

Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Oral, quarterly and annual exams and annual discussion	Lecture	Explain the idea of the topic, the materials used, the proposed implementation method, the practical implementation of the project, and the analysis and discussion of the results obtained	Understand, apply and write a project	2	I-XXXI

17. Infrastructure

There isn't any	1 Required textbooks
Websites	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
Websites	B Electronic references, websites ....

18.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	121. Educational institution
Department of Civil Technologies / Building and Construction Branch / Phase II	122. Scientific Department / Center
Construction Equipment	123. Course Name/Code
Lecture	124. Available Attendance Forms
Annual	125. Semester / Year
2 hours per week	126. Number of Credit Hours (Total)
14/2/2024	127. The history of preparation of this description
128. Course Objectives	
Enable the student to know the mechanisms used in projects and how to use them, as well as determine the productivity of machines	
As well as operating and supervising it and its good completion of the work.	

19.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives A1- Identify the types of mechanisms and how to use them. A2- Identify the duration of the completion of the project and the type of mechanisms necessary for it. A3- Learn how the mechanisms work on the site. A4- Knowing the storage methods of construction materials.
B - Skills objectives of the course. B1 – Enable the student to direct and control the work. B2 – Enable the student to direct the machines, each according to the need and location. B3- Enabling the student to direct workers to store construction materials in the best way.
Teaching and learning methods
Lecture
Evaluation methods
37. Daily tests. 38. Quarterly and annual tests. 39. Practical tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture
Evaluation methods
29. Daily tests. 30. Quarterly and annual tests. 31. Practical tests.

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

D1- Directing the work of the machines in the project.

D2- Directing the mechanisms in the way of working in the project.

D3- Guidance on the storage route for construction materials.

20. Course Structure

Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Daily, quarterly and annual exams	Lecture	Construction equipment, the importance of machines, ways to obtain them, and the advantages and disadvantages of owning or renting machines, with a scientific film.	Understanding and applying the lecture	2	The first
Daily, quarterly and annual exams	Lecture	Calculation of the cost and ownership of machinery (cost of extinction, investment, maintenance and repair).	Understanding and applying the lecture	2	Second
Daily, quarterly and annual exams	Lecture	Completing the calculation of the cost and ownership of machinery, operating costs (fuel costs, oil costs, explanation of an integrated accounting question about calculating all costs).	Understanding and applying the lecture	2	Third
Daily, quarterly and annual exams	Lecture	Special machines, standard machines, and the trade-off between them with the presentation of a scientific film.	Understanding and applying the lecture	2	Fourth
Daily, quarterly and annual exams	Lecture	The engineering foundations of engineering machinery work, including (resistance to movement and the effect of inclination).	Understanding and applying the lecture	2	V
Daily, quarterly and annual exams	Lecture	Complementing the engineering foundations of engineering machinery works (the effect of height, swelling and contraction of the soil at the expense of volumes)	Understanding and applying the lecture	2	Sixth
Daily, quarterly and annual exams	Lecture	Quarry (Dozer includes: description of the machine, types, productivity	Understanding and applying the lecture	2	Seventh

		calculation) with the presentation of a scientific film.			
Daily, quarterly and annual exams	Lecture	Shovel loading (shuffle) includes (types, difference between them, calculation of productivity, work cycle shuffle, work coordination) with the presentation of two scientific films.	Understanding and applying the lecture	2	Eighth
Daily, quarterly and annual exams	Lecture	A scientific visit to one of the business sites where different machines are available.	Understanding and applying the lecture	2	Ninth
Daily, quarterly and annual exams	Lecture	Drilling Machinery, Comprehensive Excavator, Face Excavator with Scientific Film Show.	Understanding and applying the lecture	2	X
Daily, quarterly and annual exams	Lecture	Drilling machines (rear shovel, hemophilia shovel, oyster shovel) with scientific film presentation.	Understanding and applying the lecture	2	Eleventh
Daily, quarterly and annual exams	Lecture	Machinery of transport units, tiled and untiled road trucks, classification of trucks according to multiple factors, tippers, productivity calculation with the presentation of a scientific film.	Understanding and applying the lecture	2	Twelfth
Daily, quarterly and annual exams	Lecture	Balancing the number of tippers with the size of drilling machines, lorries, locomotives and trailers, railway trucks.	Understanding and applying the lecture	2	Thirteenth
Daily, quarterly and annual exams	Lecture	Terraces include (types and benefits with productivity calculation) with the presentation of a scientific film.	Understanding and applying the lecture	2	Fourteenth
Daily, quarterly and annual exams	Lecture	Skimmers, types, benefits, and productivity calculation with the presentation of a scientific film.	Understanding and applying the lecture	2	Fifteenth

Daily, quarterly and annual exams	Lecture	Skimmer productivity Use the skimmer performance chart in calculating productivity.	Understanding and applying the lecture	2	Sixteenth
Daily, quarterly and annual exams	Lecture	A scientific visit to one of the business sites with the presentation of a scientific film.	Understanding and applying the lecture	2	Seventeenth
Daily, quarterly and annual exams	Lecture	Soil compaction machines and their importance includes their types and places of use with the presentation of a scientific film.	Understanding and applying the lecture	2	Eighteenth
Daily, quarterly and annual exams	Lecture	Complement of duction machines and calculation of productivity, pressure bulb theory for weight distribution.	Understanding and applying the lecture	2	Nineteenth
Daily, quarterly and annual exams	Lecture	Complement of vibratory valves - calculation of productivity - vibration	Understanding and applying the lecture	2	20th
Daily, quarterly and annual exams	Lecture	Material mixing equipment for concrete work with a scientific film presentation.	Understanding and applying the lecture	2	Twenty-first
Daily, quarterly and annual exams	Lecture	Concrete compaction and polishing transport equipment.	Understanding and applying the lecture	2	Twenty-second
Daily, quarterly and annual exams	Lecture	Asphalt production plants types and specifications.	Understanding and applying the lecture	2	Twenty-third
Daily, quarterly and annual exams	Lecture	Specifications of mattresses for asphalt, speed of mattresses, types of mattresses with scientific film presentation.	Understanding and applying the lecture	2	Twenty-fourth
Daily, quarterly and annual exams	Lecture	A scientific visit to asphalt production plants.	Understanding and applying the lecture	2	Twenty-fifth
Daily, quarterly and annual exams	Lecture	Trenches types, calculation of production rates with the presentation of a scientific	Understanding and applying the	2	Twenty-sixth

		film.	lecture		
Daily, quarterly and annual exams	Lecture	Tunnels their importance, types with the presentation of a scientific film.	Understanding and applying the lecture	2	Twenty-seventh
Daily, quarterly and annual exams	Lecture	Tunnel construction with mechanical excavators, ventilation of tunnels with a scientific film screening.	Understanding and applying the lecture	2	Twenty-eighth
Daily, quarterly and annual exams	Lecture	Conveyor belts, calculation of transportation costs with conveyor belts Conveyor belt parts	Understanding and applying the lecture	2	Twenty-ninth
Daily, quarterly and annual exams	Lecture	The use of modern control systems in construction machines with the presentation of a scientific film of its own.	Understanding and applying the lecture	2	Xxx

21.Infrastructure	
Course Book	1 Required textbooks
Websites	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
Websites	B Electronic references, websites ....

22.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	129. Educational institution
Department of Civil Technologies / Building and Construction Branch / Phase II	130. Scientific Department / Center
Computer Applications (2)	131. Course Name/Code
Lecture	132. Available Attendance Forms
Annual	133. Semester / Year
3 hours per week	134. Number of Credit Hours (Total)
14/2/2024	135. The history of preparation of this description
136. Course Objectives	
Teaching the student how to use ready-made systems and their applications in the completion of civil drawing.	

23.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives A1- Identify the AutoCAD program and how to install it. A2- Identify how to write dimensions on their fees and orders. A3- Know the principles of three-dimensional drawing and apply its orders. A4- Knowing how to construct a building with the work of longitudinal and transverse sections for it.
B - Skills objectives of the course. B1 – Using the AutoCAD program in drawing executive plans. B2 – The use of AutoCAD program in drawing three-dimensional buildings. B3- The skill of drawing cross and longitudinal sections of buildings. B4- The skill of adding lighting and brightness effects.
Teaching and learning methods
Theoretical lecture and practical application
Evaluation methods
40. Daily tests. 41. Quarterly and annual tests. 42. Practical tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Theoretical lecture and practical application
Evaluation methods
4. Daily tests. 5. Quarterly and annual tests. 6. Practical tests.

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

D1- The skill of how to apply drawing and revision commands in AutoCAD.

D2- The skill of making building models and sections from different viewing angles.

D3- The student's skill in using light effects and brightness to show the drawings more realistic.

24. Course Structure

Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Daily, quarterly, annual and practical tests	Lecture	General review of AutoCAD software.	Understanding and applying the lecture	3	The first
Daily, quarterly, annual and practical tests	Lecture	Redo Draw, Modify, Osnap menu apps.	Understanding and applying the lecture	3	Second
Daily, quarterly, annual and practical tests	Lecture	Complete dimensions, write, and command View.	Understanding and applying the lecture	3	Third
Daily, quarterly, annual and practical tests	Lecture	Principles of three-dimensional drawing, Surface Triple Cortical Drawing List .	Understanding and applying the lecture	3	Fourth
Daily, quarterly, annual and practical tests	Lecture	List of solid tripartite drawings Solids.	Understanding and applying the lecture	3	V
Daily, quarterly, annual and practical tests	Lecture	Applications on Extrad, Revolve _ Slice commands.	Understanding and applying the lecture	3	Sixth
Daily, quarterly, annual and practical tests	Lecture	Solidediting revisions.	Understanding and applying the lecture	3	Seventh
Daily, quarterly, annual and practical tests	Lecture	Applications about Union,Subtruct commands.	Understanding and applying the lecture	3	Eighth
Daily, quarterly, annual and practical tests	Lecture	Complete Solid editing commands.	Understanding and applying the lecture	3	Ninth
Daily, quarterly, annual and	Lecture	Create a simple building with three dimensions.	Understanding and applying the lecture	3	X

practical tests					
Daily, quarterly, annual and practical tests	Lecture	Completion of the previous building.	Understanding and applying the lecture	3	Eleventh
Daily, quarterly, annual and practical tests	Lecture	Making a model of a horizontal section in a building (residential house) and furnishing it.	Understanding and applying the lecture	3	Twelfth
Daily, quarterly, annual and practical tests	Lecture	Complete the previous form.	Understanding and applying the lecture	3	Thirteenth
Daily, quarterly, annual and practical tests	Lecture	Making a longitudinal section model in a building (residential house) with furnishing.	Understanding and applying the lecture	3	Fourteenth Fifteenth
Daily, quarterly, annual and practical tests	Lecture	Design principles Rendering.	Understanding and applying the lecture	3	Sixteenth
Daily, quarterly, annual and practical tests	Lecture	Add lighting to the scene.	Understanding and applying the lecture	3	Seventeenth
Daily, quarterly, annual and practical tests	Lecture	Add materials to surfaces.	Understanding and applying the lecture	3	Eighteenth
Daily, quarterly, annual and practical tests	Lecture	Manufacture of materials for demonstration.	Understanding and applying the lecture	3	Nineteenth
Daily, quarterly, annual and practical tests	Lecture	Other effects in the scene: night lighting, wallpapers.	Understanding and applying the lecture	3	20th
Daily, quarterly, annual and practical tests	Lecture	A project of making a model of a multi-storey building with the addition of other supplements: trees, cars, people .... A simple introduction to the programs parallel to	Understanding and applying the lecture	3	Twenty-first Twenty-ninth

		AutoCAD (3DMax).			
Daily, quarterly, annual and practical tests	Lecture	Using additional processors for the completed image _ AutoCAD by the program (Photo Shop).	Understandin g and applying the lecture	3	Xxx

25.Infrastructure	
Websites	1 Required textbooks
Websites	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
Websites	B Electronic references, websites

26.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	137. Educational institution
Department of Civil Technologies / Building and Construction Branch / Phase II	138. Scientific Department / Center
Technology of Construction	139. Course Name/Code
Lecture	140. Available Attendance Forms
Annual	141. Semester / Year
4 hours per week	142. Number of Credit Hours (Total)
14/2/2024	143. The history of preparation of this description
144. Course Objectives	
The student acquires manual skill and qualifies him to carry out construction and construction work to be qualified upon graduation	
To supervise the work.	

27.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives A1- Knowledge of brick construction work. A2- Knowledge of the work of linking English and German roads. A3- Knowledge of the work of solution and tightening of ceilings. A4- Knowledge of ficus and whiteness.
B - Skills objectives of the course. B1 – The skill of preparing for control and supervision in construction work B2 - The skill of controlling the thickness of ficus and whiteness B3 - The skill of mortar brushes. B4- The skill of earthworks for foundations.
Teaching and learning methods
Lecture
Evaluation methods
43. Daily tests. 44. Quarterly and annual tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture
Evaluation methods
32. Daily tests. 33. Quarterly and annual tests.

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

D1- The skill of supervision and follow-up of work.

D2- The skill of how to carry out works according to quantities.

D3- The skill of conducting construction work.

28. Course Structure

Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Daily, quarterly and annual exams	Lecture	Planning foundations, using surveying devices.	Understanding and applying the lecture	4	The first
Daily, quarterly and annual exams	Lecture	Excavations, and attribution of the sides of the excavation.	Understanding and applying the lecture	4	Second
Daily, quarterly and annual exams	Lecture	Work and reinforcement of the foundation for a wall or support.	Understanding and applying the lecture	4	Third
Daily, quarterly and annual exams	Lecture	Presentation of a scientific film of the works of the pillars, types and how they work and the machines used for that.	Understanding and applying the lecture	4	Fourth
Daily, quarterly and annual exams	Lecture	Brick construction, English bonding, German bonding, other types of brickwork.	Understanding and applying the lecture	4	V and the sixth
Daily, quarterly and annual exams	Lecture	Building by blocks (block, thermostone).	Understanding and applying the lecture	4	Seventh
Daily, quarterly and annual exams	Lecture	Wooden mold works, training in making wooden mold for column, bridge, stairs and roofs.	Understanding and applying the lecture	4	Eighth and ninth
Daily, quarterly and annual exams	Lecture	Plating regular and reinforced concrete and using manual knocking, as well as training in automatic mixing.	Understanding and applying the lecture	4	X
Daily, quarterly and annual exams	Lecture	A scientific visit to the work site of wooden mold and concrete pouring.	Understanding and applying the lecture	4	Eleventh
Daily, quarterly and annual exams	Lecture	Armament works, rebar, the correct way to use it, making reinforcing models for a column, roof and	Understanding and applying the lecture	4	Twelfth and thirteenth

		bridge.			
Daily, quarterly and annual exams	Lecture	Steel works, steel structural sections and aluminum profiles, and when they are not available, a scientific film was presented for that.	Understanding and applying the lecture	4	Fourteenth
Daily, quarterly and annual exams	Lecture	Application Balkashi and Steiker.	Understanding and applying the lecture	4	Fifteenth
Daily, quarterly and annual exams	Lecture	Moisture suppressant works, training on the use of some moisture inhibitors and how to use them optimally such as asphalt felt, bituminous materials and according to what is available.	Understanding and applying the lecture	4	Sixteenth and the seventeenth
Daily, quarterly and annual exams	Lecture	Presentation of a scientific film on thermal insulation materials: types, how to use them and their benefits.	Understanding and applying the lecture	4	Eighteenth
Daily, quarterly and annual exams	Lecture	Whiteness work, whiteness of a wall using plaster.	Understanding and applying the lecture	4	Nineteenth
Daily, quarterly and annual exams	Lecture	Ficus and prose works: 1. Using cement mortar. 2. Using cement mortar - Noura.	Understanding and applying the lecture	4	20th and the twenty-first
Daily, quarterly and annual exams	Lecture	Packaging works with furfur cashes.	Understanding and applying the lecture	4	Twenty-second
Daily, quarterly and annual exams	Lecture	Wall wrapping works, wall packaging using solutions.	Understanding and applying the lecture	4	Twenty-third
Daily, quarterly and annual exams	Lecture	Secondary ceilings (Moroccan), making a model of a Moroccan roof, training on how to install them.	Understanding and applying the lecture	4	Twenty-fourth
Daily, quarterly and annual exams	Lecture	Painting work (training on how to use it and the suitability of each type on	Understanding and applying the	4	Twenty-fifth

		the dyed surface).	lecture		
Daily, quarterly and annual exams	Lecture	Sanitary works: Training the student on how to extend sewage pipes, clear water pipes, basins sites, bathtubs, toilets, etc.	Understanding and applying the lecture	4	Twenty-sixth
Daily, quarterly and annual exams	Lecture	Electrical works: Training the student on the work of the wrangles and the correct termination around them and how to install some light bulbs (establishing a point of light and block).	Understanding and applying the lecture	4	Twenty-seventh
Daily, quarterly and annual exams	Lecture	Mechanical works: work of ventilation ducts (i.e. duct work for refrigeration).	Understanding and applying the lecture	4	Twenty-eighth
Daily, quarterly and annual exams	Lecture	Road works are the foundation and under the foundation of a road (as a model).	Understanding and applying the lecture	4	Twenty-ninth Thirty

29.Infrastructure	
Course Brochure	1 Required textbooks
Websites	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
	B Electronic references, websites ....

30.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	145. Educational institution
Department of Civil Technologies / Building and Construction Branch / Phase II	146. Scientific Department / Center
Concrete technology	147. Course Name/Code
Lecture + Application	148. Available Attendance Forms
Annual	149. Semester / Year
4 hours per week	150. Number of Credit Hours (Total)
14/2/ 2024	151. The history of preparation of this description
152. Course Objectives	
This course aims to obtain the student a skill to be used in the implementation of construction works to be able to	
Practicing the artistic works entrusted to him.	

