وزارة التعليم العالي والبحث العلمي
جهاز الاشراف والتقويم العلمي
دائرة ضمان الجودة والاعتماد الاكاديمي

استمارة وصف البرنامج الاكاديمي للكليات والمعاهد

الجامعة: اوروك الاهلية
الكلية: الهندسة
القسم العلمي: الهندسة المدنية
تاريخ ملء الملف:

التوقيع:
اسم رئيس القسم: م.د. جعفر صادق فرج
التاريخ:

دقق الملف من قبل
شعبة ضمان الجودة والأداء الجامعي
اسم مدير شعبة ضمان الجودة والأداء الجامعي:
التاريخ:
التوقيع:

مصادقة السيد العميد

TEMPLATE FOR COURSE SPECIFICATION

HIGHER EDUCATION PERFORMANCE REVIEW: PROGRAMME REVIEW

COURSE SPECIFICATION

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

1. Teaching Institution	College of Engineering Uruk Private University
2. University Department/Centre	Civil Engineering Department (CE)
3. Course title/code & Description	**FIRST YEAR** **Mathematics / GE 101** This course introduces: Preliminaries: Polynomials and Rational Functions, Inverse Functions , Trigonometric and Inverse Trigonometric Functions, Exponential and Logarithmic Functions, Transformations of Functions,. Limits and Continuity: The Concept of Limits, Computation of Limits, Continuity and Its Consequences, Limits Involving Infinity,. Differentiation: Tangent Lines, The Derivative, Computation of Derivatives: The Power Rule, The Product and the Quotient Rules, The Chain Rule, Derivatives of Trigonometric Functions, Derivatives of Exponential and Logarithmic Functions, Implicit Differentiation and Inverse Trigonometric Functions,

	, Applications of Derivatives: Linear Approximations, Indeterminate Forms and L'Hôpital's Rule, Maximum and Minimum Values, Increasing and Decreasing Functions, Concavity and the Second Derivative Test, Overview of Curve Sketching, Optimization, Integration: Antiderivatives, The Definite Integral, The Fundamental Theorem of Calculus, Integration by Substitution, , Applications of Definite Integral: Area Between Curves, Integration Techniques: Integration by Parts, Trigonometric Techniques of Integration, Integration of Rational Functions Using Partial Fractions, Improper Integrals, Vectors: Definition of vectors, Dot product and cross product, Vectors in space. The course is taught through 4 hrs. per week, 3theories, 1 tutorial.
4. Programme(s) to which it Contributes	Civil Engineering (CE)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a "Day Program". The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects.
6. Semester/Year	1st & 2nd / Academic Year 2024 – 2025
7. Number of hours tuition (total)	120 hrs. / 4 hrs. per week
8. Date of production/revision of this specification	February / 2025

9. Aims of the Course

1. Introduce basic definition and explain the basic concepts that essential in connection with function and illustrate these concepts by examples.
2. Explain the purpose of function and their application.
3. Enable the student to solve the integration(finite and definite).
4. Introduce basic definition and explain the basic concepts of complex number. These series are a very powerful tool in connection with various problems.
5. Enable the student to calculate area and volume generated by revolving the area.

10· Learning Outcomes

At the end of the class, the student will be able to:
a. definition any function.
b. graph any function .
c. derivative and integration any function.
d. integration and application of integration.
e. graph a complex number and determinate the roots.
f. calculate the value of determinate .
g. solved the system of equation using Crammers rule.
h. determinate the dot and cross product.

11. Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.
4. Lab. Experiments.
5. Tests and Exams.
6. In-Class Questions and Discussions.
7. Connection between Theory and Application.
8. Field Trips.
9. Extracurricular Activities.
10. Seminars.
11. In- and Out-Class oral conservations.
12. Reports, Presentations, and Posters.

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Extracurricular Activities.
3. Student Engagement during Lectures.
4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor).

13. Grading Policy

1. Quizzes:
- There will be a (8 – 10) closed books and notes quizzes during the academic year.
- The quizzes will count 20% of the total course grade.
2. Tests, 2-3 Nos. and will count 10% of the total course grade.
3. Extracurricular Activities, this is optional and will count extra marks (10 %) for the student, depending on the type of activity.
4. Final Exam:
- The final exam will be comprehensive, closed books and notes, and will count 60% of the total course grade.

14. Course Structure

Week	Hours	LOs (Article 10)	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	4 3the. 1tut.	a	The interval and equalities	1-12 of article (11)	1 – 4 of article (12)
2	4 3the. 1tut.	a , b	Introduction to function	1-12 of article (11)	1 – 4 of article (12)
3	4 3the. 1tut.	a , b	Trigonometric and invers functions	1-12 of article (11)	1 – 4 of article (12)
4	4 3the. 1tut.	a , b	Domain and range of Trigonometric functions	1-12 of article (11)	1 – 4 of article (12)
5	4 3the. 1tut.	a , b	Graph of Trigonometric functions	1-12 of article (11)	1 – 4 of article (12)
6	4 3the. 1tut.	a , b , c	Derivative of Trigonometric and functions	1-12 of article (11)	1 – 4 of article (12)
7	4 3the. 1tut.	a , b , d	Integration of Trigonometric functions	1-12 of article (11)	1 – 4 of article (12)
8	4 3the. 1tut.	a , b	Exponential functions	1-12 of article (11)	1 – 4 of article (12)
9	4 3the. 1tut.	a , b	Domain and range of Exponential function	1-12 of article (11)	1 – 4 of article (12)
10	4 3the. 1tut.	a , b	Graph of Exponential function	1-12 of article (11)	1 – 4 of article (12)
11	4 3the. 1tut.	a , b , c	Derivative of Exponential function	1-12 of article (11)	1 – 4 of article (12)
12	4 3the. 1tut.	a , b , d	Integration of Exponential function	1-12 of article (11)	1 – 4 of article (12)
13	4 3the. 1tut.	a , b	Logarithmic functions	1-12 of article (11)	1 – 4 of article (12)
14	4	a , b	Domain and range	1-12 of	1 – 4 of article (12)

	3the. 1tut.		of Logarithmic functions	article (11)	
15	4 3the. 1tut.	a , b	Graph of Logarithmic functions	1-12 of article (11)	1 – 4 of article (12)
16	4 3the. 1tut.	a , b , c	Derivative of Logarithmic functions	1-12 of article (11)	1 – 4 of article (12)
17	4 3the. 1tut.	a , b , d	Integration of Logarithmic functions	1-12 of article (11)	1 – 4 of article (12)
18	4 3the. 1tut.	a , b	Hyperboli Trigonometric and invers functions	1-12 of article (11)	1 – 4 of article (12)
19	4 3the. 1tut.	a , b	Domain and range of Hyperbolic functions	1-12 of article (11)	1 – 4 of article (12)
20	4 3the. 1tut.	a , b	Graph of Hyperbolic functions	1-12 of article (11)	1 – 4 of article (12)
21	4 3the. 1tut.	a , b , c	Derivative of Hyperbolic functions	1-12 of article (11)	1 – 4 of article (12)
22	4 3the. 1tut.	a , b , d	Integration of Hyperbolic functions	1-12 of article (11)	1 – 4 of article (12)
23	4 3the. 1tut.	c , d	Method of integration	1-12 of article (11)	1 – 4 of article (12)
24	4 3the. 1tut.	c , d	Method of integration	1-12 of article (11)	1 – 4 of article (12)
25	4 3the. 1tut.	a , c	Application of derivative	1-12 of article (11)	1 – 4 of article (12)
26	4 3the. 1tut.	a , d	The area	1-12 of article (11)	1 – 4 of article (12)
27	4 3the. 1tut.	a , d	The volume	1-12 of article (11)	1 – 4 of article (12)
28	4 3the. 1tut.	a , f , g	Complex number	1-12 of article (11)	1 – 4 of article (12)
29	4	a , f , g	The determinate	1-12 of	1 – 4 of article (12)

	3the. 1tut.		and matrix	article (11)	
30	4 3the. 1tut	a , f , g ,h	The vectors	1-12 of article (11)	1 – 4 of article (12)

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15. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	**Textbook :** Calculus by Thomas
Special requirements (include for example workshops, periodicals, IT software, websites)	/
Community-based facilities (include for example, guest Lectures , internship , field studies)	/
16. Admissions	
Pre-requisites	/
Minimum number of students	5
Maximum number of students	35 per class
17. Course Instructors	**Instructor:** **Dr. Omar Yaseen Almashhadany** Civil Engineering Department College of Engineering Uruk Private University Email: Omar_yassin@uruk.edu.iq

1. Teaching Institution	College of Engineering Uruk Private University

2. University Department/Centre	Civil Engineering Department (CE)
3. Course title/code & Description	**FIRST YEAR** **Engineering Mechanics / CE 102** This course introduces: • Introduction Definition to engineering mechanics and statics follow , system units ,scalars and vectors quantities , fundamental concepts and basic laws like (mass ,weight , force , rigid body , parallelogram law and Newton's laws), resolution of forces into components (two and three dimensions and principle of Moments and Couples • Result of Force Systems Result of Collinear forces system , coplanar forces system(concurrent , parallel and non-concurrent and non-parallel) and Non coplanar forces system (concurrent, parallel and non-concurrent and non- parallel) • Equilibrium and Free-Body Diagram Conditions for Rigid-Body Equilibrium , Free-Body Diagram and, equations of equilibrium , two and three force members , analysis of Frames and Trusses in the Plane and analysis of Frames and Trusses in the Space • Friction Mechanism and laws of friction ,static friction , kinetic friction • Centroid and Centers of Gravity Introduction of Centroids , Centroids by integration and Centroids of composite areas bodies • Second moment of area or Moment

	of Inertia Second moment of area by integration , Polar Moment of Inertia, and Products of Inertia , Mohr circle for second moment of inertia The course is taught through 4 hrs. per week, 3theories, 1 tutorial.
4. Programme(s) to which it Contributes	Civil Engineering (CE)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a "Day Program". The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects.
6. Semester/Year	1st & 2nd / Academic Year 2024– 2025
7. Number of hours tuition (total)	120 hrs. / 4 hrs. per week
8. Date of production/revision of this specification	February / 2025
9. Aims of the Course	
1. Introduce basic definitions and introductory concepts of engineering mechanics /statics 2. . Analyze forces and find out the resultant forces in two and three dimension 3. Differentiate between various type of supports and draw free-body-diagram ,Compute the reaction force in simple structure (beam, frame, truss) 4. Obtain center of gravity and centroid for deferent engineering shapes & moment of inertia for deferent sections	

10· Learning Outcomes

At the end of the class, the student will be able to:

a. Analyze forces and moments in two and three dimensions,
b. Find out the resultant forces in two and three dimensions
c. Draw free-body-diagram, Compute the reaction force in simple structure (beam, frame, truss)
d. Study Mechanism and laws of friction
e. Obtain and centroid for deferent engineering shapes.
f. Obtain moment of inertia for deferent engineering shapes

11. Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.
4. Lab. Experiments.
5. Tests and Exams.
6. In-Class Questions and Discussions.
7. Connection between Theory and Application.
8. Field Trips.
9. Extracurricular Activities.
10. Seminars.
11. In- and Out-Class oral conservations.
12. Reports, Presentations, and Posters.

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Extracurricular Activities.
3. Student Engagement during Lectures.
4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor).

13. Grading Policy

1. Quizzes:

- There will be a (10 – 15) closed books and notes quizzes during the academic year.
- The quizzes will count 20% of the total course grade.

2. Extracurricular Activities, this is optional and will count extra marks (2.5 %) for the student, depending on the type of activity.

4. Final Exam:

- The final exam will be comprehensive, closed books and notes, and will count 60% of the total course grade.

14. Course Structure					
Week	Hours	LOs (Article 10)	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	4 3the. 1tut.	a	Definition to engineering mechanics .and statics	1-12 of article (11)	1 – 4 of article (12)
2	4 3the. 1tut.	a	Resolution of forces into components(two dimensions)	1-12 of article (11)	1 – 4 of article (12)
3	4 3the. 1tut.	a	Resolution of forces into components(two dimensions)	1-12 of article (11)	1 – 4 of article (12)
4	4 3the. 1tut.	a	Principle of Moments and Couples	1-12 of article (11)	1 – 4 of article (12)
5	4 3the. 1tut.	a	Resolution of forces into components(three dimensions)	1-12 of article (11)	1 – 4 of article (12)
6	4 3the. 1tut.	a	Principle of Moments and Couples (three dimensions)	1-12 of article (11)	1 – 4 of article (12)
7	4 3the. 1tut.	b	Result of coplanar forces system(concurrent , parallel and non-concurrent and non- parallel)	1-12 of article (11)	1 – 4 of article (12)
8	4 3the. 1tut.	b	Result of coplanar forces system(concurrent , parallel and non-concurrent and non- parallel)	1-12 of article (11)	1 – 4 of article (12)
9	4 3the.	b	Result of coplanar forces	1-12 of article (11)	1 – 4 of article (12)

	1tut.		system(concurrent , parallel and non-concurrent and non- parallel)		
10	4 3the. 1tut.	b	Result of Non coplanar forces system (concurrent, parallel and non-concurrent and non- parallel)	1-12 of article (11)	1 – 4 of article (12)
11	4 3the. 1tut. .	b	Result of Non coplanar forces system (concurrent, parallel and non-concurrent and non- parallel)	1-12 of article (11)	1 – 4 of article (12)
12	4 3the. 1tut.	c	Equilibrium and Free-Body Diagram	1-12 of article (11)	1 – 4 of article (12)
13	4 3the. 1tut.	c	Analysis of Frames in the Plane	1-12 of article (11)	1 – 4 of article (12)
14	4 3the. 1tut.	c	Analysis of Frames in the Plane	1-12 of article (11)	1 – 4 of article (12)
15	4 3the. 1tut.	c	Analysis of Frames in the Plane	1-12 of article (11)	1 – 4 of article (12)
16	4 3the. 1tut.	c	Analysis of Trusses in the Plane	1-12 of article (11)	1 – 4 of article (12)
17	4 3the. 1tut.	c	Analysis of Trusses in the Plane	1-12 of article (11)	1 – 4 of article (12)
18	4 3the.	C	Analysis of Frames and Truss	1-12 of article (11)	1 – 4 of article (12)

	1tut.		in the Space		
19	4 3the. 1tut.	d	Friction	1-12 of article (11)	1 – 4 of article (12)
20	4 3the. 1tut.	d	Friction	1-12 of article (11)	1 – 4 of article (12)
21	4 3the. 1tut.	d	Friction	1-12 of article (11)	1 – 4 of article (12)
22	4 3the. 1tut.	e	Centroids by integration	1-12 of article (11)	1 – 4 of article (12)
23	4 3the. 1tut.	e	Centroids by integration	1-12 of article (11)	1 – 4 of article (12)
24	4 3the. 1tut.	e	Centroids of composite areas bodies	1-12 of article (11)	1 – 4 of article (12)
25	4 3the. 1tut.	f	Centroids of composite areas bodies	1-12 of article (11)	1 – 4 of article (12)
26	4 3the. 1tut.	f	Moment of Inertia by integration	1-12 of article (11)	1 – 4 of article (12)
27	4 3the. 1tut.	f	Moment of Inertia by integration	1-12 of article (11)	1 – 4 of article (12)
28	4 3the. 1tut.	f	Moment of Inertia of composite areas bodies	1-12 of article (11)	1 – 4 of article (12)
29	4 3the. 1tut.	f	Moment of Inertia of composite areas bodies	1-12 of article (11)	1 – 4 of article (12)
30	4 3the. 1tut.	f	Polar Moment of Inertia, and Products of Inertia , Mohr circle	1-12 of article (11)	1 – 4 of article (12)

15. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	1. Engineering Mechanics: Statics & Dynamics 13th edition. By R. C. Hibbeler , 2013 2. Engineering Mechanics: Statics 6th edition by J.L. Meriam & L.G. Kraige ,2007 3. Engineering Mechanics: Statics & Dynamics 3rd edition. By Archie Highdon & William B. Stiles , 1968
Special requirements (include for example workshops, periodicals, IT software, websites)	• Available websites related to the subject.
Community-based facilities (include for example, guest Lectures , internship , field studies)	/
16. Admissions	
Pre-requisites	/
Minimum number of students	5
Maximum number of students	35 per class
17. Course Instructors	**Instructor:** **Assistant Lecturer Raid Sattar Warwar** Civil Engineering Department College of Engineering Uruk Private University Email: raid_satar@uruk.edu.iq

1. Teaching Institution	College of Engineering Uruk Private University
2. University Department/Centre	Civil Engineering Department (CE)
3. Course title/code & Description	**FIRST YEAR** **Engineering Drawing / CE 103** This course introduces: Introduction. This section produces an introduction to the drawing tools, pencil kinds, type of sheets …. etc. - Geometric Typing Both English letters and numbers will be considered in this section. - Lines. A classification for all types of lines which used in engineering drawing will be submitted in this section (solid, dashed, chain …. etc). The section also introduced the common mistakes in the engineering drawing. - Geometric Processing. The most important geometric processing, regarding to civil engineering, will be adopted in this section just like ellipsoid, tangent arcs, tangent arc and line, bisection process … etc. - Theory of Projection. The concept of projection will be explained in this section using both first and third angle projection. - Pictorial Drawing. - Dimensions The most common dimensions (straight, inclined, radios, curved ... etc) will be considered. - Structural Drawing. This section will include the details of foundation plan, typical sections, slab reinforcement … etc. The course is taught through 5 hrs. per

	week, 1theories, 4 experimental.
4. Programme(s) to which it Contributes	Civil Engineering (CE)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a "Day Program". The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects.
6. Semester/Year	1st & 2nd / Academic Year 2024 – 2025
7. Number of hours tuition (total)	150 hrs. / 5 hrs. per week
8. Date of production/revision of this specification	February / 2025
9. Aims of the Course	
This unit will enable learners to produce engineering drawings of different components, assemblies and circuits using a variety of sketching, drawing and computer-aided drafting techniques.	

10· Learning Outcomes
At the end of the class, the student will be able to: a- Sketch engineering components. b- Interpret engineering drawings that comply with drawing standards. c- Produce engineering drawings.
11. Teaching and Learning Methods
1. Lectures. 2. Tutorials. 3. Homework and Assignments. 4. Lab. Experiments. 5. Tests and Exams. 6. In-Class Questions and Discussions. 7. Connection between Theory and Application. 8. Field Trips. 9. Extracurricular Activities.

10. Seminars.
11. In- and Out-Class oral conservations.
12. Reports, Presentations, and Posters.

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Extracurricular Activities.
3. Student Engagement during Lectures.
4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor).

13. Grading Policy

. Quizzes:
- There will be a (3 – 6) closed books and notes quizzes during the academic year.
- The quizzes will count 10% of the total course grade.

2- Classwork
-There will be a classwork sheet submitted at each lecture.
- The homework will count 30% of the total course grade

3. Homework
-There will be a homework sheet submitted at each lecture.
- The homework will count 10% of the total course grade

3. Final Exam:
- The final exam will be comprehensive, closed books and notes, and will count 50% of the total course grade

14. Course Structure

Week	Hours	LOs (Article 10)	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	5 1the. 4exp.	a	Introduction	1-12 of article (11)	1 – 4 of article (12)
2	5 1the. 4exp	a	Geometric Typing	1-12 of article (11)	1 – 4 of article (12)
3	5 1the. 4exp	a	Lines	1-12 of article (11)	1 – 4 of article (12)
4	5 1the. 4exp	a	Lines	1-12 of article (11)	1 – 4 of article (12)
5	5 1the. 4exp	a	Lines	1-12 of article (11)	1 – 4 of article (12)
6	5 1the. 4exp	b , c	Geometric Processing	1-12 of article (11)	1 – 4 of article (12)
7	5 1the. 4exp	b , c	Geometric Processing	1-12 of article (11)	1 – 4 of article (12)
8	5 1the. 4exp	b , c	Theory of Projection	1-12 of article (11)	1 – 4 of article (12)
9	5 1the. 4exp	b , c	Theory of Projection	1-12 of article (11)	1 – 4 of article (12)
10	5 1the. 4exp	b , c	Theory of Projection	1-12 of article (11)	1 – 4 of article (12)
11	5 1the. 4exp	b , c	Theory of Projection	1-12 of article (11)	1 – 4 of article (12)
12	5 1the. 4exp	b , c	Theory of Projection	1-12 of article (11)	1 – 4 of article (12)
13	5 1the. 4exp	b , c	Theory of Projection	1-12 of article (11)	1 – 4 of article (12)
14	5 1the.	b , c	Theory of Projection	1-12 of article (11)	1 – 4 of article (12)

	4exp				
15	5 1the. 4exp	b , c	Theory of Projection	1-12 of article (11)	1 – 4 of article (12)
16	5 1the. 4exp	b , c	Dimensions	1-12 of article (11)	1 – 4 of article (12)
17	5 1the. 4exp	b , c	Dimensions	1-12 of article (11)	1 – 4 of article (12)
18	5 1the. 4exp	b , c	Sections	1-12 of article (11)	1 – 4 of article (12)
19	5 1the. 4exp	b , c	Sections	1-12 of article (11)	1 – 4 of article (12)
20	5 1the. 4exp	b , c	Sections	1-12 of article (11)	1 – 4 of article (12)
21	5 1the. 4exp	b , c	Sections	1-12 of article (11)	1 – 4 of article (12)
22	5 1the. 4exp	b , c	Pictorial Drawing	1-12 of article (11)	1 – 4 of article (12)
23	5 1the. 4exp	b , c	Pictorial Drawing	1-12 of article (11)	1 – 4 of article (12)
24	5 1the. 4exp	b , c	Pictorial Drawing	1-12 of article (11)	1 – 4 of article (12)
25	5 1the. 4exp	b , c	Pictorial Drawing	1-12 of article (11)	1 – 4 of article (12)
26	5 1the. 4exp	b , c	Pictorial Drawing	1-12 of article (11)	1 – 4 of article (12)
27	5 1the. 4exp	b , c	Structural Drawing	1-12 of article (11)	1 – 4 of article (12)
28	5 1the. 4exp	b , c	Structural Drawing	1-12 of article (11)	1 – 4 of article (12)
29	5 1the.	b , c	Structural Drawing	1-12 of article (11)	1 – 4 of article (12)

	4exp				
30	5 1the. 4exp	b , c	Structural Drawing	1-12 of article (11)	1 – 4 of article (12)

15. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	***Core Texts:*** -Engineering drawing by Abed Alrasul Al Khafaf, 1986. ***References:*** - "Principle of technical drawing" by Frederick E. Giesecke, Alva Mitchell, Henry Cecil Spencer,Ivan Hill, John Thomas, James E. Novak, 1992. "Graphics Drawing workbook" by Gray R. Bertoline, 2000
Special requirements (include for example workshops, periodicals, IT software, websites)	/
Community-based facilities (include for example, guest Lectures , internship , field studies)	/
16. Admissions	
Pre-requisites	/
Minimum number of students	5
Maximum number of students	35
17. Course Instructors	**Instructors:** **Assistant Lecturer Hayder Alnasser** Civil Engineering Department College of Engineering Uruk Private University Email: hayderalnasser@uruk.edu.iq **Assistant Lecturer Reem Amer Mezher** Civil Engineering Department College of Engineering Uruk Private University Email: Reem.a.mazhar@uruk.edu.iq

1. Teaching Institution	College of Engineering Uruk Private University
2. University Department/Centre	Civil Engineering Department (CE)
3. Course title/code & Description	**FIRST YEAR** **Engineering Geology / CE 104** This course introduces: 1. Introduction to Geology and Types of Geology Introduction to Geology, Geomechanics and Geotechnical Engineering and their role in Civil engineering 2. Engineering Geology, Definition and applications ▪ Introduction to Engineering geology ▪ Application of engineering geology in civil engineering works. ▪ Explaining the difference between engineering geology and soil mechanic. 3. Earth, Definition and some applicable Factors ▪ Give a clear definition of the earth components ▪ Earth crust: Properties and components. 4. Factors Affecting Earth Crust In this subject, the presence of different

	factors that affecting the general properties of the earth crust is explained with the aid of typical actions such as temperature, rainfall and wind effects. 5. Minerals ▪ Introduction to minerals and explain their sources in the earth. ▪ Explanation of physical and chemical properties of mineral. 6. Rocks, Formation and types The Rock Cycle - the role of magma, the formation and identification of igneous rocks. 7. Ingenious Rocks: ▪ Formation and method of solidification of these rocks. ▪ Classification of igneous rocks with respect to chemical composition, location and texture is presented. 8. Metamorphic Rock ▪ Formation and method of solidification of these rocks. ▪ Metamorphism of different metamorphism agents (Thermal, Pressure, thermal and pressure and chemical metamorphism). 9. Sedimentary Rocks

	▪ Formation and method of solidification, cementation and transportation. ▪ Types, properties and classification of these rocks are presented. 10. Structural Geology for sedimentary rocks Basic Structural Geological Formations for sedimentary rocks are presented. As well as, the vertical profile in formation layers is presented. 11. Physical and Mechanical Properties of Rocks ▪ Physical properties of the rocks are presented. ▪ The physical properties includes (Mass density, unit weight, specific gravity, water content, porosity, void ratio…etc.). ▪ The mechanical properties include normal forces, shear forces and uniaxial loading. ▪ Different elastic properties are explained such as modulus of elasticity, Poisson's ratio and shear modulus. 12. Factors affecting rock properties (river work, sea work, ice work…etc.)

	▪ The weathering process, formation of sediments, formation and identification of sedimentary rocks and the formation and identification of metamorphic rocks. ▪ The actions of the above factors are explained as a weathering factor and transportation agent. 13. Soils and their formation ▪ Engineering Properties and Classification of soils definition of soil (Clay, Silt, Sand, gravel). ▪ The different types of soils according to their source of formation are presented. 14. Physical and Mechanical Properties of Soils ▪ In this subject the physical properties of the soil is presented. ▪ The physical properties includes (Mass density, unit weight, total and dry unit weight, specific gravity, water content, porosity, degree of saturation, void ratio…etc.). ▪ The mechanical properties include normal forces, shear forces, consolidation theory and uniaxial

	loading. ▪ Consolidation theory and settlement. ▪ Different elastic properties are explained such as modulus of elasticity, Poisson's ratio and shear modulus. 15. Soil Classification (overview) Introduction to the soil classification for engineering purposes is presented. The classification system which given to the students are MIT and USCS system. 16. Stresses in Rocks and soils ▪ Geostatic Stresses and the Shear Strength of Soil. ▪ Stresses in a Soil Mass Normal and Shear Stress on a Plane: Pole Method and Mohr-Coulomb Failure Criteria. ▪ Effective Stress Law (Total stress, Effective Stress and Pore Pressures). 17. Internal and external forces subjected to earth (such as Earthquake) ▪ Introduction to the source of internal stress is presented. ▪ The source of earthquake is also presented.

	▪ The effect of these force on the general topography and features of the earth crust is presented. 18. Underground Water Geology In this section a brief description for the effect of water movement on the structures and earth materials is presented. 19. Geophysical Investigation ▪ Definition of geophysical investigations ▪ Explanation of different methods related to this investigation is presented. ▪ Foxing on the seismic investigation is explained. The course is taught through 3 hrs. per week, 2theories, 1 tutorial.
4. Programme(s) to which it Contributes	Civil Engineering (CE)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a "Day Program". The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects.
6. Semester/Year	1st & 2nd / Academic Year 2024 – 2025
7. Number of hours tuition (total)	90 hrs. / 3 hours per week

8. Date of production/revision of this specification	February / 2025

9. Aims of the Course

1.Introduce basic definitions and introductory concepts general geology and engineering geology
2.Explain application of geology in civil engineering as well as the different types of geology
3.Define each type of the given minerals as well as their properties
4.Explanation of the factors that affecting the earth crust
5.Identify the different types of rocks with the structural geology of different rocks
6.study the physical and mechanical properties of rocks
7.Identify the different factors that affecting the rock properties
8.Calculating the normal stress and strain of rocks and soil samples
9.Identify soils and explain its physical and mechanical properties (Shear strength)
10.To classify the different soil types according to USCS
11.Identify all factors that affecting the earth crust and its components (internal and external forces)
12.Calculating the effective stresses, internal stresses and external stresses from footings.
13.To understand the concept of ground water
14.To understand the concept of geophysical investigations
15.To understand the concept of geological map

10· Learning Outcomes

a- At the end of the class, the student will be able to:
b- The student would make a separation between general geology and engineering geology
c- The student will know the application of geology in civil engineering as well as the different types of geology
d- The student would be able to define each type of the given minerals as well as their properties
e- The student would be able to calculate the normal stress and strain of rocks and soil samples
f- The student would be able to identify soils and explain its physical and mechanical properties (Shear strength)
g- To classify the different soil types according to USCS
h- Identify all factors that affecting the earth crust and its components (internal

and external forces)

i- Calculating the effective stresses, internal stresses and external stresses from footings.

j- To understand the concept of ground water

k- To understand the concept of geophysical investigations

i- To understand the concept of geological map

11. Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.
4. Lab. Experiments.
5. Tests and Exams.
6. In-Class Questions and Discussions.
7. Connection between Theory and Application.
8. Field Trips.
9. Extracurricular Activities.
10. Seminars.
11. In- and Out-Class oral conservations.
12. Reports, Presentations, and Posters.

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Extracurricular Activities.
3. Student Engagement during Lectures.
4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor).

13. Grading Policy

1.Quizzes:

There will be about (5-10) closed books and notes quizzes during the academic year. The quizzes will count 20% of the total course grade.

2.Tests

There will be about (1-2) closed books and notes quizzes during the academic and will count 10% of the total course grade.

3.Lab work

There will be count for 5% of the total course grade.

4.Oral discussion during academic year

There will be count for 5% of the total course grade.

5.Final Exam:

The final exam will be comprehensive, closed books and Notes. The final exam will count 60% of the total course grade.