31.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives A1- Identify concrete works in general. A2- Knowledge of concrete mixing and its uses. A3- Identify the design of concrete mixtures and calculate the quantities of materials. A4- Identify soft and hardened concrete tests.
B - Skills objectives of the course. B1 – Monitoring mixing ratios. B2 – Identify concrete additives. B3- Diagnosis of some causes of concrete degradation. B4- Identify the correct method of implementation.
Teaching and learning methods
Lecture
Evaluation methods
45. Daily tests. 46. Quarterly and annual tests. 47. Practical tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture
Evaluation methods
34. Daily tests. 35. Quarterly and annual tests. 36. Practical tests.
d. General and rehabilitative skills transferred (other skills related to employability and personal development). D1- The skill of how to prepare concrete mixtures. D2- The skill of differentiating between the types of concrete mixtures. D3- The skill of diagnosing the effect of aggregate properties on concrete

properties and degradation.

32. Course Structure

Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Daily, quarterly, annual and practical tests	Lecture	General review of the materials involved in concrete. Definitions: Ordinary concrete, Reinforced concrete, Site casting concrete, Premixed concrete, Precast concrete, Pre-Voltage Concrete.	Understanding and applying the lecture	4	The first
Daily, quarterly, annual and practical tests	Lecture	Production and mixing of concrete, types of mixing, types of mixers, mixing time.	Understanding and applying the lecture	4	Second
Daily, quarterly, annual and practical tests	Lecture	Properties of soft concrete: workability and texture. Tests for soft concrete: fluidity test, penetration test, precipitation test, compaction factor test, reshaping test with frequency vibrations, and study of factors affecting operability.	Understanding and applying the lecture	4	Third and fourth
Daily, quarterly, annual and practical tests	Lecture	Properties of soft concrete: bleeding, separation, plastic shrinkage, and unit weight in soft concrete.	Understanding and applying the lecture	4	Fifth and sixth
Daily, quarterly, annual and practical tests	Lecture	The effect of air vacuums and methods of measuring them, calculation of unit weight, output, cement factor in soft concrete, density equation and absolute volume equation for the calculation of concrete components.	Understanding and applying the lecture	4	Seventh and eighth
Daily, quarterly, annual and practical tests	Lecture	Transportation, pouring and compaction of ordinary concrete.	Understanding and applying the lecture	4	Ninth

Daily, quarterly, annual and practical tests	Lecture	Maturation (processing) of concrete, casting in hot and cold climates .	Understanding and applying the lecture	4	X
Daily, quarterly, annual and practical tests	Lecture	Pumping concrete, properties of concrete in pumping, devices used in pumping.	Understanding and applying the lecture	4	Eleventh
Daily, quarterly, annual and practical tests	Lecture	Ready-mixed concrete: definition, benefits and production methods, mixer trucks and shaker trucks.	Understanding and applying the lecture	4	Twelfth
Daily, quarterly, annual and practical tests	Lecture	Hardened concrete resistance, nature of concrete resistance, types of resistance.	Understanding and applying the lecture	4	Thirteenth
Daily, quarterly, annual and practical tests	Lecture	Concrete Strength Tests: Compressive Strength Test, Tensile Strength Test, (Bending Tensile Test and Fission Tensile Test).	Understanding and applying the lecture	4	Fourteenth
Daily, quarterly, annual and practical tests	Lecture	Factors affecting the resistance of hardened concrete. Factors affecting the results of hardened concrete resistance tests.	Understanding and applying the lecture	4	Fifteenth
Daily, quarterly, annual and practical tests	Lecture	Concrete shrinkage: drought shrinkage, contrast shrinkage, carbonization shrinkage.	Understanding and applying the lecture	4	Sixteenth
Daily, quarterly, annual and practical tests	Lecture	Concrete additives: definition, benefits and uses, the main materials involved in their composition, the observations to be taken when using them.	Understanding and applying the lecture	4	Seventeenth
Daily, quarterly, annual and practical tests	Lecture	Types of additives: accelerators, slowers, plasticizers, air vacuum emitters, silica dust, bubbles, moisture suppressant, weight loss... Etc.	Understanding and applying the lecture	4	Eighteenth

Daily, quarterly, annual and practical tests	Lecture	Design of concrete mixes: A- The American way.	Understanding and applying the lecture	4	Nineteenth
Daily, quarterly, annual and practical tests	Lecture	Design of concrete mixes: B - British way.	Understanding and applying the lecture	4	20th
Daily, quarterly, annual and practical tests	Lecture	Practical issues for the design of ordinary mixtures	Understanding and applying the lecture	4	Twenty-first
Daily, quarterly, annual and practical tests	Lecture	Applied issues for the design of mixtures containing additives.	Understanding and applying the lecture	4	Twenty-second
Daily, quarterly, annual and practical tests	Lecture	Non-destructive tests of concrete: radiation methods, hardness methods, pulse methods and resonance methods.	Understanding and applying the lecture	4	Twenty-third
Daily, quarterly, annual and practical tests	Lecture	The use of fibers in concrete such as fibers (plastic, glass, iron, wooden).	Understanding and applying the lecture	4	Twenty-fourth
Daily, quarterly, annual and practical tests	Lecture	The use of polymers (Polymers) in concrete, polymeric concrete.	Understanding and applying the lecture	4	Twenty-fifth
Daily, quarterly, annual and practical tests	Lecture	Special types of concrete: mass, light weight, heavy concrete, underwater concrete, pre-laid aggregate concrete (PAC).	Understanding and applying the lecture	4	Twenty-sixth
Daily, quarterly, annual and practical tests	Lecture	Special types of concrete: High Performance Concrete (HPC), High Strength Concrete (HSC), Self-Compacting Concrete (SCC), Effective Powder Concrete (RPC), Concrete Stacked (RCC).	Understanding and applying the lecture	4	Twenty-seventh Twenty-eighth
Daily, quarterly,	Lecture	Repair, maintenance and treatment of concrete in	Understanding and	4	Twenty-ninth

annual and practical tests		buildings using some modern materials such as epoxy and carbon fiber.	applying the lecture		Xxx

33.Infrastructure	
Concrete Technology, Muayad Nouri Khalaf and Hana Abed Youssef	1 Required textbooks
Websites	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
Websites	B Electronic references, websites ....

34.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	153. Educational institution
Department of Civil Technologies / Building and Construction Branch / Phase II	154. Scientific Department / Center
Soil mechanics	155. Course Name/Code
Lecture	156. Available Attendance Forms
Annual	157. Semester / Year
4 hours per week	158. Number of Credit Hours (Total)
14/2/2024	159. The history of preparation of this description
160. Course Objectives	
General Objective: Introducing the student to the mechanical properties of the soil through which he can estimate the risk of choosing	
The type of foundation and the effect of the installations erected on different types of soil.	
Course Objective: Qualifying the student and providing him with the necessary skill in soil classification and conducting the necessary tests	
on them (field or laboratory) and its relationship to the facilities on which they will be built.	

35.Course Outcomes and Methods of Teaching, Learning and Assessment
A- Cognitive objectives A1- Identify the types of soil, methods of formation and components with their physical properties. A2- Identify the classification of the soil through conducting various tests for it. A3- Study the different properties of the soil such as permeability and tolerable stresses. A4- Improving the properties of the soil in various ways to increase its durability. A5- Improving the soil locally by compaction and using appropriate sharpeners for each soil type. A6- Calculation of the bearing strength and resistance of soil shear and methods of measurement.
B - Skills objectives of the course. B1 – The skill of designing mixtures and conducting laboratory tests for classification. B2 – The skill of how to measure soil permeability in different ways. B3- The skill of choosing the appropriate type of foundation for each site.
Teaching and learning methods
Lecture
Evaluation methods
48.Daily tests. 49.Quarterly and annual tests. 50.Practical tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods

Lecture
Evaluation methods
37. Daily tests. 38. Quarterly and annual tests. 39. Practical tests.
d. General and rehabilitative skills transferred (other skills related to employability and personal development). D1- How to determine the soil variety by examining the gradient and plasticity limits. D2- How to determine the appropriate type of shear examination for each soil and its impact on soil durability. D3- How to choose the type of examination to measure permeability by determining the type of soil. D4- How to determine the appropriate type of foundation according to soil tolerance and shed loads.

36. Course Structure

Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Daily, quarterly, annual and practical tests	Lecture	Definition of soil, geological introduction to rock types, how soil is formed from rocks.	Understanding and applying the lecture	4	The first
Daily, quarterly, annual and practical tests	Lecture	Soil components, physical properties of the soil (moisture content, porosity, percentage of voids, wet and dry density, saturated and submerged density, specific weight).	Understanding and applying the lecture	4	Second
Daily, quarterly, annual and practical tests	Lecture	Granular analysis of soil (sieves method and condensate method).	Understanding and applying the lecture	4	Third and fourth
Daily, quarterly, annual and practical tests	Lecture	Soil plasticity properties (fluidity limit, plasticity limit, shrinkage limit).	Understanding and applying the lecture	4	V
Daily, quarterly, annual and practical tests	Lecture	Soil classification, using the Unified Classification System.	Understanding and applying the lecture	4	Sixth and the seventh
Daily, quarterly, annual and practical tests	Lecture	Permeability, coarse soil permeability, soft soil permeability, field and laboratory measurement methods.	Understanding and applying the lecture	4	Eighth and ninth
Daily, quarterly, annual and practical tests	Lecture	Types of soil stresses, total stress and effective stress.	Understanding and applying the lecture	4	X
Daily, quarterly, annual and practical tests	Lecture	Lateral Earth Pressure with an explanation of the types of filters.	Understanding and applying the lecture	4	Eleventh
Daily, quarterly,	Lecture	Soil Stabilization, Compaction.	Understanding and applying the	4	Twelfth

annual and practical tests			lecture		
Daily, quarterly, annual and practical tests	Lecture	Types of laboratory compaction tests, field compaction methods.	Understanding and applying the lecture	4	Thirteenth
Daily, quarterly, annual and practical tests	Lecture	Other methods to improve soil properties and stabilization (cement fixation, asphalt fixation, light fixation).	Understanding and applying the lecture	4	Fourteenth and fifteenth
Daily, quarterly, annual and practical tests	Lecture	Modern methods of soil stabilization (soil reinforcement, types of materials used in it and how to use them) (Reinforced Earth)	Understanding and applying the lecture	4	Sixteenth and the seventeenth
Daily, quarterly, annual and practical tests	Lecture	Californian endurance ratio (CBR) and its importance in the implementation of roads.	Understanding and applying the lecture	4	Eighteenth
Daily, quarterly, annual and practical tests	Lecture	Consolidation and its relationship to the occurrence of subsidence.	Understanding and applying the lecture	4	Nineteenth Twenty
Daily, quarterly, annual and practical tests	Lecture	The phenomenon of swelling and collapse.	Understanding and applying the lecture	4	Twenty-first
Daily, quarterly, annual and practical tests	Lecture	Definition of shear strength and its importance in calculating the amount of soil bearing capacity.	Understanding and applying the lecture	4	Twenty-second
Daily, quarterly, annual and practical tests	Lecture	Unconfined Compression Test .	Understanding and applying the lecture	4	Twenty-third
Daily, quarterly, annual and practical tests	Lecture	Shear Test (Direct)	Understanding and applying the lecture	4	Twenty-fourth
Daily, quarterly, annual and	Lecture	Triaxial Compression Test.	Understanding and applying the lecture	4	Twenty-fifth and the

practical tests					twenty-sixth
Daily, quarterly, annual and practical tests	Lecture	Field shear tests (In Situe Shear Test).	Understanding and applying the lecture	4	Twenty-seventh
Daily, quarterly, annual and practical tests	Lecture	Types of foundations and their relationship to the amount of soil tolerance.	Understanding and applying the lecture	4	Twenty-eighth
Daily, quarterly, annual and practical tests	Lecture	Shallow Foundation and Deep Foundation, such as piles.	Understanding and applying the lecture	4	Twenty-ninth
Daily, quarterly, annual and practical tests	Lecture	A simple introduction to the work of soil exploration (Soil Exploration), types of models, method of taking, preparation and depth of test pits to be implemented on site.	Understanding and applying the lecture	4	Xxx

37.Infrastructure	
Course Books	1 Required textbooks
Websites	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
Websites	B Electronic references, websites ....

38.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	1. Educational institution
Department of Civil Technologies / Building and Construction Branch / First Phase	2. Scientific Department / Center
Crimes of the defunct Baath Party	3. Course Name/Code
Lecture	4. Available Attendance Forms
Annual	5. Semester / Year
1 hours per week	6. Number of Credit Hours (Total)
14/2/2024	7. The history of preparation of this description
8. Course Objectives	
This course aims to introduce the student to Crimes of the defunct Baath Party, their objectives and development in different areas and the roles	

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	161. Educational institution
Department of Civil Technologies / Road Construction Branch / First Phase	162. Scientific Department / Center
English Language	163. Course Name/Code
Lecture	164. Available Attendance Forms
Annual	165. Semester / Year
2 hours per week	166. Number of Credit Hours (Total)
14/2/2024	167. The history of preparation of this description
168. Course Objectives	
This course aims to review the simplified basic grammar of the English language that he has previously studied in	
The previous stages, but in a lengthy manner, as well as the gradual introduction of the student to the atmosphere of technical terms related to	
Civil jurisdiction in its various branches.	

39.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives A1- Identify the terms used in civil engineering. A2- Understanding English sentences in terms of their structure and connotations. A3- Being able to write scientific technical reports in his field of competence.
B - Skills objectives of the course. B1 – Identify the elements of the sentence and its structure. B2 – Identify the parts of speech and the correct pronunciation style. B3- Identify the classification of verbs, nouns and prepositions. B4- Being able to form sentences and paragraphs in the field of civil engineering.
Teaching and learning methods
Lecture
Evaluation methods
51.Daily oral tests. 52.Quarterly and annual tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture
Evaluation methods
40.Daily oral tests. 41.Quarterly and annual tests.
d. General and rehabilitative skills transferred (other skills related to employability and personal development). D1- The ability to read technical terms in his specialization. D2- The ability to form sentences correctly grammatically and grammatically.

D3- Ability to write and read reports.

40. Course Structure					
Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Daily oral, quarterly and annual tests.	Lecture	A/ pronunciation: voiceless consonants B/ elements of sentence structure C/ patterns of sentences	Understanding and applying the lecture	2	The first
Daily oral, quarterly and annual tests.	Lecture	A/pronunciation : voiceless consonants (ii) B/ the part of speech: 1. Nouns 2.verbs 3. Adjectives 4. adverbs	Understanding and applying the lecture	2	Second
Daily oral, quarterly and annual tests.	Lecture	A/ pronunciation : voiced consonants (I) B/ the parts of speech : 1. articles 2. Demonstratives 3. Pronouns 4. Prepositions 5. Conjunctions 6. Interjections	Understanding and applying the lecture	2	Third
Daily oral, quarterly and annual tests.	Lecture	A/ pronunciation: voiced consonants (ii) B/ classification of verbs	Understanding and applying the lecture	2	Fourth
Daily oral, quarterly and annual tests.	Lecture	A/ pronunciation : pure vowels B/ pronouns (I)	Understanding and applying the lecture	2	V
Daily oral, quarterly and annual tests.	Lecture	A/pronunciation :d iphthongs B/pronounce (II)	Understanding and applying the lecture	2	Sixth
Daily oral, quarterly and annual tests.	Lecture	A/ types of questions B/genitives	Understanding and applying the lecture	2	Seventh
Daily oral, quarterly and annual tests.	Lecture	A/ the present simple tense B/the present continuous tense C/ the present perfect tense	Understanding and applying the lecture	2	Eighth
Daily oral, quarterly and annual tests.	Lecture	A/ the past simple tense B/ the past perfect tense C/ future	Understanding and applying the lecture	2	Ninth

Daily oral, quarterly and annual tests.	Lecture	A/ active and passive voice B/ the number system in English	Understanding and applying the lecture	2	X
Daily oral, quarterly and annual tests.	Lecture	A/punctuation	Understanding and applying the lecture	2	Eleventh
Daily oral, quarterly and annual tests.	Lecture	A/business letters B/tenders	Understanding and applying the lecture	2	Twelfth
Daily oral, quarterly and annual tests.	Lecture	Comprehensive paragraphs about the branches of civil engineering	Understanding and applying the lecture	2	XIII-XXX

41.Infrastructure	
Basic texts and curricula	1 Required textbooks
Websites	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
Websites	B Electronic references, websites ....

42.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	169. Educational institution
Department of Civil Technologies / Road Construction Branch / First Phase	170. Scientific Department / Center
Surveying (1)	171. Course Name/Code
Lecture	172. Available Attendance Forms
Annual	173. Semester / Year
4 hours per week	174. Number of Credit Hours (Total)
14/2/2024	175. The history of preparation of this description
176. Course Objectives	
Teaching the student the basics of space and its use for civil engineering purposes and making calculations related to it.	
As well as teaching the student how to measure horizontal distances, establish and drop columns, calculate the appropriate in addition to	
Drawing longitudinal and transverse sections of the road.	

43.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives A1- Awareness of the location and Surveying. A2- Classification of cadastral issues. A3- Learn to write reports. A4- Participation in teamwork.
B - Skills objectives of the course. B1 – Use of surveying devices and tools. B2 – Use the compass. B3- Use of scanning and leveling devices. B4- Extracting and calculating trends.
Teaching and learning methods
Lecture
Evaluation methods
53. Daily tests. 54. Quarterly and annual tests. 55. Practical tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture
Evaluation methods
42. Daily tests. 43. Quarterly and annual tests. 44. Practical tests.
d. General and rehabilitative skills transferred (other skills related to employability and personal development). D1- The ability to observe the governing points in the space. D2- The ability to determine the best place for monitoring. D3- The ability to standardize the results of the work.

44. Course Structure					
Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Daily, quarterly, annual and practical tests	Lecture	Definition of Surveying, its fields, its divisions, its uses, and units of measurement.	Understanding and applying the lecture	4	The first
Daily, quarterly, annual and practical tests	Lecture	Measuring horizontal distances, routing process, measuring horizontal distance on irregular slope ground.	Understanding and applying the lecture	4	Second
Daily, quarterly, annual and practical tests	Lecture	Measuring the horizontal distances on the lands with regular slopes (if the height difference is known, if the degree of slope of the earth is known, if the angle of slope of the earth is known).	Understanding and applying the lecture	4	Third
Daily, quarterly, annual and practical tests	Lecture	Erection and projection of columns (erection methods and dropping methods), how to overcome obstacles to guidance, measurement and guidance.	Understanding and applying the lecture	4	Fourth
Daily, quarterly, annual and practical tests	Lecture	Scanning with tape and lifting (cases of filler when lifting).	Understanding and applying the lecture	4	V
Daily, quarterly, annual and practical tests	Lecture	The planar panel has its parts, the methods of lifting the planar panel, the method of rays.	Understanding and applying the lecture	4	Sixth
Daily, quarterly, annual and practical tests	Lecture	The method of lifting with the front cross, the method of rotation, the error of the lock and how to correct it, the advantages of wiping with the flat plate and the disadvantages of wiping it.	Understanding and applying the lecture	4	Seventh
Daily, quarterly,	Lecture	Settlement definitions related to its purposes.	Understanding and applying the	4	Eighth

annual and practical tests			lecture		
Daily, quarterly, annual and practical tests	Lecture	How to calculate the levels of points by the method of the balance surface and solve examples.	Understanding and applying the lecture	4	Ninth
Daily, quarterly, annual and practical tests	Lecture	How to calculate the levels of points by the method of rise and fall and solve examples.	Understanding and applying the lecture	4	X
Daily, quarterly, annual and practical tests	Lecture	Double leveling The effect of the earth's spherical and optical refractions on the leveling work.	Understanding and applying the lecture	4	Eleventh
Daily, quarterly, annual and practical tests	Lecture	Inverted settlement Mutual settlement (reverse) with solving examples.	Understanding and applying the lecture	4	Twelfth
Daily, quarterly, annual and practical tests	Lecture	Sources of errors in the settlement work, degree of accuracy, amount of error allowed.	Understanding and applying the lecture	4	Thirteenth
Daily, quarterly, annual and practical tests	Lecture	Longitudinal sections, drawing the longitudinal section.	Understanding and applying the lecture	4	Fourteenth
Daily, quarterly, annual and practical tests	Lecture	cross sections, finding the levels of cross section points, drawing the cross section.	Understanding and applying the lecture	4	Fifteenth
Daily, quarterly, annual and practical tests	Lecture	Construction line Calculate the slope of the construction line, find the levels of the construction line if the slope is known, draw the proposed line for the project.	Understanding and applying the lecture	4	Sixteenth
Daily, quarterly, annual and practical tests	Lecture	How to calculate land Surveyings and cross sections using demarcation methods, mathematical laws and coordinates.	Understanding and applying the lecture	4	Seventeenth
Daily, quarterly,	Lecture	Calculate the volumes of the earth quantities for digging	Understanding and applying the	4	Eighteenth

annual and practical tests		and backfilling.	lecture		
Daily, quarterly, annual and practical tests	Lecture	Checking and adjusting the leveling device, balancing the settlement lines (leveling balancing).	Understanding and applying the lecture	4	Nineteenth
Daily, quarterly, annual and practical tests	Lecture	Contour lines, their properties, contour period, factors on which the contour period depends, contour space.	Understanding and applying the lecture	4	20th
Daily, quarterly, annual and practical tests	Lecture	Methods of setting contour lines (indirect methods), section method, checkpoint method, squares method (grid leveling).	Understanding and applying the lecture	4	Twenty-first
Daily, quarterly, annual and practical tests	Lecture	Drawing contour lines (calculation method and difference division method).	Understanding and applying the lecture	4	Twenty-second
Daily, quarterly, annual and practical tests	Lecture	Regressions Calculate the volumes of tanks (tanks) Drawing sections of contour lines.	Understanding and applying the lecture	4	Twenty-third
Daily, quarterly, annual and practical tests	Lecture	Calculation of Surveyings using the planometer.	Understanding and applying the lecture	4	Twenty-fourth
Daily, quarterly, annual and practical tests	Lecture	Local gravity abbreviated circular deviations.	Understanding and applying the lecture	4	Twenty-fifth
Daily, quarterly, annual and practical tests	Lecture	Scanning (lifting) using the compass and practical exercises on how to calculate the survey with the compass.	Understanding and applying the lecture	4	Twenty-sixth
Daily, quarterly, annual and practical tests	Lecture	Curves Horizontal curves of all kinds (circular and gradient) Elements of a simple circular curve.	Understanding and applying the lecture	4	Twenty-seventh
Daily, quarterly,	Lecture	Simple circular curve design (equations).	Understanding and applying the	4	Twenty-eighth

annual and practical tests			lecture		
Daily, quarterly, annual and practical tests	Lecture	Vertical curves .	Understanding and applying the lecture	4	Twenty-ninth
Daily, quarterly, annual and practical tests	Lecture	General Review.	Understanding and applying the lecture	4	Xxx

45.Infrastructure	
Course Books، Other	1 Required textbooks
Websites	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
Websites	B Electronic references, websites ....

46.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	177. Educational institution
Department of Civil Technologies / Road Construction Branch / First Phase	178. Scientific Department / Center
Workshop	179. Course Name/Code
Lecture- Workshops	180. Available Attendance Forms
Annual	181. Semester / Year
3 hours per week	182. Number of Credit Hours (Total)
14/2/2024	183. The history of preparation of this description
184. Course Objectives	
Acquire manual skill in the use of hand tools, measuring tools and operating machines necessary to prepare the student	
As a technician in the field of building and construction.	

47.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives A1- Basic principles of carpentry, maps, chips, shankara, alloys, structural steel and reinforcement. A2- Connecting the various pipes with their accessories (sanitary foundations). A3- Use of measuring tools.
B - Skills objectives of the course. B1 - Use of band saw, disc, grinder machine and press. B2 - The use of chips, shankara and piercing tools. B3- Use lathes. B4- The use of gas and electric welding tools.
Teaching and learning methods
Lecture (theoretical and practical)
Evaluation methods
Daily tests and an annual rate according to those practical daily exams.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture (theoretical and practical)
Evaluation methods
Daily tests and an annual rate according to those practical daily exams.
d. General and rehabilitative skills transferred (other skills related to employability and personal development). D1- Skill in dealing with building blocks and occupational safety. D2- Skill in the use of measuring instruments. D3- Accident prevention. D4- Skill in cutting and smoothing construction materials, punching and connecting steel with welding and screws.

48. Course Structure

Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
1- Carpentry Forms (3 weeks)					
Practical daily tests	Lecture	• The basic principles in carpentry models and identification of types of wood and its uses, types of models and carpentry and use in plumbing. • Correction of the model, conditions to be met in the correction of the model, the shrinkage coefficient on the executive drawing of simple models with one boundary and without a box • Used equipment, hand tools and mechanical equipment used, Chinese thickener machine, tape saw, rapper machine, sanding machine, transformer. • Practical training on the parts according to the operational fee on the marks.	Understanding and applying the lecture	3	The first
Practical daily tests	Lecture	Completion of training, finishing of the parts of the model and methods of assembly, its final dimensions	Understanding and applying the lecture	3	Second
Practical daily tests	Lecture	Composite models: explanation of multiple boundaries. Bucket boxes, executive drawing of the fund, the method of plumbing the	Understanding and applying the lecture	3	Third

		box, training on the preparation of the necessary model, drawing and shankrah parts of a composite model.			
2- Metal foundry (6 weeks)					
Practical daily tests	Lecture	Metal casting and its importance, the purpose of using castings in industry, the contents of the plumbing unit, industrial safety precautions in casting, the formation of a sand mold for a one-piece model in front of students. Molds and molds: types of sources, additives, mixing and adjusting processes, the use of sand mixer, the treatment of trembling sand, sand handling devices. Forming sand molds by manual method of one-piece model, forming a sand mold.	Understanding and applying the lecture	3	Fourth
Practical daily tests	Lecture	Sand mold for one-piece model with identification of estuaries and elevators, metal smelting and casting into a mold, extraction and cleaning of castings. Forming a mold using a massage box and drying it in a drying oven, forming a sand mold for a simple two-piece model with a heart.	Understanding and applying the lecture	3	V
Practical daily tests	Lecture	Forming a sand mold like the previous one with drilling the metal and pouring it into a mold and taking out the foundry and cleaning it, metal melting furnaces: types, characteristics, uses (rotary	Understanding and applying the lecture	3	Sixth

		furnace, tipper, and fixed).			
Practical daily tests	Lecture	Industrial safety equipment in casting and how to use it, metal casting in metal molds: Identifying the parts of metal molds, their benefits and how to extract castings from them, the casting of simple parts and other compounds in these molds	Understanding and applying the lecture	3	Seventh
Practical daily tests	Lecture	Sand mold plumbing for shaky models and composite with molds (these exercises are among the exercises that the student will complete their operation in other laboratories)	Understanding and applying the lecture	3	Eighth
Practical daily tests	Lecture	Sand mold casting in a productive way, training on the use of plumbing panels that contain more than one piece in one mold and have hearts, methods of cleaning castings with brushes, plumbing, files, grinding stones, steel balls, compressed air, rotating machines. Review and inspect castings, identify apparent defects and their causes, review the dimensions of castings and ensure that they conform to the required dimensions.	Understanding and applying the lecture	3	Ninth
3- Refrigerators & Maintenance (6 weeks)					
Practical daily tests	Lecture	• Industrial development and the role of refrigerators and the role of refrigerators in it. • Vernier foot: types and methods of	Understanding and applying the lecture	3	X

		measurement, how to make a vernier that reads the depth altimeter, Farajil. • The process of shankara: the base surfaces, the tools used, the materials of the demonstration fork, the shock fork, the man of justice, the leg of the shankara the guilt and the reproach, the right angle, the flowers of the shankara, the ordinary and sensitive shankar, the altimeter, the university protractor and the measurement of angles, a practical exercise that combines the operations of the shankara. • Files and cold process: types of files and their specifications, places, types, methods of linking artifacts to them, uses of files, method of cleaning files, cold process, exercise on the process of shankara and simple chips.			
Practical daily tests	Lecture	Cutting with a chainsaw: hand saw, saw weapon, fixation of the saw weapon, conditions to be met in the sawing process, saw cutting exercise Coronary process: types of embryos, embryo age and maintenance, types of manual hammer heads, hammerhead fixation method, exercise on crown	Understanding and applying the lecture	3	Eleventh

		process. Drilling and Burghala Process: Types of drills, types of prime, types of remers, how to perform piercing and bulguring operations, exercise on manual and mechanical drilling and bulgur operations after performing Shankara operations: types of screws, internal and external dental tables, training to perform different screw operations.			
Practical daily tests	Lecture	Various trainings on the work of the aforementioned refrigerators.	Understanding and applying the lecture	3	Twelfth
Practical daily tests	Lecture	The importance of maintenance of machinery and equipment, clarification of periodic and comprehensive maintenance operations, how to prepare reports for grinding drills and the use of bulgurs (fair and stolen) and the output of broken bulgur Different spindles, types, types of wear rollers, specifications, methods of installation and removal and stages of work	Understanding and applying the lecture	3	Thirteenth
Practical daily tests	Lecture	Types of filling and sealants, their uses, methods of fixing, removing and reviewing their work, types of valves and methods of work, detection and repair.	Understanding and applying the lecture	3	Fourteenth
Practical daily tests	Lecture	Speed boxes of all kinds, gear interlocking and inspection, detection of	Understanding and applying the	3	Fifteenth

		columns, rotors, connections, assembled installations, and identification of the procedures for disconnecting the electric powertrain.	lecture		
4- Welding (6 weeks)					
Practical daily tests	Lecture	Occupational safety and security precautions: gas welding equipment used, how to install and knock them, the work of other auxiliary gases and their specifications, welding wires, types and measurements, and other materials used, welding equipment, types of flame, method of ignition and control of the required flame, artifacts and cleaning windows required to weld.	Understanding and applying the lecture	3	Sixteenth
Practical daily tests	Lecture	Practical exercises: welding opposite surfaces, orthogonal surfaces, inclined surfaces, circle welding, longitudinal cutting, circular cutting, irregular shape cutting, electric arc welding, equipment used	Understanding and applying the lecture	3	Seventeenth
Practical daily tests	Lecture	Welding equipment, practical training on the use of electric arc in welding different surfaces, point and strip welding, equipment used of each type, electrodes and the method of installing them, practical training on the use of each type	Understanding and applying the lecture	3	Eighteenth

Practical daily tests	Lecture	Welding using argon gas: Doing exercises on welding artifacts using argon gas, welding point and tape practical training.	Understanding and applying the lecture	3	Nineteenth
Practical daily tests	Lecture	Gas cutting operations, equipment used and precautions to be provided	Understanding and applying the lecture	3	20th
Practical daily tests	Lecture	Combination drills using different cutting and welding processes	Understanding and applying the lecture	3	Twenty-first
5- Plumbing and blacksmithing (3 weeks)					
Practical daily tests	Lecture	Bending sheet cutting equipment, rolling machine, cardboard machine, manual tools, the use and shrinking of sheet sheets manually, manual and American pedalling and drawing method, simple singles, calculation of the individuality of cut and finished artifacts.	Understanding and applying the lecture	3	Twenty-second
Practical daily tests	Lecture	Training on calculating the solitary crosswork, doing an exercise for two cross cylinders, a cone with a cylinder for welding and assembling parts.	Understanding and applying the lecture	3	Twenty-third
Practical daily tests	Lecture	Blacksmithing, equipment used in blacksmithing, balls and their types, how to operate manual tools, machines used in mechanical blacksmithing, types of charcoal used Manual forging training to form ribbed and cylindrical products (square work, rectangle, hexagon, cylinder).	Understanding and applying the lecture	3	Twenty-fourth
6- Lathing (6 weeks)					

Practical daily tests	Lecture	Lathe, specifications, uses, accessories and installation methods Lathe operation Types of lathe pens using each of them	Understanding and applying the lecture	3	Twenty-fifth
Practical daily tests	Lecture	Turning operations: flat turning, adjustment, center work, simple graduated exercise on the use of measuring tools	Understanding and applying the lecture	3	Twenty-sixth
Practical daily tests	Lecture	Turning the internal and external loot in different ways with an explanation of the laws for each method, the work of an exercise for the external loot and another for the internal	Understanding and applying the lecture	3	Twenty-seventh
Practical daily tests	Lecture	The work of different teeth externally and internally (triangle, square, trapezoidal) Exercise work includes different types of teeth	Understanding and applying the lecture	3	Twenty-eighth
Practical daily tests	Lecture	Integrated turning works including previous turning operations and safety review Duplication between parts	Understanding and applying the lecture	3	Twenty-ninth
Practical daily tests	Lecture	Cutting speeds, selection and use of their tables	Understanding and applying the lecture	3	Xxx

49.Infrastructure	
Websites	1 Required textbooks
Websites	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
Websites	B Electronic references, websites ....

50.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	185. Educational institution
Department of Civil Technologies / Road Construction Branch / First Phase	186. Scientific Department / Center
Computer Applications (1)	187. Course Name/Code
Lecture	188. Available Attendance Forms
Annual	189. Semester / Year
3 hours per week	190. Number of Credit Hours (Total)
14/2/2024	191. The history of preparation of this description
192. Course Objectives	
Introducing the student to the Computer Applications (1) with an idea of its horizons and uses in different fields and the principles of programming	
And acquire the skill in the use of Computer Applications (1) and the application of previously prepared programs in his field of specialization. as well as the definition of	
Student using the AutoCAD operating system with applications in his field of specialization.	

51.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives A1- Knowledge of programming tools in the Computer Applications (1). A2- Know the application of coordinates. A3- Making 2D diagrams. A4- Knowing the work of icons.
B - Skills objectives of the course. B1 - Identify the parts of the Computer Applications (1). B2 - Identify icons and their work. B3- How to work on application programs. B4- Make 2D diagrams.
Teaching and learning methods
Lecture
Evaluation methods
56. Daily oral tests. 57. Written tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture
Evaluation methods
1. Daily oral tests. 2. Written tests.
d. General and rehabilitative skills transferred (other skills related to employability and personal development). D1- The student will be able to make two-dimensional diagrams. D2- The student will be able to work on the Computer Applications (1) interface. D3- The student should be able to work on the applied programs.

52. Course Structure

Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Oral and written exams	Lecture	Definition of computers: generations, components: hardware and software (system software and application programs).	Understanding and applying the lecture	3	The first
Oral and written exams	Lecture	* Windows operating system: the concept of the Windows system, its basic features and requirements, the operation of the system, the components of the home screen of the desktop, the concept of the icon, the method of dealing with mouse activities, the importance and components of the taskbar, taking advantage of Start to enter programs, exit the system and turn off the Computer Applications (1) (Shut Down). * The concept of the window for any program and identify its main components, dealing with desktop icons such as: (My Documents; My Computer ; Recycle Bin). * Identify (My Computer) in terms of disks, folders and file and how to deal with the format of floppy disks and copy folders and files, benefit from cutting and pasting and know the characteristics of disks, folders and files, dealing with the trash and how to	Understanding and applying the lecture	3	II-XV

		delete and retrieve files through what the trash can provides in this aspect. * Take advantage of the programs of the panel (Control panal) such as icon (Mouse) and icon (Display) and how to change the desktop background and control the screen saver and change its appearance to the desktop background and control the screen clipboard and change the appearance of window menus and colors, icon (Remove; Add ;p rogram) in Add and delete programs. * Take advantage of the (Run) option in the implementation of programs appropriately, as well as switch to the signal of the operating system (Ms-Dos) and deal with its commands. * Using entertainment program such as (Window Media Player) in playing movies. * Take advantage of additional programs (Accessories) such as Computer Applications (1) (Calculater). * Dealing with the drawing program (Paint) in creating, saving and retrieving fees through the orders it provides. * Handle the notes window (Notepaol; Wordpad) in writing, saving, retrieving, printing, changing the style of printing and formatting			

		texts. * Learn how to get help and its different methods.			
Oral and written exams	Lecture	Introduction to the AutoCAD program and explanation of the program's interface.	Understanding and applying the lecture	3	Sixteenth
Oral and written exams	Lecture	Screen Settings (Shap ; Grid Limits;).	Understanding and applying the lecture	3	Seventeenth
Oral and written exams	Lecture	Draw List	Understanding and applying the lecture	3	Eighteenth and nineteenth
Oral and written exams	Lecture	List of revisions (Amendment)	Understanding and applying the lecture	3	Twentieth and twenty-first
Oral and written exams	Lecture	List (Object shap)	Understanding and applying the lecture	3	Twenty-second
Oral and written exams	Lecture	Applications (Layers)	Understanding and applying the lecture	3	Twenty-third
Oral and written exams	Lecture	Dimensions	Understanding and applying the lecture	3	Twenty-fourth
Oral and written exams	Lecture	Writing	Understanding and applying the lecture	3	Twenty-fifth
Oral and written exams	Lecture	Store files and import files from other programs and export them.	Understanding and applying the lecture	3	Twenty-sixth
Oral and written exams	Lecture	Making (blocks) and importing parts of other programs.	Understanding and applying the lecture	3	Twenty-seventh
Oral and written exams	Lecture	Drawing a plan for a simple house	Understanding and applying the lecture	3	Twenty-eighth
Oral and written exams	Lecture	Drawing a section of a simple building	Understanding and	3	Twenty-ninth

			applying the lecture		
Oral and written exams	Lecture	Printing, cloning and taking out files on the printer and plotter.	Understanding and applying the lecture	3	Xxx

53.Infrastructure	
Websites	1 Required textbooks
Websites	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
Websites	B Electronic references, websites ....