14. Course Structure

Week	Hours	LOs (Article 10)	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	3 2 the. 1tut	b , c	Introduction to geology	1-12 of article (11)	1 – 4 of article (12)
2	3 2 the. 1tut	b , c	Types of geology	1-12 of article (11)	1 – 4 of article (12)
3	3 2 the. 1tut	b , c	Engineering geology (definition and applications)	1-12 of article (11)	1 – 4 of article (12)
4	3 2 the. 1tut	b , c	Crystallography	1-12 of article (11)	1 – 4 of article (12)
5	3 2 the. 1tut	b , c	Crystallography+types	1-12 of article (11)	1 – 4 of article (12)
6	3 2 the. 1tut	b , c	Minerals (definition and occurrence)	1-12 of article (11)	1 – 4 of article (12)
7	3 2 the. 1tut	b , c	Types of minerals	1-12 of article (11)	1 – 4 of article (12)
8	3 2 the. 1tut	b , c	Types of minerals	1-12 of article (11)	1 – 4 of article (12)
9	3 2 the. 1tut	b , c	Rocks (definition+ rock cycle)	1-12 of article (11)	1 – 4 of article (12)
10	3 2 the. 1tut	b , c	Igneous rocks (Definition and types)	1-12 of article (11)	1 – 4 of article (12)
11	3	b , c	Igneous rocks(	1-12 of	1 – 4 of article (12)

	2 the. 1tut		types	article (11)	
12	3 2 the. 1tut	b , c	Sedimentary rocks (Definition and types)	1-12 of article (11)	1 – 4 of article (12)
13	3 2 the. 1tut	b , c	Sedimentary rocks (types)	1-12 of article (11)	1 – 4 of article (12)
14	3 2 the. 1tut	b , c	Metamorphic rocks (Definition and types)	1-12 of article (11)	1 – 4 of article (12)
15	3 2 the. 1tut	b , c	Metamorphic rocks (types)	1-12 of article (11)	1 – 4 of article (12)
16	3 2 the. 1tut	b , c	Structural Geology (Faults)	1-12 of article (11)	1 – 4 of article (12)
17	3 2 the. 1tut	b , c	Structural Geology (folds)	1-12 of article (11)	1 – 4 of article (12)
18	3 2 the. 1tut	b , c	Weathering of rocks	1-12 of article (11)	1 – 4 of article (12)
19	3 2 the. 1tut	a , b , c	Erosion of rocks	1-12 of article (11)	1 – 4 of article (12)
20	3 2 the. 1tut	a , b , c	Works of rivers and water	1-12 of article (11)	1 – 4 of article (12)
21	3 2 the. 1tut	a , b , c	Works of air and glaciers	1-12 of article (11)	1 – 4 of article (12)
22	3 2 the.	a , b , c	Work of sea and groundwater	1-12 of article (11)	1 – 4 of article (12)

	1tut				
23	3 2 the. 1tut	a , b , c	Work of organics+rivew	1-12 of article (11)	1 – 4 of article (12)
24	3 2 the. 1tut	a , b , c	Physical properties of rocks (applications)	1-12 of article (11)	1 – 4 of article (12)
25	3 2 the. 1tut	a , b , c	Physical properties of rocks (applications)	1-12 of article (11)	1 – 4 of article (12)
26	3 2 the. 1tut	a , b , c	Mechanical properties of rocks (applications)	1-12 of article (11)	1 – 4 of article (12)
27	3 2 the. 1tut	a , b , c	Soil (formation and types)	1-12 of article (11)	1 – 4 of article (12)
28	3 2 the. 1tut	a , b , c	Stresses within soil media and external stresses (point load)	1-12 of article (11)	1 – 4 of article (12)
29	3 2 the. 1tut	a , b , c	Geotechnical and geological maps	1-12 of article (11)	1 – 4 of article (12)
30	3 2 the. 1tut	a , b , c	Geotechnical and geological maps	1-12 of article (11)	1 – 4 of article (12)

15. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	• Notebook prepared by the instructor of the course • K.M.BANGAR(1995) :"A textbook of Geology:General and Engineering". Standard Publisher Distributors,Lumos Offset Press, Delhi, India. • MUNI BUDHU(2011):" Soil Mechanics and Foundations". 3rd edition, John Wily & Sons, Inc., USA. Collection of sheets of solved and unsolved problems and Exams questions
Special requirements (include for example workshops, periodicals, IT software, websites)	• Available websites related to the subject. Extracurricular activities.
Community-based facilities (include for example, guest Lectures , internship , field studies)	• Field and scientific visits. Extra lectures by foreign guest lecturers.
16. Admissions	
Pre-requisites	GE 101Course
Minimum number of students	5 per standard classroom
Maximum number of students	35 per standard classroom
17. Course Instructors	**Instructors :** **Assistant Lecturer Ali Satar Jabbar** Civil Engineering Department College of Engineering Uruk Private University Email: Ali_Satar@uruk.edu.iq

1. Teaching Institution	College of Engineering Uruk Private University
2. University Department/Centre	Civil Engineering Department (CE)
3. Course title/code & Description	**FIRST YEAR** **Building Materials / GE 105** This course introduces the description of phenomena associated with building materials. Topics covered: physical properties of materials; bonding materials; principles of stresses in buildings quality control on building materials ; global standards and specifications, Manufacture of building materials Uses of building materials, invention of new line of building material. The course is designed to provide a background to higher level courses involving materials in building construction. The course is taught through 3 hrs. per week, 1theories, 1 tutorial, and 1experimental.
4. Programme(s) to which it Contributes	Civil Engineering (CE)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a "Day Program". The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects.
6. Semester/Year	1st & 2nd / Academic Year 2024 – 2025
7. Number of hours tuition (total)	90 hrs. / 3 hrs. per week
8. Date of production/revision of this specification	February / 2024

9. Aims of the Course

- Graduate civil engineers to serve in construction and other sectors of civil engineering labor market
- Improving the teaching and administrative activities to meet international accreditations standards and the mission of the department
- Improving the academic abilities of the faculty and attracting highly skilled personal
- Improve the abilities and management and technical support staff and attract the highly skilled for employment
- Optimum use of resources and potentials of the department
- Cooperation, academic exchange, program partnerships with other universities and academic centers in developed countries
- Establishing viable applied research that generates knowledge for local and foreign markets.

10· Learning Outcomes

a. An ability to apply knowledge of mathematics, science, and engineering.
b. An ability to design and conduct experiments, as well as to analyze and interpret data.
c. An ability to design a system, component, or process to meet desired needs.
d.Explain the application of material to a concrete ceiling
e. An ability to identify, formulates, and solves engineering problems.
f.Engage in effectively interpersonal, oral, visual, and in written communication
g. Demonstrate basic drafting proficiency, including the ability to use industry-standard computer software to generate 2D and 3D drawings
h.Demonstrate fundamental knowledge of the systems and processes used to construct the built environment, including an understanding of industry terminology
i. Estimate the costs for labor, materials, and equipment for a construction project using industry-standard software and procedures.
j. Develop a schedule of activities for a construction project, determine the critical path, and identify methods of compressing the completion time.
k. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

11. Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.
4. Lab. Experiments.
5. Tests and Exams.
6. In-Class Questions and Discussions.
7. Connection between Theory and Application.
8. Field Trips.
9. Extracurricular Activities.
10. Seminars.
11. In- and Out-Class oral conservations.
12. Reports, Presentations, and Posters.

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Extracurricular Activities.
3. Student Engagement during Lectures.
4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor).

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13. Grading Policy

1. Quizzes:
- There will be a (5 – 10) closed books and notes quizzes during the academic year.
- The quizzes will count 20% of the total course grade.
2. Lab. tests 8-11 and will count 15% of the total course grade.
3. Extracurricular Activities, this is optional and will count extra marks (15 %) for the student, depending on the type of activity.
4. Final Exam:
- The final exam will be comprehensive, closed books and notes, and will count 50% of the total course grade.

14. Course Structure

Week	hours	LOs (Article 10)	Unit/Module or Topic Title	Teaching method	Assessment method
1	3 1the. 1tut. 1exp.	a,b,e,f, g,k	Introduction of Construction Materials Science 1. Types of building 2. Mechanical properties of materials 3. Materials properties	1-12 of article (11)	1-4 of article 11
2	3 1the. 1tut. 1exp.	b,c,g,h, I,k,	Bonding Material- Gypsum plaster 1. Introduction of Gypsum plaster 2.Manufacture of gypsum plaster 3.Gypsm products : a. Plaster of Paris b.Ordinary plaster c.Technical plaster d.Anhydrous plaster e. Keen cement	1-12 of article (11)	1-4 of article 11
3	3 1the. 1tut. 1exp.	b,d,e,f,j	Bonding Material- Lime 1. Definition and classification a. Quick lime b. Hydrated lime 2. Manufacture of lime - Theory of	1-12 of article (11)	1-4 of article 11

			calcinations 3. Properties of quick lime 4. Properties of hydrated lime		
4	3 1the. 1tut. 1exp.	a,c,d,e, I,k	Bricks Classification of bricks according to constituent raw material: 1. Clay bricks 1.1 Raw materials 1.2 Composition of good clay brick 1-3 Harmful ingredients in clay bricks 1.4 Manufacture of bricks: 1.5 Classification of clay bricks in accordance with Iraqi standard No. 25 / 1988	1-12 of article (11)	1-4 of article 11
5	3 1the. 1tut. 1exp.	a,b,f,g, I,k	Bricks 1.6 Properties of bricks: 1.6.1 Compressive strength 1.6.2 Water absorption 1.6.3 Effloresce	1-12 of article (11)	1-4 of article 11
6	3 1the. 1tut. 1exp.	a,b,e,f, g,k	2. Sand - Lime bricks: .2 Mix proportion: 2.3 Manufacture: 2.4 Properties of lime sand brick 3. Concrete bricks 3.2 Properties of concrete bricks	1-12 of article (11)	1-4 of article 11
7	3 1the. 1tut.	b,c,g,h, I,k,	Blocks 1.Introduction	1-12 of article (11)	1-4 of article 11

	1exp.				
8	3 1the. 1tut. 1exp.	b,d,e,f,j	2.Types of blocks	1-12 of article (11)	1-4 of article 11
9	3 1the. 1tut. 1exp.	a,c,d,e, I,k	3.Manufactures of blocks	1-12 of article (11)	1-4 of article 11
10	3 1the. 1tut. 1exp.	a,b,f,g, I,k	4.Uses of blocks	1-12 of article (11)	1-4 of article 11
11	3 1the. 1tut. 1exp.	a,b,e,f, g,k	-solid blocks -hollow blocks	1-12 of article (11)	1-4 of article 11
12	3 1the. 1tut. 1exp.	b,c,g,h, I,k,	-itonic blocks -thermal blocks	1-12 of article (11)	1-4 of article 11
13	3 1the. 1tut. 1exp.	b,d,e,f,j	-glass blocks -hourdy blocks	1-12 of article (11)	1-4 of article 11
14	3 1the. 1tut. 1exp.	a,c,d,e, I,k	Tiles – Introduction Classification	1-12 of article (11)	1-4 of article 11
15	3 1the. 1tut. 1exp.	a,b,f,g, I,k	Types & uses of tiles	1-12 of article (11)	1-4 of article 11
16	3 1the. 1tut. 1exp.	a,b,e,f, g,k	Manufacture of Tiles	1-12 of article (11)	1-4 of article 11
17	3 1the. 1tut. 1exp.	b,c,g,h, I,k,	Timber Classification of trees	1-12 of article (11)	1-4 of article 11
18	3 1the. 1tut. 1exp.	b,d,e,f,j	Seasoning in wood	1-12 of article (11)	1-4 of article 11

19	3 1the. 1tut. 1exp.	a,c,d,e, I,k	Methods of wood seasoning	1-12 of article (11)	1-4 of article 11
20	3 1the. 1tut. 1exp.	a,b,f,g, I,k	Natural defects in timber	1-12 of article (11)	1-4 of article 11
21	3 1the. 1tut. 1exp.	a,b,e,f, g,k	Artificial defects in timber	1-12 of article (11)	1-4 of article 11
22	3 1the. 1tut. 1exp.	b,c,g,h, I,k,	Mechanical properties of woods	1-12 of article (11)	1-4 of article 11
23	3 1the. 1tut. 1exp.	b,d,e,f,j	Strength and moisture in wood	1-12 of article (11)	1-4 of article 11
24	3 1the. 1tut. 1exp.	a,c,d,e, I,k	Timber defects -Shrinkage intimber - Warping in timber Cheking in - timber	1-12 of article (11)	1-4 of article 11
25	3 1the. 1tut. 1exp.	a,b,f,g, I,k	Metal Properties of metals	1-12 of article (11)	1-4 of article 11
26	3 1the. 1tut. 1exp.	a,b,e,f, g,k	-classification of steel due to carbon content	1-12 of article (11)	1-4 of article 11
27	3 1the. 1tut. 1exp.	b,c,g,h, I,k,	-high carbon steel -properties &uses	1-12 of article (11)	1-4 of article 11
28	3 1the. 1tut. 1exp.	b,d,e,f,j	-low carbon steel -properties &uses	1-12 of article (11)	1-4 of article 11
29	3	a,c,d,e,	-factors affecting	1-12 of	1-4 of article 11

	1the. 1tut. 1exp.	I,k	steel properties	article (11)	
30	3 1the. 1tut. 1exp.	a,b,f,g, I,k	-heat treatment of steel	1-12 of article (11)	1-4 of article 11

15. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	-construction materials by zuhair sakoo -Concrete Technology by Chand -Construction materials by sersem -developed reinforced concrete by R.N.Swamy ACI(American concrete institute),ASTM(American standards for testing methods),BS(british standards
Special requirements (include for example workshops, periodicals, IT software, websites)	• Laboratory experiments in the (materials Lab) of the department. • Available websites related to the subject. • Extracurricular activities
Community-based facilities (include for example, guest Lectures , internship , field studies)	Field and scientific visits. • Extra lectures by foreign guest lecturers
16. Admissions	
Pre-requisites	/
Minimum number of students	5
Maximum number of students	35
17. Course Instructors	**Instructor :** **Assistant Lecturer Anas Nahidh Hassooni** Civil Engineering Department College of Engineering Uruk Private University Email: Anas_nahidh@uruk.edu.iq

1. Teaching Institution	College of Engineering Uruk Private University
2. University Department/Centre	Civil Engineering Department (CE)
3. Course title/code & Description	**FIRST YEAR** **Engineering Statistics / CE 108** This course introduces: Description and Classification of Data, Frequency Distribution (Cumulative Frequency Distribution, Frequency Histogram, Frequency Polygon, Frequency Curve and Relative Frequency), Measurements of Central Tendency (Mathematical Mean, Mode, Geometric Mean and Harmonic Mean), Measures of Dispersion (Standard Deviation, Variance, Coefficient of Variance, Range and Mean Absolute Deviation), Theory of Probability, Permutation and Combination, Statistical Probability Distributions (Poisson, Binomial and Normal), Sampling and Testing of Significant Chi-Square Distribution and Linear Correlation and regression. The course is taught through 2 hrs. per week, 1theories, 1 tutorial.
4. Programme(s) to which it Contributes	Civil Engineering (CE)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a "Day Program". The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects.
6. Semester/Year	1st & 2nd / Academic Year 2024 – 2025
7. Number of hours tuition (total)	60 hrs. / 2 hrs. per week
8. Date of production/revision of this specification	February / 2025

9. Aims of the Course

This course aims introduce statistics and its applications for science and engineering students. It helps students :

1.solve some practical problems by statistical methods.

2.develop their skills in thinking.

3.analyzing problems from a probabilistic.

4.statistical point of view.

5.Provide the engineer with both descriptive and analytical methods for dealing with the variability in observed data.

6.How engineers use statistical methodology as part of the engineering problem-solving process.

10· Learning Outcomes

a. Determine measure of central tendency and variation from a data set, and estimate Population parameters.
b. Identify the distribution of a random variable (discrete or continuous) of interest in an experiment, and calculate the probability that the random variable can take on certain values.
c. Conduct hypothesis testing and construct confidence intervals for the population mean, variance, or proportion (one sample and two samples).
d Apply the principles of linear regression to predict the outcomes of certain experiment parameters.

11. Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.
4. Lab. Experiments.
5. Tests and Exams.
6. In-Class Questions and Discussions.
7. Connection between Theory and Application.
8. Field Trips.
9. In- and Out-Class oral conservations.
10. Reports, Presentations, and Posters.

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Extracurricular Activities.
3. Student Engagement during Lectures.
4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor).

13. Grading Policy

1- Quizzes : the quizzes will count 15% of the total grade
2- Test : the tests will count 25% of the total grade

3-Final Exam : the will count 60% of the total grade

14. Course Structure

Week	Hours	LOs (Article 10)	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	2 1the. 1tut.	a	Introduction to Statistics	1-12 of article (11)	1 – 4 of article (12)
2	2 1the. 1tut	a	Description of Data	1-12 of article (11)	1 – 4 of article (12)
3	2 1the. 1tut	a	Classification of Data	1-12 of article (11)	1 – 4 of article (12)
4	2 1the. 1tut	a	Frequency Distribution	1-12 of article (11)	1 – 4 of article (12)
5	2 1the. 1tut	a	Frequency Distribution	1-12 of article (11)	1 – 4 of article (12)
6	2 1the. 1tut	a	Measurements of Central Tendency	1-12 of article (11)	1 – 4 of article (12)
7	2 1the. 1tut	a	Measurements of Central Tendency	1-12 of article (11)	1 – 4 of article (12)
8	2 1the. 1tut	a	Measures of Dispersion	1-12 of article (11)	1 – 4 of article (12)
9	2 1the. 1tut	a	Measures of Dispersion	1-12 of article (11)	1 – 4 of article (12)
10	2 1the. 1tut	a	Theory of Probability	1-12 of article (11)	1 – 4 of article (12)
11	2 1the. 1tut	a	Theory of Probability	1-12 of article (11)	1 – 4 of article (12)
12	2 1the. 1tut	a	Theory of Probability	1-12 of article (11)	1 – 4 of article (12)
13	2 1the. 1tut	a	Permutation	1-12 of article (11)	1 – 4 of article (12)
14	2 1the.	a	Combination	1-12 of article (11)	1 – 4 of article (12)

	1tut				
15	2 1the. 1tut	a	Statistical Probability Distributions	1-12 of article (11)	1 – 4 of article (12)
16	2 1the. 1tut	a	Discrete Prob. Dist	1-12 of article (11)	1 – 4 of article (12)
17	2 1the. 1tut	a	Poisson Distributions,	1-12 of article (11)	1 – 4 of article (12)
18	2 1the. 1tut	a	Poisson Distributions,	1-12 of article (11)	1 – 4 of article (12)
19	2 1the. 1tut	a	Poisson Distributions,	1-12 of article (11)	1 – 4 of article (12)
20	2 1the. 1tut	a	Poisson Distributions,	1-12 of article (11)	1 – 4 of article (12)
21	2 1the. 1tut	a	Continuous Prob. Dist	1-12 of article (11)	1 – 4 of article (12)
22	2 1the. 1tut	a	Normal Disttribution	1-12 of article (11)	1 – 4 of article (12)
23	2 1the. 1tut	a	Normal Disttribution	1-12 of article (11)	1 – 4 of article (12)
24	2 1the. 1tut	a	Chi-Square Distribution	1-12 of article (11)	1 – 4 of article (12)
25	2 1the. 1tut	a	Chi-Square Distribution	1-12 of article (11)	1 – 4 of article (12)
26	2 1the. 1tut	c	Statistical Hypothesis	1-12 of article (11)	1 – 4 of article (12)
27	2 1the. 1tut	c	Statistical Hypothesis	1-12 of article (11)	1 – 4 of article (12)
28	2 1the. 1tut	d	Linear Correlation and regression	1-12 of article (11)	1 – 4 of article (12)
29	2 1the.		Linear Correlation and regression	1-12 of article (11)	1 – 4 of article (12)

	1tut				
30	2 1the. 1tut	d	Linear Correlation and regression	1-12 of article (11)	1 – 4 of article (12)

15. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	الاحصاء الهندسي ، د. ناجي توفيق Applied statistic and probability for Engineering, Montgomery D. C. and Runger G. C., John Wiley & Sons, Inc, 2003. Modern Engineering statistic, RYAN, T. P. , John Wiley & Sons, Inc, 2007.
Special requirements (include for example workshops, periodicals, IT software, websites)	/
Community-based facilities (include for example, guest Lectures , internship , field studies)	/
16. Admissions	
Pre-requisites	GE 101 Course
Minimum number of students	5
Maximum number of students	35
17. Course Instructors	**Instructor :** **Dr. Salah Khazaal Zamim** Civil Engineering Department College of Engineering Uruk Private University Email: dr.salah@uruk.edu.iq

1. Teaching Institution	College of Engineering University of Baghdad
2. University Department/Centre	Civil Engineering Department (CE)
3. Course title/code & Description	**FIRST YEAR** **Computer Programming / GE 109** This course introduces: 1. Introduction to computers and historical review. 2. Introduction to programming languages. Basic language [Algorithms and flow chart, Data Types, Constant and Variables, Expressions and Assignment (arithmetic, logical, characteristic, relational), Operators (arithmetic operators, logical operators, rules of logical operators, string operators, relational operators), Library Functions, Input and Output Commands, Conditional Statement, Loops and Counters, Arrays and Matrices, Subroutines (subprogram), Format Statement (printing). The course is taught through 4 hrs. per week, 2theories, 2 experimental..
4. Programme(s) to which it Contributes	Civil Engineering (CE)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a "Day Program". The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects.
6. Semester/Year	1st & 2nd / Academic Year 2024 – 2025
7. Number of hours tuition (total)	120 hrs. / 4 hrs. per week

8. Date of production/revision of this specification	February / 2025

9. Aims of the Course

1. Introduce the History of Computing and Decimal numbering systems and bilateral.
2. Introduce the Algorithms and flowcharts.
3. Explain the Quick Basic programming languages as follows:
   3.1 Constant, variable, input, output.
   3.2 Mathematical expressions and library functions.
   3.3 Control statements (GOTO, ON…GOTO, IF statement).
   3.4 Counters, loops and the FOR - NEXT statements.
   3.5 Selected case.
   3.5 Matrices and Arrays
   3.6 Defined Functions, subroutine and subprogram.
   3.7 Format statement.
4. Introduce students to the computer's hardware
5. Windows system.
6. Microsoft Word.
7. Microsoft Excel.
   Microsoft Power Point.

10· Learning Outcomes

At the end of the class, the student will be able to:
a. Learning
how to transform the numbers from decimal to binary system and from binary to decimal system.
b. Learning how to write the algorithms and how to draw the flowchart sketches.
c. Learning how to deal with the numerical and string constant and variable.
d. Learning the types of input and output statements
e. Learning the mathematical expressions and library functions in the Basic Language.
f. Learning how to use the control statements (GOTO, ON...GOTO, IF statements) to make the conditions in the programs.

g. Learning how to use the Counters, loops and the FOR - NEXT statements in the series programming.
h. Learning how to use the (Selected case) in programming.
i. Learning how to create matrix, the mathematical operation and the properties of matrices.
j. Learning how to arrange the elements of matrix ascending or descending.
k. Learning how to change the locations of the matrix elements and Learning how to create two dimensional matrix, the mathematical operation and the properties of matrices.
l. Learning how to use the Defined Functions, subroutine and subprogram in the programs.
m. Learning the types of Format statement.
n. Introduce students to the computer's hardware
o. Introducing the student on how to use Microsoft WORD software
p. Introducing the student on how to use Microsoft EXCIL software
q. Introducing the student on how to use Microsoft POWER POINT software.

11. Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.
4. Lab. Experiments.
5. Tests and Exams.
6. In-Class Questions and Discussions.
7. Connection between Theory and Application.
8. Field Trips.
9. Extracurricular Activities.
10. Seminars.
11. In- and Out-Class oral conservations.
12. Reports, Presentations, and Posters.

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Extracurricular Activities.
3. Student Engagement during Lectures.
4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor).

13. Grading Policy

1.Quizzes
There will be a (5-10) close books quizzes during the academic year.
These quizzes will count 30% of the total course grade.
2. Extracurricular Activities
This is optional and will count 20% of the total course grade depending on the type of activity.
3. Final Exam
The final exam will be comprehensive, closed books and will count 50% of the total course grade.

14. Course Structure

Week	Hours	LOs (Article 10)	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	4 2 the. 2tut	a , n	History of Computing and Decimal numbering systems and bilateral & computers hardware	1-12 of article (11)	1 – 4 of article (12)
2	4 2 the. 2tut	b , n	Algorithms and flowcharts Windows, start menu	1-12 of article (11)	1 – 4 of article (12)
3	4 2 the. 2tut	c , n	Basic language programming - variables and constants Desktop, search, screen saver, control panels	1-12 of article (11)	1 – 4 of article (12)
4	4 2 the. 2tut	a , b , c	Mathematical expressions and library functions Applications on Quick Basic	1-12 of article (11)	1 – 4 of article (12)
5	4 2 the. 2tut	c , d	Input statement Quiz Applications on Quick Basic	1-12 of article (11)	1 – 4 of article (12)

6	4 2 the. 2tut	d , o	Output statements and printing Office-word-starting, tools, format, insert Quiz	1-12 of article (11)	1 – 4 of article (12)
7	4 2 the. 2tut	e , o	CLS, REM sentences Office-word-starting, tools, format, insert	1-12 of article (11)	1 – 4 of article (12)
8	4 2 the. 2tut	f , o	control statements(GOTO, ON...GOTO, IF statements) Header, footer, border, paragraph	1-12 of article (11)	1 – 4 of article (12)
9	4 2 the. 2tut	g	Counters Quiz	1-12 of article (11)	1 – 4 of article (12)
10	4 2 the. 2tut	l	Quiz Create Pdf, print	1-12 of article (11)	1 – 4 of article (12)
11	4 2 the. 2tut	g	loops and series Applications on Quick Basic	1-12 of article (11)	1 – 4 of article (12)
12	4 2 the. 2tut	g	the FOR - NEXT statements in the series Applications on Quick Basic	1-12 of article (11)	1 – 4 of article (12)
13	4 2 the. 2tut	g	Quiz	1-12 of article (11)	1 – 4 of article (12)
14	4 2 the. 2tut	h	Selected case Applications on Quick Basic	1-12 of article (11)	1 – 4 of article (12)
15	4 2 the.	g	DO …LOOP statement	1-12 of article (11)	1 – 4 of article (12)

	2tut		Applications on Quick Basic		
16	4 2 the. 2tut	g	Quiz	1-12 of article (11)	1 – 4 of article (12)
17	4 2 the. 2tut	I , p	Matrices and Arrays Office-Excel- starting, worksheets	1-12 of article (11)	1 – 4 of article (12)
18	4 2 the. 2tut	J , p	Mathematical operation and the properties of matrices. Equations, functions, graphs	1-12 of article (11)	1 – 4 of article (12)
19	4 2 the. 2tut	j , p	Ascending and descending order Tools properties, insert	1-12 of article (11)	1 – 4 of article (12)
20	4 2 the. 2tut	k , p	Diagonals, row and columns, triangles properties. Tutorials	1-12 of article (11)	1 – 4 of article (12)
21	4 2 the. 2tut	k	Change the locations of the matrix elements Quiz	1-12 of article (11)	1 – 4 of article (12)
22	4 2 the. 2tut	k	Applications on Quick Basic	1-12 of article (11)	1 – 4 of article (12)
23	4 2 the. 2tut	k , q	Operations on Tow dimensional array Office-Power Point- starting new, slides	1-12 of article (11)	1 – 4 of article (12)
24	4 2 the. 2tut	k , q	Multiplication on Tow dimensional array View types, insert	1-12 of article (11)	1 – 4 of article (12)

25	4 2 the. 2tut	k , q	Creating the largest and smallest element Tutorials	1-12 of article (11)	1 – 4 of article (12)
26	4 2 the. 2tut	k , q	Quiz	1-12 of article (11)	1 – 4 of article (12)
27	4 2 the. 2tut	l	Defined Functions Applications on Quick Basic	1-12 of article (11)	1 – 4 of article (12)
28	4 2 the. 2tut	l	Subroutine and subprogram in the programs. Applications on Quick Basic	1-12 of article (11)	1 – 4 of article (12)
29	4 2 the. 2tut	m	Format statement Applications on Quick Basic	1-12 of article (11)	1 – 4 of article (12)
30	4 2 the. 2tut	m	Quiz	1-12 of article (11)	1 – 4 of article (12)

15. Infrastructure

Required reading:
· CORE TEXTS
· COURSE MATERIALS
· OTHER

References:

1-Programming with Quick Basic –Salah R. Hamza

2-Basic language programming - Mehdi Fadel

3- Basic language programming - Salah Messenger Hamza

4- BASIC practical for personal computers - Aladdin Shamsuddin

5-Basic (Robert L. Albercht)

6- An Introduction to Computer Science and Programming with Basic Language-Salam Al-

	Ammri.
Special requirements (include for example workshops, periodicals, IT software, websites)	/
Community-based facilities (include for example, guest Lectures , internship , field studies)	/
16. Admissions	
Pre-requisites	GE 101 Course
Minimum number of students	5
Maximum number of students	35
17. Course Instructors	**Instructor :** **Assistant Lecturer Mina Faris Ali Alnaimy** Civil Engineering Department College of Engineering Uruk Private University Email: minafalnaimy@uruk.edu.iq

1. Teaching Institution	College of Engineering University of Baghdad
2. University Department/Centre	Civil Engineering Department (CE)
3. Course title/code & Description	**FIRST YEAR** **English Languages / GE 111** This course introduces: Grammars, Pronunciation, Selected Paragraphs in Civil Engineering. The course is taught through 2 hrs. per week, 1theories, 1 tutorial.
4. Programme(s) to which it Contributes	Civil Engineering (CE)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a "Day Program". The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects.
6. Semester/Year	1st & 2nd / Academic Year 2024 – 2025
7. Number of hours tuition (total)	60 hrs. / 2 hrs. per week
8. Date of production/revision of this specification	February / 2024
9. Aims of the Course	

A- A great deal of successful language learning comes from experiences in which the learning is largely unconscious.
B- This course aimed to make the student's interest in the career information presented will increase his or her ability to communicate more easily in English.

10· Learning Outcomes

a. This Course is to introduce the student to the particular vocational area in which he or she is involved.
b. The duties of different kinds of jobs are discussed, as well as the problems that might be encountered at work.
c. Different phases of the civil engineering filed are discussed, together with some of the methods involved in designing structures for a number of different purposes.
d. The aptitudes and education that an engineer must have are also discussed, as well as some of the specific job areas in which he or she may work.

e. This course will be an introduction to the different kinds of work in the field of civil engineering.

11. Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.
4. Lab. Experiments.
4. Tests and Exams.
5. In-Class Questions and Discussions.
6. Connection between Theory and Application.
7. Field Trips.

8. Extracurricular Activities.
9. Seminars.
10. In- and Out-Class oral conservations.
11. Reports, Presentations, and Posters.

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Extracurricular Activities.
3. Student Engagement during Lectures.
4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor).

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13. Grading Policy

- Quiz per week and with average of these quizzes will effect on 30% from the overall score.
- Final exam of 70% scores.
- The final score will be the summation of the average of quizzes and the final exam score.