54.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	193. Educational institution
Department of Civil Technologies / Road Construction Branch / First Phase	194. Scientific Department / Center
Human Rights and Democracy	195. Course Name/Code
Lecture	196. Available Attendance Forms
Annual	197. Semester / Year
2 hours per week	198. Number of Credit Hours (Total)
14/2/2024	199. The history of preparation of this description
200. Course Objectives	
This course aims to introduce the student to human rights, their objectives and development in different eras and the role of	
International organizations and public opinion in respecting and protecting human rights.	

55.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives A1- Identify the most important rights in various legislations. A2- Identifying human rights in Islam and man-made laws. A3- Identify the principle of equality in rights and duties. A4- Identify the concept of democracy and its types. A5- Identify the mechanism of separation in the democratic system A6- Identify the types of freedoms in the democratic system.
B - Skills objectives of the course. B1 – Identify the historical development of individual rights in various legislations. B2 – Identify the duties and rights of the individual. B3- Identify the various principles of human rights. B4- The democratic system and the mechanism of its implementation.
Teaching and learning methods
Lecture
Evaluation methods
58. Daily tests. 59. Quarterly and annual tests. 60. Style of discussion and dialogue.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture
Evaluation methods
4. Daily tests. 5. Quarterly and annual tests. 6. Style of discussion and dialogue.

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

D1- The ability to interact with the humanitarian community in accordance with the principles of human rights.

D2- The ability to apply the spirit and atmosphere of democracy in daily life.

56. Course Structure					
Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	Human rights, definition, objectives	Understanding and applying the lecture	2	The first
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	The roots and development of human rights in human history: human rights in antiquity and the Middle Ages	Understanding and applying the lecture	2	Second
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	Human rights in ancient civilizations, especially the civilization of Mesopotamia	Understanding and applying the lecture	2	Third
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	Human rights in divine laws with a focus on human rights in Islam	Understanding and applying the lecture	2	Fourth
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	Human rights in the Middle Ages: human rights in doctrines - schools and political theories - human rights in companies and their declarations - revolutions and constitutions (English documents - the American Revolution - the French Revolution - the Russian Revolution)	Understanding and applying the lecture	2	V
Daily Tests Quarterly and yearly	Lecture	The Right of Man in Contemporary and Modern History: International	Understanding and applying the lecture	2	Sixth

And the style of discussion and dialogue		Recognition of Human Rights since the First World War and the League/United Nations			
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	Regional recognition of human rights: European Convention on Human Rights 1950, American Convention on Human Rights 1969, African Charter on Human Rights 1981, Arab Charter on Human Rights 1994.	Understanding and applying the lecture	2	Seventh
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	NGOs and human rights (ICRC, Amnesty International, Human Rights Watch)	Understanding and applying the lecture	2	Eighth
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	National Human Rights Organizations	Understanding and applying the lecture	2	Ninth
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	Human rights in Iraqi constitutions between theory and reality.	Understanding and applying the lecture	2	X
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	The relationship between human rights and public freedoms 3- In the Universal Declaration of Human Rights 4- In regional charters and national constitutions	Understanding and applying the lecture	2	Eleventh and twelfth
Daily Tests Quarterly and yearly And the style of discussion	Lecture	Essential human rights and collective human rights	Understanding and applying the lecture	2	Thirteenth

and dialogue					
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	Economic, social and cultural human rights, civil and political rights	Understanding and applying the lecture	2	Fourteenth
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	Modern human rights: the right to development, the right to a clean environment, the right to solidarity, the right to religion	Understanding and applying the lecture	2	Fifteenth
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	Guarantees of respect and protection of human rights at the national level, guarantees in the Constitution and laws, guarantees in the principle of the rule of law	Understanding and applying the lecture	2	Sixteenth
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	Guarantees in constitutional oversight, guarantees in freedom of the press and public opinion, the role of non-governmental organizations in respecting and protecting human rights	Understanding and applying the lecture	2	Seventeenth
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	Guarantees, respect and protection of human rights at the international level: - The role of the United Nations and its specialized agencies in providing guarantees	Understanding and applying the lecture	2	Eighteenth
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	- Role of regional organizations (Arab League, European Union, African Union, Organization of American States, ASEAN) - The role of international, regional non-governmental	Understanding and applying the lecture	2	Nineteenth

		organizations and public opinion in respecting and protecting human rights			
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	- The general theory of freedoms: the origin of rights and freedoms, the position of the project on the declared rights and freedoms, the use of the term public freedoms	Understanding and applying the lecture	2	20th
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	The functional nature of the concept of public freedoms: philosophical considerations of the functional right, structural considerations of positive right, economic considerations and public freedoms	Understanding and applying the lecture	2	Twenty-first
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	The legal basis of the rule of law	Understanding and applying the lecture	2	Twenty-second and twenty-third
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	Regulation of public freedoms by public authorities	Understanding and applying the lecture	2	Twenty-fourth
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	Non-judicial litigation or grievance	Understanding and applying the lecture	2	Twenty-fifth
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	Judicial appeal, determining the responsibility of the state for its legitimate acts	Understanding and applying the lecture	2	Twenty-sixth
Daily Tests	Lecture	- The effect of dual	Understandin	2	Twenty-

Quarterly and yearly And the style of discussion and dialogue		elimination of public freedoms - Public freedoms under administrative jurisprudence	g and applying the lecture		seventh
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	Equality: the historical development of the administrative concept	Understandin g and applying the lecture	2	Twenty-eighth
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	The modern development of the idea of equality	Understandin g and applying the lecture	2	Twenty-ninth
Daily Tests Quarterly and yearly And the style of discussion and dialogue	Lecture	- Gender equality - Equality between individuals according to their beliefs and race	Understandin g and applying the lecture	2	Xxx

57.Infrastructure	
Basic texts and curricula	1 Required textbooks
Websites	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
Websites	B Electronic references, websites ....

58.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	201. Educational institution
Department of Civil Technologies / Road Construction Branch / First Phase	202. Scientific Department / Center
Engineering Drawing	203. Course Name/Code
Lecture	204. Available Attendance Forms
Annual	205. Semester / Year
6 hours per week	206. Number of Credit Hours (Total)
14/2/2024	207. The history of preparation of this description
208. Course Objectives	
The general objective of the course is to teach the student the principles of preliminary engineering drawing and computer drawing programs efficiently and quickly	
To enable him to express his thoughts by him. The goal of the course is to qualify the student to draw and read maps	
Engineering with knowledge of architectural and structural terms used in maps.	

59.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives A1- Identify the basics of engineering drawing. A2- Identify the principles of projection and the method of placing dimensions. A3- Learn how to draw the isometric perspective. A4- Learn how to use the AutoCAD program in completing the drawing.
B - Skills objectives of the course. B1 – Drawing basic and composite shapes using engineering processes manually and computerly. B2 – Drawing projections of stereoscopic shapes and placing dimensions on them manually and using the Computer Applications (1). B3- Drawing stereoscopic shapes and drawing sections. B4- Drawing an integrated painting.
Teaching and learning methods
Lecture
Evaluation methods
61.Practical daily tests. 62.Quarterly tests. 63.Annual tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture
Evaluation methods
45.Practical daily tests. 46.Quarterly tests. 47.Annual tests.

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

D1- Ability to solve problems in the field of work.

D2- The ability to form and propose experimental solutions to a problem.

D3- The ability to compare between alternative solutions to face a specific problem for the purpose of choosing the best solution.

D4- The ability to record data briefly to facilitate interaction with it.

60. Course Structure					
Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Daily and quarterly practical tests	Lecture	Basics of engineering drawing, tools used, painting fixation, types of fonts, writing in geometric calligraphy	Understanding and applying the lecture	6	The first
Daily and quarterly practical tests	Lecture	Engineering processes, halving of a straight piece, halving of an angle, straightening with a circle with an arc, connecting two lines with an arc, drawing of an equilateral, pentagonal, hexagonal, straight tangent to two circles inside and out, tangent arc to the inside and outside of the circles	Understanding and applying the lecture	6	Second
Daily and quarterly practical tests	Lecture	Ellipse, application of drawing geometric shapes using basic geometric processes	Understanding and applying the lecture	6	Third
Daily and quarterly practical tests	Lecture	Principles of projection, method of placing dimensions on the drawing, exercises on projection	Understanding and applying the lecture	6	Fourth
Daily and quarterly practical tests	Lecture	Drawing the isometric perspective	Understanding and applying the lecture	6	V
Daily and quarterly practical tests	Lecture	Finding the Missing Projection with Isometric Perspective Drawing	Understanding and applying the lecture	6	Sixth
Daily and quarterly practical tests	Lecture	heckler	Understanding and applying the lecture	6	Seventh
Daily and quarterly	Lecture	AutoCAD applications, redefining the relationship	Understanding and	6	Eighth

practical tests		between AutoCAD program and its use in the completion of two-dimensional drawings (2D) and three-dimensional (3D) and opening a new page in the program, determining the drawing field (Limits), drawing a painting frame and a data table, with the application of writing inside the spreadsheet (Text)	applying the lecture		
Daily and quarterly practical tests	Lecture	Identify the types of fonts and how to obtain and use them in the AutoCAD program by placing them in multiple layers (Layers), different colors and different thickness (Line weight)	Understanding and applying the lecture	6	Ninth
Daily and quarterly practical tests	Lecture	Draw basic geometric shapes, triangle, pentagon, hexagons and polygons in general, ellipse, connecting two lines with a circle sector, connecting two circles with an arc by instructing (((circle Ttr connecting a line with a circle with an arc in the same way	Understanding and applying the lecture	6	X
Daily and quarterly practical tests	Lecture	Drawing composite geometric shapes and mechanical parts (applications to engineering processes)	Understanding and applying the lecture	6	Eleventh and twelfth
Daily and quarterly practical tests	Lecture	Drawing projections of stereoscopic shapes and placing dimensions on them using multiple layers	Understanding and applying the lecture	6	Thirteenth and fourteenth
Daily and	Lecture	Drawing projections of	Understanding and	6	Fifteenth

quarterly practical tests		stereoscopic shapes using different colors of lines and different thicknesses by changing properties	applying the lecture		
Daily and quarterly practical tests	Lecture	Find the missing projection and continue drawing the projections	Understanding and applying the lecture	6	Sixteenth
Daily and quarterly practical tests	Lecture	Explanation of the principles of grouping projections into body shapes	Understanding and applying the lecture	6	Seventeenth
Daily and quarterly practical tests	Lecture	Continue to take applications on the assembly of projections of container shapes on inclined surfaces, projections or cylindrical cavities	Understanding and applying the lecture	6	Eighteenth and nineteenth
Daily and quarterly practical tests	Lecture	Explain the principles of cutting and their importance in engineering drawing with methods of fragmentation	Understanding and applying the lecture	6	20th
Daily and quarterly practical tests	Lecture	Continue to take applications on sections of shapes containing overlapping cavities	Understanding and applying the lecture	6	Twenty one and twenty second
Daily and quarterly practical tests	Lecture	Initial applications on the computer using AutoCAD program in order to implement simple exercises in geometric operations, drawing polygons and principles of vertical projection	Understanding and applying the lecture	6	Twenty-third, twenty-fourth, and twenty-fifth
Daily and quarterly practical tests	Lecture	Principles of architectural drawing - the importance of architectural drawing, types of architectural maps and how to organize them	Understanding and applying the lecture	6	Twenty-sixth
Daily and quarterly practical tests	Lecture	Architectural symbols with applications on them	Understanding and applying the lecture	6	Twenty-seventh
Daily and	Lecture	Draw a horizontal chart of a	Understandin		Twenty-

quarterly practical tests		small house at a scale of 1:100	g and applying the lecture		eighth
Daily and quarterly practical tests	Lecture	Drawing sections in foundations and walls	Understandin g and applying the lecture		Twenty-ninth
Daily and quarterly practical tests	Lecture	Drawing a façade of a house with enlarged vertical sections	Understandin g and applying the lecture		Xxx

61.Infrastructure	
Course Books، Other	1 Required textbooks
Websites	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
Websites	B Electronic references, websites ....

62.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	209. Educational institution
Department of Civil Technologies / Road Construction Branch / First Phase	210. Scientific Department / Center
Mathematics	211. Course Name/Code
Lecture	212. Available Attendance Forms
Annual	213. Semester / Year
3 hours per week	214. Number of Credit Hours (Total)
14/2/2024	215. The history of preparation of this description
216. Course Objectives	
Developing the student's ability to use mathematics in practical applications and benefit from it in engineering lessons	
Other.	
The student learned the different ways of representing equations, mathematical laws, and different data to form curves.	
In a graph and with different types of charts fit and purpose of drawing.	

63.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives A1- Identify the function, its statement and types. A2- Mastering the concept of purpose and how to find it. A3- Identify sequences and their types. A4- Identify logarithms, base, positive and negative graphs. A5- Know the concept of integration and the laws of integration. A6- Identify statistical processes and statistical methods.
B - Skills objectives of the course. B1 - Plots the function and determines the domain and range. B2 – Finds the end of algebraic and trigonometric functions. B3- Solves applied problems on numerical and geometric sequences. B4- Uses the laws of integration to solve problems.
Teaching and learning methods
Lecture
Evaluation methods
64.Oral daily tests. 65.Quarterly tests. 66.Annual tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture
Evaluation methods
48.Oral daily tests. 49.Quarterly tests. 50.Annual tests.
d. General and rehabilitative skills transferred (other skills related to employability and personal development). D1- The ability to solve problems in the field of work by taking advantage of logic and mathematical reasoning.

D2- The ability to form and propose experimental solutions to a problem. D3- The ability to compare between alternative solutions to face a specific problem for the purpose of choosing the best solution. D4- The ability to record data briefly to facilitate interaction with it.

64.Infrastructure	
	1 Required textbooks
Websites	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
Websites	B Electronic references, websites ....

65.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

10. Course Structure

Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Oral and written exams	Lecture	Matrices, determinants, properties.	Understanding and applying the lecture	3	The first
Oral and written exams	Lecture	Solving linear equations, Cramer method, applications to determinants, solving force analysis equations.	Understanding and applying the lecture	3	Second
Oral and written exams	Lecture	Vectors, vector analysis, vector and scalar quantities, vector algebra, vector arithmetic operations in space.	Understanding and applying the lecture	3	Third
Oral and written exams	Lecture	Unit of orthogonal vectors, vector scale, scalar and directional multiplication, applications of vectors, calculation of moment applications, work.	Understanding and applying the lecture	3	Fourth
Oral and written exams	Lecture	Function, trigonometric functions and trigonometric relations, logarithmic function.	Understanding and applying the lecture	3	V
Oral and written exams	Lecture	Exponential function, hyperbolic functions, their applications.	Understanding and applying the lecture	3	Sixth
Oral and written exams	Lecture	Ends, the end of algebraic and trigonometric functions, applications to the end.	Understanding and applying the lecture	3	Seventh
Oral and written exams	Lecture	Sequences .	Understanding and applying the lecture	3	Eighth

Oral and written exams	Lecture	Differentiation, derivative, derivative of algebraic functions, chain rule.	Understanding and applying the lecture	3	Ninth
Oral and written exams	Lecture	Curved functions, the derived standard function with higher orders.	Understanding and applying the lecture	3	X
Oral and written exams	Lecture	The derivative of trigonometric functions, the derivative of logarithmic functions.	Understanding and applying the lecture	3	Eleventh
Oral and written exams	Lecture	The derivative of the exponential function, the derivative of hyperbolic functions.	Understanding and applying the lecture	3	Twelfth
Oral and written exams	Lecture	Derivative applications, tangent and column equation, speed, acceleration and magnification.	Understanding and applying the lecture	3	Thirteenth
Oral and written exams	Lecture	Exponents and logarithms .	Understanding and applying the lecture	3	Fourteenth
Oral and written exams	Lecture	General physical and engineering applications, drawing functions.	Understanding and applying the lecture	3	Fifteenth
Oral and written exams	Lecture	Integral, indefinite integral, integration of algebraic functions, and logarithm.	Understanding and applying the lecture	3	Sixteenth
Oral and written exams	Lecture	Integration of exponential and trigonometric functions.	Understanding and applying the lecture	3	Seventeenth
Oral and written exams	Lecture	Definite integral, applications of definite integral, Surveying under the curve, Surveying between curves.	Understanding and applying the lecture	3	Eighteenth
Oral and written exams	Lecture	Rotational volumes, curved arc length.	Understanding and applying the	3	Ninetee

			lecture		nth
Oral and written exams	Lecture	Physical and engineering applications (work, momentum, momentum, inertial momentum).	Understanding and applying the lecture	3	20th
Oral and written exams	Lecture	General methods of integration include compensation and segmentation.	Understanding and applying the lecture	3	Twenty-first and the twenty second
Oral and written exams	Lecture	Use of partial, exponential and logarithmic fractions.	Understanding and applying the lecture	3	Twenty-third
Oral and written exams	Lecture	Numerical methods in integration, trapezoidal rule, base (calculation of the volume of earth quantities and the Surveying of longitudinal sections).	Understanding and applying the lecture	3	Twenty-fourth
Oral and written exams	Lecture	Solving discrete, homogeneous and linear differential equations with their different applications within the field of specialization.	Understanding and applying the lecture	3	Twenty-fifth
Oral and written exams	Lecture	Find the value of the highest or lowest point of the vertical curve.	Understanding and applying the lecture	3	Twenty-sixth
Oral and written exams	Lecture	Complex numbers, addition subtraction, multiplication, division.	Understanding and applying the lecture	3	Twenty-seventh
Oral and written exams	Lecture	Polar formula, conversion of the polar formula to algebra and vice versa, forces and roots, representation of roots by drawing.	Understanding and applying the lecture	3	Twenty-eighth
Oral and	Lecture	Statistical operations,	Understandin	3	Twenty-

written exams		frequency distributions, histogram, frequency curve, arithmetic mean, range, standard deviation, variance and relativity.	g and applying the lecture		ninth Thirty

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	217. Educational institution
Department of Civil Technologies / Road Construction Branch / First Phase	218. Scientific Department / Center
Construction materials and asphalt	219. Course Name/Code
Lecture	220. Available Attendance Forms
Annual	221. Semester / Year
5 hours per week	222. Number of Credit Hours (Total)
14/2/2024	223. The history of preparation of this description
224. Course Objectives	
Introducing the student to the properties of construction materials, especially those that are used in road works and methods of production	
And the correct way to use it and qualify the student to do standard tests to know the extent of conformity of the material	
Structural specifications as well as introducing the student to asphalt, its types, sources, properties and uses	
and standard tests and general specifications.	