14. Course Structure

Week	Hours	LOs (Article 10)	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	2 1the. 1tut.	a , b	Unit one- the engineering profession	1-12 of article (11)	1 – 4 of article (12)
2	2 1the. 1tut	a , b	Exercises- discussion	1-12 of article (11)	1 – 4 of article (12)
3	2 1the. 1tut	a , b	review	1-12 of article (11)	1 – 4 of article (12)
4	2 1the. 1tut	b, c, d, e	Unit two- surveying	1-12 of article (11)	1 – 4 of article (12)
5	2 1the. 1tut	b, c, d, e	Exercises- discussion	1-12 of article (11)	1 – 4 of article (12)
6	2 1the. 1tut	b, c, d, e	review	1-12 of article (11)	1 – 4 of article (12)
7	2 1the. 1tut	b, c, d, e	Unit three-modern buildings and structural materials	1-12 of article (11)	1 – 4 of article (12)
8	2 1the. 1tut	b, c, d, e	Exercises- discussion	1-12 of article (11)	1 – 4 of article (12)
9	2 1the. 1tut	b, c, d, e	review	1-12 of article (11)	1 – 4 of article (12)
10	2 1the. 1tut	b, c, d, e	Unit four- transportation systems	1-12 of article (11)	1 – 4 of article (12)
11	2 1the. 1tut	b, c, d, e	Exercises- discussion	1-12 of article (11)	1 – 4 of article (12)
12	2 1the. 1tut	b, c, d, e	review	1-12 of article (11)	1 – 4 of article (12)
13	2 1the.	b, c, d, e	Unit five- bridges	1-12 of article (11)	1 – 4 of article (12)

	1tut				
14	2 1the. 1tut	b, c, d, e	Exercises-discussion	1-12 of article (11)	1 – 4 of article (12)
15	2 1the. 1tut	b, c, d, e	review	1-12 of article (11)	1 – 4 of article (12)
16	2 1the. 1tut	b, c, d, e	Unit six-tunnels	1-12 of article (11)	1 – 4 of article (12)
17	2 1the. 1tut	b, c, d, e	Exercises-discussion	1-12 of article (11)	1 – 4 of article (12)
18	2 1the. 1tut	b, c, d, e	review	1-12 of article (11)	1 – 4 of article (12)
19	2 1the. 1tut	b, c, d, e	Unit seven-hydraulic engineering-dams and canals	1-12 of article (11)	1 – 4 of article (12)
20	2 1the. 1tut	b, c, d, e	Exercises-discussion	1-12 of article (11)	1 – 4 of article (12)
21	2 1the. 1tut	b, c, d, e	review	1-12 of article (11)	1 – 4 of article (12)
22	2 1the. 1tut	b, c, d, e	Unit eight-environment/ sanitary engineering	1-12 of article (11)	1 – 4 of article (12)
23	2 1the. 1tut	b, c, d, e	Exercises-discussion	1-12 of article (11)	1 – 4 of article (12)
24	2 1the. 1tut	b, c, d, e	review	1-12 of article (11)	1 – 4 of article (12)
25	2 1the. 1tut	b, c, d, e	Unit nine-careers in engineering	1-12 of article (11)	1 – 4 of article (12)
26	2 1the. 1tut	b, c, d, e	Exercises-discussion	1-12 of article (11)	1 – 4 of article (12)
27	2 1the. 1tut	b, c, d, e	review	1-12 of article (11)	1 – 4 of article (12)

28	2 1the. 1tut			1-12 of article (11)	1 – 4 of article (12)
29	2 1the. 1tut			1-12 of article (11)	1 – 4 of article (12)
30	2 1the. 1tut			1-12 of article (11)	1 – 4 of article (12)

15. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	**Textbook:** "The Language of Civil Engineering in English "by Eugene J. Hall English For Careers, prentice Hall Regents, Englewood Cliffs. NJ 07632, 1977
Special requirements (include for example workshops, periodicals, IT software, websites)	• Available websites related to the subject
Community-based facilities (include for example, guest Lectures , internship , field studies)	/
16. Admissions	
Pre-requisites	Depending on English courses taken in secondary school
Minimum number of students	5
Maximum number of students	35 per class
	Instructor: **Assuistant Lecturer Noor Majeed Al-lamy** Civil Engineering Department College of Engineering Uruk Private University Email: noor.ma.allamy @uruk.edu.iq

1. Teaching Institution	College of Engineering Uruk Private University
2. University Department/Centre	Civil Engineering Department (CE)
3. Course title/code & Description	**SECOND YEAR** **Mathematics / GE 201** This course introduces:

	Matrices, System of leaner equations, Functions of two or more variables, Limit and continuous functions, Sketch for surface, Sketch for surface, Partial derivatives ,Chain Rule, Total deferential, Directional derivative, Extreme values ,max.,min., Multipliers Lagrange, Double integral, The area, Vectors, Operations on vectors, Equation of Lines, Equation of planes, Vector functions Curvature,Tortion, Sequences, THE infinite series, The test for convergence, Maclo Taylor series , Deferential equations, First order, Second order. The course is taught through 4 hrs per week, 3theories, 1 tutorial.
4. Programme(s) to which it Contributes	Civil Engineering (CE)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a "Day Program". The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects.
6. Semester/Year	1st & 2nd / Academic Year 2024 – 2025
7. Number of hours tuition (total)	120 hrs. / 4 hrs. per week
8. Date of production/revision of this specification	February / 2025
9. Aims of the Course	
a-Introduce basic definitions and introductory concepts of mathematics b- Understand branches of mathematics you will encounter such as geometry or calculus or teach specific topics such as differential equations, algorithms, or non-linear geometry. mathematics courses are very beneficial for students of engineering that will require the extensive use of applied mathematics	

10· Learning Outcomes

At the end of the course, students should be able to:

- a) know and demonstrate understanding of the concepts from the five branches of mathematics (number, algebra, geometry and trigonometry, statistics and probability, and discrete mathematics)
- b) use appropriate mathematical concepts and skills to solve problems in both familiar and unfamiliar situations including those in real-life contexts
- c) Select and apply general rules correctly to solve problems including those in real-life contexts.

11. Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.
4. Lab. Experiments.
5. Tests and Exams.
6. In-Class Questions and Discussions.
7. Connection between Theory and Application.
8. Field Trips.
9. Extracurricular Activities.
10. Seminars.
11. In- and Out-Class oral conservations.
12. Reports, Presentations, and Posters.

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Extracurricular Activities.
3. Student Engagement during Lectures.
4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor).

13. Grading Policy

1-Quizzes: there will be a 5-10 closed books and notes quizzes during the year

2- 1-5% for the students on the type of activity
3-Final Exam will be closed books and notes (60%).

14. Course Structure

Week	Hours	LOs (Article 10)	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	4 3the. 1tut.	a , b , c	Matrices	1-12 of article (11)	1 – 4 of article (12)
2	4 3the. 1tut.	a , b , c	Matrices	1-12 of article (11)	1 – 4 of article (12)
3	4 3the. 1tut.	a , b , c	System of leaner equations	1-12 of article (11)	1 – 4 of article (12)
4	4 3the. 1tut.	a , b , c	Functions of two or more variables	1-12 of article (11)	1 – 4 of article (12)
5	4 3the. 1tut.	a , b , c	Limit and continuous functions, Sketch for surface	1-12 of article (11)	1 – 4 of article (12)
6	4 3the. 1tut.	a , b , c	Sketch for surface	1-12 of article (11)	1 – 4 of article (12)
7	4 3the. 1tut.	a , b , c	Partial derivatives	1-12 of article (11)	1 – 4 of article (12)
8	4 3the. 1tut.	a , b , c	Chain Rule	1-12 of article (11)	1 – 4 of article (12)
9	4 3the. 1tut.	a , b , c	Total deferential	1-12 of article (11)	1 – 4 of article (12)
10	4 3the. 1tut.	a , b , c	Directional derivative	1-12 of article (11)	1 – 4 of article (12)
11	4 3the. 1tut.	a , b , c	Extreme values ,max.,min.,	1-12 of article (11)	1 – 4 of article (12)
12	4 3the. 1tut.	a , b , c	applications	1-12 of article (11)	1 – 4 of article (12)
13	4 3the. 1tut.	a , b , c	Double integral	1-12 of article (11)	1 – 4 of article (12)
14	4	a , b , c	The area,volume	1-12 of	1 – 4 of article (12)

	3the. 1tut.			article (11)	
15	4 3the. 1tut.	a , b , c	Polar coordinates	1-12 of article (11)	1 – 4 of article (12)
16	4 3the. 1tut.	a , b , c	Polar coordinates	1-12 of article (11)	1 – 4 of article (12)
17	4 3the. 1tut.	a , b , c	applications	1-12 of article (11)	1 – 4 of article (12)
18	4 3the. 1tut.	a , b , c	vectors	1-12 of article (11)	1 – 4 of article (12)
19	4 3the. 1tut.	a , b , c	Dot product and applications	1-12 of article (11)	1 – 4 of article (12)
20	4 3the. 1tut.	a , b , c	Vector product and applications	1-12 of article (11)	1 – 4 of article (12)
21	4 3the. 1tut.	a , b , c	Vector functions	1-12 of article (11)	1 – 4 of article (12)
22	4 3the. 1tut.	a , b , c	Curvature and torsion	1-12 of article (11)	1 – 4 of article (12)
23	4 3the. 1tut.	a , b , c	Sequence and infinite series	1-12 of article (11)	1 – 4 of article (12)
24	4 3the. 1tut.	a , b , c	Test for convergent	1-12 of article (11)	1 – 4 of article (12)
25	4 3the. 1tut.	a , b , c	Test for convergent	1-12 of article (11)	1 – 4 of article (12)
26	4 3the. 1tut.	a , b , c	Power series	1-12 of article (11)	1 – 4 of article (12)
27	4 3the. 1tut.	a , b , c	Tyloer series	1-12 of article (11)	1 – 4 of article (12)
28	4 3the. 1tut.	a , b , c	applications	1-12 of article (11)	1 – 4 of article (12)
29	4	a , b , c	Differential	1-12 of	1 – 4 of article (12)

	3the. 1tut.		equations 1st order	article (11)	
30	4 3the. 1tut	a , b , c	2nd order diff. eq.	1-12 of article (11)	1 – 4 of article (12)

15. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	Text book: calculus by thomuse
Special requirements (include for example workshops, periodicals, IT software, websites)	Reference:1) calculus ,seventh edition by Howard 2)Notebook prepared by the instructor
Community-based facilities (include for example, guest Lectures , internship , field studies)	/
16. Admissions	
Pre-requisites	GE 101 Course
Minimum number of students	5
Maximum number of students	35
17. Course Instructors	**Instructor :** **Dr. Omar Yaseen Almashhadany** Civil Engineering Department College of Engineering Uruk Private University Email: Omar_yassin@uruk.edu.iq

1. Teaching Institution	College of Engineering Uruk Private University
2. University Department/Centre	Civil Engineering Department (CE)
3. Course title/code & Description	**SECOND YEAR** **Surveying / CE 201** This course introduces: fundamental concepts of surveying ,distance measurements, elevations and the methods of calculating them, benchmarks, areas and volumes ,coordinates systems, angles measurement with theodolite, using of total station and laying out works. The course is taught through 30 weeks, 5 hrs. per week, 2hrs. theories, 1hrs. tutorial, and 2hrs. experimental.
4. Programme(s) to which it Contributes	Civil Engineering (CE)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a "Day Program". The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects.
6. Semester/Year	1st & 2nd / Academic Year 2024 – 2025
7. Number of hours tuition (total)	150 hrs. / 5 hrs. per week
8. Date of production/revision of this specification	February / 2025
9. Aims of the Course	
The aims of the course are: 1-Giving the students fundamental concepts about surveying as science in general then teaching them the concepts of engineering surveying 2-Teaching them how to measure distances using simple instruments then modern ones and how to correct the measurements to get the desired accuracy. 3-explain what are elevations and how to measure them and the importance of elevations to civil engineers, what are benchmarks and how to make them using different types of levels. Correcting elevations, sections both longitudinal and	

cross sections.
4-how to calculate all kinds of areas and volumes of earthworks by different methods.
5-to teach them about angles ,traversing ,classifications of north, coordinate systems, using of theodolite and total station.
6-make them learn how to set out works ,curves both horizontal & vertical.
7-knowing an introduction in GIS .

10· Learning Outcomes

At the end of the class the students will be able to:
a-measuring any distance using different kinds of instruments.
b-measuring elevations and making bench marks ,and all sections.
c-measuring any needed areas
d-measuring volumes of earth works
e-measuring coordinates ,angles assigning north, and making GCPS.
f-using modern surveying instruments like total station and GPS
g-laying out civil works ,curves and foundation elevations.

11. Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.
4. Lab. Experiments.
5. Tests and Exams.
6. In-Class Questions and Discussions.
7. Connection between Theory and Application.
8. Field Trips.
9. Extracurricular Activities.
10. Seminars.
11. In- and Out-Class oral conservations.
12. Reports, Presentations, and Posters.

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Extracurricular Activities.
3. Student Engagement during Lectures.
4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor).

13. Grading Policy

1-There will be one quiz and one exam for each chapter which means at least 7 quizzes and 7 exams during the teaching year.
2- The quiz will be 5% and the exam 25% and the practical degree will be 15%
3-activities will be 5%
4-final exam will be 50%.

14. Course Structure

Week	Hours	LOs (Article 10)	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	5 2 the. 1 tut. 2 exp.	a	Fundamental principles	1-12 of article (11)	1 – 4 of article (12)
2	5 2 the. 1 tut. 2exp.	a	Fundamental principles	1-12 of article (11)	1 – 4 of article (12)
3	5 2 the. 1 tut. 2 exp	a	Dist. measurements	1-12 of article (11)	1 – 4 of article (12)
4	5 2 the. 1 tut. 2 exp	a	Measurements corrections	1-12 of article (11)	1 – 4 of article (12)
5	5 2 the. 1 tut. 2 exp	a	Quiz and exam	1-12 of article (11)	1 – 4 of article (12)
6	5 2 the. 1 tut. 2 exp	b	leveling	1-12 of article (11)	1 – 4 of article (12)
7	5 2 the. 1 tut. 2 exp	b	Methods of measuring elevations	1-12 of article (11)	1 – 4 of article (12)
8	5 2 the. 1 tut. 2 exp	b	benchmarks	1-12 of article (11)	1 – 4 of article (12)
9	5 2 the. 1 tut. 2 exp	b	Elevation corrections	1-12 of article (11)	1 – 4 of article (12)
10	5 2 the. 1 tut. 2 exp	b	Longitudinal sections	1-12 of article (11)	1 – 4 of article (12)
11	5	b	Cross sections	1-12 of	1 – 4 of article

	2 the. 1 tut. 2 exp			article (11)	(12)
12	5 2 the. 1 tut. 2 exp	b	Topographical maps	1-12 of article (11)	1 – 4 of article (12)
13	5 2 the. 1 tut. 2 exp	b	exam	1-12 of article (11)	1 – 4 of article (12)
14	5 2 the. 1 tut. 2 exp	c	Calculating areas	1-12 of article (11)	1 – 4 of article (12)
15	5 2 the. 1 tut. 2 exp	c	Mathematical and mechanical methods	1-12 of article (11)	1 – 4 of article (12)
16	5 2 the. 1 tut. 2 exp	c	Mathematical and mechanical methods	1-12 of article (11)	1 – 4 of article (12)
17	5 2 the. 1 tut. 2 exp	c	Calculating volumes	1-12 of article (11)	1 – 4 of article (12)
18	5 2 the. 1 tut. 2 exp	d	Calculating volumes	1-12 of article (11)	1 – 4 of article (12)
19	5 2 the. 1 tut. 2 exp	e	theodolite	1-12 of article (11)	1 – 4 of article (12)
20	5 2 the. 1 tut. 2 exp	e	traversing	1-12 of article (11)	1 – 4 of article (12)
21	5 2 the. 1 tut. 2 exp	e	North assessment	1-12 of article (11)	1 – 4 of article (12)
22	5 2 the.	e	coordinate	1-12 of article (11)	1 – 4 of article (12)

	1 tut. 2 exp				
23	5 2 the. 1 tut. 2 exp	e	Azimuth & bearing	1-12 of article (11)	1 – 4 of article (12)
24	5 2 the. 1 tut. 2 exp	e	angles	1-12 of article (11)	1 – 4 of article (12)
25	5 2 the. 1 tut. 2 exp	f	Total station	1-12 of article (11)	1 – 4 of article (12)
26	5 2 the. 1 tut. 2 exp	f	exam	1-12 of article (11)	1 – 4 of article (12)
27	5 2 the. 1 tut. 2 exp	g	Laying out works	1-12 of article (11)	1 – 4 of article (12)
28	5 2 the. 1 tut. 2 exp	g	curves	1-12 of article (11)	1 – 4 of article (12)
29	5 2 the. 1 tut. 2 exp	g	curves	1-12 of article (11)	1 – 4 of article (12)
30	5 2 the. 1 tut. 2 exp	g	GIS	1-12 of article (11)	1 – 4 of article (12)

15. Infrastructure

Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	Text books 1-ENGINEERING SURVEYING ,al ani,Naji Tawfeek 2-Engineering surveying,OBAID,yaseen References: 1-SURVEYING,Bannister,Raymond 2-Engineering surveying,Shepherd

	3-Plane surveying,Chand Others: 1- Notebook by the instructor Collection of sheets of solved and unsolved problems
Special requirements (include for example workshops, periodicals, IT software, websites)	Practical experiments, field experiments Websites related to subjects Requesting websites activities
Community-based facilities (include for example, guest Lectures , internship , field studies)	Field studies
16. Admissions	
Pre-requisites	GE 101 & GE 109 Courses
Minimum number of students	5
Maximum number of students	35
17. Course Instructors	**Instructor:** **Assistant Lecturer Ali Satar Jabbar** Civil Engineering Department College of Engineering Uruk Private University Email: Ali_Satar@uruk.edu.iq

1. Teaching Institution	College of Engineering Uruk Private University
2. University Department/Centre	Civil Engineering Department (CE)
3. Course title/code & Description	**SECOND YEAR** **Mechanics of Materials / CE203** This course introduces: Introduction, Stress and Strain, Hook's Law, Riveted Connections, Thin Walled Pressure Vessels, Axially Loaded Members, Equations of Equilibrium and Compatibility, Thermal Strains, Transformation of Stresses and Strains, Principal Stresses, Torsion, Axial Force, Shear, and Bending Moment Diagrams, Bending Stresses, Composite Beams, Shearing Stresses in Beams, Shear Center and Shear Flow, Compound Stresses, Deflection of Beams, Direct Integration Method, Moment-Area Method, Buckling of Columns. The course is taught through 4 hrs. per week, 3theories, 1 tutorial.
4. Programme(s) to which it Contributes	Civil Engineering (CE)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a "Day Program". The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects.
6. Semester/Year	1st & 2nd / Academic Year 2024 – 2025
7. Number of hours tuition (total)	120 hrs. / 4 hrs. per week
8. Date of production/revision of this specification	February / 2025
9. Aims of the Course	

1. Introduce basic definitions and introductory concepts of solid mechanics
2. Introduce the description of stresses and strains , Hooks law,and Deflection of axially loaded members.
3. Introduce the description of Statically indeterminate problems of axially loaded members and Thermal stresses.
4. Introduce the description of torsion stress and the angle of twist and its deformation.
5. Introduce the principles of Torsion of solid non_ circular members and Torsion thin_ walled hollow members
6. Introduce the principles of Axial force, Shear, and Bending moment,

7. Enable the student to analyze by using simple bending theory.
8. Enable the student to measure the Shearing Stress in Beams
9. Introduce the principles of Deflection of Beams and measuring the deflection by using moment area method.
10. Provide a background to find the Compound Stresses and Principal Stresses, Maximum Shearing Stresses, An Important Transformation of Stress and using Mohr's Circle of Stress to find any stresses in any twisting angle.
11. Introduce the principles of Buckling and Stability of Columns

10· Learning Outcomes

At the end of the class, the student will be able to:
a. calculate Normal stresses, Bearing stresses and Searing stresses.
b. Calculate Strain, Deflection of axially loaded members and find the effect of Thermal stresses.
c. Calculate the torsional stress and Design of circular members in torsion and the Angle of twist of circular members.
d. drawing the shear , axial and Bending moment diagrams
e. Use the simple bending theory to analyses any beam to find the maximum stress and deals with Beams of Two Materials.
f. Calculate the shear stresses for any section and its distribution with the cross-section.
g. Calculate the deflection by using Direct integration Method and Moment – Area Method.
h. Find the stresses of different types and using the Superposition and its Limitation.
i. find the Principal Stresses, Maximum Shearing Stresses, An Important Transformation of Stress by using Mohr's Circle of Stress.
j. Calculate the Buckling and Stability of the columns.

11. Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.
4. Lab. Experiments.
5. Tests and Exams.
6. In-Class Questions and Discussions.
7. Connection between Theory and Application.
8. Field Trips.
9. Extracurricular Activities.
10. Seminars.
11. In- and Out-Class oral conservations.
12. Reports, Presentations, and Posters.

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Extracurricular Activities.
3. Student Engagement during Lectures.
4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor).

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13. Grading Policy

Quizzes:
- There will be a (10 – 15) closed books and notes quizzes during the academic year.
- The quizzes will count 30% of the total course grade.

2. Extracurricular Activities, this is optional and will count extra marks (10 %) for the student, depending on the type of activity.

4. Final Exam:
- The final exam will be comprehensive, closed books and notes, and will count 60% of the total course grade.

14. Course Structure

Week	Hours	LOs (Article 10)	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	4 3the. 1tut.	a	1. Normal tresses. 2. Bearing tresses.	1-12 of article (11)	1 – 4 of article (12)
2	4 3the. 1tut.	a	3. Searing tresses. 4. Allowable stresses and factor of safety.	1-12 of article (11)	1 – 4 of article (12)
3	4 3the. 1tut.	a	5. Application of above concepts a. Design of Axially loaded Members. b. Riveted and bolted connections. c. Thin_ walled pressure tubes and vessels.	1-12 of article (11)	1 – 4 of article (12)
4	4 3the. 1tut.	b	1. Strain 2. Stress_ Strain diagram. 3. Hooks law.	1-12 of article (11)	1 – 4 of article (12)
5	4 3the. 1tut.	b	4. Deflection of axially loaded members. 5. Generalized hooks law.	1-12 of article (11)	1 – 4 of article (12)
6	4 3the. 1tut.	b	6. Statically indeterminate problems of axially loaded members. 7. Thermal stresses.	1-12 of article (11)	1 – 4 of article (12)
7	4 3the. 1tut.	c	1. Application of method of section. 2. Basic assumptions. 3. Torsion formula.	1-12 of article (11)	1 – 4 of article (12)

8	4 3the. 1tut.	c	4. Design of circular members in torsion. 5. Angle of twist of circular members.	1-12 of article (11)	1 – 4 of article (12)
9	4 3the. 1tut.	c	6. Statically indeterminate torsional members. 7. Torsion of solid non_ circular members. 8. Torsion thin_ walled hollow members	1-12 of article (11)	1 – 4 of article (12)
10	4 3the. 1tut.	d	1. Sign convention	1-12 of article (11)	1 – 4 of article (12)
11	4 3the. 1tut.	d	2. Axial_ force, shear, and moment diagrams: A direct approach.	1-12 of article (11)	1 – 4 of article (12)
12	4 3the. 1tut.	d	3. Shear and moment diagrams: A summation approach.	1-12 of article (11)	1 – 4 of article (12)
13	4 3the. 1tut.	e	1. Limitations of theory. 2. Basic kinematic assumption.	1-12 of article (11)	1 – 4 of article (12)
14	4 3the. 1tut.	e	3. Flexure formula.	1-12 of article (11)	1 – 4 of article (12)
15	4 3the. 1tut.	e	4. Economic Sections.	1-12 of article (11)	1 – 4 of article (12)
16	4 3the. 1tut.	e	5. Beams of Two Materials	1-12 of article (11)	1 – 4 of article (12)

17	4 3the. 1tut.	f	1. Some Preliminaries	1-12 of article (11)	1 – 4 of article (12)
18	4 3the. 1tut.	f	2. Shear Flow	1-12 of article (11)	1 – 4 of article (12)
19	4 3the. 1tut.	f	3. The Shearing Stress Formula for Beams	1-12 of article (11)	1 – 4 of article (12)
20	4 3the. 1tut.	f	4. Limitations of Shearing Stress Formula.	1-12 of article (11)	1 – 4 of article (12)
21	4 3the. 1tut.	g	1. Strain – Curvature and Moment – Curvature Relations	1-12 of article (11)	1 – 4 of article (12)
22	4 3the. 1tut.	g	2. Direct integration Method.	1-12 of article (11)	1 – 4 of article (12)
23	4 3the. 1tut.	g	3. Moment – Area Method.	1-12 of article (11)	1 – 4 of article (12)
24	4 3the. 1tut.	h	1. Superposition and its Limitation. 2. Skew Bending.	1-12 of article (11)	1 – 4 of article (12)
25	4 3the. 1tut.	h	3. Eccentrically Loaded Members. 4. Superposition of Shearing Stresses .	1-12 of article (11)	1 – 4 of article (12)
26	4 3the. 1tut.	h	1. The Basic Problem 2. Equation for the Transformation of Plan Stress.	1-12 of article (11)	1 – 4 of article (12)
27	4 3the. 1tut.	i	3. Principal Stresses. 4. Maximum Shearing Stresses.	1-12 of article (11)	1 – 4 of article (12)
28	4	i	5. An Important	1-12 of	1 – 4 of article (12)

	3the. 1tut.		Transformation of Stress. 6. Mohr's Circle of Stress.	article (11)	
29	4 3the. 1tut.	j	1. Buckling and Stability	1-12 of article (11)	1 – 4 of article (12)
30	4 3the. 1tut	j	2. Columns with Pinned Ends. 3. Columns with Eccentric Axial Loads.	1-12 of article (11)	1 – 4 of article (12)

15. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	1- Mechanics of materials "SECOND EDETION 1979"BY E.P.Popov. 2- Mechanics of materials "fifth Edetions 2001" By J.M. Geer 3- Strength of material by F.L.Singer 4- Elements of strength of materials By S.Timoshenko and Young.
Special requirements (include for example workshops, periodicals, IT software, websites)	Laboratory experiments in the (Strength of material Lab) of the department. • Available websites related to the subject.
Community-based facilities (include for example, guest Lectures , internship , field studies)	/
16. Admissions	
Pre-requisites	CE 102 & GE 101 Courses
Minimum number of students	
Maximum number of students	
17. Course Instructors	**Instructor :** **Prof. Dr. Hisham Mohammed Ali Al-Hassani** Civil Engineering Department College of Engineering Uruk Private University Email: dr.hisham_mohamed @uruk.edu.iq

1. Teaching Institution	College of Engineering Uruk Private University
2. University Department/Centre	Civil Engineering Department (CE)
3. Course title/code & Description	**SECOND YEAR** **Computer Programming /GE 204** This course introduces: Introduction to Visual Basic 6 and user interface, New Concepts in Visual Basic (Properties, Events, Methods) , Basic components and their use, Forms, Variable declaration, types, effective time, Textbox, Labels, command button, Frame, checkbox, radio button, List Box + Combo Box, Scroll Bar + Picture Box, More on Built in Functions. The course is taught through 4 hrs. per week, 2theories, 2experimental.
4. Programme(s) to which it Contributes	Civil Engineering (CE)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a "Day Program". The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects.
6. Semester/Year	1st & 2nd / Academic Year 2024 – 2025
7. Number of hours tuition (total)	120 hrs. / 4 hrs. per week
8. Date of production/revision of this specification	February / 2025

9. Aims of the Course

1. Graduate Civil engineers to serve in building and construction, project management and other sectors of the Civil engineering market.
2. Improving the teaching and administrative activities to meet international accreditations standards and the mission of the department.
3. Improving the academic abilities of the faculty and attracting highly skilled personnel.
4. Improve the abilities of management and technical support staff and attract the highly skilled for employment.
5. Optimum use of resources and potentials of the department.
6. Cooperation, academic exchange programs, partnerships with other universities and academic centers in developed countries.
7. Establishing viable applied research that generates knowledge for local and foreign markets.

10· Learning Outcomes

At the end of the class, the student will be able to:
a. make computer programs using visual basic 6 programming language using each of the individual components with review of popular algorithm.
b. Learn to use the events to run subroutines that may alter or use the properties or methods of other components.
c. To use the Label and textbox components.
d. To use the button component.
e. To use the list component.
f. To use the combo component.
g. To use the image box and multiline textbox.
h. To use the option button and check box.
i. To use the scroll bar component.
j. To use the picture box.
k. To use user defined functions and subroutines.
l. Introduce MatLab programming Language.
m. Define variables, vectors, and matrices.
n. Polynomial integration, differentiation, and evaluation.
o. Ordinary differentiation and integration and limits.
p. 2-D x-y plots.
q. Subplots.
r. Polar Plots
s. For loops.
t. conditional if statements.

11. Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.
4. Lab. Experiments.
5. Tests and Exams.
6. In-Class Questions and Discussions.
7. Connection between Theory and Application.
8. Field Trips.
9. Extracurricular Activities.
10. Seminars.
11. In- and Out-Class oral conservations.
12. Reports, Presentations, and Posters.

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Extracurricular Activities.
3. Student Engagement during Lectures.
4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor).

13. Grading Policy

1. Quizzes:
- There will be a (10 – 15) closed books and notes quizzes during the academic year.
- The quizzes will count 25% of the total course grade.
2. Tests, 2-3 Nos. and will count 15% of the total course grade.
3. Extracurricular Activities, this is optional and will count extra marks (10 %) for the student, depending on the type of activity.
4. Final Exam:
- The final exam will be comprehensive, closed books and notes, and will count 50% of the total course grade.