11.Course Outcomes and Methods of Teaching, Learning and Assessment
A- Cognitive objectives A1- Knowing the types of bricks and concrete blocks, their properties and methods of classification. A2- Knowing the properties and methods of examining the light, plaster and various types of gypsum products in Iraq. A3- Knowledge of the properties and methods of inspection of metal materials, as well as knowledge of the various types of rebar according to specifications A4- Knowing the types of bituminous materials and their use. A5- Knowing the specifications of the aggregates used in the asphalt mixture. A6- Knowing the types of asphalt mixtures and their specifications and conducting tests to evaluate asphalt materials.
B - Skills objectives of the course. B1 – Knowing the properties of building materials in addition to mastering laboratory testing methods. B2 – Knowing the properties of asphalt materials, types of asphalt mixtures and their laboratory tests, and comparing them with Iraqi standard specifications.
Teaching and learning methods
Lecture
Evaluation methods
67.Daily oral tests. 68.Written tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods

Lecture
Evaluation methods
69.Daily oral tests. 70.Written tests.
d. General and rehabilitative skills transferred (other skills related to employability and personal development). D1- The student will be able to receive samples of materials on the site and conduct the required tests on them. D2- The student will be able to prepare reports on the extent to which the tests conform to the approved specifications. D3- The student acquires the sensory dimension to prevent problems that can affect the properties of materials and their continuity.

12.Infrastructure	
Construction materials / Galal Bashir Sarsam, Saeed Abdel Aal	1 Required textbooks
Construction materials / Galal Bashir Sarsam, Saeed Abdel Aal	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
Websites	B Electronic references, websites

13.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

10. Course Structure					
Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Oral and written exams	Lecture	General description of the physical properties and standard specifications of building materials and their uses.	Understanding and applying the lecture	5	The first
Oral and written exams	Lecture	Bricks, types, industry, uses, properties.	Understanding and applying the lecture	5	II and III
Oral and written exams	Lecture	Concrete blocks, their industry, uses, properties.	Understanding and applying the lecture	5	Fourth
Oral and written exams	Lecture	Binders, their types, binder materials that resist moisture.	Understanding and applying the lecture	5	V
Oral and written exams	Lecture	Binders that are not resistant to moisture, plaster, its industry, uses, specifications.	Understanding and applying the lecture	5	Sixth
Oral and written exams	Lecture	Wood, its types, its uses in railway and road works.	Understanding and applying the lecture	5	Seventh
Oral and written exams	Lecture	Iron, its types, methods of manufacture.	Understanding and applying the lecture	5	Eighth
Oral and written exams	Lecture	Structural steel, its uses and specifications.	Understanding and applying the lecture	5	Ninth
Oral and	Lecture	Concrete slabs,	Understandin	5	X

written exams		types, specifications, use in road pavements.	g and applying the lecture		
Oral and written exams	Lecture	A visit to the center for construction materials.	Understandin g and applying the lecture	5	Eleventh
Oral and written exams	Lecture	Concrete pipes, their industry, specifications, use in road works.	Understandin g and applying the lecture	5	Twelfth
Oral and written exams	Lecture	Paints, types, use in road planning and traffic signs.	Understandin g and applying the lecture	5	Thirteenth
Oral and written exams	Lecture	Stones, their classification and types and the use of stones in the work of elevation.	Understandin g and applying the lecture	5	Fourteenth
Oral and written exams	Lecture	Epoxy, its types, properties, uses and use in roads.	Understandin g and applying the lecture	5	Fifteenth
Oral and written exams	Lecture	An overview of asphalt materials.	Understandin g and applying the lecture	5	Sixteenth
Oral and written exams	Lecture	Qirene materials, types and uses.	Understandin g and applying the lecture	5	Seventeenth
Oral and written exams	Lecture	Sources and specifications of bindings.	Understandin g and applying the lecture	5	Eighteenth
Oral and written exams	Lecture	Physical properties of asphalt, cement asphalt, properties and uses.	Understandin g and applying the lecture	5	Nineteenth
Oral and	Lecture	Trimmed asphalt,	Understandin	5	20th

written exams		properties, types, uses.	g and applying the lecture		
Oral and written exams	Lecture	Emulsified asphalt, its types and uses.	Understandin g and applying the lecture	5	Twenty-first
Oral and written exams	Lecture	Standard tests for bituminous materials.	Understandin g and applying the lecture	5	Twenty-second
Oral and written exams		Determination of the category of gear - screening examination.	Understandin g and applying the lecture	5	Twenty-third
Oral and written exams		Determination of the grade of gear - examination of viscosity.	Understandin g and applying the lecture	5	Twenty-fourth
Oral and written exams		Determination of the grade of gear - examination of ductility by the method of the ball and the ring.	Understandin g and applying the lecture	5	Twenty-fifth
Oral and written exams		Other tests to determine the properties of cement asphalt.	Understandin g and applying the lecture	5	Twenty-sixth
Oral and written exams		Tack coat and Prime coat , properties and uses of each coating.	Understandin g and applying the lecture	5	Twenty-seventh
Oral and written exams		Effect of heat on asphalt properties, loss test by heat effect	Understandin g and applying the lecture	5	Twenty-eighth

Oral and written exams		Tar paste (mastic) Uses and properties Standard checks	Understanding and applying the lecture	5	Twenty-ninth
Oral and written exams		Bituminous felt, properties, uses and field tests.	Understanding and applying the lecture	5	Xxx

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	225. Educational institution
Department of Civil Technologies / Road Construction Branch / First Phase	226. Scientific Department / Center
Engineering Mechanics	227. Course Name/Code
Lecture	228. Available Attendance Forms
annual	229. Semester / Year
3 hours per week	230. Number of Credit Hours (Total)
14/2/2024	231. The history of preparation of this description
232. Course Objectives	
Teaching the student to analyze the forces and loads applied to the bodies and extract the stresses and emotions as a result of these	
Forces and their relationship to the materials that make up these bodies, analysis of installations and finding forces and stresses in their parts as a result of	
Shedding external loads and its relationship to the dimensions of the different parts in engineering facilities to withstand stresses	
Safely and economically ruled.	

11.Course Outcomes and Methods of Teaching, Learning and Assessment
A- Cognitive objectives A1- Identify how to analyze and find the result of forces of all kinds. A2- Identify how to calculate the loads imposed on the bodies and extract stresses and strains. A3- Identify how to analyze the facilities and find the forces and stresses in their different parts. A4- Identify the types of bridges and draw graphs of shear forces and bending moments.
B - Skills objectives of the course. B1 - Analysis and calculation of the outcome of forces of all kinds. B2 - Calculation of loads on bodies and extraction of stresses and strains. B3- Analysis of facilities and finding forces and stresses in their different parts. B4- Drawing graphs of shear forces and bending moments.
Teaching and learning methods
Lecture
Evaluation methods
71.Oral daily tests. 72.Quarterly tests. 73.Annual tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture
Evaluation methods
51.Oral daily tests. 52.Quarterly tests.

53.Annual tests.
d. General and rehabilitative skills transferred (other skills related to employability and personal development). D1- Ability to solve problems in the field of work. D2- The ability to form and propose experimental solutions to a problem. D3- The ability to compare between alternative solutions to face a specific problem for the purpose of choosing the best solution. D4- The ability to record data briefly to facilitate interaction with it.

12.Infrastructure	
Course Books	1 Required textbooks
Websites	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
Websites	B Electronic references, websites ....

13.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

10. Course Structure

Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Oral and written exams	Lecture	Definition of mechanics, general review of physics topics related to the subject, trigonometric ratios of angles, vector and non-vector quantities.	Understanding and applying the lecture	3	The first
Oral and written exams	Lecture	Analysis and composition of forces, the law of triangle of forces and polygon of forces.	Understanding and applying the lecture	3	II and III
Oral and written exams	Lecture	The determination of the forces.	Understanding and applying the lecture	3	Fourth
Oral and written exams	Lecture	Doubles .	Understanding and applying the lecture	3	V
Oral and written exams	Lecture	The result of converging, non-converging and parallel forces.	Understanding and applying the lecture	3	Sixth and the seventh
Oral and written exams	Lecture	Scattered weights.	Understanding and applying the lecture	3	Eighth
Oral and written exams	Lecture	Equilibrium, drawing a free body diagram, equilibrium equations, equilibrium in the case of converging, non-convergent and parallel forces.	Understanding and applying the lecture	3	Ninth and the tenth
Oral and written exams	Lecture	Types of tributaries, types of supports, balance in tributaries.	Understanding and applying the lecture	3	Eleventh
Oral and written exams	Lecture	Gables, analysis of gables by joint and section methods.	Understanding and applying the lecture	3	Twelfth and thirteenth

Oral and written exams	Lecture	Friction, nature of friction, theory of friction, laws of friction, types of friction, general applications.	Understanding and applying the lecture	3	Fourteenth and fifteenth
Oral and written exams	Lecture	Centers of gravity of simple and complex geometric shapes and their applications.	Understanding and applying the lecture	3	Sixteenth and seventeenth
Oral and written exams	Lecture	The moment of inertial of simple and composite geometric shapes and their applications.	Understanding and applying the lecture	3	Eighteenth and nineteenth
Oral and written exams	Lecture	Introduction to material resistance, definition of stresses and their types, safety coefficient.	Understanding and applying the lecture	3	20th
Oral and written exams	Lecture	Applications on stresses.	Understanding and applying the lecture	3	Twenty-first
Oral and written exams	Lecture	Emotion, Hooke's law, the relationship of emotion to stress.	Understanding and applying the lecture	3	Twenty-second
Oral and written exams	Lecture	Lateral strain, Poisson ratio, applications on strain and stress.	Understanding and applying the lecture	3	Twenty-third
Oral and written exams	Lecture	Shear diagrams and bending moments for bridges, how to form equations of shear change and bending moment.	Understanding and applying the lecture	3	Twenty-fourth
Oral and written exams	Lecture	Applications on drawing shear equations and bending moment of bridges	Understanding and applying the lecture	3	Twenty-fifth
Oral and written exams	Lecture	Bending stress for bridges and their applications.	Understanding and applying the lecture	3	Twenty-sixth and the twenty-

					seventh
Oral and written exams	Lecture	Shear stress for bridges and their applications.	Understanding and applying the lecture	3	Twenty-eighth
Oral and written exams	Lecture	Bridges made of two different materials and their applications.	Understanding and applying the lecture	3	Twenty-ninth Thirty

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	233. Educational institution
Department of Civil Technologies / Road Construction Branch / Phase II	234. Scientific Department / Center
English Language	235. Course Name/Code
Lecture	236. Available Attendance Forms
annual	237. Semester / Year
1 hour per week	238. Number of Credit Hours (Total)
14/2/2024	239. The history of preparation of this description
240. Course Objectives	
This course aims to teach the student sentence tenses in the English language and speech sections in addition to expressions	
Social and traits.	

10.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives A1- Identify the terms used in civil engineering. A2- Understanding English sentences in terms of their structure and connotations. A3- Being able to write scientific technical reports in his field of competence.
B - Skills objectives of the course. B1 – Identify the elements of the sentence and its structure. B2 – Identify the parts of speech and the correct pronunciation style. B3- Identify the classification of verbs, nouns and prepositions. B4- Being able to form sentences and paragraphs in the field of civil engineering.
Teaching and learning methods
Lecture
Evaluation methods
74. Daily oral tests. 75. Quarterly and annual tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture
Evaluation methods
54. Daily oral tests. 55. Quarterly and annual tests.

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

D1- The ability to read technical terms in his specialization.

D2- The ability to form sentences correctly grammatically and grammatically.

D3- Ability to write and read reports.

11. Course Structure					
Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Daily oral, quarterly and annual tests.	Lecture	Tenses- Questions- Using a Bilingual Dictionary	Understanding and applying the lecture	1	First and second
Daily oral, quarterly and annual tests.	Lecture	Present Tenses-have/have got	Understanding and applying the lecture	1	Third and fourth
Daily oral, quarterly and annual tests.	Lecture	Past Tenses –Word Formation- Time Expressions	Understanding and applying the lecture	1	Fifth and sixth
Daily oral, quarterly and annual tests.	Lecture	Much/Many- Some/Any- a Few, a Little , a Lot of- articles- shopping- prices	Understanding and applying the lecture	1	VII-IX
Daily oral, quarterly and annual tests.	Lecture	Verb Patterns 1- Future Forms – Hot verbs- How do you feel?	Understanding and applying the lecture	1	Tenth and eleventh
Daily oral, quarterly and annual tests.	Lecture	What.... like?- Comparatives and Superlative – Synonyms and Antonyms- Directions	Understanding and applying the lecture	1	Twelfth and thirteenth
Daily oral, quarterly and annual tests.	Lecture	Present Perfect- For , Since- adverbs , word pairs – Short Answers	Understanding and applying the lecture	1	Fourteenth and fifteenth
Daily oral, quarterly and annual tests.	Lecture	Have(got)to – should/must- words that go together- at the doctors	Understanding and applying the lecture	1	XVI-XVIII
Daily oral, quarterly and annual tests.	Lecture	Time Clauses- if- Hot Verbs – in a hotel	Understanding and applying the lecture	1	Nineteenth and Twenty
Daily oral, quarterly and annual tests.	Lecture	Verb Patterns 2 – manage to, used to _-ed /-ing adjective – Exclamations	Understanding and applying the lecture	1	Twenty one and twenty second
Daily oral, quarterly and annual tests.	Lecture	Passives- Verbs and Nouns that go together- notices	Understanding and applying the lecture	1	Twenty-third and twenty-fourth

Daily oral, quarterly and annual tests.	Lecture	Second Conditional- might- phrasal verbs – social expressions2	Understanding and applying the lecture	1	Twenty-fifth and twenty-sixth
Daily oral, quarterly and annual tests.	Lecture	Present Perfect Continuous- word formation – adverbs- telephoning	Understanding and applying the lecture	1	Twenty-seventh and twenty-eighth
Daily oral, quarterly and annual tests.	Lecture	Past Perfect – Reported Statements- saying goodbye	Understanding and applying the lecture	1	Twenty-ninth and thirty-ninth

12.Infrastructure	
Basic texts and curricula	1 Required textbooks
Websites	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
Websites	B Electronic references, websites ....

13.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	241. Educational institution
Department of Civil Technologies / Road Construction Branch / Phase II	242. Scientific Department / Center
Surveying (2)	243. Course Name/Code
Lecture	244. Available Attendance Forms
annual	245. Semester / Year
4 hours per week	246. Number of Credit Hours (Total)
14/2/2024	247. The history of preparation of this description
248. Course Objectives	
This course aims to teach the student on the use of angle measuring devices (theodolite) and practical applications.	
The various for this device with raising polygons, beams, triangulation works, dropping curves and the rest of the works that	
He needs it in civil works.	

14.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives A1- Identify the surveying devices (theodolite) and how to install it. A2- Learn how to measure and correct angles. A3- Knowledge of theoretical applications in angle calculations for different polygons. A4- Knowledge of theoretical applications in the calculations of the elements of horizontal and vertical curves.
B - Skills objectives of the course. B1 – The use of theodolite devices in the work of surveying and lifting beams. B2 – The use of theodolite devices in measurements and ribbing works in roads. B3- Dropping and lifting roads. B4- Projecting vertical and horizontal curves.
Teaching and learning methods
Theoretical lecture and practical application
Evaluation methods
76. Daily tests. 77. Quarterly and annual tests. 78. Practical tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Theoretical lecture and practical application
Evaluation methods
7. Daily tests. 8. Quarterly and annual tests. 9. Practical tests.

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

D1- The skill of how to develop engineering works through advanced modern devices.

D2- The student's skill in using surveying equipment.

D3- The student's skill in working in engineering projects through learning in the field of surveying.

15. Course Structure

Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Daily, quarterly, annual and practical tests	Lecture	Definitions of theodolite parts / parts, uses, types, installation of the device, reading the horizontal and vertical directions of different types.	Understanding and applying the lecture	4	The first
Daily, quarterly, annual and practical tests	Lecture	Checking and adjusting the theodolite device for all types of vertical and horizontal examinations and then finding the device constant.	Understanding and applying the lecture	4	Second
Daily, quarterly, annual and practical tests	Lecture	Methods of measuring angles with theodolite device.	Understanding and applying the lecture	4	Third
Daily, quarterly, annual and practical tests	Lecture	Ribbing, types of polygons, their purposes, uses.	Understanding and applying the lecture	4	Fourth
Daily, quarterly, annual and practical tests	Lecture	Measure and correct the internal horizontal angles of a closed polygon.	Understanding and applying the lecture	4	V
Daily, quarterly, annual and practical tests	Lecture	Methods of measuring the horizontal distances of the sides of a polygon.	Understanding and applying the lecture	4	Sixth
Daily, quarterly, annual and practical tests	Lecture	Draw closed and open polygons.	Understanding and applying the lecture	4	Seventh
Daily, quarterly, annual and practical tests	Lecture	Lifting the beams of the polygons with theodolite and tape device.	Understanding and applying the lecture	4	Eighth
Daily, quarterly,	Lecture	calculate horizontal and vertical components of	Understanding and applying the	4	Ninth

annual and practical tests		polygon sides and calculate coordinates.	lecture		
Daily, quarterly, annual and practical tests	Lecture	Calculate horizontal components, vertical components and coordinates of an open polygon.	Understanding and applying the lecture	4	X
Daily, quarterly, annual and practical tests	Lecture	Methods of measuring vertical angles with theodolite device.	Understanding and applying the lecture	4	Eleventh
Daily, quarterly, annual and practical tests	Lecture	Find the height of a building (target) that can be reached using the theodolite device	Understanding and applying the lecture	4	Twelfth
Daily, quarterly, annual and practical tests	Lecture	Finding the height of a building (target) that cannot be reached using theodolite device	Understanding and applying the lecture	4	Thirteenth
Daily, quarterly, annual and practical tests	Lecture	Finding the height of a building (target) by measuring three angles of rise or fall in the theodolite device	Understanding and applying the lecture	4	Fourteenth
Daily, quarterly, annual and practical tests	Lecture	Curves / types, horizontal curves types (circle and fold)	Understanding and applying the lecture	4	Fifteenth
Daily, quarterly, annual and practical tests	Lecture	Elements of the horizontal curve (elements of a simple circular curve) and the equations used in the design of a simple circular curve	Understanding and applying the lecture	4	Sixteenth
Daily, quarterly, annual and practical tests	Lecture	Draw a path with its horizontal curves.	Understanding and applying the lecture	4	Seventeenth
Daily, quarterly, annual and practical tests	Lecture	Convex and concave main curves / their elements / calculation of the length of the vertical curve, calculations related to them	Understanding and applying the lecture	4	Eighteenth
Daily, quarterly, annual and	Lecture	Projection of the vertical curve on the ground	Understanding and applying the lecture	4	Nineteenth

practical tests					
Daily, quarterly, annual and practical tests	Lecture	Triangulation, its purposes, use, selection of triangulation points, triangulation networks.	Understanding and applying the lecture	4	20th
Daily, quarterly, annual and practical tests	Lecture	Measuring the base line for triangulation and making fortifications for tape measurement.	Understanding and applying the lecture	4	Twenty-first
Daily, quarterly, annual and practical tests	Lecture	Measuring the horizontal angles of the triangulation network, calculations and making the necessary fortifications for the triangulation network.	Understanding and applying the lecture	4	Twenty-second
Daily, quarterly, annual and practical tests	Lecture	Tachometric survey, types of tachometer devices.	Understanding and applying the lecture	4	Twenty-third
Daily, quarterly, annual and practical tests	Lecture	Ribbing by leveling with a tachiometric device	Understanding and applying the lecture	4	Twenty-fourth
Daily, quarterly, annual and practical tests	Lecture	Ribbing leveling with a pediatric device Telescope	Understanding and applying the lecture	4	Twenty-fifth
Daily, quarterly, annual and practical tests	Lecture	Identify electronic measuring devices and how to use them to measure horizontal and vertical distances of several types.	Understanding and applying the lecture	4	Twenty-sixth
Daily, quarterly, annual and practical tests	Lecture	Triangulation using side lengths of triangles measured by electronic devices	Understanding and applying the lecture	4	Twenty-seventh
Daily, quarterly, annual and practical tests	Lecture	A general project on the construction of a road with the horizontal and vertical curves necessary to complete it with its drawing.	Understanding and applying the lecture	4	Twenty-eighth, twenty-ninth and thirtieth

16.Infrastructure

Textbook + Other Books	1 Required textbooks
Websites	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
Websites	B Electronic references, websites ....

17.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	249. Educational institution
Department of Civil Technologies / Road Construction Branch / Phase II	250. Scientific Department / Center
Quantity Surveying	251. Course Name/Code
Lecture	252. Available Attendance Forms
Annual	253. Semester / Year
3 hours per week	254. Number of Credit Hours (Total)
14/2/2024	255. The history of preparation of this description
256. Course Objectives	
Enabling the student to complete the quantitative surveying of road works and estimate the cost of the paragraphs of the works as well as the completion of	
Site arms for the implementing establishments and workers and providing him with the necessary information from the contracts for the implementation of projects	
and how to implement them.	

18.Course Outcomes and Methods of Teaching, Learning and Assessment
A- Cognitive objectives A1 - Identify the work of the arms for road works. A2- Knowledge of the works of the arms for the work of the pipe arches. A3- Identify the works of the arms for sewage works. A4- Identify the scheduling work for projects.
B - Skills objectives of the course. B1 – Preparing scheduling for projects. B2 – Carrying out arms for earthworks. B3- Carrying out asphalt works. B4- Identifying the quantities of construction materials.
Teaching and learning methods
Lecture
Evaluation methods
79.Daily tests. 80.Quarterly and annual tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture
Evaluation methods
56.Daily tests. 57.Quarterly and annual tests.

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

D1 - The skill of how to prepare mixtures procedure arms.

D2- The skill of how to prepare bills of quantities.

D3- The skill of how to calculate contractors' advances.

D4- How to follow up the work of projects.

19. Course Structure

Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Daily, quarterly and annual exams	Lecture	General introduction to guessing, specifications, contracting contracts and their types	Understanding and applying the lecture	3	The first
Daily, quarterly and annual exams	Lecture	Definitions of guessing, arms, how to collect information, preliminary investigations before guessing, and the bases on which the guess is based	Understanding and applying the lecture	3	Second
Daily, quarterly and annual exams	Lecture	Types of guessing / guessing work, machinery, tools, expenses, profit and unforeseen work.	Understanding and applying the lecture	3	Third
Daily, quarterly and annual exams	Lecture	Bills of quantities and price analysis (materials + work) according to units of volumes, Surveyings, lengths, numbers and wholesale using Computer Applications (1)	Understanding and applying the lecture	3	Fourth
Daily, quarterly and annual exams	Lecture	Analyzing prices, organizing bills of quantities for road works and their specifications, and carrying out a site pretext for those works	Understanding and applying the lecture	3	V
Daily, quarterly and annual exams	Lecture	How to calculate the volumes of earthworks for roads, canals and dams in different ways and identify the types of flexible and solid roads	Understanding and applying the lecture	3	Sixth and seventh
Daily, quarterly and annual exams	Lecture	Bills of quantities and price analysis for the works of the pipe barrages	Understanding and applying the lecture	3	Eighth and ninth
Daily, quarterly and annual exams	Lecture	A site pretext for the work of the barrages and identifying their	Understanding and applying the	3	X

		specifications	lecture		
Daily, quarterly and annual exams	Lecture	Bills of quantities and price analysis for box barrage works	Understanding and applying the lecture	3	Eleventh and twelfth
Daily, quarterly and annual exams	Lecture	Bills of quantities and price analysis for sewage works, identification of their engineering and technical specifications, and carrying out a site pretext for them	Understanding and applying the lecture	3	Thirteenth and fourteenth
Daily, quarterly and annual exams	Lecture	Identify technical, private and general specifications and identify the conditions and specifications for civil engineering contracting	Understanding and applying the lecture	3	Fifteenth and sixteenth
Daily, quarterly and annual exams	Lecture	How to evaluate and tender form, contract forms, instructions for contractors regarding fines, advances and bids	Understanding and applying the lecture	3	Seventeenth and eighteenth
Daily, quarterly and annual exams	Lecture	Exercises on fines and contractor advances	Understanding and applying the lecture	3	nineteenth and twenty
Daily, quarterly and annual exams	Lecture	The use of international standards with a focus on following Iraqi standards	Understanding and applying the lecture	3	Twenty-first and second
Daily, quarterly and annual exams	Lecture	Tables of quantities and price analysis of railway works and carrying out a site pretext for these works using the Computer Applications (1) in organizing tables	Understanding and applying the lecture	3	Third and Twenty-fourth
Daily, quarterly and annual exams	Lecture	Familiarization with the duties of the project manager, the schedule of work submission with following the method of network plans C.P.M and schemes were in the implementation of engineering projects	Understanding and applying the lecture	3	Fifth and twenty-sixth
Daily,	Lecture	Bills of quantities and price	Understandin	3	Seventh

quarterly and annual exams		analysis for bridge works and carrying out concrete slabs for field works	g and applying the lecture		and Twenty-eighth
Daily, quarterly and annual exams	Lecture	Making a site pretext for a small road with arches and approaches using the Computer Applications (1) with the shield and drawing	Understandin g and applying the lecture	3	Twenty-ninth and thirty-ninth

20.Infrastructure	
Course Book	1 Required textbooks
Websites	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
Websites	B Electronic references, websites

10.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	257. Educational institution
Department of Civil Technologies / Road Construction Branch / Phase II	258. Scientific Department / Center
Project	259. Course Name/Code
Lecture and application	260. Available Attendance Forms
Annual	261. Semester / Year
2 hours per week	262. Number of Credit Hours (Total)
14/2/2024	263. The history of preparation of this description
264. Course Objectives	
Teaching the student how to prepare scientific and applied research and projects in various fields of work. as well as teaching	
The student how to search for scientific sources and how to conduct research and projects with the help of specialized professors	
In the department and the use of the department's and institute's laboratory equipment and the use of state departments if required according to the nature of	
Project.	

11.Course Outcomes and Methods of Teaching, Learning and Assessment
A- Cognitive objectives A1- Identify the research problem, its causes and solutions. A2- Know how to search in specialized sources and websites. A3- Know how to direct research in a scientific way. A4- Know how to write the research in a scientific way.
B - Skills objectives of the course. B1 – The skill of conducting and implementing research in a scientific manner and according to specialization. B2 – The skill of employing laboratories and equipment available for the purpose of research. B3- The skill of using the computer in developing data and results. B4- Comparing the results with previous research in the same discipline.
Teaching and learning methods
Lecture
Evaluation methods
81.Oral tests. 82.Monthly and quarterly evaluation. 83.Annual discussion.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture
Evaluation methods
58.Oral tests. 59.Monthly and quarterly evaluation.

60.Annual discussion.
d. General and rehabilitative skills transferred (other skills related to employability and personal development). D1- Know how to develop scientific solutions to the problems facing him in civil disciplines. D2- Knowing how to benefit from previous research in the same discipline. D3- Know how to analyze factors and influences to solve problems in civil disciplines. D4- Know how to conclude and analyze the reasons.

12.Course Structure					
Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Oral, quarterly and annual exams and annual discussion	Lecture	Explain the idea of the topic, the materials used, the proposed implementation method, the practical implementation of the project, and the analysis and discussion of the results obtained	Understand, apply and write a project	2	I-XXXI

13.Infrastructure	
There isn't any	1 Required textbooks
Websites	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
Websites	B Electronic references, websites ....

14.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	265. Educational institution
Department of Civil Technologies / Road Construction Branch / Phase II	266. Scientific Department / Center
Highway construction	267. Course Name/Code
Lecture	268. Available Attendance Forms
annual	269. Semester / Year
3 hours per week	270. Number of Credit Hours (Total)
14/2/2024	271. The history of preparation of this description
272. Course Objectives	
The course aims to teach the student the scientific engineering and technical methods of business and specifications for the establishment of	
Rigid and flexible roads with the study of road problems and maintenance methods.	

15.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives A1- Identify the types of roads (flexible and rigid). A2- Knowing the types of materials used. A3- Identify the characteristics of roads and their problems. A4- Identify the road layers for each type.
B - Skills objectives of the course. B1 – The skill of designing asphalt mixtures. B2 – The skill of designing solid roads. B3- The skill of conducting the process of analyzing the components of the flexible road.
Teaching and learning methods
Lecture
Evaluation methods
84. Daily tests. 85. Quarterly and annual tests. 86. Practical tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture
Evaluation methods
61. Daily tests. 62. Quarterly and annual tests. 63. Practical tests.
d. General and rehabilitative skills transferred (other skills related to employability and personal development). D1- The skill of preparing the appropriate mixtures for each type of method. D2- The skill of finding the ideal mixing ratios.

D3- The skill of diagnosing failed and successful mixtures according to the approved specifications.

16. Course Structure

Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Daily, quarterly, annual and practical tests	Lecture	A brief history of the development of road construction in terms of raw materials and methods of road implementation		3	The first
Daily, quarterly, annual and practical tests	Lecture	Dividing the roads into flexible and rigid and comparing each of them in terms of composition, resistance and road age		3	Second
Daily, quarterly, annual and practical tests	Lecture	Flexible roads / introduction to the components of flexible roads, their characteristics, general specifications of flexible road layers, the role of asphalt as a binder, adhesive coatings, types, properties and components.		3	Third, fourth and fifth
Daily, quarterly, annual and practical tests	Lecture	The effect of the characteristics of the natural earth (Sub grade) in the subject of road construction and in determining the thickness of the tiling layers, and the effect of the characteristics of the layer (Sub base) (sub-foundation layer) and technical specifications in terms of gradient and coefficients of softness and fluidity and the impact of this on road performance and failures.		3	Sixth, seventh and eighth
Daily, quarterly, annual and practical tests	Lecture	The theory of weight distribution during the layers of the flexible road and the behavior of flexible tiling under the influence of		3	Ninth and tenth

		weights (axial and tire weight)			
Daily, quarterly, annual and practical tests	Lecture	Classification of heavy and light vehicles that travel on the road in terms of the number of axles and how to calculate and convert traffic volumes to standard axial weights.		3	Eleventh and twelfth
Daily, quarterly, annual and practical tests	Lecture	Introduction to Flexible Tiling Design Methods and Implementation Method, Group Guide Method, AASHTO Method		3	Third and fourteenth
Daily, quarterly, annual and practical tests	Lecture	Steel tiling, properties of its components, types of joints, rebar.		3	Fifth and sixteenth
Daily, quarterly, annual and practical tests	Lecture	Introduction to steel tiling design methods and execution method		3	Seventh and eighteenth
Daily, quarterly, annual and practical tests	Lecture	Methods of draining water from the road, modern methods in the design of filters for road works, protection of roads from the influence of water influence through the layers of the road		3	Nineteenth and Twenty
Daily, quarterly, annual and practical tests	Lecture	How to evaluate road performance, failures in flexible roads		3	Twenty-first and second
Daily, quarterly, annual and practical tests	Lecture	Reasons for the failure of flexible methods, the reasons for the failure of each case		3	Twenty-third
Daily, quarterly, annual and practical tests	Lecture	Methods of periodic maintenance of roads, road furniture and methods of implementation		3	Twenty-fourth and twenty-fifth
Daily, quarterly,	Lecture	Evaluation of solid road performance, failure		3	Twenty-sixth and

annual and practical tests		solutions in solid roads			twenty-seventh
Daily, quarterly, annual and practical tests	Lecture	Causes of failures in solid roads		3	Twenty-eighth
Daily, quarterly, annual and practical tests	Lecture	Maintenance program for hard roads, shoulder and roadside problems and their treatment		3	Twenty-ninth and thirty-ninth

17.Infrastructure	
Course Books	1 Required textbooks
Websites	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
Websites	B Electronic references, websites

18.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	273. Educational institution
Department of Civil Technologies / Road Construction Branch / Phase II	274. Scientific Department / Center
Computer Applications (2)	275. Course Name/Code
Lecture	276. Available Attendance Forms
Annual	277. Semester / Year
3 hours per week	278. Number of Credit Hours (Total)
14/2/2024	279. The history of preparation of this description
280. Course Objectives	
Teaching the student how to use ready-made systems and their applications in the completion of civil drawing.	

19.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives A1- Identify the AutoCAD program and how to install it. A2- Identify how to write dimensions on their drawingss and orders. A3- Know the principles of three-dimensional drawing and apply its orders. A4- Knowing how to construct a building with the work of longitudinal and transverse sections for it.
B - Skills objectives of the course. B1 – Using the AutoCAD program in drawing executive plans. B2 – The use of AutoCAD program in drawing three-dimensional buildings. B3- The skill of drawing cross and longitudinal sections of buildings. B4- The skill of adding lighting and brightness effects.
Teaching and learning methods
Theoretical lecture and practical application
Evaluation methods
87. Daily tests. 88. Quarterly and annual tests. 89. Practical tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Theoretical lecture and practical application
Evaluation methods
10. Daily tests. 11. Quarterly and annual tests. 12. Practical tests.

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

D1- The skill of how to apply drawing and revision commands in AutoCAD.

D2- The skill of making building models and sections from different viewing angles.

D3- The student's skill in using light effects and brightness to show the drawings more realistic.

20. Course Structure

Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Daily, quarterly, annual and practical tests	Lecture	General review of AutoCAD software.	Understanding and applying the lecture	3	The first
Daily, quarterly, annual and practical tests	Lecture	Redo Draw, Modify, Osnap menu apps.	Understanding and applying the lecture	3	Second
Daily, quarterly, annual and practical tests	Lecture	Complete dimensions, write, and command View.	Understanding and applying the lecture	3	Third
Daily, quarterly, annual and practical tests	Lecture	Principles of three-dimensional drawing, Surface Triple Cortical Drawing List .	Understanding and applying the lecture	3	Fourth
Daily, quarterly, annual and practical tests	Lecture	List of solid tripartite drawings Solids.	Understanding and applying the lecture	3	V
Daily, quarterly, annual and practical tests	Lecture	Applications on Extrad, Revolve _ Slice commands.	Understanding and applying the lecture	3	Sixth
Daily, quarterly, annual and practical tests	Lecture	Solidediting revisions.	Understanding and applying the lecture	3	Seventh
Daily, quarterly, annual and practical tests	Lecture	Applications about Union,Subtruct commands.	Understanding and applying the lecture	3	Eighth
Daily, quarterly, annual and practical tests	Lecture	Complete Solid editing commands.	Understanding and applying the lecture	3	Ninth
Daily, quarterly, annual and	Lecture	Create a simple building with three dimensions.	Understanding and applying the lecture	3	X

practical tests					
Daily, quarterly, annual and practical tests	Lecture	Completion of the previous building.	Understanding and applying the lecture	3	Eleventh
Daily, quarterly, annual and practical tests	Lecture	Making a model of a horizontal section in a building (residential house) and furnishing it.	Understanding and applying the lecture	3	Twelfth
Daily, quarterly, annual and practical tests	Lecture	Complete the previous form.	Understanding and applying the lecture	3	Thirteenth
Daily, quarterly, annual and practical tests	Lecture	Making a longitudinal section model in a building (residential house) with furnishing.	Understanding and applying the lecture	3	Fourteenth Fifteenth
Daily, quarterly, annual and practical tests	Lecture	Design principles Rendering.	Understanding and applying the lecture	3	Sixteenth
Daily, quarterly, annual and practical tests	Lecture	Add lighting to the scene.	Understanding and applying the lecture	3	Seventeenth
Daily, quarterly, annual and practical tests	Lecture	Add materials to surfaces.	Understanding and applying the lecture	3	Eighteenth
Daily, quarterly, annual and practical tests	Lecture	Manufacture of materials for demonstration.	Understanding and applying the lecture	3	Nineteenth
Daily, quarterly, annual and practical tests	Lecture	Other effects in the scene: night lighting, wallpapers.	Understanding and applying the lecture	3	20th
Daily, quarterly, annual and practical tests	Lecture	A project of making a model of a multi-storey building with the addition of other supplements: trees, cars, people .... A simple introduction to the programs parallel to	Understanding and applying the lecture	3	Twenty-first Twenty-ninth

		AutoCAD (3DMax).			
Daily, quarterly, annual and practical tests	Lecture	Using additional processors for the completed image _ AutoCAD by the program (Photo Shop).	Understanding and applying the lecture	3	Xxx

21.Infrastructure	
Websites	1 Required textbooks
Websites	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
Websites	B Electronic references, websites ....