14. Course Structure

Week	Hours	LOs (Article 10)	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	4 2the. 2exp.	a	Introduction to computer programming using visual basic 6 programming language.	1-12 of article (11)	1 – 4 of article (12)
2	4 2the. 2exp.	a	Review to important computer algorithms	1-12 of article (11)	1 – 4 of article (12)
3	4 2the. 2exp.	a	Review to important computer algorithms	1-12 of article (11)	1 – 4 of article (12)
4	4 2the. 2exp.	b	Introduction to Visual Basic 6 programming	1-12 of article (11)	1 – 4 of article (12)
5	4 2the. 2exp.	b	Description of the events, properties and methods of components	1-12 of article (11)	1 – 4 of article (12)
6	4 2the. 2exp.	b	Quick review of the components used in the visual basic programming language	1-12 of article (11)	1 – 4 of article (12)
7	4 2the. 2exp.	c	Learn to use labels and textboxes	1-12 of article (11)	1 – 4 of article (12)
8	4 2the. 2exp.	f	To use the combo component.	1-12 of article (11)	1 – 4 of article (12)
9	4 2the. 2exp.	g	To use the image box and multiline textbox	1-12 of article (11)	1 – 4 of article (12)
10	4 2the. 2exp.	h	To use the option button and check box	1-12 of article (11)	1 – 4 of article (12)
11	4 2the.	i	To use the scroll bar	1-12 of article (11)	1 – 4 of article (12)

	2exp.		component		
12	4 2the. 2exp.	j	To use the picture box.	1-12 of article (11)	1 – 4 of article (12)
13	4 2the. 2exp.	k	To use user defined functions and subroutines	1-12 of article (11)	1 – 4 of article (12)
14	4 2the. 2exp.	k	To use user defined functions and subroutines	1-12 of article (11)	1 – 4 of article (12)
15	4 2the. 2exp.	l	Introduce MatLab programming Language.	1-12 of article (11)	1 – 4 of article (12)
16	4 2the. 2exp.	l	Introduce MatLab programming Language.	1-12 of article (11)	1 – 4 of article (12)
17	4 2the. 2exp.	m	Define variables, vectors, and matrices.	1-12 of article (11)	1 – 4 of article (12)
18	4 2the. 2exp.	m	Define variables, vectors, and matrices.	1-12 of article (11)	1 – 4 of article (12)
19	4 2the. 2exp.	n	Polynomial integration, differentiation, and evaluation.	1-12 of article (11)	1 – 4 of article (12)
20	4 2the. 2exp .	n	Polynomial integration, differentiation, and evaluation.	1-12 of article (11)	1 – 4 of article (12)
21	4 2the. 2exp.	o	Ordinary differentiation and integration and limits.	1-12 of article (11)	1 – 4 of article (12)
22	4 2the. 2exp.	o	Ordinary differentiation and integration and limits.	1-12 of article (11)	1 – 4 of article (12)
23	4 2the. 2exp.	p	2-D x-y plots.	1-12 of article (11)	1 – 4 of article (12)
24	4 2the. 2exp.	p	2-D x-y plots.	1-12 of article (11)	1 – 4 of article (12)

25	4 2the. 2exp.	p	Axis + legend + data marker + line type	1-12 of article (11)	1 – 4 of article (12)
26	4 2the. 2exp.	p	Step plot + pie chart	1-12 of article (11)	1 – 4 of article (12)
27	4 2the. 2exp.	q	Subplots.	1-12 of article (11)	1 – 4 of article (12)
28	4 2the. 2exp.	r	Polar Plots	1-12 of article (11)	1 – 4 of article (12)
29	4 2the. 2exp.	s	For loops.	1-12 of article (11)	1 – 4 of article (12)
30	4 2the. 2exp.	t	conditional if statements.	1-12 of article (11)	1 – 4 of article (12)

15. Infrastructure

Required reading:
· CORE TEXTS
· COURSE MATERIALS
· OTHER

Textbook

"Programming Microsoft Visual Basic 6.0"; by Francesco Balena., 1988. PUBLISHED BY Microsoft Press A Division of Microsoft Corporation

- ***References***

Learn Visual Basic 6.0 by Lou Tylee, 1998.
MICROSOFT VISUAL BASIC PROGRAMS TO ACCOMPANY PROGRAMMING LOGIC AND DESIGN by JO ANN SMITH, 2011.
فجوال بيسك للجميع نحو برمجة كائنية التوجه 2002
Essential MATLAB® for Engineers and Scientists, by Brian D. Hahn
And Daniel T. Valentine, 2007
INTRODUCTION TO MATLAB
By ENG. MAHDI AL-HOUSANI

Special requirements (include for example workshops, periodicals, IT software, websites)	Laboratory experiments in the (Computer Lab.) of the department. • Available websites related to the subject.
Community-based facilities (include for example, guest Lectures , internship , field studies)	/
16. Admissions	
Pre-requisites	GE 109 Course
Minimum number of students	5
Maximum number of students	35
17. Course Instructors	**Instructor:** **Assistant Lecturer Mohammed Mahdi Hashim** Civil Engineering Department College of Engineering Uruk Private University Email: comp.mmh@uruk.edu.iq

1. Teaching Institution	College of Engineering Uruk Private University
2. University Department/Centre	Civil Engineering Department (CE)

3. Course title/code & Description	**SECOND YEAR** **Fluid Mechanics / CE 205** This course introduces: **Fluid static:** Fluid properties and flow characteristics Fluid static, Pressure variation in static fluid Hydrostatics force on plane surface Hydrostatic pressure forces on curved Surfaces. Buoyancy and accelerated fluid masses **Fluid dynamic:** Kinematics of fluid motion Bernoulli's equation Applications of energy equations Momentum equation Similitude and dimensional analysis Flow of real fluid, energy equation with friction losses, correction of velocity and momentum Flow of real fluid, energy equation with fr correction of velocity and momentum Fluid flow in pipes, major friction losses, r losses Pipe in series and pipes in parallel Network and junctions Fluid flow in open channels, critical flow Specific energy and transitions Hydraulic jump Weirs The course is taught through 5 hrs. per week, 2theories, 1 tutorial, and 2experimental.
4. Programme(s) to which it Contributes	Civil Engineering (CE)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a “Day Program”. The students are full time

	students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects.
6. Semester/Year	1st & 2nd / Academic Year 2024 – 2025
7. Number of hours tuition (total)	150 hrs. / 5 hrs. per week
8. Date of production/revision of this specification	February / 2025

9. Aims of the Course

1. Introduce basic definitions and introductory concepts of fluid mechanics in static and dynamic cases and its applications in civil engineering.
2.Improving the teaching and administrative activities to meet international accreditations standards and the mission of the department.
3.Improving the academic abilities of the faculty and attracting highly skilled personnel.
4.Improve the abilities of management and technical support staff and attract the highly skilled for employment.
5.Optimum use of resources and potentials of the department.

10· Learning Outcomes

a. The graduate student will be able to apply knowledge of fluid mechanics in static and dynamic cases and its applications in civil engineering.
b. The graduate student will be able to function on multi-disciplinary teams (Our interpretation of multidisciplinary teams includes teams of individuals with similar educational backgrounds focusing on different aspects of a project as well as teams of individuals with different educational backgrounds).
c. The graduate student will be able to identify, formulates, and solves engineering problems, understanding of professional and ethical responsibility and ability to communicate effectively.
d. The broad education necessary to understand the impact of engineering solutions in a global and societal context.
e. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
f. Develop the ability to conduct experiments, and critically analyze and interpret data.
g. An ability to design close system (pressure pipes) with all application and open

channel to meet desired needs.

11. Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.
4. Lab. Experiments.
5. Tests and Exams.
6. In-Class Questions and Discussions.
7. Connection between Theory and Application.
8. Field Trips.
9. Extracurricular Activities.
10. Seminars.
11. In- and Out-Class oral conservations.
12. Reports, Presentations, and Posters.

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Extracurricular Activities.
3. Student Engagement during Lectures.
4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor).

13. Grading Policy

1.Quizzes: There will be about (5-10) closed books and notes quizzes during the academic year. The quizzes will count 20% of the total course grade.
2.Tests: There will be about (1-2) closed books and notes quizzes during the academic and will count 15% of the total course grade.
3.Laboratory work: There will about (9-12) experimental water and waste water tests. These works will a count 15% of the total course grade.
4.Final Exam: The final exam will be comprehensive, closed books and Notes. The final exam will count 50% of the total course grade.

14. Course Structure

Week	Hours	LOs (Article 10)	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	5 2the. 1tut. 2exp.	a, b	Fluid static: Fluid properties and flow characteristics	1-12 of article (11)	1 – 4 of article (12)
2	5 2the. 1tut. 2exp.	a, b	Fluid static: Fluid properties and flow characteristics	1-12 of article (11)	1 – 4 of article (12)
3	5 2the. 1tut. 2exp.	a, b, c	Fluid static: Fluid properties and flow characteristics	1-12 of article (11)	1 – 4 of article (12)
4	5 2the. 1tut. 2exp.	a, b, c	Hydrostatics force on plane surface	1-12 of article (11)	1 – 4 of article (12)
5	5 2the. 1tut. 2exp.	a, b, c	Hydrostatics force on plane surface	1-12 of article (11)	1 – 4 of article (12)
6	5 2the. 1tut. 2exp.	a, b, c	Hydrostatic pressure forces on curved surfaces	1-12 of article (11)	1 – 4 of article (12)
7	5 2the. 1tut. 2exp.	a, b, c	Buoyancy and accelerated fluid masses	1-12 of article (11)	1 – 4 of article (12)
8	5 2the. 1tut. 2exp.	d,e,f,g	Fluid dynamic: Kinematics of fluid motion	1-12 of article (11)	1 – 4 of article (12)
9	5 2the. 1tut. 2exp.	d,e,f,g	Bernoulli's equation	1-12 of article (11)	1 – 4 of article (12)
10	5 2the. 1tut. 2exp.	d,e,f,g	Applications of energy equations	1-12 of article (11)	1 – 4 of article (12)
11	5	d,e,f,g	Applications of	1-12 of	1 – 4 of article (12)

	2the. 1tut. 2exp.		energy equations	article (11)	
12	5 2the. 1tut. 2exp.	c,f,g	Momentum equations	1-12 of article (11)	1 – 4 of article (12)
13	5 2the. 1tut. 2exp.		**Course Examination**	1-12 of article (11)	1 – 4 of article (12)
14	5 2the. 1tut. 2exp.	c,e,f	Dimensional analysis hydraulic simulation	1-12 of article (11)	1 – 4 of article (12)
15	5 2the. 1tut. 2exp.	c,e,f	Dimensional analysis hydraulic simulation	1-12 of article (11)	1 – 4 of article (12)
16	5 2the. 1tut. 2exp.	c,e,f,g	Flow of real fluid, energy equation with friction losses, correction of velocity and momentum	1-12 of article (11)	1 – 4 of article (12)
17	5 2the. 1tut. 2exp.	c,e,f,g	Flow of real fluid, energy equation with friction losses, correction of velocity and momentum	1-12 of article (11)	1 – 4 of article (12)
18	5 2the. 1tut. 2exp.	a,,b,e,f,g	Fluid flow in pipes, major friction losses, minor friction losses (Exam 1)	1-12 of article (11)	1 – 4 of article (12)
19	5 2the. 1tut. 2exp.	a,,b,e,f,g	Fluid flow in pipes, major friction losses, minor friction losses	1-12 of article (11)	1 – 4 of article (12)
20	5 2the. 1tut. 2exp.	a,,b,e,f,g	Pipe in series and pipes in parallel	1-12 of article (11)	1 – 4 of article (12)

21	5 2the. 1tut. 2exp.	a,,b,e,f,g	Pipe in series and pipes in parallel	1-12 of article (11)	1 – 4 of article (12)
22	5 2the. 1tut. 2exp.	a,,b,e,f,g	Network and junctions	1-12 of article (11)	1 – 4 of article (12)
23	5 2the. 1tut. 2exp.	a,,b,e,f,g	Network and junctions (Exam 2)	1-12 of article (11)	1 – 4 of article (12)
24	5 2the. 1tut. 2exp.	a,,b,e,f,g	Fluid flow in open channels, critical flow	1-12 of article (11)	1 – 4 of article (12)
25	5 2the. 1tut. 2exp.	a,,b,e,f,g	Fluid flow in open channels, critical flow	1-12 of article (11)	1 – 4 of article (12)
26	5 2the. 1tut. 2exp.	a,,b,e,f,g	Specific energy and transitions	1-12 of article (11)	1 – 4 of article (12)
27	5 2the. 1tut. 2exp.	a,,b,e,f,g	Hydraulic jump	1-12 of article (11)	1 – 4 of article (12)
28	5 2the. 1tut. 2exp.	a,,b,e,f,g	Weirs	1-12 of article (11)	1 – 4 of article (12)
29	5 2the. 1tut. 2exp.	a,,b,e,f,g	Weirs	1-12 of article (11)	1 – 4 of article (12)
30	5 2the. 1tut. 2exp.		Exam 3	1-12 of article (11)	1 – 4 of article (12)

15. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	**Textbook :** Bruce R. Munson, Donald F. Young, and Theodore H. Okiishi (2002) "Fundamentals of Fluid Mechanics" Fourth edition, John Wiley & Sons, Inc. **References :** 1. Dr. R. K. Bansal, (2008) "A Textbook of Fluid Mechanics" First Edition, Laxmi .Publications (P) Ltd 2. Madan Mohan Das, (2009) "Open Channel Flow" Second Edition, PHI Learning Private Limited, New Delhi.
Special requirements (include for example workshops, periodicals, IT software, websites)	1.Laboratory experiments in the fluid laboratory of the water recourses department. 2.Availability websites related to the subject. 3.Extracurricular activities.
Community-based facilities (include for example, guest Lectures , internship , field studies)	/
16. Admissions	
Pre-requisites	
Minimum number of students	5
Maximum number of students	35
17. Course Instructors	**Instructor :** **Assistant Lecturer Rehab Kareem Jbbar** Civil Engineering Department College of Engineering Uruk Private University Email: rehab_karim@uruk.edu.iq

1. Teaching Institution	College of Engineering Uruk Private University
2. University Department/Centre	Civil Engineering Department (CE)
3. Course title/code & Description	**SECOND YEAR** **Building Constructions / CE 206** This course introduces: Types of Buildings, earthwork, Footing and Foundations, Piles and Piling, Concrete Works, Bricks and Blocks works, Masonry Works, Forms and Scaffoldings, Floors and Roofs, Arches, Lintels and Sills, Damp Proofing, Finishing of Walls and Ceilings, Doors and Windows, Means of Moving Between Levels, Fire Places and Chimneys and Joints in Buildings. The course is taught through 4 hrs. per week, 1theories, 1 tutorial, and 2experimental.
4. Programme(s) to which it Contributes	Civil Engineering (CE)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a "Day Program". The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects.
6. Semester/Year	1st & 2nd / Academic Year 2024 – 2025
7. Number of hours tuition (total)	120 hrs. / 4 hrs. per week
8. Date of production/revision of this specification	February / 2025
9. Aims of the Course	

Teaching in the subject of building and construction should aim at:

1- helping students develop knowledge of professions in construction.
building of houses.
2.painting and sheet paper, as well as other specialist professions.

Students should also be given opportunities to develop basic skills in construction, building of houses, painting and sheet paper work, as well as an understanding of work in the building and construction industry.

10· Learning Outcomes

a. The ability to search for information and plan, organize and carry out common tasks.
b. Knowledge of different methods, materials, tools and machines.
c. Knowledge of laws and other regulations in the professional area.
d. The ability to carry out risk assessments of tasks.
e. Skills in following task descriptions and using drawings.
f. The ability to assess work processes and results and document their work.
g. Knowledge of common professions and work processes in the building and construction industry, and what sustainable development means in the industry

11. Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.
4. Lab. Experiments.
5. Tests and Exams.
6. In-Class Questions and Discussions.
7. Connection between Theory and Application.
8. Field Trips.
9. Extracurricular Activities.
10. Seminars.
11. In- and Out-Class oral conservations.
12. Reports, Presentations, and Posters.

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Extracurricular Activities.
3. Student Engagement during Lectures.
4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor).

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13. Grading Policy

1. Quizzes:
- There will be (5 – 10) closed books and notes quizzes during the academic year.
- The quizzes will count 30% of the total course grade.
2. Experimental test (homework and class work) will count 20% of the total course grade.
3.Final Exam:
- The final exam will be comprehensive, closed books and notes, will count (50) % of the total course grade

14. Course Structure

Week	Hours	LOs (Article 10)	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	4 1the. 1tut. 2exp.	a,b,c,d, e	Types of buildings	1-12 of article (11)	1 – 4 of article (12)
2	4 1the. 1tut. 2exp.	a,b,c,d, e	Earthworks and Excavations	1-12 of article (11)	1 – 4 of article (12)
3	4 1the. 1tut. 2exp.	a,b,c,d, e	Types of foundation	1-12 of article (11)	1 – 4 of article (12)
4	4 1the. 1tut. 2exp.	a,b,c,d, e,f,g	Piles ,introductions ,types	1-12 of article (11)	1 – 4 of article (12)
5	4 1the. 1tut. 2exp.	a,b,c,d, e,f,g	Concrete works	1-12 of article (11)	1 – 4 of article (12)
6	4 1the. 1tut. 2exp.	a,b,c,d, e,f,g	Bricks unites and the work with Bricks	1-12 of article (11)	1 – 4 of article (12)
7	4 1the. 1tut. 2exp.		First exam	1-12 of article (11)	1 – 4 of article (12)
8	4 1the. 1tut. 2exp.	a,b,c,d, e,f,g	Def. of stone , types and the work in stone	1-12 of article (11)	1 – 4 of article (12)
9	4 1the. 1tut. 2exp.	a,b,c,d, e,f,g	Templates&scaffolds, *Introduction *Site work and create templates	1-12 of article (11)	1 – 4 of article (12)
10	4 1the.	a,b,c,d, e,f,g	*Loads and the forces of design	1-12 of article (11)	1 – 4 of article (12)

	1tut. 2exp.		templates contracting and suspenders *Specifications and design factors templates thresholds and beams and columns		
11	4 1the. 1tut. 2exp.	a,b,c,d, e,f,g	*The def. ,Types of thresholds by lengths *Stresses in the thresholds and their cross sections drawing. *Types of thresholds by materials *Classification thresholds reinforced concrete Columns *Sort columns The end of the piles cases &Sort columns by materials	1-12 of article (11)	1 – 4 of article (12)
12	4 1the. 1tut. 2exp.		2Exam	1-12 of article (11)	1 – 4 of article (12)
13	4 1the. 1tut. 2exp.	a,b,c,d, e,f,g	floors and ceilings Def. types, Loads	1-12 of article (11)	1 – 4 of article (12)
14	4 1the. 1tut. 2exp.	a,b,c,d, e	upper and lower thresholds Def., types, loads	1-12 of article (11)	1 – 4 of article (12)
15	4 1the. 1tut.	a,b,c,d, e,f,g	humidity blocker Moisture damage Moisture to leak	1-12 of article (11)	1 – 4 of article (12)

	2exp.		outlets buildings Moisture compounds The methods used in cutting humidity		
16	4 1the. 1tut. 2exp.	a,b,c,d, e,f,g	transportation between levels And types of ladders Dimensions of peace and grades and the way the longitudinal cut fee And types of elevators	1-12 of article (11)	1 – 4 of article (12)
17	4 1the. 1tut. 2exp.	a,b,c,d, e	fireplaces and chimneys Full sections burner Basic things for the good work of the fireplace and heating good	1-12 of article (11)	1 – 4 of article (12)
18	4 1the. 1tut. 2exp.		3exam	1-12 of article (11)	1 – 4 of article (12)
19	4 1the. 1tut. 2exp.	a,b,c,d, e,f,g	joints in buildings Define and determine the kinds of joints The first type - construction and types of joints Type II - the extended joints	1-12 of article (11)	1 – 4 of article (12)
20	4 1the. 1tut. 2exp.	a,b,c,d, e	walls and ceilings Is recognized on the vocabulary of this chapter briefly and streamlined.	1-12 of article (11)	1 – 4 of article (12)

			End walls from the inside		
21	4 1the. 1tut. 2exp.	a,b,c,d, e	Working methods of the internal walls of whiteness	1-12 of article (11)	1 – 4 of article (12)
22	4 1the. 1tut. 2exp.		4Exam	1-12 of article (11)	1 – 4 of article (12)
23	4 1the. 1tut. 2exp.	a,b,c,d, e	General observations on the work of whiteness An end to the internal ceilings End walls and ceilings from abroad	1-12 of article (11)	1 – 4 of article (12)
24	4 1the. 1tut. 2exp.	a,b,c,d, e,f,g	Desiccation and review	1-12 of article (11)	1 – 4 of article (12)
25	4 1the. 1tut. 2exp.	a , b	Wallpaper	1-12 of article (11)	1 – 4 of article (12)
26	4 1the. 1tut. 2exp.	a,b,c,d	Windows and Doors Is recognized on the vocabulary of this chapter a simplified manner . Drying timber Qualities of wood	1-12 of article (11)	1 – 4 of article (12)
27	4 1the. 1tut. 2exp.	a,b,c,d	disadvantages Types of wood Doors definitions and kinds Doors by its materials	1-12 of article (11)	1 – 4 of article (12)
28	4		4Exam	1-12 of	1 – 4 of article (12)

	1the. 1tut. 2exp.			article (11)	
29	4 1the. 1tut. 2exp.	a,b,c,d, e,f,g	Review and desiccation	1-12 of article (11)	1 – 4 of article (12)
30	4 1the. 1tut. 2exp.		Final exam	1-12 of article (11)	1 – 4 of article (12)

15. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	**Text Book :** Source: - construction of buildings Edited by Dr. Zuhair Sacco and Dr. Artin Levon
Special requirements (include for example workshops, periodicals, IT software, websites)	• / Available websites related to the subject. • Extracurricular activities.
Community-based facilities (include for example, guest Lectures , internship , field studies)	• / Field and scientific visits. • Extra lectures by foreign guest lecturers
16. Admissions	
Pre-requisites	CE 104 & CE 105 Courses
Minimum number of students	5
Maximum number of students	35
17. Course Instructors	**Instructor :** **Prof. Dr. Kais Taha Shlash** Civil Engineering Department College of Engineering Uruk Private University Email: Qais.shelash@uruk.edu.iq **Assistant lecturer Ahmed Mustafa Hussein** Civil Engineering Department College of Engineering Uruk Private University Email: ahmed_mostafa@uruk.edu.iq

1. Teaching Institution	College of Engineering Uruk Private University
2. University Department/Centre	Civil Engineering Department (CE)
3. Course title/code & Description	**SECOND YEAR** **Concrete Technology / CE 207** This course introduces the description of phenomena associated with concrete. Topics covered: physical properties of concrete; bonding materials; principles of stresses in buildings quality control on building materials; global standards and specifications, Manufacture of cement, Mix design, Uses of building materials, invention of new line of concrete mixes. The course is designed to provide a background to higher level courses involving concrete mixes design and testing. The course is taught through 4 hrs. per week, 1theories, 1 tutorial, and 2experimental.
4. Programme(s) to which it Contributes	Civil Engineering (CE)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a "Day Program". The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects.
6. Semester/Year	1st & 2nd / Academic Year 2024 – 2025
7. Number of hours tuition (total)	120 hrs. / 4 hrs. per week
8. Date of production/revision of this specification	February / 2025

9. Aims of the Course

- Graduate civil engineers to serve in construction and other sectors of civil engineering labor market
- Improving the teaching and administrative activities to meet international accreditations standards and the mission of the department
- Improving the academic abilities of the faculty and attracting highly skilled personal
- Improve the abilities and management and technical support staff and attract the highly skilled for employment
- Optimum use of resources and potentials of the department
- Cooperation, academic exchange, program partnerships with other universities and academic centers in developed countries
- Establishing viable applied research that generates knowledge for local and foreign markets.

10· Learning Outcomes

a. An ability to apply knowledge of mathematics, science, and engineering.
b. An ability to design and conduct experiments, as well as to analyze and interpret data.
c. An ability to design a system, component, or process to meet desired needs.
d. Explain the application of material to a concrete ceiling
e. An ability to identify, formulates, and solves engineering problems.
f. Engage in effectively interpersonal, oral, visual, and in written communication
g. Demonstrate basic drafting proficiency, including the ability to use industry-standard computer software to generate 2D and 3D drawings
h. Demonstrate fundamental knowledge of the systems and processes used to construct the built environment, including an understanding of industry terminology
i. Estimate the costs for labor, materials, and equipment for a construction project using industry-standard software and procedures.
j. Develop a schedule of activities for a construction project, determine the critical path, and identify methods of compressing the completion time.
k. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

11. Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.
4. Lab. Experiments.
5. Tests and Exams.
6. In-Class Questions and Discussions.
7. Connection between Theory and Application.
8. Field Trips.
9. Extracurricular Activities.
10. Seminars.
11. In- and Out-Class oral conservations.
12. Reports, Presentations, and Posters.

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Extracurricular Activities.
3. Student Engagement during Lectures.
4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor).

13. Grading Policy

1. Quizzes:
- There will be a (5 – 10) closed books and notes quizzes during the academic year.
- The quizzes will count 25% of the total course grade.
2. Lab. tests 8-11 and will count 15% of the total course grade.
3. Extracurricular Activities, this is optional and will count extra marks (10 %) for the student, depending on the type of activity.
4. Final Exam:
- The final exam will be comprehensive, closed books and notes, and will count 50% of the total course grade

14. Course Structure

Week	hours	LOs (Article 10	Unit/Module or Topic Title	Teaching method	Assessment method
1	4 1the. 1tut. 2exp.	a,b,e,f, g,k	1-Portland cement definition	1-12 of article (11)	1-4 of article 11
2	4 1the. 1tut. 2exp.	b,c,g,h, I,k,	2-Manufacture of cement -raw materials -method of manufacture -grinding of clinker	1-12 of article (11)	1-4 of article 11
3	4 1the. 1tut. 2exp.	b,d,e,f,j	3-Chemical composition of p.c. -minor compounds -major compounds -loss on ignition -soluble salts	1-12 of article (11)	1-4 of article 11
4	4 1the. 1tut. 2exp.	a,c,d,e, I,k	4-Hydration of cement -C3S hydrate -C2S hydrate -setting &factors affecting -false setting -flash setting	1-12 of article (11)	1-4 of article 11
5	4 1the. 1tut. 2exp.	a,b,f,g, I,k	5-Types of cement -rapid hardening cement -low heat cement	1-12 of article (11)	1-4 of article 11
6	4 1the. 1tut. 2exp.	a,b,e,f, g,k	-sulfate resistance cement -colored cement -white cement	1-12 of article (11)	1-4 of article 11
7	4 1the. 1tut. 2exp.	b,c,g,h, I,k,	6-Aggregate -types of aggregate -specifications of aggregate	1-12 of article (11)	1-4 of article 11

8	4 1the. 1tut. 2exp.	b,d,e,f,j	-factors affecting limitation of cemen	1-12 of article (11)	1-4 of article 11
9	4 1the. 1tut. 2exp.	a,c,d,e, I,k	7-Design of concrete mix -ASTM mix design	1-12 of article (11)	1-4 of article 11
10	4 1the. 1tut. 2exp.	a,b,f,g, I,k	- BS mix design	1-12 of article (11)	1-4 of article 11
11	4 1the. 1tut. 2exp.	a,b,e,f, g,k	8-Fresh concrete -properties	1-12 of article (11)	1-4 of article 11
12	4 1the. 1tut. 2exp.	b,c,g,h, I,k,	-specifications -tests of fresh concret	1-12 of article (11)	1-4 of article 11
13	4 1the. 1tut. 2exp.	b,d,e,f,j	9-Hardened concrete -properties	1-12 of article (11)	1-4 of article 11
14	4 1the. 1tut. 2exp.	a,c,d,e, I,k	-specifications -tests of hardened concrete	1-12 of article (11)	1-4 of article 11
15	4 1the. 1tut. 2exp.	a,b,f,g, I,k	-compressive strength -tensile strength -factors affecting comp. str.	1-12 of article (11)	1-4 of article 11
16	4 1the. 1tut. 2exp.	a,b,e,f, g,k	-shear strength -fatigue strength	1-12 of article (11)	1-4 of article 11
17	4 1the. 1tut. 2exp.	b,c,g,h, I,k,	10-shrinkage of concrete -types of shrinkage	1-12 of article (11)	1-4 of article 11

18	4 1the. 1tut. 2exp.	b,d,e,f,j	11- creep in concrete -factors affecting creep	1-12 of article (11)	1-4 of article 11
19	4 1the. 1tut. 2exp.	a,c,d,e, I,k	12-consistency of concrete -factors affecting consistency	1-12 of article (11)	1-4 of article 11
20	4 1the. 1tut. 2exp.	b,c,g,h, I,k,	13- workability of concrete -factors affecting workability	1-12 of article (11)	1-4 of article 11
21	4 1the. 1tut. 2exp.	b,d,e,f,j	14-effect of w/c ratio on concrete strength	1-12 of article (11)	1-4 of article 11
22	4 1the. 1tut. 2exp.	a,c,d,e, I,k	Effect of w/c ratio on concrete workability	1-12 of article (11)	1-4 of article 11
23	4 1the. 1tut. 2exp.	b,c,g,h, I,k,	Tests of workability -slump test -kelly ball test	1-12 of article (11)	1-4 of article 11
24	4 1the. 1tut. 2exp.	b,c,g,h, I,k,	- Compaction factor test - Ve be time test	1-12 of article (11)	1-4 of article 11
25	4 1the. 1tut. 2exp.	b,d,e,f,j	-factor affecting workabilty	1-12 of article (11)	1-4 of article 11
26	4 1the. 1tut. 2exp.	b,c,g,h, I,k,	15- segregation in concrete -causes of segregation	1-12 of article (11)	1-4 of article 11
27	4 1the. 1tut. 2exp.	b,d,e,f,j	-factors affect concrete segregation -suitable condition for segregation	1-12 of article (11)	1-4 of article 11

28	4 1the. 1tut. 2exp.	a,c,d,e, I,k	16-concrete segregation improvement	1-12 of article (11)	1-4 of article 11
29	4 1the. 1tut. 2exp.	b,c,g,h, I,k,	18-enhance concrete bleeding -factors affecting concrete bleeding	1-12 of article (11)	1-4 of article 11
30	4 1the. 1tut. 2exp.	b,d,e,f,j	19-light weight concrete -properties of L.W.C. -types and specification of l.w.c aggregate -no fine concrete	1-12 of article (11)	1-4 of article 11

15. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	Concrete Technology by Chand -developed reinforced concrete by R.N.Swamy ACI(American concrete institute),ASTM(American standards for testing methods),BS(british standards)
Special requirements (include for example workshops, periodicals, IT software, websites)	• Laboratory experiments in the (materials Lab) of the department. • Available websites related to the subject. • Extracurricular activities
Community-based facilities (include for example, guest Lectures , internship , field studies)	• Field and scientific visits. • Extra lectures by foreign guest lecturers

16. Admissions	
Pre-requisites	/
Minimum number of students	5
Maximum number of students	35
17. Course Instructors	**Instructor :** **Assistant lecturer Aya Waleed Naqi** Civil Engineering Department College of Engineering Uruk Private University Email: Aya.w.taqi@uruk.edu.iq

1. Teaching Institution	College of Engineering Uruk Private University
2. University Department/Centre	Civil Engineering Department (CE)
3. Course Title/Code & Description	**Human rights** GE1**13/Second year** This course provides comprehensive knowledge to students in terms of basic human rights and the history of their manifesto principles.
4. Program(s) to which it Contributes	Human rights
5. Modes of Attendance offered	Annual System: There is only one mode of delivery, which is a "Day Program". The students are full time students, and on campus. They attend full day program in face-to-face lecturing system. The academic year composed of 30-week regular subjects.
6. Semester/Year	1st and 2nd Academic Year 2024– 2025
7. Number of hours tuition (total)	60 hrs. / 2 hrs. per week
8. Date of production/revision of this specification	May - 2025
9. Aims of the Course	
1- تعزيز فكرة العدالة الاجتماعية.. 2- تعزيز الربط بين الفرد والجماعة والدولة ومؤسساتها.. 3- تعزيز مشاعر التضامن مع الآخرين.. 4- تنمية مهارات رصد الانتهاكات والتعامل مع المنتهكين.. 5- دعم مهارات فهم قضايا حقوق الإنسان.. 6- تعزيز سبل التعليم التفاعلي.. 7- تعزيز سبل المشاركة في الشأن العام – المواطنة..	

10· Learning Outcomes (LOs)
1. الجانب المعرفي: ابراز حقوق الإنسان ومصادرها وأنواعها والآليات المستخدمة لحمايتها. 2· الجانب الوجداني: تعزيز القيم والاتجاهات وأنماط السلوك التي تُعلي من شأن حقوق الإنسان وتعمل على التمسك بها. 3 · الجانب السلوكي: المساهمة في ترجمة المعارف والخبرات والقيم وأنماط السلوك إلى عمل دائم ونشاط مستمر من أجل الدفاع عنها في الواقع المعاش وتعزيز الجهود الكفيلة بمعالجة قضايا حقوقالإنسان.

11. Teaching and Learning Methods

إن الأساليب المقترحة أدناه يمكن للمدرسين أن يستثيروا التجاوب الوجداني والتخيل الأخلاقي لدى التلاميذ، وتحدي افتراضات التلاميذ وإدراج مفاهيم مثل الكرامة الإنسانية في خبرتهم اليومية بالناس والسلطة والـسؤ.ليـ.لأ وقد أثبتت هذه الأساليب ملاءمتها بوجه خاص لتعليم حقوق الإنسان بسبب أنها تشجع التفكير النقدي، والتعلم الإدراآي والوجداني على السواء، واحترام الاختلافات في التجارب لآالآراء، والمشارآة النشطة من جانب جميع المشارآين فيعمليةالتعلم الجارية.

(1) شحذ الفكر

يمكن استخدام هذا الأسلوب لإيجاد حلول للمشآل النظرية والعملية على السواء. وهو يتطلب تحليل المشكلة ثم وضع حـ لول لها. ويتطلب شحذ الفكر درجة عالية من المشاركة، وهو يحفز من يشارآون فيه على التحلي بأقصى قدر من الإبداعية .فعقب عرض مشكلة من المشااكل، تُسجَّل على سبورة أو على ورق رسم بياني جميع الأفكار المطروحة آرد فعل لهذا العرض. وتسجَّل جميع الردود؛ وليس من المطلوب تقديم تفسيرات ولا الحكم على الاقتراحات أو رفضها في هذه المرحلة. ثم يصنف المدرس الردود المقدمة ويحللها، ويَجري في هذه المرحلة الجمع بين بعض الردود أو تكييفها أو رفضها. وفيالختام، تقدم المجموعةتوصيات وتتخذ قرارات بشأن المشكلة المطروحة.

(2) دراسات حالات إفرادية

يتناول الطلبة في مجموعات صغيرة حالات حقيقية أو تخيلية تتطلب منهم أن يطبقوا معايير حقوق الإنسان. وينبغي أن تستند دراسات الحالات الإفرادية إلى سيناريوهات معقولة وواقعية تركز على اثنتين أو ثلاث من القضايا الرئيسية. ويمكن تقديم سيناريو الدراسة إلى الطلبة للنظر فيه برمته أو عرضه عليهم مسلسلاً آحالة متطورة ("الفرضية المتطورة") يجب أن يصدر عنهم رد فعل إزاءها. وهذا الأسلوب يشجّع على تنمية مهارات التحليل وحل المشاكل والتخطيط، فضلاً عن التعاون وتشكيل الفرق. ويمكن استخدام دراسات الحالات الإفرادجلإ ةيراء مناظرات أو مناقشات أو مزيد من البحوث.

(3) النقاش

يوجد الكثير من الأساليب لاستثارة مناقشات هادفة بين مجموعات من اثنين أو مجموعات صغيرة أو الفصل الدر اسي بأكمله. ولإيجاد جو من الثقة لاالاحترام، قد يقوم اللطبة بوضع ""قواعد المناقشة" الخاصة بهم..

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Student Engagement during Lectures.
3. Responses Obtained from Students,

13. Grading Policy

1. Quizzes:
- There are (5-10) closed books and notes quizzes during the academic year.
- The quizzes count 20% of the total course grade.
2. Tests, 2-3 Nos. and count 20% of the total course grade.
3. Final Exam:
- The final exam will be comprehensive, closed books and notes, and will counts 60% of the total course grade.

14. Course Structure					
Week	**Hours**	**LOs (Article 10)**	**Topic Title**	**Teaching Method**	**Assessment Method**
1	2	1-3	تعريف ح قوة الانسان	1-3 of article (11)	1 – 3 of article (12)
2	2	1-3	سمات وخصائص حقوة الانسان	1-3 of article (11)	1 – 3 of article (12)
3	2	1-3	سمات وخصائص حقوة الانسان	1-3 of article (11)	1 – 3 of article (12)
4	2	1-3	حقوة الانسان في وادي الرافدين	1-3 of article (11)	1 – 3 of article (12)
5	2	1-3	حقوة الانسان في وادي الرافدين	1-3 of article (11)	1 – 3 of article (12)
6	2	1-3	حقوة الانسان في وادي النيل	1-3 of article (11)	1 – 3 of article (12)
7	2	1-3	حقوة الانسان في وادي النيل	1-3 of article (11)	1 – 3 of article (12)
8	2	1-3	حقوة الانسان في وادي النيل	1-3 of article (11)	1 – 3 of article (12)
9	2	1-3	حقوة الانسان في الحضارة اليونايية	1-3 of article (11)	1 – 3 of article (12)
10	2	1-3	حقوة الانسان في الحضارة اليونايية	1-3 of article (11)	1 – 3 of article (12)
11	2	1-3	حقوة الانسان في الديانات السماوية	1-3 of article (11)	1 – 3 of article (12)
12	2	1-3	حقوة الانسان في الديانات السماوية	1-3 of article (11)	1 – 3 of article (12)
13	2	1-3	حقوة الانسان في الديانات السماوية	1-3 of article (11)	1 – 3 of article (12)
14	2	1-3	حقوة الانسان في الديانه الإسلامية	1-3 of article (11)	1 – 3 of article (12)
15	2	1-3	حقوة الانسان في الديانه الإسلامية	1-3 of article (11)	1 – 3 of article (12)
16	2	1-3	حقوة الانسان في الديانه الإسلامية	1-3 of article (11)	1 – 3 of article (12)
17	2	1-3	حقوة الانسان في الديانه المسيحية	1-3 of article (11)	1 – 3 of article (12)
18	2	1-3	حقوة الانسان في الديانه المسيحية	1-3 of article (11)	1 – 3 of article (12)
19	2	1-3	حقوة الانسان في الديانه المسيحية	1-3 of article (11)	1 – 3 of article (12)

15. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	Textbook : حقوق الانسان بين الفلسفة والأديان تاليف: مصطفى الباش ، ٢٠١٦ دكتور رياض عزيز هادي- حقوق الانسان تطورها مضامينها حمايتها 2005 **Suggested references** دكتور محمد عابد الجابري- الديمقراطية و حقوق الانسان 1994 دكتور وحيد عبد المجيد- الديمقراطية في الوطن العربي 1980
Special requirements (include for example workshops, periodicals, IT software, websites)	
Community-based facilities (include for example, guest Lectures , internship , field studies)	

16. Admissions	
Pre-requisites	
Minimum number of students	5
Maximum number of students	35 per class
17. Course Instructors	**Instructor :** **Assistant Lecturer Naser Fadhil Hussein** Civil Engineering Department College of Engineering Uruk Private University Email: nasserfathel@uruk.edu.iq

Uruk University / College of Engineering Course Description (2024-2025)	
Subject: English Language	Instructor: Assist. Lect. Noor Majeed Allamy
Class: 2nd Year	Theoretical Hrs/week: 2
Semester: First & second	Units: 2

Week No.	Topics	Week Main Theme
1	• Warm-up activity • Grammar: Auxiliary verbs, Naming the tenses, Question and negatives, Short answers. • Vocabulary: What's in a word?: Parts of speech Word formation Words that go together. • Every day English: Social expressions, never mind, take care, you must be joking•	It's a wonderful world!
2	• Warm-up activity • Grammar: Present simple& continuous and Present passive • Reading: 'The clown doctor" • Speaking: Discussion: what make people happy • Listening: Sports-three people talk about their free time activities • Writing: Letters and emails	Get Happy
3	• Warm up activity • Grammar: Past simple&Countinous • Reading: "The painter and the writer" • Speaking: information gap-An amazing thing happened • Listening: Books and Films- people talk about their favourite books and films.	Telling Tales
4	• Warm up activity	Doing the right thing

	• Grammar: Modal verbs- Obligation and permission, Have (got) to, can • Reading: How to behave abroad • Speaking: Talking about rules and regulations, Discussion- what advice would you give a foreign learners • Listening: Come round to my place- entertaining friends in three different countries	
5	• Warm up activity • Grammar: Future forms going to and will • Reading: A travel agent talks about his holiday • Speaking: Discussion your ideal holiday • Listening: A weather forecast • Writing: Making a reservation	On the Move
6	• Warm up activity • Grammar: Questions with like -What's she like? • Reading: Global Pizza- The history of the world favourite food and popular places to visit • Speaking: Talking about food and popular places to eat- Discussion- restaurants, cities, and people you know • Listening: New York and London- An English couple talks about living in New York; An American gives his impressions of living in London. • Writing: A description	I just love it!
7	• Warm up activity • Grammar: Present perfect vs Past simple and Present perfect Passive • Vocabulary: Phrasal verbs literal or idiomatic? • Reading: Dream jobs- two people describe their jobs (jigsaw) • Speaking: Discussion- what's in the news today • Listening: The busy life of a retired man-a man talks to his granddaughter about life since retirement • Writing: A description	The world of work
8 & 9	• Warm up activity • Grammar: Conditionals (First and second conditionals) and Time clause • Reading: "who wants to be a millionaire" • Speaking: Discussion-What would you do with 5$ million and what charities would you support? • Listening: Song-"Who wants to be a millionaire" • Writing: A narrative	Just Imagine!
10 & 11	• Warm up activity • Grammar: Modal verbs must, could, might, can't • Vocabularies: Character adjectives reliable, sociable, easy-going • Speaking: Quiz-What type of person are you? • Everyday English: Agreeing and disagreeing-So do I! And neither do I! • Discussion-what size in the perfect family? • Listening: Brothers and sisters- Two people talk about their families	Getting on Together
12& 13	• Warm up activity • Grammar: Present perfect Simple vs Continuous, Questions and answers, Time expressions • Reading: "Famous for not being famous"- • Speaking: Exchanging information about major life events • Listening: Collectors-two people talk about their collections(jigsaw) • Writing: Writing a biography	Obsessions
14 & 15	• Warm up activity • Grammar: Indirect questions Reported speech	Tell me about it! Life's great events!

	• Vocabulary: Verbs and nouns that go together (ice-cream), Idioms, Birth marriage and death • Reading: "How do you know your world?" David Copperfield by Charles Dickens • Speaking: Information gab- Finding out about Celine Dion- Discussion- Customs connected with birth , weddings, and funerals • Listening: The forgetful generation- a radio programme- Noisy neighbours- two people making statements to the police • Writing: Words that join ideas, correcting mistakes	
Textbook • **Headway Plus (Intermediate), John and Liz Soars, Oxford University Press, 2016**		

1. Teaching Institution	College of Engineering Uruk Private University
2. University Department/Centre	Civil Engineering Department (CE)
3. Course title/code & Description	**THIRD YEAR** **Theory of Structures / CE 301** This course introduces: Introduction, Stability and Determinacy of Structures, Types of Trusses, Analysis of Trusses, Axial Force, Shear, and Bending Moment Diagrams for Frames and Arches, Influence Lines in Statically Determinate Structures (Beams, Frames, Trusses, Composite Structures and Floor beam System), Application on Influence Line (Maximum Reactions, Shear, Moments and Maximum absolute

	moment), Deflections of Statically Determinate Structures using Unit Load Method (Beams, Frames, Trusses, Arches and Composite Structures) , Deflections of Statically Determinate Structures using Least Work Method (Beams, Frames, Trusses, Arches and Composite Structures), Deflections of Statically Determinate Beams using Conjugate-Beam Method, Approximate Analysis of Statically Indeterminate Structures, Analysis of Indeterminate Structures using Consistence Deformation Method (Beams, Frames, Trusses, Arches and Composite Structures), Analysis of Indeterminate Structures by Least Work Method (Beams, Frames, Trusses, Arches and Composite Structures), Analysis of Indeterminate Frames using Slop Deflection Method, Analysis of Indeterminate Frames using Moment Distribution Method. The course is taught through 4 hrs. per week, 3theories, 1 tutorial.
4. Programme(s) to which it Contributes	Civil Engineering (CE)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a "Day Program". The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects.
6. Semester/Year	1st & 2nd / Academic Year 2024– 2025
7. Number of hours tuition (total)	120 hrs. / 4 hrs. per week
8. Date of production/revision of this specification	February / 2025
9. Aims of the Course	
1. Introduce basic definitions and introductory concepts of theory of structures 2. Introduce the basic concepts to classify structures into stable and unstable	

structures.
3. Introduce the description of Statically determinate and indeterminate structures.
4. Introduce the principles of axial force, shear force and bending moment for frames and arches.
5. Introduce the principles and types of trusses.
6. Enable the student to analyze statically determinate trusses.
7. Introduce the principles of influence lines and moving loads.
8. Enable the student to evaluate the elastic deformations of statically determinate structures.
9. Enable the student to analyze statically indeterminate structures.
10. Introduce the principles of structural analysis for statically indeterminate structures using approximate methods.
11. Introduce the principles of structural analysis for statically determinate and indeterminate structures using stiffness matrix method.

10· Learning Outcomes

At the end of the class, the student will be able to:
a. Classify structures into stable and unstable structures
b. Classify structures into determinate and indeterminate structures.
c. Analyze statically determinate trusses.
d. Drawing shear, axial and Bending moment diagrams for frames and arches.
e. Evaluating deformations for statically determinate frames, arches and trusses.
f. Analyze statically indeterminate frames and arches.
g. Analyze statically indeterminate trusses.

11. Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.
4. Lab. Experiments.
5. Tests and Exams.
6. In-Class Questions and Discussions.

7. Connection between Theory and Application.
8. Field Trips.
9. Extracurricular Activities.
10. Seminars.
11. In- and Out-Class oral conservations.
12. Reports, Presentations, and Posters.

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Extracurricular Activities.
3. Student Engagement during Lectures.
4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor).

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13. Grading Policy

1. Quizzes:

- There will be (10 – 15) closed books and notes quizzes during the academic year.
- The quizzes will count 25% of the total course grade.

2. Extracurricular Activities, this is optional and will count extra marks (15 %) for the student, depending on the type of activity.

4. Final Exam:

- The final exam will be comprehensive, closed books and notes, and will count 60% of the total course grade.

14. Course Structure

Week	Hours	LOs (Article 10)	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	4 3the. 1tut.	a	Introduction	1-12 of article (11)	1 – 4 of article (12)
2	4 3the. 1tut.	a	Stability and Determinacy of Structures 2.1 Beams 2.2 Frames	1-12 of article (11)	1 – 4 of article (12)
3	4 3the. 1tut.	a	2.3 Arches 2.4 Trusses 2.5 Composite Structures	1-12 of article (11)	1 – 4 of article (12)
4	4 3the. 1tut.	b	3. Axial Force, Shear Force and Bending Moment Diagrams 3.1 Beams 3.2 Frames	1-12 of article (11)	1 – 4 of article (12)
5	4 3the. 1tut.	b	3.3 Arches 3.4 Composite Structures	1-12 of article (11)	1 – 4 of article (12)
6	4 3the. 1tut.	b	4. Analysis of Statically Determinate Trusses 3.1 Simple Trusses	1-12 of article (11)	1 – 4 of article (12)
7	4 3the. 1tut.	c	3.2 Combined Trusses 3.3 Complex Trusses	1-12 of article (11)	1 – 4 of article (12)
8	4 3the. 1tut.	c	5. Influence Lines and Moving Loads 5.1 Influence Lines for Beams	1-12 of article (11)	1 – 4 of article (12)
9	4 3the.	c	5.2 Influence Lines for Girder	1-12 of article (11)	1 – 4 of article (12)

	1tut.		Floor Beams Stringers System		
10	4 3the. 1tut.	d	5.3 Influence Lines for Trusses 5.4 Influence Lines for Composite Structures	1-12 of article (11)	1 – 4 of article (12)
11	4 3the. 1tut.	d	5.5 Absolute Max. Bending Moment in Simply Supported Beams due to Series of Moving Loads	1-12 of article (11)	1 – 4 of article (12)
12	4 3the. 1tut.	d	6. Elastic Deformation of Statically Determinate Structures 6.1 Unit Load Method	1-12 of article (11)	1 – 4 of article (12)
13	4 3the. 1tut.	e	Continue for unit load method	1-12 of article (11)	1 – 4 of article (12)
14	4 3the. 1tut.	e	6.2 Least Work Method (Castigiliano's First Theorem)	1-12 of article (11)	1 – 4 of article (12)
15	4 3the. 1tut.	e	6.3 Conjugate Beam Method	1-12 of article (11)	1 – 4 of article (12)
16	4 3the. 1tut.	e	7. Approximate Analysis of Indeterminate Structures 7.1 Portal Frames	1-12 of article (11)	1 – 4 of article (12)
17	4 3the. 1tut.	f	7.2 Trusses	1-12 of article (11)	1 – 4 of article (12)

18	4 3the. 1tut.	f	8. Analysis of Statically Indeterminate Structures 8.1 Consistent Deformation Method 8.1.1 Beams	1-12 of article (11)	1 – 4 of article (12)
19	4 3the. 1tut.	f	8.1.2 Frames 8.1.3 Arches	1-12 of article (11)	1 – 4 of article (12)
20	4 3the. 1tut.	f	8.1.4 Trusses	1-12 of article (11)	1 – 4 of article (12)
21	4 3the. 1tut.	g	8.1.5 Composite Structures	1-12 of article (11)	1 – 4 of article (12)
22	4 3the. 1tut.	g	8.2 Least Work Method (Castigiliano's Second Theorem) 8.2.1 Beams	1-12 of article (11)	1 – 4 of article (12)
23	4 3the. 1tut.	g	8.2.2 Frames 8.2.3 Arches	1-12 of article (11)	1 – 4 of article (12)
24	4 3the. 1tut.	g	8.2.4 Trusses	1-12 of article (11)	1 – 4 of article (12)
25	4 3the. 1tut.	g	8.2.5 Composite Structures	1-12 of article (11)	1 – 4 of article (12)
26	4 3the. 1tut.	g	8.3 Slope Deflection Method 8.3.1 Beams	1-12 of article (11)	1 – 4 of article (12)
27	4 3the. 1tut.	g	8.3.2 Frames.	1-12 of article (11)	1 – 4 of article (12)
28	4 3the. 1tut.	g	8.4 Moment Distribution	1-12 of article (11)	1 – 4 of article (12)

			Method 8.4.1 Beams		
29	4 3the. 1tut.	g	8.4.2 Frames	1-12 of article (11)	1 – 4 of article (12)
30	4 3the. 1tut	g	9. Stiffness matrix method	1-12 of article (11)	1 – 4 of article (12)

15. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	Elementary theory of structures. By(Yuan-yu Hsieh)
Special requirements (include for example workshops, periodicals, IT software, websites)	Laboratory experiments in the (Strength of material Lab) of the department. • Available websites related to the subject.
Community-based facilities (include for example, guest Lectures , internship , field studies)	/

16. Admissions	
Pre-requisites	GE 101 & CE 102 Courses
Minimum number of students	5
Maximum number of students	35
17. Course Instructors	**Instructor :** **Prof. Dr. Hisham Mohammed Ali Al-Hassani** Civil Engineering Department College of Engineering Uruk Private University Email: dr.hisham_mohamed @uruk.edu.iq

1. Teaching Institution	College of Engineering Uruk Private University
2. University Department/Centre	Civil Engineering Department (CE)
3. Course title/code & Description	**THIRD YEAR** **Soil Mechanics / CE 302** This course introduces the description of theories and techniques used in soil mechanics, the topics covered are: origin and formation of soil, types of soils, physical properties of soil, weight-volume relations, classification of soil by unified soil classification system and AASHTO system, soil compaction in the laboratory and field, permeability of soil, seepage in soil and solving continuity equation, overburden pressure of soil, stresses in soil mass resulting from the applications of different types of loads, consolidation of soil and solving Terzaghi one dimensional consolidation theory, and shear strength of soil. The course is taught through 5 hrs. per week, 2theories, 1 tutorial, and 2experimental.
4. Programme(s) to which it Contributes	Civil Engineering (CE)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a "Day Program". The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects.
6. Semester/Year	1st & 2nd / Academic Year 2024 – 2025
7. Number of hours tuition (total)	150 hrs. / 5 hrs. per week

8. Date of production/revision of this specification	February / 2025

9. Aims of the Course

Understanding of the basic concepts of soil mechanics is essential in the design of foundations for structures, retaining walls, tunnels, excavations, earth fills, stability of earth slopes, sanitary landfill, and environmental remediation projects. Specifically, a student completing this course will:

1. Understanding the basic principles of soil mechanics and geotechnical engineering.
2. Learn the relevant terms and soil tests needed to describe and predict the behavior of a soil, permitting the student to work effectively with specialist in geotechnical engineering.
3. Solve fundamentals problems related to the flow of pore water, compression and consolidation, and shear strength of soil as required in geotechnical design.
4. Acquire the background knowledge needed to complete more advanced courses in geotechnical engineering (Foundation Eng., Advance soil mechanics and modeling).
5. Provide a strong physical and analytical understanding of soil mechanics in order to function in the capacity of civil engineer in an engineering company dealing with soil investigation and civil works.
6. Provide a background to higher level courses involving soil mechanics, seepage and soil testing.

10· Learning Outcomes

At the end of the class, the student will be able to:

a. Define soil and soil mechanics and distinguish between soil and rock, and understand and define the basic soil properties; especially particle-size, density and specific gravity.
b. Understanding the weight-volume relations defining the soil properties.
c. Be familiar with engineering soil classification systems such as unified soil classification system used by civil engineers and AASHTO classification system which is used in the roads design.
d. Understand the concept of soil compaction and factors affecting compaction which help civil engineer to evaluate the compaction works in the field. Also,

learning about field and laboratory measurement of density and compaction techniques used in large projects.

e. Solving the problems related to the permeability of soil, vertical flow and horizontal flow and flow in stratified soil.
f. Know how to measure groundwater flow properties (pressure, velocity, discharge)
g. Solving the continuity equation analytically and graphically by using flow net to calculate the quantity of seepage in soil.
h. Analyze and calculate the overburden pressure and pore water pressure in soil.
i. Analyze and calculate the stresses in soil mass at different depths which resulting from the application of external loads to soil (foundations) taking into consideration the shape of foundation and type of loading.
j. Calculate the total settlement in soil, elastic settlement, primary consolidation settlement and secondary consolidation settlement.
k. Solving the one dimensional consolidation theory by Terzaghi to estimate the time rate of consolidation.
l. Studying the failure mechanism of soil, Mohr-Coulomb failure criteria, and shear strength tests.
m. Be able to analyze the stresses variation in soil, the settlement in soil and shear strength parameters of soil.
n. Be able to apply modern knowledge and to apply mathematics, science, engineering and technology to soil mechanics problems and applications.
o. Design and conduct experiments of soil mechanics, as well as analyze, interpret data and apply the experimental results for the services.
p. Work in groups and function on multi-disciplinary teams.
q. Identify, formulate and solve engineering soil mechanics problems.
r. Understand professional, social and ethical responsibilities.
s. Communicate effectively.
t. Use the techniques, skills, and modern engineering tools necessary for engineering practice in fluid mechanics applications.

11. Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.
4. Lab. Experiments.
5. Tests and Exams.

6. In-Class Questions and Discussions.
7. Connection between Theory and Application.
8. Field Trips.
9. Extracurricular Activities.
10. Seminars.
11. In- and Out-Class oral conservations.
12. Reports, Presentations, and Posters.

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Extracurricular Activities.
3. Student Engagement during Lectures.
4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor).

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13. Grading Policy

1) Quizzes:
   There will be a number of closed books and notes quizzes during the academic year. The quizzes will count 2.5% of the total course grade.
2) Homework and assignments:
   There will be a number of homework's and assignments during the academic year. The homework's will count 2.5% of the total course grade.
3) Attendance Lectures:
   The attendance of student for lectures during the academic year will be evaluated by 2.5% of the total course grade.
4) Evaluation of student in class
   The activity of student in class during the academic year will be evaluated by 2.5% of the total course grade.
5) Experimental work
   The experimental part includes conducting tests in the laboratory and preparing reports for each test. The experimental work will count 10% of the total course grade.
6) Tests:
   Doing three tests during the academic year and will count 20% of the total course grade.
7) Final Exam:

   The final exam will be comprehensive, closed books and notes, and will count 50% of the total course grade

14. Course Structure

Week	Hours	LOs (Article 10)	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	5 2the. 1tut. 2exp.	a,l,m,n, o,p,q,r	Origin and Formation of soil and Rock Origins of soils Soil particle size Clay Minerals	1-12 of article (11)	1 – 4 of article (12)
2	5 2the. 1tut. 2exp.	a,l,m,n, o,p,q,r	Origin and Formation of soil and Rock Specific Gravity Mechanical analysis of soil Gradation of soil	1-12 of article (11)	1 – 4 of article (12)
3	5 2the. 1tut. 2exp.	b,l,m,n, o,p,q,r	Soil Composition Weight-volume relations Relative density	1-12 of article (11)	1 – 4 of article (12)
4	5 2the. 1tut. 2exp.	b,l,m,n, o,p,q,r	Soil Composition Consistency of soil Liquidity index Plasticity chart Soil Structure	1-12 of article (11)	1 – 4 of article (12)
5	5 2the. 1tut. 2exp.	b,l,m,n, o,p,q,r	Classification of Soil Textural Classification Classification by Engineering Behavior	1-12 of article (11)	1 – 4 of article (12)
6	5 2the. 1tut. 2exp.	b,l,m,n, o,p,q,r	Classification of Soil AASHTO and USCS classifications	1-12 of article (11)	1 – 4 of article (12)
7	5 2the. 1tut. 2exp.	b,l,m,n, o,p,q,r	Soil Compaction General Principals Standard and Modified Proctor Factors affecting	1-12 of article (11)	1 – 4 of article (12)

			compaction		
8	5 2the. 1tut. 2exp.	b,l,m,n, o,p,q,r	Soil Compaction Field compaction Specification for field compactions	1-12 of article (11)	1 – 4 of article (12)
9	5 2the. 1tut. 2exp.	b,l,m,n, o,p,q,r	Soil Compaction Determinations of field unit weight of compaction Special compaction techniques	1-12 of article (11)	1 – 4 of article (12)
10	5 2the. 1tut. 2exp.	b,l,m,n, o,p,q,r	Effective stress concept Stress in saturated soils without seepage Stress in saturated soils with seepage	1-12 of article (11)	1 – 4 of article (12)
11	5 2the. 1tut. 2exp.	c,l,m,n, o,p,q,r	Effective stress concept Seepage forces Heaving in soil caused by flow around sheet piles	1-12 of article (11)	1 – 4 of article (12)
12	5 2the. 1tut. 2exp.	c,l,m,n, o,p,q,r	Effective stress concept Effective stress in partially saturated soils Capillary rise in soils Effective stress in the zone of Capillary rise	1-12 of article (11)	1 – 4 of article (12)
13	5 2the. 1tut. 2exp.	c,l,m,n, o,p,q,r	Stress in soil mass Normal and shear stress on a plane The pole method of finding stress along a plane Stress caused by a point load	1-12 of article (11)	1 – 4 of article (12)
14	5 2the.		Stress in soil mass Vertical Stress	1-12 of article (11)	1 – 4 of article (12)

	1tut. 2exp.		caused by 1- a point load 2- a line load 3- a strip load 4- due to embankment loading Vertical stress below the center of a uniformly loaded circular area		
15	5 2the. 1tut. 2exp.	c,l,m,n, o,p,q,r	Stress in soil mass Vertical stress caused by a rectangular loaded area Influence chart for vertical loads Average vertical stress increase caused by rectangular loaded area	1-12 of article (11)	1 – 4 of article (12)
16	5 2the. 1tut. 2exp.	d,l,m,n, o,p,q,r	Flow in one and two dimensions Introduction Hydraulic gradient Darcy's law	1-12 of article (11)	1 – 4 of article (12)
17	5 2the. 1tut. 2exp.	d,l,m,n, o,p,q,	Flow in one and two dimensions Coefficient of permeability Laboratory determination of hydraulic conductivity Empirical relations Equivalent permeability in stratified soils	1-12 of article (11)	1 – 4 of article (12)
18	5	d,l,m,n,	Flow in one and	1-12 of	1 – 4 of article (12)

	2the. 1tut. 2exp.	o,p,q,	two dimensions Permeability tests in field Continuity Equation Mathematical solution Flow nets Uplift pressure Seepage through an earth dam	article (11)	
19	5 2the. 1tut. 2exp.	d,l,m,n, o,p,q,	Compressibility of soil Introduction Elastic settlement	1-12 of article (11)	1 – 4 of article (12)
20	5 2the. 1tut. 2exp.	e,l,m,n, o,p,q,	Compressibility of soil Consolidation settlement One-dimensional consolidation test	1-12 of article (11)	1 – 4 of article (12)
21	5 2the. 1tut. 2exp.	e,l,m,n, o,p,q,	Compressibility of soil Void ratio-pressure plot NC and OC soils Calculation of consolidation Settlement	1-12 of article (11)	1 – 4 of article (12)
22	5 2the. 1tut. 2exp.	e,l,m,n, o,p,q,	Compressibility of soil Calculation of consolidation Settlement	1-12 of article (11)	1 – 4 of article (12)
23	5 2the. 1tut. 2exp.	f, g,l,m,n, o,p,q,r	Compressibility of soil Compression index Cc Swell index Cs Secondary consolidation settlement	1-12 of article (11)	1 – 4 of article (12)
24	5 2the. 1tut.	h, i,l,m,n, o,p,q,	Compressibility of soil Time rate of	1-12 of article (11)	1 – 4 of article (12)

	2exp.		consolidation		
25	5 2the. 1tut. 2exp.	h, i,l,m,n, o,p,q,r	Compressibility of soil Coefficient of consolidation Calculation of consolidation settlement under a foundation Total Foundation settlement	1-12 of article (11)	1 – 4 of article (12)
26	5 2the. 1tut. 2exp.	j,l,m,n, o,p,q	Shear strength of soil Introduction	1-12 of article (11)	1 – 4 of article (12)
27	5 2the. 1tut. 2exp.	j,l,m,n, o,p,q,	Shear strength of soil Mohr-coulomb failure criteria Determination of shear strength parameters for soils in the laboratory	1-12 of article (11)	1 – 4 of article (12)
28	5 2the. 1tut. 2exp.	j,l,m,n, o,p,q,r	Shear strength of soil Direct shear test Triaxial shear test	1-12 of article (11)	1 – 4 of article (12)
29	5 2the. 1tut. 2exp.	k,l,m,n, o,p,q,	Shear strength of soil Unconfined compression test of saturated clay General comments on triaxial tests	1-12 of article (11)	1 – 4 of article (12)
30	5 2the. 1tut. 2exp.	k,l,m,n, o,p,q,r	Shear strength of soil Stress Path	1-12 of article (11)	1 – 4 of article (12)

15. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	***Text Book*** Principle of Geotechnical Engineering, By B. M. Das, 6th edition, PWS Publishing Co., 2006 **References :** 1. Craig's Soil Mechanics, By R. F Craig, 7th edition, Spon Press, 2004. 2. Soil Mechanics, Basic Concepts and Engineering Applications, By A. Aysen, 2002, A. A. Balkema Publishers. Soil Mechanics, By Arnold Verruijt, 2006, http://geo.verruijt.net.
Special requirements (include for example workshops, periodicals, IT software, websites)	1. Laboratory experiments in the (Soil Mechanics Lab) at Civil engineering department. 2. Available websites related to the subject. 3. Extracurricular activities.
Community-based facilities (include for example, guest Lectures , internship , field studies)	1. Field and scientific visits. 2. Extra lectures by foreign guest lecturers.
16. Admissions	
Pre-requisites	CE102, CE104, CE105, & CE 203 Courses
Minimum number of students	5 per class
Maximum number of students	35 per class
17. Course Instructors	**Instructors:** **Assistant lecturer Noor Salim Atia** Civil Engineering Department College of Engineering Uruk Private University Email: noor.sal.atia@uruk.edu.iq

1. Teaching Institution	College of Engineering Uruk Private University

2. University Department/Centre	Civil Engineering Department (CE)
3. Course title/code & Description	**THIRD YEAR** **Reinforced Concrete / CE 303** This course introduce: • Introduction to Modern Design Theory, Definition of Loads, and Selecting of Structural System. • Properties of Concrete and Reinforcing Steel. • Flexure Analysis and Design of Beams. • Shear and Diagonal Tension. • Bond, Development Length, and Anchorage. • Analysis and Design for Torsion. • Approximate Analysis of Continuous Beams. • One-way Slabs. • Edge Supported Two-way Slabs. • Short Columns. ender Columns. The course is taught through 4 hrs. per week, 3theories, 1 tutorial.
4. Programme(s) to which it Contributes	Civil Engineering (CE)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a "Day Program". The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects.
6. Semester/Year	1st & 2nd / Academic Year 2024 – 2025
7. Number of hours tuition (total)	120 hrs. / 4 hrs. per week
8. Date of production/revision of this specification	February / 2025
9. Aims of the Course	

- Introduce students in to modern design theory and its applications to reinforced concrete structures. This include introduce students to definition of structural design, load estimations, structural systems, deterministic and non-deterministic design issues and role of codes and specifications in design process.
- Brief review of material properties for concrete and reinforcing rebars.
- Showing drawbacks of conventional flexure formula and derived more sophisticated relations that could be used in analysis and design of singly, doubly, T-shaped, and irregular shapes reinforced concrete sections. All derivations are based on basic principles of structural engineering, namely compatibility, equilibrium, and constitutive relations. ACI code regulations related to flexure are presented thoroughly.
- Presentations of theoretical and empirical relations related to shear and diagonal tensions. Many examples are presented to show how ACI shear regulations could be applied to practical problems.
- Introducing students in basic concepts and code regulations related to:
    - Development of tensions rebars based on embedded length.
    - Development of tension rebars based on standard hooks.
    - Development of compression rebars.
    - Development of bundled rebars.
    - Anchorage requirement for web reinforcement.
    - Development length and cutoff points for flexure reinforcement.
    - Lap splices.
- Presenting theoretical and code regulations related to design for torsions including:
    - Reviewing torsional behavior of homogenous beams.
    - Introducing basic concepts of torsional behavior of reinforced concrete beams.
    - Discussing difference between equilibrium and compatibility torsion from ACI code point of view.
    - Presenting many examples to show how ACI pertains regulations could be applied to practical problems.
- Presenting student for:
    - Definition of one-way and two-way edged supported slabs and to a criterion to distinguish between them.
    - ACI regulations related to deflection control, bending moments and shear forces determinations, and reinforcement selections for one-way and two-way edge supported slabs.
    - Determination of load sharing of supporting beams
    - Many practical examples.
- Introducing student for:
    - ACI definition of RC columns.
    - Analysis and design of axially loaded columns.
    - Analysis of design of columns that subjected to an axial load and a uniaxial moment.