22.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	281. Educational institution
Department of Civil Technologies / Road Construction Branch / Phase II	282. Scientific Department / Center
Concrete technology	283. Course Name/Code
Lecture + Application	284. Available Attendance Forms
Annual	285. Semester / Year
4 hours per week	286. Number of Credit Hours (Total)
14/2/2024	287. The history of preparation of this description
288. Course Objectives	
This course aims to obtain the student a skill to be used in the implementation of construction works to be able to	
Practicing the artistic works entrusted to him.	

23.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives A1- Identify concrete works in general. A2- Knowledge of concrete mixing and its uses. A3- Identify the design of concrete mixtures and calculate the quantities of materials. A4- Identify soft and hardened concrete tests.
B - Skills objectives of the course. B1 – Monitoring mixing ratios. B2 – Identify concrete additives. B3- Diagnosis of some causes of concrete degradation. B4- Identify the correct method of implementation.
Teaching and learning methods
Lecture
Evaluation methods
90. Daily tests. 91. Quarterly and annual tests. 92. Practical tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture
Evaluation methods
64. Daily tests. 65. Quarterly and annual tests. 66. Practical tests.
d. General and rehabilitative skills transferred (other skills related to employability and personal development). D1- The skill of how to prepare concrete mixtures. D2- The skill of differentiating between the types of concrete mixtures. D3- The skill of diagnosing the effect of aggregate properties on concrete

properties and degradation.

24. Course Structure					
Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Daily, quarterly, annual and practical tests	Lecture	General principles about concrete (definition, composition, terminology, properties).		4	The first
Daily, quarterly, annual and practical tests	Lecture	Portland cement, its industry, chemical composition, types		4	Second
Daily, quarterly, annual and practical tests	Lecture	Properties of cement: softness, weight loss by combustion, cement stability, hydration temperature, initial and final cohesion time, compressive durability, tensile strength.		4	Third
Daily, quarterly, annual and practical tests	Lecture	Types of cement (Portland cement and its types, natural cement, expansion cement, alumina cement) and the specifications of each type.		4	Fourth
Daily, quarterly, annual and practical tests	Lecture	Concrete aggregates, sources, types, classification		4	V
Daily, quarterly, annual and practical tests	Lecture	Aggregate tests: modeling methods, moisture content, specific weight, compact and non-compacted unit of weight, gradiency, porosity, absorbability, abrasion, surface concrete particle shape, sand inflation).		4	Sixth and seventh
Daily, quarterly, annual and practical tests	Lecture	Water, properties of water used in concrete, aggregate washing water, maturation water		4	Eighth
Daily, quarterly, annual and	Lecture	Properties of soft concrete: workability and texture.		4	Ninth

practical tests					
Daily, quarterly, annual and practical tests	Lecture	Tests for soft concrete: fluidity test, penetration test, precipitation test, compaction factor test, reshaping test with frequency vibrations, and study of factors affecting operability.		4	X
Daily, quarterly, annual and practical tests	Lecture	Properties of soft concrete: bleeding, separation, shrinkage, and unit weight in soft concrete.		4	Eleventh
Daily, quarterly, annual and practical tests	Lecture	The effect of air vacuums and methods of measurement, calculation of unit weight, output, cement factor in soft concrete.		4	Twelfth
Daily, quarterly, annual and practical tests	Lecture	Hardened concrete resistance, nature of concrete resistance, types of hardened concrete resistance.		4	Thirteenth
Daily, quarterly, annual and practical tests	Lecture	Factors affecting the resistance of hardened concrete.		4	Fourteenth
Daily, quarterly, annual and practical tests	Lecture	Factors affecting the results of hardened concrete resistance tests.		4	Fifteenth
Daily, quarterly, annual and practical tests	Lecture	The use of fibers in concrete such as fibers (plastic, glass, iron, wooden).		4	Sixteenth
Daily, quarterly, annual and practical tests	Lecture	The use of polymers (Polymers) in concrete.		4	Seventeenth
Daily, quarterly, annual and practical tests	Lecture	Special types of concrete: mass, lightweight, bubble, sand-free.		4	Eighteenth
Daily,	Lecture	Special types of concrete:		4	Nineteent

quarterly, annual and practical tests		heavy concrete, underwater formwork			h
Daily, quarterly, annual and practical tests	Lecture	Non-destructive tests of concrete: radiation methods, hardness methods, pulse methods and resonance methods.		4	20th
Daily, quarterly, annual and practical tests	Lecture	Design of concrete mixes: A- The American way.		4	Twenty-first
Daily, quarterly, annual and practical tests	Lecture	Design of concrete mixes: B - British way.		4	Twenty-second
Daily, quarterly, annual and practical tests	Lecture	Practical issues for the design of ordinary mixtures		4	Twenty-third
Daily, quarterly, annual and practical tests	Lecture	Practical issues for the design of mixtures using additives.		4	Twenty-fourth
Daily, quarterly, annual and practical tests	Lecture	Concrete additives: definition, benefits and uses, the main materials involved in their manufacture, notes to be taken when using them		4	Twenty-fifth
Daily, quarterly, annual and practical tests	Lecture	Types of additives: accelerating, slowing, emitting air spaces, explosive, moisture suppressant, weight loss.... etc		4	Twenty-sixth
Daily, quarterly, annual and practical tests	Lecture	Repair, maintenance and treatment of concrete, the use of certain materials such as boxy and the like		4	Twenty-seventh
Daily, quarterly, annual and practical tests	Lecture	Production, mixing, compaction and transportation of ordinary concrete, ready-mixed concrete		4	Twenty-eighth

Daily, quarterly, annual and practical tests	Lecture	Concrete maturation, pouring in hot and cold climate		4	Twenty-ninth
Daily, quarterly, annual and practical tests	Lecture	Pumping concrete, properties of concrete in pumping, devices used in pumping.		4	Xxx

25.Infrastructure	
Concrete Technology, Muayad Nouri Khalaf and Hana Abed Youssef	1 Required textbooks
Websites	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
Websites	B Electronic references, websites ....

26.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	289. Educational institution
Department of Civil Technologies / Road Construction Branch / Phase II	290. Scientific Department / Center
Highway Drawing	291. Course Name/Code
Lecture	292. Available Attendance Forms
annual	293. Semester / Year
3 hours per week	294. Number of Credit Hours (Total)
14/2/2024	295. The history of preparation of this description
296. Course Objectives	
General and special course objective: Teaching the student how to draw and prepare special details of methods of all kinds	
And the attached facilities and intersections of all kinds.	

27.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives A1- Identify the types of methods. A2- Knowing the problems related to roads and methods of addressing them. A3- Knowing and analyzing traffic loads for each type of road.
B - Skills objectives of the course. B1 – Reinforcement methods used by steel paving. B2 – Treatment of different types of structural joints. B3- Methods of implementing compound curves.
Teaching and learning methods
Lecture
Evaluation methods
93. Daily tests. 94. Quarterly and annual tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture
Evaluation methods
67. Daily tests. 68. Quarterly and annual tests.
d. General and rehabilitative skills transferred (other skills related to employability and personal development). D1- The skill of drawing horizontal and vertical curves of roads. D2- The skill of drawing intersections and their types of roads. D3- The skill of drawing the cross section of the road.

28. Course Structure

Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Daily, quarterly and annual exams	Lecture	Introduction to the development of roads in Iraq Technical reformers used in drawing roads and transportation	Understanding and applying the lecture	3	First and second
Daily, quarterly and annual exams	Lecture	Types of plans necessary for any project and their purpose, the use of aerial photography in the subject of determining the route of the road	Understanding and applying the lecture	3	Third
Daily, quarterly and annual exams	Lecture	Drawing a general plan for a road within the city, a road outside the city	Understanding and applying the lecture	3	Fourth
Daily, quarterly and annual exams	Lecture	The use of computers in drawing the general plan of the road	Understanding and applying the lecture	3	V
Daily, quarterly and annual exams	Lecture	Drawing horizontal curves and their equations,	Understanding and applying the lecture	3	Sixth
Daily, quarterly and annual exams	Lecture	drawing vertical curves and their equations,	Understanding and applying the lecture	3	Seventh
Daily, quarterly and annual exams	Lecture	Drawing a cross section of a dirt road	Understanding and applying the lecture	3	Eighth
Daily, quarterly and annual exams	Lecture	Drawing cross sections of flexible roads, straight part, curved part with its different layers	Understanding and applying the lecture	3	Ninth
Daily, quarterly and annual exams	Lecture	Using a computer to draw a cross section of a flexible road with its different layers	Understanding and applying the lecture	3	X
Daily, quarterly and annual exams	Lecture	Drawing a complete outline of a road with a length of (1 km) with details	Understanding and applying the lecture	3	Eleventh

Daily, quarterly and annual exams	Lecture	Drawing a cross section of a solid road	Understanding and applying the lecture	3	Twelfth
Daily, quarterly and annual exams	Lecture	The use of computers in drawing a solid cross section with all the structural details	Understanding and applying the lecture	3	Thirteenth
Daily, quarterly and annual exams	Lecture	Drawing a cross section of a composite road from a rigid and flexible part	Understanding and applying the lecture	3	Fourteenth
Daily, quarterly and annual exams	Lecture	The use of computers in drawing the height of the edge of the road	Understanding and applying the lecture	3	Fifteenth
Daily, quarterly and annual exams	Lecture	The use of computers in drawing parking lots	Understanding and applying the lecture	3	Sixteenth
Daily, quarterly and annual exams	Lecture	The use of computers in drawing the details of tube and box arches	Understanding and applying the lecture	3	Seventeenth and eighteenth
Daily, quarterly and annual exams	Lecture	Drawing of iron details for box arches	Understanding and applying the lecture	3	Nineteenth
Daily, quarterly and annual exams	Lecture	Drawing the curve of earth quantities	Understanding and applying the lecture	3	20th
Daily, quarterly and annual exams	Lecture	The use of computer programs in drawing and estimating dirt quantities	Understanding and applying the lecture	3	Twenty-first
Daily, quarterly and annual exams	Lecture	Drawing a cross section of the road in case of burial and cutting	Understanding and applying the lecture	3	Twenty-second
Daily, quarterly and annual exams	Lecture	Showing a scientific film and slides about the types of intersections in the road	Understanding and applying the lecture	3	Twenty-third
Daily, quarterly and annual exams	Lecture	Draw a T-shaped intersection with its horizontal projection	Understanding and applying the lecture	3	Twenty-fourth
Daily, quarterly and	Lecture	Drawing a circular field intersection	Understanding and	3	Twenty-fifth

annual exams			applying the lecture		
Daily, quarterly and annual exams	Lecture	Drawing highway entrances and exits	Understanding and applying the lecture	3	Twenty-sixth
Daily, quarterly and annual exams	Lecture	Drawing a cross section of a railway	Understanding and applying the lecture	3	Twenty-seventh
Daily, quarterly and annual exams	Lecture	Drawing details of railway diagrams	Understanding and applying the lecture	3	Twenty-eighth
Daily, quarterly and annual exams	Lecture	Drawing a horizontal chart of an airport	Understanding and applying the lecture	3	Twenty-ninth
Daily, quarterly and annual exams	Lecture	Drawing details and cross section of the tunnel road	Understanding and applying the lecture	3	Xxx

29.Infrastructure	
Textbook + Other Books	1 Required textbooks
Websites	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
Websites	B Electronic references, websites

30.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	297. Educational institution
Department of Civil Technologies / Road Construction Branch / Phase II	298. Scientific Department / Center
Highway Construction Equipments	299. Course Name/Code
Lecture	300. Available Attendance Forms
Annual	301. Semester / Year
3 hours per week	302. Number of Credit Hours (Total)
14/2/2024	303. The history of preparation of this description
304. Course Objectives	
This course aims to teach the student the equipment and machines for the construction of roads and engineering foundations in the work of	
Machines and factors affecting the selection of machines, work management and organization of construction events.	

31.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives A1- Identify the types of methods and how to benefit from them. A2- Knowing the types of mechanisms used to implement roads. A3- Knowing how to choose the required machine for each paragraph of the implementation of the road. A4- Knowing how to use alternatives when the required machine is not available to implement the road.
B - Skills objectives of the course. B1 – How to calculate the productivity of each type of road machinery. B2 – How to calculate the quantities for each paragraph of the implementation of the road. B3- The economic feasibility of each construction machine. B4- The economic feasibility of each road project.
Teaching and learning methods
Lecture
Evaluation methods
95. Daily tests. 96. Quarterly and annual tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture
Evaluation methods
69. Daily tests. 70. Quarterly and annual tests.
d. General and rehabilitative skills transferred (other skills related to employability and personal development). D1- The skill of how to develop the road and reduce traffic accidents. D2- The skill of how to reduce the cost of constructing roads and increase

their life.
D3- The skill of linking the use of manpower and machines when implementing roads.

32. Course Structure

Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Daily, quarterly and annual exams	Lecture	Business planning and management	Understanding and applying the lecture	3	The first
Daily, quarterly and annual exams	Lecture	Construction work activities, critical path method and steps to find critical path	Understanding and applying the lecture	3	II and III
Daily, quarterly and annual exams	Lecture	Factors affecting the choice of construction machinery	Understanding and applying the lecture	3	Fourth
Daily, quarterly and annual exams	Lecture	Special and standard machines, the cost of owning and operating machines, extinction, operating cost and obsolescence cost, maintenance and repair, economic life of machines	Understanding and applying the lecture	3	Fifth and sixth
Daily, quarterly and annual exams	Lecture	Engineering foundations in the work of machines, rolling resistance and the effect of the degree of inclination of the road on the required traction voltage	Understanding and applying the lecture	3	Seventh
Daily, quarterly and annual exams	Lecture	Effect of roof slope on supply pit location, altitude effect on internal combustion engine performance, temperature effect on internal combustion engine performance	Understanding and applying the lecture	3	Eighth
Daily, quarterly and annual exams	Lecture	Soil limitation, soil stabilization, swelling and shrinkage phenomenon, determination of density and humidity by nuclear examination, soil	Understanding and applying the lecture	3	Ninth and tenth

		stabilization using lime, cement and asphalt			
Daily, quarterly and annual exams	Lecture	Soil limiting machines, good hadling specifications, types of hadling machines	Understanding and applying the lecture	3	Eleventh and twelfth
Daily, quarterly and annual exams	Lecture	Pistil and smooth wheel sharps, pulmonary tire sharps and vibration sharps.	Understanding and applying the lecture	3	Thirteenth
Daily, quarterly and annual exams	Lecture	Pressure bulb theory for load distribution, for vibrational accidents	Understanding and applying the lecture	3	Fourteenth
Daily, quarterly and annual exams	Lecture	Tractors and similar machinery	Understanding and applying the lecture	3	Fifteenth
Daily, quarterly and annual exams	Lecture	Quarry, Soil Transfer by Quarry, Land Evacuation Process	Understanding and applying the lecture	3	Sixteenth
Daily, quarterly and annual exams	Lecture	Skimmers, types and sizes	Understanding and applying the lecture	3	Seventeenth
Daily, quarterly and annual exams	Lecture	Production and operating cost, improving and increasing the productivity of the skimmer	Understanding and applying the lecture	3	Eighteenth
Daily, quarterly and annual exams	Lecture	Listed, characteristics and uses.	Understanding and applying the lecture	3	Nineteenth
Daily, quarterly and annual exams	Lecture	Excavation machines, automatic shovels, selection of type and size of motorized shovel, productivity	Understanding and applying the lecture	3	Twentieth and twenty-first
Daily, quarterly and annual exams	Lecture	Hemophilia excavators, size of haemophilic excavator, types of haemophilia excavators	Understanding and applying the lecture	3	Twenty-second
Daily, quarterly and annual exams	Lecture	Trucks & Trolleys, Types of Trucks, Capacity of Trucks & Trolleys	Understanding and applying the lecture	3	Twenty-third
Daily,	Lecture	Asphalt production plants,	Understanding and	3	Twenty-

quarterly and annual exams		types, parts	applying the lecture		fourth and twenty-fifth
Daily, quarterly and annual exams	Lecture	Conveyor belts, economical material transport with conveyor belts, conveyor belt parts	Understanding and applying the lecture	3	Twenty-sixth
Daily, quarterly and annual exams	Lecture	Tunnels, objects from tunnels, rock scrubbing, tunnel construction with mechanical holes, tunnel ventilation	Understanding and applying the lecture	3	Twenty-seventh and twenty-eighth
Daily, quarterly and annual exams	Lecture	Asphalt brushes, speed of hinge, joint limit, specifications of asphalt mattresses, speed of mattresses, types of mattresses	Understanding and applying the lecture	3	Twenty-ninth and thirty-ninth

33.Infrastructure	
Textbook + Other Books	1 Required textbooks
Websites	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
Websites	B Electronic references, websites

34.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	305. Educational institution
Department of Civil Technologies / Road Construction Branch / Phase II	306. Scientific Department / Center
Soil mechanics	307. Course Name/Code
Lecture	308. Available Attendance Forms
Annual	309. Semester / Year
4 hours per week	310. Number of Credit Hours (Total)
14/2/2024	311. The history of preparation of this description
312. Course Objectives	
General Objective: Introducing the student to the mechanical properties of the soil through which he can estimate the risk of choosing	
The type of foundation and the effect of the installations erected on different types of soil.	
Course Objective: Qualifying the student and providing him with the necessary skill in soil classification and conducting the necessary tests	
on them (field or laboratory) and its relationship to the facilities on which they will be built.	