- Analysis of columns that subjected an axial load and biaxial moments.

- Introducing student for:
  - Definition of slenderness ratio and its effect of concentrically and eccentrically loaded columns.
  - Three different ACI approaches to deal with slenderness effects, namely nonlinear analysis, elastic analysis, and moment magnification approaches.
  - ACI criteria to classify buildings into braced and sway buildings.
  - ACI criteria to classify columns into short or slender.
  - ACI moment magnification approach when apply to a column in a braced story.

ACI moment magnification approach when apply to a column in a sway story.

10· Learning Outcomes

At end of course, the student will be able to:

a. Proposed a suitable structural system for a reinforced concrete building. This system will be compatible with architectural and functional requirements of the building.
b. Predicate service loads with good accuracy and predicate factored loads according to ACI code requirements.
c. Assess or propose adequate slab thickness for deflection control according provisions of ACI code.
d. Determine internal forces, bending moments and shear forces, in edge supported concrete slab with a level of accuracy that is accepted by ACI code.
e. Assess or select suitable slab reinforcements for a specified moments in edge supported RC slabs.
f. Assess a proposed slab thickness for one-way shear requirements.
g. Estimate accurately load shares that transfer from supported slabs to the supporting beams.
h. Estimate accurately resulting bending moments and shear forces in the supporting beams.
i. Assess or design of beams for flexure.
j. Assess or design of beams for shear and diagonal tension.
k. Assess or design of beams for torsion.
l. Check adequacy or design of reinforcement details related to development length, splice, and cutoff points.
m. Assess or design of short columns.
n. Assess or design of slender columns.

11. Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.
4. Lab. Experiments.
5. Tests and Exams.
6. In-Class Questions and Discussions.
7. Connection between Theory and Application.
8. Field Trips.
9. Extracurricular Activities.
10. Seminars.
11. In- and Out-Class oral conservations.
12. Reports, Presentations, and Posters.

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Extracurricular Activities.
3. Student Engagement during Lectures.
4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor).

13. Grading Policy

a. Thirty degrees (30%) on Quizzes and Term Exams.
b. Additional two degrees (10%) for contribution in critical discussion in lectures.
c. Seventy degrees (60%) on final exam.

14. Course Structure

Week	Hours	LOs (Article 10)	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	4 3the. 1tut.	a , b	Introduction	1-12 of article (11)	1 – 4 of article (12)
2	4 3the. 1tut.	i	Flexure Analysis and Design of Beams	1-12 of article (11)	1 – 4 of article (12)
3	4 3the. 1tut.	i	Flexure Analysis and Design of Beams	1-12 of article (11)	1 – 4 of article (12)
4	4 3the. 1tut.	i	Flexure Analysis and Design of Beams	1-12 of article (11)	1 – 4 of article (12)
5	4 3the. 1tut.	i	Flexure Analysis and Design of Beams	1-12 of article (11)	1 – 4 of article (12)
6	4 3the. 1tut.	i	Flexure Analysis and Design of Beams	1-12 of article (11)	1 – 4 of article (12)
7	4 3the. 1tut.	i	Flexure Analysis and Design of Beams	1-12 of article (11)	1 – 4 of article (12)
8	4 3the. 1tut.	i	Flexure Analysis and Design of Beams	1-12 of article (11)	1 – 4 of article (12)
9	4 3the. 1tut.	i	Flexure Analysis and Design of Beams	1-12 of article (11)	1 – 4 of article (12)
10	4 3the. 1tut.	j	Shear and Diagonal Tension.	1-12 of article (11)	1 – 4 of article (12)
11	4 3the. 1tut.	j	Shear and Diagonal Tension.	1-12 of article (11)	1 – 4 of article (12)
12	4 3the. 1tut.	j	Shear and Diagonal Tension.	1-12 of article (11)	1 – 4 of article (12)
13	4 3the. 1tut.	j	Shear and Diagonal Tension.	1-12 of article (11)	1 – 4 of article (12)
14	4 3the.	j	Shear and Diagonal Tension.	1-12 of article (11)	1 – 4 of article (12)

	1tut.				
15	4 3the. 1tut.	j	Shear and Diagonal Tension.	1-12 of article (11)	1 – 4 of article (12)
16	4 3the. 1tut.	l	Bond, Development Length, and Anchorage.	1-12 of article (11)	1 – 4 of article (12)
17	4 3the. 1tut.	l	Bond, Development Length, and Anchorage.	1-12 of article (11)	1 – 4 of article (12)
18	4 3the. 1tut.	l	Bond, Development Length, and Anchorage.	1-12 of article (11)	1 – 4 of article (12)
19	4 3the. 1tut.	k	Analysis and Design for Torsion	1-12 of article (11)	1 – 4 of article (12)
20	4 3the. 1tut.	c,d,e,f, g,h	One-way Slabs and Approximate Analysis of Continuous Beams	1-12 of article (11)	1 – 4 of article (12)
21	4 3the. 1tut.	c,d,e,f, g,h	One-way Slabs and Approximate Analysis of Continuous Beams	1-12 of article (11)	1 – 4 of article (12)
22	4 3the. 1tut.	c,d,e,f, g,h	Edge Supported Two-way Slabs	1-12 of article (11)	1 – 4 of article (12)
23	4 3the. 1tut.	c,d,e,f, g,h	Edge Supported Two-way Slabs	1-12 of article (11)	1 – 4 of article (12)
24	4 3the. 1tut.	m	Short Columns	1-12 of article (11)	1 – 4 of article (12)
25	4 3the. 1tut.	m	Short Columns	1-12 of article (11)	1 – 4 of article (12)
26	4 3the. 1tut.	m	Short Columns	1-12 of article (11)	1 – 4 of article (12)
27	4 3the.	m	Short Columns	1-12 of article (11)	1 – 4 of article (12)

	1tut.				
28	4 3the. 1tut.	m	Short Columns	1-12 of article (11)	1 – 4 of article (12)
29	4 3the. 1tut.	n	Slender Columns	1-12 of article (11)	1 – 4 of article (12)
30	4 3the. 1tut	n	Slender Columns	1-12 of article (11)	1 – 4 of article (12)

15. Infrastructure

Required reading:
· CORE TEXTS
· COURSE MATERIALS
· OTHER

Text Book:

1. A. H. Nilson, D. Darwin, and C. W. Dolan, Design of Concrete Structures, 14th Edition, McGraw Hill, 2010 (Metric Edition).
2. Building Code Requirements for Structural Concrete (ACI318M- 2008).

References:

1. J. K. Wight and J. G. MacGregor, Reinforced Concrete: Mechanics and Design, 5th Edition, Person/Prentice Hall, 2009.
2. E. G. Nawy, Reinforced Concrete: A Fundamental Approach, 6th Edition, Prentice Hall, 2009.
3. C.K. Wang, C.G. Salmon and J. A. Pincheira, Reinforced Concrete Design, 7th Edition, John Wiley & Sons, 2007.
4. J.C. McCormac and R. H. Brown, Design of Reinforced Concrete, 8th Edition, John Wiley & Sons, 2009.
5. M. N. Hassoun, A. Al-Manaseer, Structural Concrete: Theory and Design, 3rd Edition, Addison–Wesley, 2005.
6. G.F. Limbrunner and A.O. Aghayere, Reinforced Concrete Design, 7th Edition, Prentice Hall, 2010.
7. M. Setareh, and R. Darvas, Concrete Structure, Prentice Hall, 2007.
8. M. E. Kamara, B. G. Rabbat, Notes on

	ACI 318-05, 9th Edition, 2005. **Others:** Lecture notes prepared by instructor including many solved examples
Special requirements (include for example workshops, periodicals, IT software, websites)	/
Community-based facilities (include for example, guest Lectures , internship , field studies)	/
16. Admissions	
Pre-requisites	CE 102, CE 203, CE 108 & CE 207 Courses
Minimum number of students	5
Maximum number of students	35
17. Course Instructors	**Instructor:** **Assistant lecturer Aya Waleed Naqi** Civil Engineering Department College of Engineering Uruk Private University Email: Aya.w.taqi@uruk.edu.iq

1. Teaching Institution	College of Engineering Uruk Private University
2. University Department/Centre	Civil Engineering Department (CE)
3. Course title/code & Description	**THIRD YEAR** **Water Resources Engineering / CE 304** This course introduces: Introduction, Hydraulic design of irrigation system: Design of lined canals by different methods such as Manning's equ.,section factor method, Design of unlined canals by different method such as Manning's equ., lacey's method ,Kennedys silt method, Types of lining, Ground water movement: Permeability of soil – How to compute the hydraulic conductivity in lab, Laplace equ., Dapuit equ., Flow in confined and unconfined aquifer, Analogy between the flow of ground water and electricity, Water infiltration in to soil – basic infiltration rate, Hydraulic design of drainage system: Hydraulic design of open drains-Manning's equ. ,design chart, Hydraulic design of closed drains-Hooghoudts equ., Van Beers approach, Kirkham equ. , Hydraulic design of pipe drains, Drainage wells – Steady state wells ,Artesian wells, Interference of wells –super position method, Salt problems in soil and water: Evolution of irrigation water, Water quality: Water sampling, Water pollution index, Method for controlling water quality. Introduction to dams types . The course is taught through 3 hrs. per week, 2theories, 1 tutorial.
4. Programme(s) to which it Contributes	Civil Engineering (CE)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a "Day Program". The students are full time

	students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects.
6. Semester/Year	1st & 2nd / Academic Year 2024 – 2025
7. Number of hours tuition (total)	90 hrs. / 3 hrs. per week
8. Date of production/revision of this specification	February / 2025

9. Aims of the Course

- Understand the key drivers on water resources, both for drinking water and food production;
- Understand the individual hydrological processes and their integrated behavior in catchments;
- Appreciate the use of modeling techniques for water resources management;
- Have an ability to construct and design of hydrological irrigation and drainage
- canals And groundwater problems.

10· Learning Outcomes

a. .After teaching, students acquire the knowledge necessary for the design and the technical-economic management of irrigation and drainage..

B. In particular, the student is able to design the plant components of irrigation is under pressure to free surface flow and managing the water resource with the most appropriate criteria and with the most appropriate irrigation methods and systems drainage, including the assessment of their economic costs.

C.. Understand the key drivers on water resources, and water quality.

11. Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.
4. Lab. Experiments.
5. Tests and Exams.
6. In-Class Questions and Discussions.
7. Connection between Theory and Application.
8. Field Trips.
9. Extracurricular Activities.
10. Seminars.
11. In- and Out-Class oral conservations.
12. Reports, Presentations, and Posters.

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Extracurricular Activities.
3. Student Engagement during Lectures.
4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor).

13. Grading Policy

1.Quizzes & home works (20) %
2.Tests 2-3 (10)%
3. seminars(10) %
4.Final (60) %

14. Course Structure					
Week	Hours	LOs (Article 10)	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	3 2 the. 1tut		Introduction.	1-12 of article (11)	1 – 4 of article (12)
2	3 2 the. 1tut	a , b	Hydraulic design of canals-lined & unlined by several methods such as Manning method, section factor method,Lacy's method	1-12 of article (11)	1 – 4 of article (12)
3	3 2 the. 1tut	a , b	Hydraulic design of canals-lined & unlined by several methods such as Manning method, section factor method,Lacy's method	1-12 of article (11)	1 – 4 of article (12)
4	3 2 the. 1tut	a , b	Hydraulic design of canals-lined & unlined by several methods such as Manning method, section factor method,Lacy's method	1-12 of article (11)	1 – 4 of article (12)
5	3 2 the. 1tut	a , b	Hydraulic design of canals-lined & unlined by several methods such as Manning method, section factor method,Lacy's method	1-12 of article (11)	1 – 4 of article (12)
6	3 2 the. 1tut	a , b	Hydraulic design of canals-lined & unlined by several methods such as Manning method,	1-12 of article (11)	1 – 4 of article (12)

			section factor method,Lacy's method		
7	3 2 the. 1tut	a , b	Hydraulic design of canals-lined & unlined by several methods such as Manning method, section factor method,Lacy's method	1-12 of article (11)	1 – 4 of article (12)
8	3 2 the. 1tut	a , b	Introduction to lining -types, advantages, disadvantages.	1-12 of article (11)	1 – 4 of article (12)
9	3 2 the. 1tut	a , b	Introduction to lining -types, advantages, disadvantages.	1-12 of article (11)	1 – 4 of article (12)
10	3 2 the. 1tut	c	Water quality of rivers-stream sampling, pollution index	1-12 of article (11)	1 – 4 of article (12)
11	3 2 the. 1tut	c	Water quality of rivers-stream sampling, pollution index	1-12 of article (11)	1 – 4 of article (12)
12	3 2 the. 1tut	c	Water quality of rivers-stream sampling, pollution index	1-12 of article (11)	1 – 4 of article (12)
13	3 2 the. 1tut	a	Infiltration	1-12 of article (11)	1 – 4 of article (12)
14	3 2 the. 1tut	a , b	Ground water movement	1-12 of article (11)	1 – 4 of article (12)
15	3 2 the. 1tut	a , b	Ground water movement	1-12 of article (11)	1 – 4 of article (12)

16	3 2 the. 1tut	a , b	Ground water movement	1-12 of article (11)	1 – 4 of article (12)
17	3 2 the. 1tut	a , b	Drainage system-surface drainage-open drains-closed drains-drainage wells.	1-12 of article (11)	1 – 4 of article (12)
18	3 2 the. 1tut	a , b	Drainage system-surface drainage-open drains-closed drains-drainage wells.	1-12 of article (11)	1 – 4 of article (12)
19	3 2 the. 1tut	a , b	Drainage system-surface drainage-open drains-closed drains-drainage wells.	1-12 of article (11)	1 – 4 of article (12)
20	3 2 the. 1tut	a , b	Drainage system-surface drainage-open drains-closed drains-drainage wells.	1-12 of article (11)	1 – 4 of article (12)
21	3 2 the. 1tut	a , b	Drainage system-surface drainage-open drains-closed drains-drainage wells.	1-12 of article (11)	1 – 4 of article (12)
22	3 2 the. 1tut	a , b	Drainage system-surface drainage-open drains-closed drains-drainage wells.	1-12 of article (11)	1 – 4 of article (12)
23	3 2 the. 1tut	a , b	Drainage system-surface drainage-open drains-closed drains-drainage wells.	1-12 of article (11)	1 – 4 of article (12)
24	3 2 the. 1tut	a , b	Dams-earth dams, gravity dams.	1-12 of article (11)	1 – 4 of article (12)
25	3	a , b	Dams-earth dams,	1-12 of	1 – 4 of article (12)

	2 the. 1tut		gravity dams.	article (11)	
26	3 2 the. 1tut	a , b	Dams-earth dams, gravity dams.	1-12 of article (11)	1 – 4 of article (12)
27	3 2 the. 1tut	a , b , c	Seminars	1-12 of article (11)	1 – 4 of article (12)
28	3 2 the. 1tut	a , b , c	Seminars	1-12 of article (11)	1 – 4 of article (12)
29	3 2 the. 1tut	a , b , c	Seminars	1-12 of article (11)	1 – 4 of article (12)
30	3 2 the. 1tut	a , b , c	Seminars	1-12 of article (11)	1 – 4 of article (12)

15. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	Irrigation engineering by:R.K.Sharma2009 Water resources engineering by: Larry W.Mays2010 Irrigation& water resources engineering by:G.L.Asawa2008
Special requirements (include for example workshops, periodicals, IT software, websites)	/
Community-based facilities (include for example, guest Lectures , internship , field studies)	/

16. Admissions	
Pre-requisites	CE 205
Minimum number of students	5
Maximum number of students	35
17. Course Instructors	**Instructor :** **Assistant Lecturer Rehab Kareem Jbbar** Civil Engineering Department College of Engineering Uruk Private University Email: rehab_karim@uruk.edu.iq

1. Teaching Institution	College of Engineering Uruk Private University
2. University Department/Centre	Civil Engineering Department (CE)
3. Course title/code & Description	**THIRD YEAR** **Engineering Analysis / CE 305** This course introduces: introduction to differential equations . Classification of differential equation. Ordinary differential equation(1st order):Separable differential equation,Homogeneous differential equation, Linear differential equation, Exact differential equation, Special differential equation, application of 1st order differential equation:Change the depth of water in the tank as a function of time. Change the amount of salt in the tank as a function of time.Ordinary differential equation(2nd order). Homogeneous linear ODEs with constant coefficients.Differential operators .application of 2nd order homogeneous linear differential equation:Free oscillations (Mass-Spring System),Buckling of colume, Nonhomogeneous linear ODEs with constant coefficients:Solution by variation of parameters,Solution by indeterminate coefficents,application of 2nd order nonhomogeneous linear differential equation. Forced oscillations (resonance) Ordinary differential equation(higher order), Euler – Cauchy differential equation. Simultaneous linear differential equation,Application of simultaneous linear differential equation:Amount of salt of many tank (mixture), Mechanical vibration of many mass.Fourier series . Periodic function. The Euler coefficient. Half

	– range expansions. Application of Fourier series. Partial differential equation (PDE). Characteristics and classification of PDE. Separation of variables. Heat equation. Wave equation.Laplace equation. Power series to solve the linear D.E. with variables coefficient. The course is taught through 2 hrs. per week, 2theories.
4. Programme(s) to which it Contributes	Civil Engineering (CE)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a "Day Program". The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects.
6. Semester/Year	1st & 2nd / Academic Year 2024 – 2025
7. Number of hours tuition (total)	60 hrs. / 2 hrs. per week
8. Date of production/revision of this specification	February / 2025
9. Aims of the Course	

1. Introduce basic definition and explain the basic concepts that essential in connection with differential equations and illustrate these concepts by examples.
2. Explain the purpose of differential equations and their application.
3. Enable the student to solve the differential equations(ordinary and partial).
4. Introduce basic definition and explain the basic concepts of Fourier series. These series are a very powerful tool in connection with various problems involving ordinary and partial differential equations.
5. Enable the student to solve examples and some important engineering applications will be included.
6. 6. Provide a background to higher level courses involving mathematics.

10· Learning Outcomes

At the end of the class, the student will be able to:
a. classified any differential equation.
b. solved any differential equation .
c. Translation of the given physical information into a mathematical form (modeling). This model may be a differential equation , a system of linear equations, or some other mathematical expression.
d. Treatment of the model by mathematical methods. This will lead to the solution of the given problem in mathematical form.
e. solved Fourier series
f. solved any partial differential equation.

11. Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.
4. Lab. Experiments.
5. Tests and Exams.
6. In-Class Questions and Discussions.
7. Connection between Theory and Application.
8. Field Trips.
9. Extracurricular Activities.
10. Seminars.
11. In- and Out-Class oral conservations.
12. Reports, Presentations, and Posters.

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Extracurricular Activities.
3. Student Engagement during Lectures.
4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor).

13. Grading Policy

1. Quizzes:
- There will be a (8 – 10) closed books and notes quizzes during the academic year.
- The quizzes will count 20% of the total course grade.
2. Tests, 2-3 Nos. and will count 10% of the total course grade.
3. Extracurricular Activities, this is optional and will count extra marks (10 %) for the student, depending on the type of activity.
4. Final Exam:
- The final exam will be comprehensive, closed books and notes, and will count 60% of the total course grade.

14. Course Structure

Week	Hours	LOs (Article 10)	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	2 2the.	a	Classified differential equation	1-12 of article (11)	1 – 4 of article (12)
2	2 2the.	a , b	The solution of 1st order D.E	1-12 of article (11)	1 – 4 of article (12)
3	2 2the.	a , b	The solution of 1st order D.E	1-12 of article (11)	1 – 4 of article (12)
4	2 2the.	a , b	The solution of 1st order D.E	1-12 of article (11)	1 – 4 of article (12)
5	2 2the.	a,b,c,d	The solution of 1st order D.E	1-12 of article (11)	1 – 4 of article (12)
6	2 2the.	a,b,c,d	The solution of 1st order D.E	1-12 of article (11)	1 – 4 of article (12)
7	2 2the.	a,b,c,d	The solution of 1st order D.E	1-12 of article (11)	1 – 4 of article (12)
8	2 2the.	a , b	The solution of 2nd order D.E	1-12 of article (11)	1 – 4 of article (12)
9	2 2the.	a , b	The solution of 2nd order D.E	1-12 of article (11)	1 – 4 of article (12)
10	2 2the.	a , b	The solution of 2nd order D.E	1-12 of article (11)	1 – 4 of article (12)
11	2 2the.	a,b,c,d	Application of 1st order D.E	1-12 of article (11)	1 – 4 of article (12)
12	2 2the.	a,b,c,d	Application of 1st order D.E	1-12 of article (11)	1 – 4 of article (12)
13	2 2the.	a,b,c,d	Application of 1st order D.E	1-12 of article (11)	1 – 4 of article (12)
14	2 2the.	a , b	The solution of higher order D.E	1-12 of article (11)	1 – 4 of article (12)
15	2 2the.	a , b	The solution of higher order D.E	1-12 of article (11)	1 – 4 of article (12)
16	2 2the.	a,b,c,d	The solution of higher order D.E	1-12 of article (11)	1 – 4 of article (12)
17	2 2the.	a,b,c,d	The solution of higher order D.E	1-12 of article (11)	1 – 4 of article (12)
18	2 2the.	a , b	The solution of simultaneous D.E	1-12 of article (11)	1 – 4 of article (12)
19	2 2the.	a , b	The solution of simultaneous D.E	1-12 of article (11)	1 – 4 of article (12)
20	2	a,b,c,d	The solution of	1-12 of	1 – 4 of article (12)

	2the.		simultaneous D.E	article (11)	
21	2 2the.	a , e	Fourier series	1-12 of article (11)	1 – 4 of article (12)
22	2 2the.	a , e	Fourier series	1-12 of article (11)	1 – 4 of article (12)
23	2 2the.	a , e	Fourier series	1-12 of article (11)	1 – 4 of article (12)
24	2 2the.	a , b , f	Application of Fourier series	1-12 of article (11)	1 – 4 of article (12)
25	2 2the.	a , b	Partial differential equations	1-12 of article (11)	1 – 4 of article (12)
26	2 2the.	a , b	Partial differential equations	1-12 of article (11)	1 – 4 of article (12)
27	2 2the.	a,b,e,f	Application of P.D.ES	1-12 of article (11)	1 – 4 of article (12)
28	2 2the.	a,b,e,f	Application of P.D.ES	1-12 of article (11)	1 – 4 of article (12)
29	2 2the.	a,b,e,f	Application of P.D.ES	1-12 of article (11)	1 – 4 of article (12)
30	2 2the.	a,b,e,f	Application of P.D.ES	1-12 of article (11)	1 – 4 of article (12)

15. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	Advanced engineering analysis by Wylie Advance engineering analysis by Grizeg
Special requirements (include for example workshops, periodicals, IT software, websites)	/
Community-based facilities (include for example, guest Lectures , internship , field studies)	/
16. Admissions	
Pre-requisites	/
Minimum number of students	5
Maximum number of students	25 per class
17. Course Instructors	**Instructor :** **Assistant Lecturer Anas Nahidh Hassooni** Civil Engineering Department College of Engineering Uruk Private University Email: Anas_nahidh@uruk.edu.iq

1. Teaching Institution	College of Engineering Uruk Private University
2. University Department/Centre	Civil Engineering Department (CE)
3. Course title/code & Description	**THIRD YEAR** **Traffic Engineering / CE 306** This course introduces: Introduction to traffic engineering: Definition of Traffic Engineering: Subject of Traffic Engineering, Objects in Traffic Engineering Studies, Main Elements in Traffic Engineering, Background of Development of Traffic Engineering, Challenges that traffic engineers face, Transportation Systems and their Function Traffic stream components: Roadway characteristics (highway functional classification, geometric characteristics of Roadways that includes cross section elements, vertical alignments and horizontal alignments), Road user characteristics (driver and pedestrian characteristics that includes Visual Characteristics of Drivers, hearing characteristics, perception-reaction time, pedestrian walking speed , Vehicle characteristics (static characteristics which include dimensions and turning radius, kinematics characteristics which include the relation between distance ,speed and acceleration . dynamic characteristics which include resistances for the motion of vehicle) Volume, density & speed studies and characteristics: Definition of volumes, Definition of speed, Density, Relationship among volume, speed and density, The Greenshields linear model , Greenberg's logarithmic

	model, Bottleneck and shockwave Spot speed, travel time, and delay studies: Spot speed studies, Travel time studies, Delay studies Statistics and application in traffic engineering: Normal distribution, Poisson distribution, Negative exponential distribution Car Parking: Car parking types, Requirements Car parking studies Traffic Control Device :Signal, Sign, Marking, Intersection: Basic types, Requirements, Control types, Signal timing (Webster model) Traffic capacity analysis (HCM procedure): Multi-lane highways (operational analysis and design), Two-lane highways (operational analysis) The course is taught through 3 hrs. per week, 1theories, 1 tutorial, and 1experimental.
4. Programme(s) to which it Contributes	Civil Engineering (CI)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a "Day Program". The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects.
6. Semester/Year	1st & 2nd / Academic Year 2024 – 2025
7. Number of hours tuition (total)	90 hrs. / 3 hrs. per week
8. Date of production/revision of this specification	February / 2025

9. Aims of the Course

This course deals with the technical aspects of traffic engineering. It covers the analytical procedures and computational methods employed in a wide variety of tasks related to traffic operations and control. A person who completes this course will be able to identify operational problems to carry out traffic engineering studies and evaluate alternative solutions.

10· Learning Outcomes

At the end of the class, the student will be able to:

a. Understand critical components of the traffic system that are drivers, vehicles, roads and highways, physical environment, and control devices interact to form traffic streams.
b. Know how to conduct basic traffic engineering studies and apply proper statistical tests to test hypotheses
c. Understand the capacity and level of service concepts and use them to evaluate the performance of highways and streets
d. Know how to select proper control devices and place them to positively guide the motorists
e. Know how to apply the traffic signal warrants
f. Understand the principles of traffic signal timing and the process of determining proper phasing and phase sequence
g. Know how to properly analyze the performance of signalized intersections
h. Know how to properly analyze the performance of two way-two lane highway
i. Know how to design the cross section (No. of lanes) of highway.

11. Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.
4. Lab. Experiments.
5. Tests and Exams.
6. In-Class Questions and Discussions.
7. Connection between Theory and Application.
8. Field Trips.
9. Extracurricular Activities.
10. Seminars.
11. In- and Out-Class oral conservations.
12. Reports, Presentations, and Posters.

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Extracurricular Activities.
3. Student Engagement during Lectures.
4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor).

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13. Grading Policy

1. Quizzes:
- There will be a (8) closed books and notes quizzes during the academic year.
- The quizzes will count 25% of the total course grade.
- There wiil be 2-3 tests, 15% of the total grade.

2. Final Exam:
- The final exam will be comprehensive, closed books and notes, and will count 60 % of the total course grade

14. Course Structure					
Week	Hours	LOs (Article 10)	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	3 1the. 1tut. 1exp.	a	Introduction to traffic engineering	1-12 of article (11)	1 – 4 of article (12)
2	3 1the. 1tut. 1exp.	a	Traffic stream components 1- Roadway characteristics	1-12 of article (11)	1 – 4 of article (12)
3	3 1the. 1tut. 1exp.	a	2- Road user characteristics	1-12 of article (11)	1 – 4 of article (12)
4	3 1the. 1tut. 1exp.	a	3- Vehicle characteristics	1-12 of article (11)	1 – 4 of article (12)
5	3 1the. 1tut. 1exp.	b	Traffic Volume characteristics	1-12 of article (11)	1 – 4 of article (12)
6	3 1the. 1tut. 1exp.	b	Speed types and characteristics	1-12 of article (11)	1 – 4 of article (12)
7	3 1the. 1tut. 1exp.	c	Traffic Density Definition and characteristics	1-12 of article (11)	1 – 4 of article (12)
8	3 1the. 1tut. 1exp.	c	1-Relationship among volume, speed and density, 2-The Greenshields linear model	1-12 of article (11)	1 – 4 of article (12)
9	3 1the. 1tut. 1exp.	c	3- Greenberg's logarithmic model,	1-12 of article (11)	1 – 4 of article (12)
10	3	c	Bottleneck and	1-12 of	1 – 4 of article (12)

	1the. 1tut. 1exp.		shockwave	article (11)	
11	3 1the. 1tut. 1exp.	c	Spot speed, travel time, and delay studies	1-12 of article (11)	1 – 4 of article (12)
12	3 1the. 1tut. 1exp.	c	Statistics and application in traffic engineering 1- Normal distribution	1-12 of article (11)	1 – 4 of article (12)
13	3 1the. 1tut. 1exp.	b	2- Poisson distribution	1-12 of article (11)	1 – 4 of article (12)
14	3 1the. 1tut. 1exp.	b	3. Negative exponential distribution .	1-12 of article (11)	1 – 4 of article (12)
15	3 1the. 1tut. 1exp.	a	4. Car Parking	1-12 of article (11)	1 – 4 of article (12)
16	3 1the. 1tut. 1exp.	e	Traffic Control Device (Signal, Sign, Marking)	1-12 of article (11)	1 – 4 of article (12)
17	3 1the. 1tut. 1exp.	e , g	Intersection 1-(Basic types, Requirements,	1-12 of article (11)	1 – 4 of article (12)
18	3 1the. 1tut. 1exp.	e	2. Control types and warrants	1-12 of article (11)	1 – 4 of article (12)
19	3 1the. 1tut. 1exp.	f	3. Signal timing (Webster model)	1-12 of article (11)	1 – 4 of article (12)
20	3 1the. 1tut. 1exp.	g	Traffic capacity analysis (HCM method)	1-12 of article (11)	1 – 4 of article (12)
21	3	h	1. operational	1-12 of	1 – 4 of article (12)

	1the. 1tut. 1exp.		analysis and design of multi lanes highway	article (11)	
22	3 1the. 1tut. 1exp.	h	Examples for operational analysis and design of multi lanes highway	1-12 of article (11)	1 – 4 of article (12)
23	3 1the. 1tut. 1exp.	h	2. operational analysis and design of two lanes highway	1-12 of article (11)	1 – 4 of article (12)
24	3 1the. 1tut. 1exp.	h	Examples for operational analysis and design of two lanes highway	1-12 of article (11)	1 – 4 of article (12)
25	3 1the. 1tut. 1exp.	h	Interchang Interchanges (definition and typeses (definition and types	1-12 of article (11)	1 – 4 of article (12)
26	3 1the. 1tut. 1exp.	a	Design of lighting poles for highway and streets	1-12 of article (11)	1 – 4 of article (12)
27	3 1the. 1tut. 1exp.	i	Visiting guest lecture	1-12 of article (11)	1 – 4 of article (12)
28	3 1the. 1tut. 1exp.	i	Seminars	1-12 of article (11)	1 – 4 of article (12)
29	3 1the. 1tut. 1exp.	g	Seminars	1-12 of article (11)	1 – 4 of article (12)
30	3 1the. 1tut. 1exp.	h	Seminars	1-12 of article (11)	1 – 4 of article (12)

15. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	1-Traffic Engineering, by Roger P. Roess, Elena S. Prassas and William R. McShane 2- Highway Capacity Manual (HCM) 3- Garber, Nicholas, J. and Lester A. Hoel. Traffic and Highway Engineering. PWS Publishing, NewYork, 1999 4-Banks, James H. Introduction to Transportation Engineering. Second Edition, McGraw-Hill, New York, NY, 2001. 5-American Association of State Highway and Transportation Officials (2004), A Policy on Geometric Design of Highways and Streets, AASHTO, Washington, DC.
Special requirements (include for example workshops, periodicals, IT software, websites)	Laboratory experiments in the (traffic engineering) as well as computer lab. in the department. • Available websites related to the subject. www.ITE.org
Community-based facilities (include for example, guest Lectures , internship , field studies)	Visiting Guest (lecture)
16. Admissions	
Pre-requisites	GE 10 , CE 108 & GE 201 Courses
Minimum number of students	5 per class
Maximum number of students	30 per class
17. Course Instructors	**Instructor :** **Assistant Lecturer Zainab Adil Mohammed** Civil Engineering Department College of Engineering Uruk Private University Email: zainab.a.mohammed@uruk.edu.iq

1. Teaching Institution	College of Engineering Uruk Private University

2. University Department/Centre	Civil Engineering Department (CE)
3. Course title/code & Description	**THIRD YEAR** **Engineering Management and Economy / CE 307** This course introduces: **Construction Management :** Definition, Management Duties during Construction of Project, Requirements of Successful Project Planning, Project Planning Methods (Bar-Chart, Net-Work Analysis and Grid Methods) Crash Program Updating the Plan, Program Updating, Precedence diagram, Crashed program, Resources Allocation. **Engineering Economy :** Introduction to Science of Economy, Interest, Simple interest, Compound interest, Nominal and effective interest, interest rate. Uniform series of payments (Annuities), Depreciation methods, straight line method, Matheson method, sinking fund method, sum of years digits method. Basic methods for making economic studies (alternatives). The course is taught through 2 hrs. Per week, 2theories.
4. Programme(s) to which it Contributes	Civil Engineering (CE)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a "Day Program". The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects.
6. Semester/Year	1st & 2nd / Academic Year 2024– 2025

7. Number of hours tuition (total)	60 hrs. / 2 hrs. per week
8. Date of production/revision of this specification	February / 2025

9. Aims of the Course

Engineering Economy :

1. Understand the types of questions engineering economy can answer.
2. Determine the role of engineering economy in the decision-making process.
3. Identify what is needed to successfully perform an engineering economy study.
4. Perform calculations about interest rates and rate of return.
5. Understand what equivalence means in economic terms.
6. Calculate simple interest and compound interest for one or more interest periods.
7. Identify and use engineering economy terminology and symbols.
8. Understand cash flows, their estimation, and how to graphically represent them.

Construction Management :

1. Students will learn primary construction systems.
2. Students will learn primary construction methods and materials.
3. Students will develop construction cost accounting, management and control knowledge and skills.
4. Students will learn construction project management and control systems.
5. Students will understand professional ethical responsibility.
6. Students will learn to function as a member of a team.
7. Students will learn computer skills and applications common to the construction industry.
8. Students will learn to communicate effectively.
9. Students will learn to apply mathematic skills to solve construction problems.

10· Learning Outcomes

students will have:

a. an ability to select and apply the knowledge, technique, skills, and modern tools of the discipline to broadly-defined construction management activities;

b. an ability to select and apply knowledge of mathematics, science, business, management, construction and construction science to problems that require the application of construction management principles and applied procedures or methodologies;

c. an ability to identify, sequence, schedule, and estimate the costs of critical construction activities as associated with successful construction proposals;

d. the ability to display fundamental knowledge of critical aspects of the body of knowledge expected of constructors entering the construction management profession;

e. an ability to function effectively as a member or leader on a construction team;

f. an ability to identify, analyze and solve broadly-defined construction problems;

g. an ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature;

h. an understanding of the need for an ability to engage in self-directed continuing professional development;

i. an understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity;

j. a knowledge of the impact of construction in a societal and global context; and

k. a commitment to cost-effectiveness, quality, timeliness and continuous improvement.

11. Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.
4. Lab. Experiments.
5. Tests and Exams.
6. In-Class Questions and Discussions.
7. Connection between Theory and Application.
8. Field Trips.
9. Extracurricular Activities.
10. Seminars.
11. In- and Out-Class oral conservations.
12. Reports, Presentations, and Posters.

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Extracurricular Activities.
3. Student Engagement during Lectures.
4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor).

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13. Grading Policy

1. Quizzes:

- There will be a (10 – 15) closed books and notes quizzes during the academic year.
- The quizzes will count 20% of the total course grade.

2. Tests, 2-3 Nos. and will count 20% of the total course grade.
3. Final Exam:

- The final exam will be comprehensive, closed books and notes, and will count 60% of the total course grade .

14. Course Structure

Week	Hours	LOs (Article 10)	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	2 2the.	a	Definitions	1-12 of article (11)	1 – 4 of article (12)
2	2 2the.	b ,c,	Management Duties during Construction of Project, Requirements of Successful Project Planning	1-12 of article (11)	1 – 4 of article (12)
3	2 2the.	a, b, c	Project Planning Methods (Bar-Chart)	1-12 of article (11)	1 – 4 of article (12)
4	2 2the.	a, b, c	Project Planning Methods (Bar-Chart)	1-12 of article (11)	1 – 4 of article (12)
5	2 2the.	a, b,c,j	Net-Work Analysis	1-12 of article (11)	1 – 4 of article (12)
6	2 2the.	a, b,c,j	Net-Work Analysis	1-12 of article (11)	1 – 4 of article (12)
7	2 2the.	a, b,c,j	Net-Work Analysis	1-12 of article (11)	1 – 4 of article (12)
8	2 2the.	a, b,c,j	Net-Work Analysis	1-12 of article (11)	1 – 4 of article (12)
9	2 2the.	a, b,c,j	Grid Methods	1-12 of article (11)	1 – 4 of article (12)
10	2 2the.	a, b,c,j	Program updating	1-12 of article (11)	1 – 4 of article (12)
11	2 2the.	a, b,c,j	Program updating	1-12 of article (11)	1 – 4 of article (12)
12	2 2the.	a, b,c,j	Precedence diagram	1-12 of article (11)	1 – 4 of article (12)
13	2 2the.	a, b,c,j	Precedence diagram	1-12 of article (11)	1 – 4 of article (12)
14	2 2the.	d,e,f	Crashed program	1-12 of article (11)	1 – 4 of article (12)
15	2 2the.	d,e,f	Crashed program	1-12 of article (11)	1 – 4 of article (12)
16	2 2the.	d,e,f,k	Resources Allocation	1-12 of article (11)	1 – 4 of article (12)
17	2	d,e,f,k	Resources	1-12 of	1 – 4 of article (12)

	2the.		Allocation	article (11)	
18	2 2the.	g,h,i,j	Introduction to Science of Economy, kind of interest	1-12 of article (11)	1 – 4 of article (12)
19	2 2the.	g,h,i,j	Simple & compound interest	1-12 of article (11)	1 – 4 of article (12)
20	2 2the.	g,h,i,j	Simple & compound interest	1-12 of article (11)	1 – 4 of article (12)
21	2 2the.	g,h,i,j	Nominal & effective interest rate	1-12 of article (11)	1 – 4 of article (12)
22	2 2the.	g,h,i,j	Uniform series of payments (Annuities)	1-12 of article (11)	1 – 4 of article (12)
23	2 2the.	g,h,i,j	Uniform series of payments (Annuities)	1-12 of article (11)	1 – 4 of article (12)
24	2 2the.	g,h,i,j	Depreciation	1-12 of article (11)	1 – 4 of article (12)
25	2 2the.	g,h,i,j	Depreciation	1-12 of article (11)	1 – 4 of article (12)
26	2 2the.	g,h,i,j	Depreciation	1-12 of article (11)	1 – 4 of article (12)
27	2 2the.	g,h,i,j	Alternatives, Economical Studies	1-12 of article (11)	1 – 4 of article (12)
28	2 2the.	g,h,i,j	Alternatives, Economical Studies	1-12 of article (11)	1 – 4 of article (12)
29	2 2the.	g,h,i,j	Using of Statistical Methods in Engineering Economy.	1-12 of article (11)	1 – 4 of article (12)
30	2 2the.	g,h,i,j	Using of Statistical Methods in Engineering Economy.	1-12 of article (11)	1 – 4 of article (12)

15. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	***Textbook:*** 1. Engineering Economy By: Degarmo 2. Construction planning, Equipment and methods By: Peurifoy ***References:*** Construction Management • Principles of construction management By: Roy Pitlcher • Modern Construction management By: F. Harrris • Critical path methods in construction practice By: Antill ***Others*** Notebook prepared by the instructor
Special requirements (include for example workshops, periodicals, IT software, websites)	• Available websites related to the subject. • Extracurricular activities.
Community-based facilities (include for example, guest Lectures , internship , field studies)	/
16. Admissions	
Pre-requisites	CE 108 Course
Minimum number of students	5
Maximum number of students	35
17. Course Instructors	**Instructor:** **Dr. Salah Khazaal Zamim** Civil Engineering Department College of Engineering Uruk Private University Email: dr.salah@uruk.edu.iq

1. Teaching Institution	College of Engineering Uruk Private University
2. University Department/Centre	Civil Engineering Department (CE)
3. Course title/code & Description	**THIRD YEAR** **Computer Applications in Civil Engineering / CE 308** This course introduces: Introduction: Review about STAAD Pro. history. Type of structures: Consist of four structures which are: Space, Plane, Floor and Truss Structures. Types of used units: System is allowed to input data and request output in almost all commonly used engineering unit systems including SI and FPS. Types of used coordinate systems: STAAD Pro. uses two types of coordinate systems which are the GLOBAL and LOCAL coordinate. The Global Coordinate consists of three types which are Cartesian, Cylindrical and Reverse Cylindrical Coordinates. Types of Elements: STAAD Pro. uses three main types of elements which are Beam, Plate/Shell and Solid Elements and an entity called the surface element. Show Window of Program: Show window consists of five parts which are menu bars, tool bars, Control Page, Main window and Data boxes. Control page: Uses and details of control page in the program. Create elements: Draw joints and beam elements in plane structure Create properties: Create PRISMATIC property specifications,

	Standard Steel shapes from built-in section library, TAPERED sections. Prismatic properties consist of circular, rectangular, Tee, Trapezoidal and General sections. Specifications in control page: Create internal pin and internal support by release. Create truss cable, compression and tension members Supports in control page: Create hinge, roller fixed and spring supports. Load in control page: Create live, dead and combination loads. Also create concentrated, distribution, triangle loads, ….etc. Create materials in control page: Create concrete, steel, ….etc. materials. Analysis/Print in control page: Output results from post-processing such as node displacements, shear, bending moment, axial forces, stresses, reactions at supports, animation of frames, reports ….etc. Staad Editor: Using joint coordinates order by editing Staad Editor: Using member incidences order by editing Staad Editor: Using member properties order by editing Staad Editor: Using define materials property order by editing MS PROJECT PROGRAM Introduction, Embarking new Project, Gantt Chart, Grouping Tasks in Logical Order (WBS Outline), MS Project Views, Resource Sheet, Find Critical Path

	The course is taught through 3 hrs. per week, 1 tutorial, and 2experimental.
4. Programme(s) to which it Contributes	Civil Engineering (CE)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a "Day Program". The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects.
6. Semester/Year	1st & 2nd / Academic Year 2024 – 2025
7. Number of hours tuition (total)	90 hrs. / 3 hrs. per week
8. Date of production/revision of this specification	February / 2025

9. Aims of the Course

This course deals with the Staad Pro. and MS Project Programs.
The STAAD Pro. is a Graphical User Interface (GUI) is normally used to create all input specifications and all output reports and displays. These structural modeling and analysis input specifications are stored in a text file with extension ".STD. A user may edit/create this STD file and have the GUI and the analysis engine both reflect the changes. A STRUCTURE can be defined as an assemblage of elements. STAAD is capable of analyzing and designing structures consisting of frame, plate/shell and solid elements. These structures types are Space, Plane, Floor and Truss.

MS Project is software used to schedule the tasks of a project in a simplified manner and provide completed reports about time scheduling, costs, and resources (human, material, and equipment). These reports are graphic and tables forms which helps the engineers and top management to understand the sequence of project activities, the relationships between them, the costs associated to each activity, the holidays and stopped days, percent of completion, resources allocation, and other features.

10· Learning Outcomes

At the end of the class, the student will be able to:

a. Analysis of 2D Frames by Staad Pro. program.
b. Analysis of 2D Trusses by Staad Pro. program.
c. Analysis of Space Frames by Staad Pro. program.
d. Analysis of Space Trusses by Staad Pro. program.
e. Design of R.C. Frames (According to ACI Code) by Staad Pro. program.
f. Design of Steel Frames (According to AISC) by Staad Pro. program.
g. Analysis & Design of Structures subjected Lateral & Environmental Loadings (Wind & Earthquake Loadings) by Staad Pro. program.

Also, the student will be able to:

h. Embarking new Project: learning how can you schedule the project.
i. Gantt Chart: learning how can enter information of all the activities.
j. Grouping Tasks in Logical Order: Outlining helps organize your tasks into more manageable chunks.
k. MS Project Views: MS project consist of many views such as Bar (Gantt) Chart, Network (CPM) view, Task Usage, Gantt Tracking, Resource Graph Resource Usage, Resource.
l. Resource Sheet: create a list of the people, equipment, and material resources.
m. m. Find Critical Path: helps you to lay out all tasks that must be completed as part of a project.

11. Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.
4. Lab. Experiments.
5. Tests and Exams.
6. In-Class Questions and Discussions.
7. Connection between Theory and Application.
8. Field Trips.
9. Extracurricular Activities.
10. Seminars.
11. In- and Out-Class oral conservations.
12. Reports, Presentations, and Posters.

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Extracurricular Activities.
3. Student Engagement during Lectures.
4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor).

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13. Grading Policy

1. Quizzes:
- There will be (8) closed books and notes quizzes during the academic year.
- The quizzes will count 25% of the total course grade.
-There will be 2-3 test, 25% of the total grade.
2. Final Exam:
- The final exam will be comprehensive, closed books and notes, will count 50 % of the total course grade

14. Course Structure

Week	Hours	LOs (Article 10)	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	3 1tut. 2exp.	a	Introduction	1-12 of article (11)	1 – 4 of article (12)
2	3 1tut. 2exp.	a , b	Type of structures and used units	1-12 of article (11)	1 – 4 of article (12)
3	3 1tut. 2exp.	a , b	Types of used coordinate systems and Types of Elements	1-12 of article (11)	1 – 4 of article (12)
4	3 1tut. 2exp.	a , b	Control page	1-12 of article (11)	1 – 4 of article (12)
5	3 1tut. 2exp.	a , b , c	Create elements	1-12 of article (11)	1 – 4 of article (12)
6	3 1tut. 2exp.	a , b , c	Create properties	1-12 of article (11)	1 – 4 of article (12)
7	3 1tut. 2exp.	a , b , c	Specifications in control page	1-12 of article (11)	1 – 4 of article (12)
8	3 1tut. 2exp.	a , b , c	Supports in control page	1-12 of article (11)	1 – 4 of article (12)
9	3 1tut. 2exp.	a , b , c	Load in control page	1-12 of article (11)	1 – 4 of article (12)
10	3 1tut. 2exp.	a , b , c	Load in control page	1-12 of article (11)	1 – 4 of article (12)
11	3 1tut. 2exp.	a , b , c	Create materials in control page	1-12 of article (11)	1 – 4 of article (12)
12	3 1tut. 2exp.	a , b , c	Analysis/Print in control page	1-12 of article (11)	1 – 4 of article (12)
13	3 1tut. 2exp.	d , e , f	Post-processing	1-12 of article (11)	1 – 4 of article (12)

14	3 1tut. 2exp.	d , e , f	Post-processing	1-12 of article (11)	1 – 4 of article (12)
15	3 1tut. 2exp.	a , b , c	Staad Editor	1-12 of article (11)	1 – 4 of article (12)
16	3 1tut. 2exp.	a , b , c	Staad Editor	1-12 of article (11)	1 – 4 of article (12)
17	3 1tut. 2exp.	d , e , f	Staad Editor	1-12 of article (11)	1 – 4 of article (12)
18	3 1tut. 2exp.	d , e , f	Staad Editor	1-12 of article (11)	1 – 4 of article (12)
19	3 1tut. 2exp.	g	Staad Editor	1-12 of article (11)	1 – 4 of article (12)
20	3 1tut. 2exp.	h	Introduction	1-12 of article (11)	1 – 4 of article (12)
21	3 1tut. 2exp.	h	Embarking new Project	1-12 of article (11)	1 – 4 of article (12)
22	3 1tut. 2exp.	h	Embarking new Project	1-12 of article (11)	1 – 4 of article (12)
23	3 1tut. 2exp.	i	Gantt Chart	1-12 of article (11)	1 – 4 of article (12)
24	3 1tut. 2exp.	i	Gantt Chart	1-12 of article (11)	1 – 4 of article (12)
25	3 1tut. 2exp.	j	Grouping Tasks in Logical Order (WBS Outline)	1-12 of article (11)	1 – 4 of article (12)
26	3 1tut. 2exp.	j	Grouping Tasks in Logical Order (WBS Outline)	1-12 of article (11)	1 – 4 of article (12)
27	3 1tut. 2exp.	k	MS Project Views	1-12 of article (11)	1 – 4 of article (12)
28	3 1tut. 2exp.	k	MS Project Views	1-12 of article (11)	1 – 4 of article (12)

29	3 1tut. 2exp.	l	Resource Sheet	1-12 of article (11)	1 – 4 of article (12)
30	3 1tut. 2exp.	m	Find Critical Path	1-12 of article (11)	1 – 4 of article (12)

15. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	Technical reference in Staad Pro. 2007 Help Internet for MS Project
Special requirements (include for example workshops, periodicals, IT software, websites)	Computer lab. in the department. • Available websites related to the subject.
Community-based facilities (include for example, guest Lectures , internship , field studies)	/
16. Admissions	
Pre-requisites	GE 109 & CE 204 Courses
Minimum number of students	5 per class
Maximum number of students	30 per class
17. Course Instructors	**Instructor :** **Assistant Lecturer Zainab Adil Mohammed** Civil Engineering Department College of Engineering Uruk Private University Email: zainab.a.mohammed@uruk.edu.iq

1. Teaching Institution	College of Engineering Uruk Private University

2. University Department/Centre	Civil Engineering Department (CE)
3. Course title/code & Description	**THIRD YEAR** **Numerical Methods / CE 309** This course introduces: Introduction , Approximations and Errors, Solution of Nonlinear Equations (Roots of Equations){Graphical method , Bisection method , Newton's method , method of false Position , Fixed point method}, Solution of System of Linear equations {Graphical method , Solution by Iterations: (Jacobi's method & Gauss-Seidel method)}, Curve Fitting {Interpolation : (Lagrange's Interpolating Polynomial , Newton's Divided-Difference Interpolating Polynomial & Gregory-Newton's Divided-Difference Interpolating Polynomial) & Least Squares Regression : (Linear Regression , Polynomial Regression)}, Numerical Integration { Newton-Cotes Integration Formulas : (Rectangles Rule , Trapezoidal rule & Simpson's Rule) & Gaussian Integration : (method of Undetermined Coefficients & Two, Three and Higher-point Gaussian Formulas)} , Numerical Solution of Ordinary Differential Equations (Taylor's Expansion method , Euler's method , Modified Euler's method & Range-Kuta method) , The Finite-Difference Method for Boundary-Value Problems, Numerical Solution of Partial Differential Equations (Finite-Difference : Elliptic Equations , Finite-Difference : Parabolic Equation & Finite-Difference : Hyperbolic Equation). The course is taught through 4 hrs. per week, 1theories, 1 tutorial, and 2experimental.

4. Programme(s) to which it Contributes	Civil Engineering (CE)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a "Day Program". The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects.
6. Semester/Year	1st & 2nd / Academic Year 2024 – 2025
7. Number of hours tuition (total)	120 hrs. / 4 hrs. per week
8. Date of production/revision of this specification	February / 2025

9. Aims of the Course

1. derive appropriate numerical methods to solve algebraic and transcendental equations.
2.develop appropriate numerical methods to approximate a function.
3.develop appropriate numerical methods to solve a differential equation.
4.derive appropriate numerical methods to evaluate a derivative at a value.
5.derive appropriate numerical methods to solve a linear system of equations.
6.perform an error analysis for various numerical methods.
7.prove results for various numerical root finding methods.
8.derive appropriate numerical methods to calculate a definite integral.
9.code various numerical methods in a modern computer language.

10· Learning Outcomes

At the end of the class, the student will be able to:

a. Be aware of the use of numerical methods in modern scientific computing,
b. Be familiar with finite precision computation,
c. Be familiar with numerical solutions of nonlinear equations in a single variable,
d. Be familiar with numerical solutions of system of linear equations in a single variable,
e. Be familiar with numerical interpolation and approximation of functions,
f. Be familiar with numerical integration and differentiation
g. Be familiar with numerical solution of ordinary differential equations
h. Be familiar with calculation and interpretation of errors in numerical methods,
i. Be familiar with programming with numerical packages like MATLAB

11. Teaching and Learning Methods

1. Lectures.
2. Tutorials.
3. Homework and Assignments.
4. Lab. Experiments.
5. Tests and Exams.
6. In-Class Questions and Discussions.
7. Connection between Theory and Application.
8. Field Trips.
9. Extracurricular Activities.
10. Seminars.
11. In- and Out-Class oral conservations.
12. Reports, Presentations, and Posters.

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Extracurricular Activities.
3. Student Engagement during Lectures.
4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor).

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13. Grading Policy

1. Quizzes:
- There will be a (5 – 8) closed books and notes quizzes during the academic year.
- The quizzes will count 25% of the total course grade.
-Ther will be 2-3 tests, 25% of the total grade.
2. Extracurricular Activities, this is optional and will count extra marks (10 %) for the student, depending on the type of activity.
4. Final Exam:
- The final exam will be comprehensive, closed books and notes, and will count 50% of the total course grade.

14. Course Structure

Week	Hours	LOs (Article 10)	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	4 1.the. 1tut. 2exp.	b	Introduction	1-12 of article (11)	1 – 4 of article (12)

2	4 1.the. 1tut. 2exp.	h	Approximation And Errors	1-12 of article (11)	1 – 4 of article (12)
3	4 1.the. 1tut. 2exp.	c	Solution of nonlinear Equations : 1- Bisection Method	1-12 of article (11)	1 – 4 of article (12)
4	4 1.the. 1tut. 2exp.	c	2- Newton's Method	1-12 of article (11)	1 – 4 of article (12)
5	4 1.the. 1tut. 2exp.	c	3- Method of False - Position	1-12 of article (11)	1 – 4 of article (12)
6	4 1.the. 1tut. 2exp.	c	4- Fixed – Point Method	1-12 of article (11)	1 – 4 of article (12)
7	4 1.the. 1tut. 2exp.	c	Applications in Civil Engineering	1-12 of article (11)	1 – 4 of article (12)
8	4 1.the. 1tut. 2exp.	d	Solution of System of Linear Eq.s: 1- Gauss – Elimination method	1-12 of article (11)	1 – 4 of article (12)
9	4 1.the. 1tut. 2exp.	d	2- solution by Iteration: a- Jacobi's method	1-12 of article (11)	1 – 4 of article (12)
10	4 1.the. 1tut. 2exp.	d	b- Gauss - Seidel Method	1-12 of article (11)	1 – 4 of article (12)
11	4 1.the. 1tut. 2exp.	d	Applications in Civil Engineering	1-12 of article (11)	1 – 4 of article (12)
12	4 1.the.	e	Curve Fitting : 1- Interpolation	1-12 of article (11)	1 – 4 of article (12)

	1tut. 2exp.		:		
13	4 1.the. 1tut. 2exp.	e	a- Lagrange's Interpolating	1-12 of article (11)	1 – 4 of article (12)
14	4 1.the. 1tut. 2exp.	e	b- Newton's Divided - Difference	1-12 of article (11)	1 – 4 of article (12)
15	4 1.the. 1tut. 2exp.	e	c- Gregory - Newton's Divided - Difference	1-12 of article (11)	1 – 4 of article (12)
16	4 1.the. 1tut. 2exp.	e	Curve Fitting : 2- Least Square a- Linear Regression	1-12 of article (11)	1 – 4 of article (12)
17	4 1.the. 1tut. 2exp.	e	b- Polynomial Regression	1-12 of article (11)	1 – 4 of article (12)
18	4 1.the. 1tut. 2exp.	e	Applications in Civil Engineering	1-12 of article (11)	1 – 4 of article (12)
19	4 1.the. 1tut. 2exp.	f	Numerical Integration: 1- Newton-Cotes Formulas: a- Rectangles Rule	1-12 of article (11)	1 – 4 of article (12)
20	4 1.the. 1tut. 2exp.	f	b- Trapezoidal Rule	1-12 of article (11)	1 – 4 of article (12)
21	4 1.the. 1tut. 2exp.	f	c-Simpson’s Rule	1-12 of article (11)	1 – 4 of article (12)
22	4 1.the. 1tut. 2exp.	f	Numerical Integration: 2- Gauss Quadrature: a- Method of	1-12 of article (11)	1 – 4 of article (12)

			Undetermined Coefficients		
23	4 1.the. 1tut. 2exp.	f	b- Two, Three and higher- points Gaussian Formulas	1-12 of article (11)	1 – 4 of article (12)
24	4 1.the. 1tut. 2exp.	g	Numerical Solution of Ordinary Differential Eqs.: Initial Value Problem 1- Taylor's Expansion Method	1-12 of article (11)	1 – 4 of article (12)
25	4 1.the. 1tut. 2exp.	g	2-Euler's Method 3- Modified Euler's Method	1-12 of article (11)	1 – 4 of article (12)
26	4 1.the. 1tut. 2exp.	g	4- Runge Kutta Method	1-12 of article (11)	1 – 4 of article (12)
27	4 1.the. 1tut. 2exp.	g	The Finite Difference Method For Boundary-Value problems	1-12 of article (11)	1 – 4 of article (12)
28	4 1.the. 1tut. 2exp.	g	Numerical Solution of Partial Differential Eqs: 1- Finite Difference :Elliptic Equation	1-12 of article (11)	1 – 4 of article (12)
29	4 1.the. 1tut. 2exp.	g	2- Finite Difference :Parabolic Equation	1-12 of article (11)	1 – 4 of article (12)
30	4 1.the. 1tut. 2exp.	g	3- Finite Difference :Hyperbolic Equation	1-12 of article (11)	1 – 4 of article (12)

15. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	1- Chapra, Steven C, and Canale, Raymond P. (2009)"Numerical Methods for Engineers", Mc Graw-Hill, New York 2- Chapra, Steven C (2011)"Applied Numerical Methods with MATLAB for Engineers and Scientists", Mc Graw-Hill, New York
Special requirements (include for example workshops, periodicals, IT software, websites)	• Available websites related to the subject.
Community-based facilities (include for example, guest Lectures , internship , field studies)	/
16. Admissions	
Pre-requisites	/
Minimum number of students	5
Maximum number of students	35
17. Course Instructors	**Instructure :** **Assistant lecturer Ahmed Mustafa Hussein** Civil Engineering Department College of Engineering Uruk Private University Email: ahmed_mostafa@uruk.edu.iq

1. Teaching Institution	College of Engineering Uruk Private University
2. University Department/Centre	Civil Engineering Department (CE)
3. Course title/code & Description	**Workshop GE 107/FIRST YEAR** التعريف بعلىيات التشغيل الميكاذ يكي، عمليات الادامة والصيانة وارشادات السلامة والتدري ب على: 1.اةطارخل: التعريف بأجزاء المخرطة، التعريف بعدد القطع، التدريب على عمليات الخراطة و تصنيع نماذج عملية. 2.اللحام: التعريف بعمليات اللحام المختلفة، Stick, Mig, Tig ، لألألة الألألأي ستيلينية، لحام النقطة الألألأبائية، التدري لأ لألى تنفيذ لالالات اللحام المختلفة عمليا. 3.القراجز: مدخل لعمليات النجارة، التعريف بأنواع الأخلأابالمختلفة وعيوبها، عمليات قطع وتنعيم الاخشاب، عمليات صبغ الالالاب. 4.السباكة الرملية: لتعريف بأنواع السباكة، انواع الأفران المستخدمة، التعريف بالمعادن المختلفة ودرجة انصهارها، تصنيع نما .. عملية. 5. التفريز: التعريف بأنواع التفريز، التعريف ب سكاكين القطع المختلفة، تنفيذ عمليات التفريز القرصي والتفريز الطرفي وتصنيع نماذج عملية.
4. Programme(s) to which it Contributes	Civil Engineering (CE)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a “Day Program”. The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects.
6. Semester/Year	1st & 2nd / Academic Year 2020 – 2021
7. Number of hours tuition (total)	60 hrs. / 2 hrs. per week
8. Date of production/revision of this specification	February / 2021

9. Aims of the Course

التعريف بعلميات التشغيل الميكانيكي، عمليات الادامة والصيانة وارشادات الاالامال.