35.Course Outcomes and Methods of Teaching, Learning and Assessment
A- Cognitive objectives A1- Identify the types of soil, methods of formation and components with their physical properties. A2- Identify the classification of the soil through conducting various tests for it. A3- Study the different properties of the soil such as permeability and tolerable stresses. A4- Improving the properties of the soil in various ways to increase its durability. A5- Improving the soil locally by compaction and using appropriate sharpeners for each soil type. A6- Calculation of the bearing strength and resistance of soil shear and methods of measurement.
B - Skills objectives of the course. B1 – The skill of designing mixtures and conducting laboratory tests for classification. B2 – The skill of how to measure soil permeability in different ways. B3- The skill of choosing the appropriate type of foundation for each site.
Teaching and learning methods
Lecture
Evaluation methods
97.Daily tests. 98.Quarterly and annual tests. 99.Practical tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods

Lecture
Evaluation methods
71.Daily tests. 72.Quarterly and annual tests. 73.Practical tests.
d. General and rehabilitative skills transferred (other skills related to employability and personal development). D1- How to determine the soil variety by examining the gradient and plasticity limits. D2- How to determine the appropriate type of shear examination for each soil and its impact on soil durability. D3- How to choose the type of examination to measure permeability by determining the type of soil. D4- How to determine the appropriate type of foundation according to soil tolerance and shed loads.

36.Infrastructure	
Course Books	1 Required textbooks
Websites	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
Websites	B Electronic references, websites ....

37.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

10. Course Structure					
Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Daily, quarterly, annual and practical tests	Lecture	Definition of soil, geological introduction to rock types, how soil is formed from rocks.	Understanding and applying the lecture	4	The first
Daily, quarterly, annual and practical tests	Lecture	Soil components, physical properties of the soil (moisture content, porosity, percentage of voids, wet and dry density, saturated and submerged density, specific weight).	Understanding and applying the lecture	4	Second
Daily, quarterly, annual and practical tests	Lecture	Granular analysis of soil (sieves method and condensate method).	Understanding and applying the lecture	4	Third and fourth
Daily, quarterly, annual and practical tests	Lecture	Soil plasticity properties (fluidity limit, plasticity limit, shrinkage limit).	Understanding and applying the lecture	4	V
Daily, quarterly, annual and practical tests	Lecture	Soil classification, using the Unified Classification System.	Understanding and applying the lecture	4	Sixth and the seventh
Daily, quarterly, annual and practical tests	Lecture	Permeability, coarse soil permeability, soft soil permeability, field and laboratory measurement methods.	Understanding and applying the lecture	4	Eighth and ninth
Daily, quarterly, annual and practical tests	Lecture	Types of soil stresses, total stress and effective stress.	Understanding and applying the lecture	4	X
Daily, quarterly, annual and practical tests	Lecture	Lateral Earth Pressure with an explanation of the types of filters.	Understanding and applying the lecture	4	Eleventh
Daily, quarterly, annual and	Lecture	Soil Stabilization, Compaction.	Understanding and applying the lecture	4	Twelfth

practical tests					
Daily, quarterly, annual and practical tests	Lecture	Types of laboratory compaction tests, field compaction methods.	Understanding and applying the lecture	4	Thirteenth
Daily, quarterly, annual and practical tests	Lecture	Other methods to improve soil properties and stabilization (cement fixation, asphalt fixation, light fixation).	Understanding and applying the lecture	4	Fourteenth and fifteenth
Daily, quarterly, annual and practical tests	Lecture	Modern methods of soil stabilization (soil reinforcement, types of materials used in it and how to use them) (Reinforced Earth)	Understanding and applying the lecture	4	Sixteenth and the seventeenth
Daily, quarterly, annual and practical tests	Lecture	Californian endurance ratio (CBR) and its importance in the implementation of roads.	Understanding and applying the lecture	4	Eighteenth
Daily, quarterly, annual and practical tests	Lecture	Consolidation and its relationship to the occurrence of subsidence.	Understanding and applying the lecture	4	Nineteenth Twenty
Daily, quarterly, annual and practical tests	Lecture	The phenomenon of swelling and collapse.	Understanding and applying the lecture	4	Twenty-first
Daily, quarterly, annual and practical tests	Lecture	Definition of shear strength and its importance in calculating the amount of soil bearing capacity.	Understanding and applying the lecture	4	Twenty-second
Daily, quarterly, annual and practical tests	Lecture	Unconfined Compression Test .	Understanding and applying the lecture	4	Twenty-third
Daily, quarterly, annual and practical tests	Lecture	Shear Test (Direct)	Understanding and applying the lecture	4	Twenty-fourth
Daily, quarterly, annual and practical tests	Lecture	Triaxial Compression Test.	Understanding and applying the lecture	4	Twenty-fifth and the twenty-

					sixth
Daily, quarterly, annual and practical tests	Lecture	Field shear tests (In Situe Shear Test).	Understanding and applying the lecture	4	Twenty-seventh
Daily, quarterly, annual and practical tests	Lecture	Types of foundations and their relationship to the amount of soil tolerance.	Understanding and applying the lecture	4	Twenty-eighth
Daily, quarterly, annual and practical tests	Lecture	Shallow Foundation and Deep Foundation, such as piles.	Understanding and applying the lecture	4	Twenty-ninth
Daily, quarterly, annual and practical tests	Lecture	A simple introduction to the work of soil exploration (Soil Exploration), types of models, method of taking, preparation and depth of test pits to be implemented on site.	Understanding and applying the lecture	4	Xxx

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	313. Educational institution
Department of Civil Technologies / Road Construction Branch / Phase II	314. Scientific Department / Center
Airports and Railway Engineering	315. Course Name/Code
Lecture	316. Available Attendance Forms
annual	317. Semester / Year
2 hours per week	318. Number of Credit Hours (Total)
14/2/2023	319. The history of preparation of this description
320. Course Objectives	
This course aims to introduce the student to the principles of airport and railway engineering and railway design standards and specifications.	
and airports.	

11.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives A1- Identify air transport with its advantages and disadvantages. A2- Knowing the types of airports and the types of aircraft used. A3- Knowledge of the development of rail transport. A4- Know the components of the railway.
B - Skills objectives of the course. B1 – The appropriate location for choosing the airport. B2 – Choosing the appropriate stone materials as a rail. B3- Choosing the appropriate types of beams for the railway. B4- Examinations conducted on the rail stone.
Teaching and learning methods
Lecture
Evaluation methods
100. Daily tests. 101. Quarterly and annual tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture
Evaluation methods
74. Daily tests. 75. Quarterly and annual tests.
d. General and rehabilitative skills transferred (other skills related to employability and personal development). D1- The skill of developing train transport. D2- The skill of developing runways for aircraft. D3- The skill of developing the railway.

12. Course Structure

Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Daily, quarterly and annual exams	Lecture	General introduction to air transport, its development, advantages and disadvantages	Understanding and applying the lecture	2	The first
Daily, quarterly and annual exams	Lecture	Types of airports, specifications, features	Understanding and applying the lecture	2	Second
Daily, quarterly and annual exams	Lecture	Airport sections, functions of each department	Understanding and applying the lecture	2	Third
Daily, quarterly and annual exams	Lecture	Choosing an airport location, factors affecting it, entrance to site selection	Understanding and applying the lecture	2	Fourth
Daily, quarterly and annual exams	Lecture	Runway orientation	Understanding and applying the lecture	2	V
Daily, quarterly and annual exams	Lecture	Accommodating the airport, methods of calculating it, factors affecting it	Understanding and applying the lecture	2	Sixth
Daily, quarterly and annual exams	Lecture	Engineering design of the runway cross-section, its specifications	Understanding and applying the lecture	2	Seventh
Daily, quarterly and annual exams	Lecture	The slope of the runway slope, its specifications	Understanding and applying the lecture	2	Eighth
Daily, quarterly and annual exams	Lecture	Runway length, factors affecting it	Understanding and applying the lecture	2	Ninth
Daily, quarterly and annual exams	Lecture	Runway design determinants and general standards of air navigation	Understanding and applying the lecture	2	X
Daily, quarterly and annual exams	Lecture	Types of aircraft, specifications and types of aircraft used in air transport	Understanding and applying the lecture	2	Eleventh

Daily, quarterly and annual exams	Lecture	Runway approaches, specifications and design criteria	Understanding and applying the lecture	2	Twelfth
Daily, quarterly and annual exams	Lecture	Service buildings for airports and arranging the distribution of buildings.	Understanding and applying the lecture	2	Thirteenth
Daily, quarterly and annual exams	Lecture	Geotechnical realities of airport soil and water drainage of airport facilities	Understanding and applying the lecture	2	Fourteenth
Daily, quarterly and annual exams	Lecture	Airport Lighting & Private Signs	Understanding and applying the lecture	2	Fifteenth
Daily, quarterly and annual exams	Lecture	A brief history of the development of rail transport	Understanding and applying the lecture	2	Sixteenth
Daily, quarterly and annual exams	Lecture	Introduction to Railway Dynamics	Understanding and applying the lecture	2	Seventeenth
Daily, quarterly and annual exams	Lecture	Resistance encountered by trains, traction force of train types	Understanding and applying the lecture	2	Eighteenth
Daily, quarterly and annual exams	Lecture	Railway foundation, specifications	Understanding and applying the lecture	2	Nineteenth
Daily, quarterly and annual exams	Lecture	Railway construction methods, specifications	Understanding and applying the lecture	2	20th
Daily, quarterly and annual exams	Lecture	Means of treating the foundation of the rail	Understanding and applying the lecture	2	Twenty-first
Daily, quarterly and annual exams	Lecture	Railway stone - properties - benefits - types	Understanding and applying the lecture	2	Twenty-second
Daily, quarterly and annual exams	Lecture	Railway stone tests, stone selection methods and stone layer thickness design	Understanding and applying the lecture	2	Twenty-third
Daily, quarterly and	Lecture	Railway beams, benefits, types	Understanding and applying the	2	Twenty-fourth

annual exams			lecture		
Daily, quarterly and annual exams	Lecture	Specifications of railway beams, their treatment, sections	Understanding and applying the lecture	2	Twenty-fifth
Daily, quarterly and annual exams	Lecture	Railway rails, types, features, sections, industry, checks	Understanding and applying the lecture	2	Twenty-sixth and twenty-seventh
Daily, quarterly and annual exams	Lecture	Stresses affecting the rail, their types	Understanding and applying the lecture	2	Twenty-eighth
Daily, quarterly and annual exams	Lecture	Rail line orientation, transverse slope of the rail in curves	Understanding and applying the lecture	2	Twenty-ninth
Daily, quarterly and annual exams	Lecture	Side ramp of the rail, how to implement it and transition curves	Understanding and applying the lecture	2	Xxx

13.Infrastructure	
Textbook + Other Books	1 Required textbooks
Websites	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
Websites	B Electronic references, websites

14.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	321. Educational institution
Department of Civil Technologies / Road Construction Branch / Phase II	322. Scientific Department / Center
Traffic and Highway Engineering	323. Course Name/Code
Lecture	324. Available Attendance Forms
annual	325. Semester / Year
3 hours per week	326. Number of Credit Hours (Total)
14/2/2024	327. The history of preparation of this description
328. Course Objectives	
Providing the student with the theoretical and practical foundations he needs to design the road, analyze its information and provide the student with	
The necessary skill to collect the statistical information necessary for the design as well as provide it with the necessary information about	
Road details and furnishing It is also given some information about urban transport planning in the city and how	

15.Course Outcomes and Methods of Teaching, Learning and Assessment

A- Cognitive objectives A1- Identify the scientific terms of traffic engineering. A2- A general description of the road, its dimensions, tendencies and maps. A3- Identify traffic volumes and how to count them and deal with the road. A4- Traffic planning and means of controlling it. A5- Knowing the vertical and horizontal curves and achieving a safe vision distance A6- Knowing the intersections, their types, uses and determining their types on the road
B - Skills objectives of the course. B1 – The skill of knowing the traffic volume and expectations of an increase in the traffic volume after a certain period of time. B2 – The skill of furnishing the road in terms of signs and traffic signals. B3- The skill of classifying vehicles and their impact on the design speed of the road.
Teaching and learning methods
Lecture
Evaluation methods
102. Daily tests. 103. Quarterly and annual tests. 104. Practical tests.
C. Emotional and value goals A1- The student should pay attention to the calm and order of the class. A2- The student should not interrupt his colleagues while discussing an issue. C3- The student should know the impact of science and scientists on life. A4- The student should be careful not to miss the lecture.
Teaching and learning methods
Lecture
Evaluation methods
76. Daily tests. 77. Quarterly and annual tests.

78.Practical tests.

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

D1- The student acquires the skill of determining the type of road for any two Surveying to be linked.

D2- The skill of choosing the necessary traffic volume in the design of the road and the expected increase in the traffic volume after a certain period of time.

D3- The skill of counting traffic accidents and the method of diagnosing them.

16. Course Structure

Evaluation method	Method of education	Unit / Subject Name	Required Learning Outcomes	Hours	The week
Daily, quarterly, annual and practical tests	Lecture	General introduction to roads, history of roads, types, introduction to traffic engineering, definition, vehicles.	Understanding and applying the lecture	3	The first
Daily, quarterly, annual and practical tests	Lecture	Engineering characteristics of road users (drivers and pedestrians) and their impact on road design	Understanding and applying the lecture	3	Second
Daily, quarterly, annual and practical tests	Lecture	Engineering characteristics of vehicles and their impact on road design	Understanding and applying the lecture	3	Third
Daily, quarterly, annual and practical tests	Lecture	Road geometric characteristics and specifications	Understanding and applying the lecture	3	Fourth
Daily, quarterly, annual and practical tests	Lecture	Traffic surveys, their types, how to measure traffic speed, traffic volume, types, how to display their information	Understanding and applying the lecture	3	Fifth and sixth
Daily, quarterly, annual and practical tests	Lecture	Characteristics of traffic flow, traffic density, traffic volume, traffic speed, relationship between them, road absorption, service level	Understanding and applying the lecture	3	Seventh and eighth
Daily, quarterly, annual and practical tests	Lecture	Choosing the route of the road, the factors affecting it, the cadastral works related to it	Understanding and applying the lecture	3	Ninth
Daily, quarterly, annual and practical tests	Lecture	Elements of the engineering design of the road and the factors affecting it	Understanding and applying the lecture	3	X
Daily, quarterly, annual and	Lecture	Horizontal planning of the road, circular horizontal curves, types, elements,	Understanding and applying the lecture	3	Eleventh and twelfth

practical tests		calculations, implementation			
Daily, quarterly, annual and practical tests	Lecture	Vertical planning of the road - convex and concave vertical curves - their types - laws - calculations	Understanding and applying the lecture	3	Fifteenth and sixteenth
Daily, quarterly, annual and practical tests	Lecture	The safe viewing distance to stand on a flat and steep road and its relationship to the length of the vertical curve	Understanding and applying the lecture	3	Seventeenth
Daily, quarterly, annual and practical tests	Lecture	The safe vision distance of traversal and its relationship to the length of the vertical curve	Understanding and applying the lecture	3	Eighteenth
Daily, quarterly, annual and practical tests	Lecture	Surface intersections, types, characteristics	Understanding and applying the lecture	3	Nineteenth
Daily, quarterly, annual and practical tests	Lecture	Bridged intersections (isolated), types, characteristics	Understanding and applying the lecture	3	20th
Daily, quarterly, annual and practical tests	Lecture	Traffic accidents, types, causes, methods of recording accidents, analyzing them, identifying dangerous Surveyings, comparing them	Understanding and applying the lecture	3	Twenty-first and twenty-second
Daily, quarterly, annual and practical tests	Lecture	Parking lots, types, characteristics, designs, factors affecting the choice of parking	Understanding and applying the lecture	3	Twenty-third and twenty-fourth
Daily, quarterly, annual and practical tests	Lecture	Traffic islands, types, features, designs	Understanding and applying the lecture	3	Twenty-fifth
Daily, quarterly, annual and practical tests	Lecture	Means of organizing traffic - traffic relations - types	Understanding and applying the lecture	3	Twenty-sixth

Daily, quarterly, annual and practical tests	Lecture	Introduction to urban transport planning in cities, its importance, methods of collecting its information, models, how to analyze the information and the results obtained in it	Understanding and applying the lecture	3	Twenty-seventh and twenty-eighth
Daily, quarterly, annual and practical tests	Lecture	City Transportation Systems Planning Department	Understanding and applying the lecture	3	Twenty-ninth and thirty-ninth

17.Infrastructure	
The methodological book of traffic engineering / d. Abdel Hadi Muteb and d. Riyadh Al , Anbari	1 Required textbooks
Websites	2 Main references (sources)
Websites	Recommended books and references (scientific journals, reports ,....)
Websites	B Electronic references, websites, ...

18.Course Development Plan
Through the use of the latest scientific sources that are compatible with the study in technical institutes

Course Description Form

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, proving whether he or she has made the most of the available learning opportunities. It must be linked to the program description.;

Babylon Technical Institute	9. Educational institution
Department of Civil Technologies / Road and Construction Branch / First Phase	10. Scientific Department / Center
Crimes of the defunct Baath Party	11. Course Name/Code
Lecture	12. Available Attendance Forms
Annual	13. Semester / Year
1 hours per week	14. Number of Credit Hours (Total)
14/2/2024	15. The history of preparation of this description
16. Course Objectives	
This course aims to introduce the student to Crimes of the defunct Baath Party, their objectives and development in different areas and the roles	