10·Learning Outcomes (LOs)

At the end of the class, the student will be able to:

a. تنفيذ عمليات التشغيل الميكانيكي المختلفة.
b. تحديد عدد القطع والعمليات المناسبة لكل نوع من التشغيل الميكانيكي.
c. تحديد ظروف التشغيل المثلى لكل نوع من المعادن المشغلة.
d. تنفيذ المخططات الهندسية.

11.Teaching and Learning Methods

1. Lectures.
2. Training.
3. Class assignments.
4. Reports, Presentations, and Posters.
5. Tests and Exams.
6. In-Class Questions and Discussions.
7. Seminars.
8. In- and Out-Class oral conservations.

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Extracurricular Activities.
3. Student Engagement during Lectures.
4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor).

13. Grading Policy

1. Quizzes:
- There will be a (5– 10) closed books and notes quizzes during the academic year.
- The quizzes will count 30% of the total course grade.
2. Tests, 2-3 Nos. and will count 30% of the total course grade.
4. Final Exam:
- The final exam will be comprehensive, closed books and notes.
The final exam will count 40% of the total course grade.

14. Course Structure

Week	Hours	LOs (Article 10)	Topic Title	Teaching Method (article 11)	Assessment Method (article 12)
1	2	a , b	وحدة الخراطة	1-8	1 – 4
2	2	a , b	(عمل مدرجات)	1-8	1 – 4
3	2	a , b	(عمل نرمادة)	1-8	1 – 4
4	2	a , b	عمل ذنبة المخرطة)	1-8	1 – 4
5	2	a , b	(عمل توصيلة ماء)	1-8	1 – 4
6	2	a , b	(عددقطع)	1-8	1 – 4
7	2	a , b	(صيانة القلم)	1-8	1 – 4
8	2	a , b	(خراطة السطوح الجانبية والسطحية)	1-8	1 – 4
9	2	a , b	وحدة البرادة	1-8	1 – 4
10	2	a , b	(عمل مبرد)	1-8	1 – 4
11	2	a , b , c	(عمل مبرد باشكال مختلفة)	1-8	1 – 4
12	2	a , b , d	(عمل مقاشط يدوية)	1-8	1 – 4
13	2	a , b	(استعمال الاجنة في تحديد زاوية)	1-8	1 – 4
14	2	a , b	(تنعيم المنشار حسب النعومة والخشونة المطلوبة	1-8	1 – 4
15	2	a , b	(تشكيل قطع حديدة باشكال مختلفة)	1-8	1 – 4
16	2	a , b , c	(عمل ثقوب في لوح حديدي بقياسات محدةد)	1-8	1 – 4
17	2	a , b , d	امتحان وحدة الخراطة	1-8	1 – 4
18	2	a , b	امتحان وحدة البرادة	1-8	1 – 4
19	2	a , b	وحدة النجارة	1-8	1 – 4
20	2	a , b	(تنعيم الاخشاب بالرندة)	1-8	1 – 4
21	2	a , b , c	(عمل تقوس في الخشب الجام	1-8	1 – 4
22	2	a , b , d	(عيوب الاخشاب وكيفية معالجتها)	1-8	1 – 4

23	2	c , d	(عمل زخاف فنية على الالواح الخشبية)	1-8	1 – 4
24	2	c , d	(تقطيع الخشب بابعاد محددة	1-8	1 – 4
25	2	a , c	وحدة اللحام	1-8	1 – 4
26	2	a , d	(وصل قطعتين حديديتين)	1-8	1 – 4
27	2	a , d	استعمال اللحام الغازي)	1-8	1 – 4
28	2	a	لحام المقاومة)	1-8	1 – 4
29	2	a	(استخدام المكائن والعدات والعدد)	1-8	1 – 4
30	2	a	امتحان وحدة النجارة واللحام	1-8	1 – 4

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15. Infrastructure	
16. Admissions	
Pre-requisites	/
Minimum number of students	5
Maximum number of students	35
17. Course Instructors	**Instructor:** **Assistant Lecturer Ali Satar Jabbar** Civil Engineering Department College of Engineering Uruk Private University Email: Ali_Satar@uruk.edu.iq

Uruk University / College of Engineering Course Description (2024-2025)	
Subject: English Language	Instructor: Assist. Lect. Noor Majeed Allamy
Class: 3rd Year	Theoretical Hrs/week: 2
Semester: First	Units: 2

Week No.	Topics	Week Main Theme
1	• Warm-up activity • Grammar: Auxiliary verbs, Naming the tenses, Question and negatives, Short answers. • Vocabulary: What's in a word?: Parts of speech Word formation Words that go together. • Every day English: Social expressions, never mind, take care, you must be joking•	It's a wonderful world!
2	• Warm-up activity • Grammar: Present simple& continuous and Present passive • Reading: 'The clown doctor" • Speaking: Discussion: what make people happy • Listening: Sports-three people talk about their free time activities • Writing: Letters and emails	Get Happy
3	• Warm up activity • Grammar: Past simple&Countinous • Reading: "The painter and the writer" • Speaking: information gap-An amazing thing happened • Listening: Books and Films- people talk about their favourite books and films.	Telling Tales
4	• Warm up activity • Grammar: Modal verbs- Obligation and permission, Have (got) to, can • Reading: How to behave abroad • Speaking: Talking about rules and regulations, Discussion- what advice would you give a foreign learners • Listening: Come round to my place- entertaining friends in three different countries	Doing the right thing
5	• Warm up activity • Grammar: Future forms going to and will • Reading: A travel agent talks about his holiday	On the Move

	• Speaking: Discussion your ideal holiday • Listening: A weather forecast • Writing: Making a reservation	
6	• Warm up activity • Grammar: Questions with like -What's she like? • Reading: Global Pizza- The history of the world favourite food and popular places to visit • Speaking: Talking about food and popular places to eat- Discussion- restaurants, cities, and people you know • Listening: New York and London- An English couple talks about living in New York; An American gives his impressions of living in London. • Writing: A description	I just love it!
7	• Warm up activity • Grammar: Present perfect vs Past simple and Present perfect Passive • Vocabulary: Phrasal verbs literal or idiomatic? • Reading: Dream jobs- two people describe their jobs (jigsaw) • Speaking: Discussion- what's in the news today • Listening: The busy life of a retired man-a man talks to his granddaughter about life since retirement • Writing: A description	The world of work
8 & 9	• Warm up activity • Grammar: Conditionals (First and second conditionals) and Time clause • Reading: "who wants to be a millionaire" • Speaking: Discussion-What would you do with 5$ million and what charities would you support? • Listening: Song-"Who wants to be a millionaire" • Writing: A narrative	Just Imagine!
10 & 11	• Warm up activity • Grammar: Modal verbs must, could, might, can't • Vocabularies: Character adjectives reliable, sociable, easy-going • Speaking: Quiz-What type of person are you? • Everyday English: Agreeing and disagreeing-So do I! And neither do I! • Discussion-what size in the perfect family? • Listening: Brothers and sisters- Two people talk about their families	Getting on Together
12& 13	• Warm up activity • Grammar: Present perfect Simple vs Continuous, Questions and answers, Time expressions • Reading: "Famous for not being famous"- • Speaking: Exchanging information about major life events • Listening: Collectors-two people talk about their collections(jigsaw) • Writing: Writing a biography	Obsessions
14 & 15	• Warm up activity • Grammar: Indirect questions Reported speech • Vocabulary: Verbs and nouns that go together (ice-cream), Idioms, Birth marriage and death • Reading: "How do you know your world?" David Copperfield by Charles Dickens • Speaking: Information gab- Finding out about Celine Dion- Discussion- Customs connected with birth , weddings, and funerals • Listening: The forgetful generation- a radio programme- Noisy neighbours- two people making statements to the police • Writing: Words that join ideas, correcting mistakes	Tell me about it! Life's great events!

Textbook

- **Headway Plus (Intermediate), John and Liz Soars, Oxford University Press, 2016**

1. Teaching Institution	College of Engineering Uruk Private University
2. University Department/Centre	Civil Engineering Department (CE)
3. Course title/code & Description	**FOURTH YEAR** **Steel Design / CE 401** This course introduces description of the most convenient structural steel sections that used in steel constructions. The topics covered in this course are: Introduction to the structural steel design, design of tension members, design of members under compression, design of beams and other flexural members, analysis of combined stresses and design of beam-column members and finally analysis and design of steel connections. The course is taught through 4 hrs. per week, 2theories, 2 tutorial.
4. Programme(s) to which it Contributes	Civil Engineering (CE)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a "Day Program". The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects.
6. Semester/Year	1st & 2nd / Academic Year 2024 – 2025
7. Number of hours tuition (total)	120 hrs. / 4 hrs. per week
8. Date of production/revision of this specification	February – 2025

9. Aims of the Course

- Graduate civil engineers to serve in structural steel constructions and other sectors of civil engineering labor market.
- Improving the teaching and administrative activities to meet international accreditations standards and the mission of the department.
- Improving the academic abilities of the faculty and attracting highly skilled personal.
- Improve the abilities and management of technical support staff and attract the highly skilled for employment.
- Optimum use of resources and potentials of the department.
- Cooperation, academic exchange, program partnerships with other universities and academic centers in developed countries.
- Establishing viable applied research that generates knowledge for local and foreign markets.

10· Learning Outcomes

Materials Science program develop the knowledge and skills that will enable students to:
a.apply basic mathematical and scientific concepts for the description and solution of engineering problems,
b. develop initial proficiency in civil engineering disciplines,
c. develop the ability to conduct experiments, and critically analyze and interpret data,
e. perform civil engineering integrated design of mixes, structures, or processes by means of practical experiences (group projects),
f. identify, formulate, and solve civil engineering problems using modern engineering tools, techniques, and skills,
g.collaborate in group projects,
h.develop their written and oral communication skills through presentations of project results,
i.acquire an appreciation for some of the ethical problems that arise in the exercise of the profession

11. Teaching and Learning Methods

13. Lectures.
14. Tutorials.
15. Homework and Assignments.

16. Lab. Experiments.
17. Tests and Exams.
18. In-Class Questions and Discussions.
19. Connection between Theory and Application.
20. Field Trips.
21. Extracurricular Activities.
22. Seminars.
23. In- and Out-Class oral conservations.
24. Reports, Presentations, and Posters.

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Extracurricular Activities.
3. Student Engagement during Lectures.
4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor).

13. Grading Policy

1. Quizzes:
- There will be (5 – 6) closed notes quizzes during the academic year.
- The quizzes will count 25% of the total course grade.
2. Take-home-exams and homework problems will count 5% of the total course grade.
3. Extracurricular Activities, this is optional and will count extra marks (1 – 5 %) for the student, depending on the type of activity.
4. Final Exam:
- The final exam will be comprehensive, closed notes, and will take place on June 2014 from 9:00 AM - 12:00 PM in civil engineering dept. class rooms
- The final exam will count 70% of the total course grade.

14. Course Structure

Week	Hours	LOs (Article 10)	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	4 2 the. 2tut	a	1-Introduction: - About the AISC Manual, -Units & General Properties, -Structural Steel Shapes and, -Stress-Strain Diagram.	1-12 of article (11)	1 – 4 of article (12)
2	4 2 the. 2tut	b	1-Introduction: - Types of Structural Steel -Design Methods. 2- Tension Members: - Types of Tension Members, -Area of Section	1-12 of article (11)	1 – 4 of article (12)
3	4 2 the. 2tut	c	2- Tension Members: -Allowable Stresses, -Bolted Connections, - The Standard Hole.	1-12 of article (11)	1 – 4 of article (12)
4	4 2 the. 2tut	d	2- Tension Members: -Bearing strength -Block shear strength -Examples	1-12 of article (11)	1 – 4 of article (12)
5	4 2 the. 2tut	e	2- Tension Members: -Weld connections - Check and design examples	1-12 of article (11)	1 – 4 of article (12)
6	4 2 the. 2tut	e	2- Tension Members: - Check and	1-12 of article (11)	1 – 4 of article (12)

			design examples		
7	4 2 the. 2tut	e	2- Tension Members: - Check and design examples	1-12 of article (11)	1 – 4 of article (12)
8	4 2 the. 2tut	e	2- Tension Members: - design of eye bars 3- Compression Members: - Introduction	1-12 of article (11)	1 – 4 of article (12)
9	4 2 the. 2tut	e	3- Compression Members: - Buckling of columns - AISC charts	1-12 of article (11)	1 – 4 of article (12)
10	4 2 the. 2tut	e	3- Compression Members: - design of columns using AISC equations. - design of columns using AISC charts.	1-12 of article (11)	1 – 4 of article (12)
11	4 2 the. 2tut	f	3- Compression Members: - Analsis and design of other than I-shaped members - design of single angle members	1-12 of article (11)	1 – 4 of article (12)
12	4 2 the. 2tut	g	3- Compression Members: - design of truss members - design of end connections (Base plates)	1-12 of article (11)	1 – 4 of article (12)
13	4	g	4- Flexural Members:	1-12 of	1 – 4 of article (12)

	2 the. 2tut		- Actual flexural stress - Major axis of bending	article (11)	
14	4 2 the. 2tut	h	4- Flexural Members: - Coefficient of bending - AISC limitations	1-12 of article (11)	1 – 4 of article (12)
15	4 2 the. 2tut	h	4- Flexural Members: - Check and design examples of beam section using AISC equations	1-12 of article (11)	1 – 4 of article (12)
16	4 2 the. 2tut	h	4- Flexural Members: - Check and design examples of beam section using AISC equations	1-12 of article (11)	1 – 4 of article (12)
17	4 2 the. 2tut	h	4- Flexural Members: - Check and design examples of beam section using AISC charts	1-12 of article (11)	1 – 4 of article (12)
18	4 2 the. 2tut	i	4- Flexural Members: - Check and design examples of rectangular and round bar sections	1-12 of article (11)	1 – 4 of article (12)
19	4 2 the. 2tut	i	4- Flexural Members: - Plate girder	1-12 of article (11)	1 – 4 of article (12)
20	4 2 the. 2tut	i	4- Flexural Members: -Design examples of Plate girders	1-12 of article (11)	1 – 4 of article (12)
21	4 2 the. 2tut	j	5- Combined Stress: - AISC formule and its limitations	1-12 of article (11)	1 – 4 of article (12)
22	4	k	5- Combined	1-12 of	1 – 4 of article (12)

	2 the. 2tut		Stress: - Beam-Colums check problems	article (11)	
23	4 2 the. 2tut	l	5- Combined Stress: - Beam-Colums check problems	1-12 of article (11)	1 – 4 of article (12)
24	4 2 the. 2tut	m	5- Combined Stress: - Beam-Colums check problems using AISC modified equations	1-12 of article (11)	1 – 4 of article (12)
25	4 2 the. 2tut	n	5- Combined Stress: - Beam-Colums Design problems using equivalent load method	1-12 of article (11)	1 – 4 of article (12)
26	4 2 the. 2tut	n	6- Connection: - Analsis and design of bolted bracket connection	1-12 of article (11)	1 – 4 of article (12)
27	4 2 the. 2tut	o	6- Connection: - Analsis and design of welded bracket connection	1-12 of article (11)	1 – 4 of article (12)
28	4 2 the. 2tut	p	6- Connection: - Analsis and design of seated connection	1-12 of article (11)	1 – 4 of article (12)
29	4 2 the. 2tut	q	6- Connection: - Analsis and design of shear connection	1-12 of article (11)	1 – 4 of article (12)
30	4 2 the. 2tut	r	Review and comprehasive exam.	1-12 of article (11)	1 – 4 of article (12)

15. Infrastructure

Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	1- Structural steel design, "FOURTH EDITION 2008" By: Jack C. McCormac. 2- Steel construction manual , American Institute of Steel Construction (AISC) THIRTEEN EDITION 2005 3- Steel design "FIFTH EDITION" 2013, By: William T. Segui. 4- Structural steel design A practice-Oriented Approach "PEARSON INTERNATIONAL EDITION" 2009, "By: Abi Aghayere and janson vigil. 5- Structural steel design and behavior "PEARSON INTERNATIONAL EDITION" 2009, By: Charles E. Johnson and A. Malhas 6- Applied structural steel design "FOURTH EDITION" 2002, By: Leonard Spiegel andGeorge F. Limbrunner.
Special requirements (include for example workshops, periodicals, IT software, websites)	• Solutions to the problems of Steel design book "FIFTH EDITION" 2013, By: William T. Segui • Available websites related to the subject.
Community-based facilities (include for example, guest Lectures , internship , field studies)	/
16. Admissions	
Pre-requisites	CE 102 , CE 203 & CE 301 Courses
Minimum number of students	15
Maximum number of students	20
17. Course Instructors	**Instructors :** **Assistant lecturer Aya Waleed Naqi** Civil Engineering Department College of Engineering Uruk Private University Email: Aya.w.taqi@uruk.edu.iq

1. Teaching Institution	College of Engineering Uruk Private University
2. University Department/Centre	Civil Engineering Department (CE)
3. Course title/code & Description	**FOURTH YEAR** **Foundation Design / CE 402** This course introduces: Lateral Earth Pressure, Introduction, Rankine Theory, Coloumbe Theory, Reataining walls Design, Gravity wall, Cantilever wall, Semi gravity wall, Counterfort wall, Sheet Pile walls, Free Earth support method, Fixed end support method, Bearing Capacity Equation, Terzaghi equation, Myrhoff equation, Structural design of shallow footing, Spread footing, combined footing, Mat foundation, piles, piles in sand, piles in clay, efficiency of pile group, Dynamic formula for pile bearing capacity. The course is taught through 4 hrs. per week, 2theories, 2 tutorial.
4. Programme(s) to which it Contributes	Civil Engineering (CE)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a "Day Program". The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects.
6. Semester/Year	1st & 2nd / Academic Year 2024 – 2025
7. Number of hours tuition (total)	120 hrs. / 4 hrs. per week
8. Date of production/revision of this specification	February – 2024
9. Aims of the Course	
1. Introduce basic definitions and introductory concepts of lateral earth pressure computations.	

2. Introduce the description some retaining structures such as retaining walls and sheet piles.
3. Introduce the calculations and checking of retaining walls stability.
4. Explain and derive the bearing capacity equations of shallow foundations.
5. Enable the student to calculate the bearing capacity of shallow footings.
6. Enable the student to estimate the total settlement of buildings(Immediate and consolidation settlement)
7. Introduce the principles of slope stability analysis.
8. Introduce the basic steps that may followed in consrtruction design of spread footings, combined footings, mat foundations,…
9. Enable the student to analyze and design shallow footings.
10. Introduce the types of deep foundations and its classifications.
11. Provide a complete derivation of ultimate bearing capacity of single pile (Static Method), introduce the dynamic formula too.
12. Enable the student to calculate the distribution of load on each pile within a group of piles.

10· Learning Outcomes

At the end of the class, the student will be able to:
a. Define the lateral earth pressure and retaining structures, the types of lateral earth pressure, and calculate the total thrust on the retaining structures.
b. Checking the stability of both rigid and flexible retaining walls.
c. Be familiar with retaining structures problems .
d. Estimate the ultimate bearing capacity of shallow footing problems.
e. Checking the stability of finite and infinite slopes with and without seepage through the infinite slope.
f. Estimation of allowable settlement of buildings, and calculation of settlement under rigid and flexible loaded areas (footings).
g. Choose the suitable type of shallow footing for buildings.
h. Make a complete construction design for the chosen type of shallow footing.
i. Introduce the classification of piles and types.
j. Estimate the ultimate bearing capacity of single pile using static methods.
k. Estimate the ultimate bearing capacity of single pile using dynamic formula.
l. Introduce the different patterns of pile groups and estimate the bearing capacity of pile group.
m. Estimation of efficiency of pile group in different types of soil.
n. Distribute the load on each pile within pile group.

11. Teaching and Learning Methods

13. Lectures.
14. Tutorials.
15. Homework and Assignments.
16. Lab. Experiments.
17. Tests and Exams.
18. In-Class Questions and Discussions.
19. Connection between Theory and Application.
20. Field Trips.
21. Extracurricular Activities.
22. Seminars.
23. In- and Out-Class oral conservations.
24. Reports, Presentations, and Posters.

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Extracurricular Activities.
3. Student Engagement during Lectures.
4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor).

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13. Grading Policy

1. Quizzes:

- There will be a (15 – 20) closed books and notes quizzes during the academic year.
- The quizzes will count 20% of the total course grade.

2. Tests, 2-3 Nos. and will count 10% of the total course grade.
3. Extracurricular Activities, this is optional and will count extra Marks (1 – 5 %) for the student, depending on the type of activity.
4. Final Exam:

- The final exam will be comprehensive, closed books and notes, and will take place on June 2014 from 9:00 AM - 12:00 PM in Civil dept. class rooms.
- The final exam will count 70% of the total course grade.

14. Course Structure					
Week	Hours	LOs (Article 10)	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	4 2 the. 2tut	a,b,c,	Lateral Earth Pressure Copmutations	1-12 of article (11)	1 – 4 of article (12)
2	4 2 the. 2tut	a,b,c,	Lateral Earth Pressure Copmutations	1-12 of article (11)	1 – 4 of article (12)
3	4 2 the. 2tut	a,b,c,	Retaining Walls and Sheet Piles	1-12 of article (11)	1 – 4 of article (12)
4	4 2 the. 2tut	a,b,c,	Retaining Walls and Sheet Piles	1-12 of article (11)	1 – 4 of article (12)
5	4 2 the. 2tut	d	Bearing Capacity of Shallow Footings	1-12 of article (11)	1 – 4 of article (12)
6	4 2 the. 2tut	d	Bearing Capacity of Shallow Footings	1-12 of article (11)	1 – 4 of article (12)
7	4 2 the. 2tut	e	Slope Stability Analysis	1-12 of article (11)	1 – 4 of article (12)
8	4 2 the. 2tut	e	Slope Stability Analysis	1-12 of article (11)	1 – 4 of article (12)
9	4 2 the. 2tut	f	Settlement of Buildings	1-12 of article (11)	1 – 4 of article (12)
10	4 2 the. 2tut	f	Settlement of Buildings	1-12 of article (11)	1 – 4 of article (12)
11	4	g,h	Construction	1-12 of	1 – 4 of article (12)

	2 the. 2tut		Design of Shallow Footings	article (11)	
12	4 2 the. 2tut	g,h	Construction Design of Shallow Footings	1-12 of article (11)	1 – 4 of article (12)
13	4 2 the. 2tut	g,h	Construction Design of Shallow Footings	1-12 of article (11)	1 – 4 of article (12)
14	4 2 the. 2tut	g,h	Construction Design of Shallow Footings	1-12 of article (11)	1 – 4 of article (12)
15	4 2 the. 2tut	i,j,k	Deep Foundation (Piles)	1-12 of article (11)	1 – 4 of article (12)
16	4 2 the. 2tut	i,j,k	Deep Foundation (Piles)	1-12 of article (11)	1 – 4 of article (12)
17	4 2 the. 2tut	i,j,k	Deep Foundation (Piles)	1-12 of article (11)	1 – 4 of article (12)
18	4 2 the. 2tut	i,j,k	Deep Foundation (Piles)	1-12 of article (11)	1 – 4 of article (12)
19	4 2 the. 2tut	i,j,k,l	Pile Groups	1-12 of article (11)	1 – 4 of article (12)
20	4 2 the. 2tut	i,j,k,l	Pile Groups	1-12 of article (11)	1 – 4 of article (12)
21	4 2 the. 2tut	i,j,k,l	Pile Groups	1-12 of article (11)	1 – 4 of article (12)
22	4 2 the.	i,j,k,l	Pile Groups	1-12 of article (11)	1 – 4 of article (12)

	2tut				
23	4 2 the. 2tut	i,j,k,l	Pile Groups	1-12 of article (11)	1 – 4 of article (12)
24	4 2 the. 2tut	l,m	Efficiency of Pile Group	1-12 of article (11)	1 – 4 of article (12)
25	4 2 the. 2tut	l,m	Efficiency of Pile Group	1-12 of article (11)	1 – 4 of article (12)
26	4 2 the. 2tut	l,m	Efficiency of Pile Group	1-12 of article (11)	1 – 4 of article (12)
27	4 2 the. 2tut	l,m,n	Efficiency of Pile Group	1-12 of article (11)	1 – 4 of article (12)
28	4 2 the. 2tut	l,m,n	Efficiency of Pile Group	1-12 of article (11)	1 – 4 of article (12)
29	4 2 the. 2tut	l,m,n	Efficiency of Pile Group	1-12 of article (11)	1 – 4 of article (12)
30	4 2 the. 2tut	l,m,n	Efficiency of Pile Group	1-12 of article (11)	1 – 4 of article (12)

15. Infrastructure

Required reading:
· CORE TEXTS
· COURSE MATERIALS
· OTHER

Text Book:

- Al-Shakarchi, Y. & N. Al-Mohamadi, (1985) "Foundation Engineering", (in Arabic)"

References:

	• Bowles, J. E. (1996), "Foundation Analysis edition Mc Graw-Hill Book Company Inc. Ne • Das,B.,M. (2003),"Principle of foundation Engineering" **Others:** 1. Notebook prepared by the instructor of the course 2. Collection of sheets of solved and unsolved problems and Exams questions
Special requirements (include for example workshops, periodicals, IT software, websites)	Extracurricular activities
Community-based facilities (include for example, guest Lectures , internship , field studies)	Field and scientific visits. • Extra lectures by foreign guest lecturers.
16. Admissions	
Pre-requisites	CE 302
Minimum number of students	/
Maximum number of students	100
17. Course Instructors	**Instructor :** **Prof. Dr. Kais Taha Shlash** Civil Engineering Department College of Engineering Uruk Private University Email: Qais.shelash@uruk.edu.iq

1. Teaching Institution	College of Engineering Uruk Private University
2. University Department/Centre	Civil Engineering Department (CE)
3. Course title/code & Description	**FOURTH YEAR** **Transportation Engineering** This course introduce: materials which deals with basic concepts of highway design. The major articles which introduce by this course consists of: Functional Classification of Highways;

	Route location and Survey; Design Elements of Geometric Design; Vertical, horizontal and Transition curves; Mass-Haul Diagram; Properties of Bituminous Materials; Rheological Properties of Asphalt Materials; Job-Mix Formula; Structural design of flexible pavement; Structural design of Rigid pavement. The course is taught through 4 hrs. per week, 2theories and 2experimental.
4. Programme(s) to which it Contributes	Civil Engineering (CE)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a "Day Program". The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects.
6. Semester/Year	1st & 2nd / Academic Year 2024 – 2025
7. Number of hours tuition (total)	120 hrs. / 4 hrs. per week
8. Date of production/revision of this specification	February / 2025
9. Aims of the Course	
The main objective of this course is to prepare a civil engineer with ability to work in highway project. This ability achieved by obtaining potentials in highway planning, traffic system analysis, geometric design, earthwork quantities calculation, paving materials types and specifications, asphalt mix design and structural design of flexible pavement. This course intended to deliver the information's by a theoretical demonstration as well as an applicable practicing in the lab by conducting several testing.	

10· Learning Outcomes

At the end of the complete course, the student will be able to:

a. Classifying the different types of highways according to their functions;

b. Preparing an preliminary report of route location;
c. Define the types of sight distances;
d. Design the vertical alignment (sag and crest);
e. Design the horizontal alignment;
f. Design the transition curve, superelevation, and pavement widening;
g. Design the cross section elements;
h. Classifying the types of interchange and intersections;
i. Design the speed change lanes;
j. Calculating the earthwork quantities using mass haul diagram;
k. Define the types of pavement(flexible and rigid);
l. Define the types of asphalt binder used in paving construction;
m. Define the types of aggregate (coarse ,fine and filler);
n. Preparing Job-Mix- Formula for asphalt concrete mixtures;
o. Density-voids analysis of asphalt mixtures;
p. Designing the layers of asphalt flexible pavement;
q. Design the thickness of concrete course for rigid pavement.

11. Teaching and Learning Methods

13. Lectures.
14. Tutorials.
15. Homework and Assignments.
16. Lab. Experiments.
17. Tests and Exams.
18. In-Class Questions and Discussions.
19. Connection between Theory and Application.
20. Field Trips.
21. Extracurricular Activities.
22. Seminars.
23. In- and Out-Class oral conservations.
24. Reports, Presentations, and Posters.

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Extracurricular Activities.
3. Student Engagement during Lectures.
4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor).

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13. Grading Policy

1. Quizzes:

There will be a (4) closed books and notes quizzes during the academic year.

The quizzes will count 5% of the total course grade.

2. Tests, 2-3 Nos. and will count 15% of the total course grade.
3. Seminar, will count 5 % of the total course grade.
4. Laboratory work will count 15 % of the total course grade.
5. Final Exam:
   - The final exam will be comprehensive, closed books and notes, and will take place on June 2014 from 9:00 AM - 12:00 PM. In Civil dept. class rooms.
   - The final exam will count 60 % of the total course grade

14. Course Structure

Week	Hours	LOs (Article 10)	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	4 2the. 2exp.	a	Functional Classification of Highways	1-12 of article (11)	1 – 4 of article (12)
2	4 2the. 2exp.	b	Location Surveys	1-12 of article (11)	1 – 4 of article (12)
3	4 2the. 2exp.	c	Design Control and Criteria	1-12 of article (11)	1 – 4 of article (12)
4	4 2the. 2exp.	c	Passing ,decision and stopping sight distance	1-12 of article (11)	1 – 4 of article (12)
5	4 2the. 2exp.	d	Vertical alignment, crest	1-12 of article (11)	1 – 4 of article (12)
6	4 2the. 2exp.	d	Vertical alignment, sag	1-12 of article (11)	1 – 4 of article (12)

7	4 2the. 2exp.	d	Vertical alignment, combination	1-12 of article (11)	1 – 4 of article (12)
8	4 2the. 2exp.	e	Horizontal alignment	1-12 of article (11)	1 – 4 of article (12)
9	4 2the. 2exp.	f	Transition curve	1-12 of article (11)	1 – 4 of article (12)
10	4 2the. 2exp.	f	Super elevation rate and runoff	1-12 of article (11)	1 – 4 of article (12)
11	4 2the. 2exp.	f	Widening of pavement	1-12 of article (11)	1 – 4 of article (12)
12	4 2the. 2exp.	g	travel lanes (numbers and width) , roadway cross slope, types of roadway surfaces, shoulders and sidewalk, curb and gutter, medians, highway roadside right-of way, vertical clearance.	1-12 of article (11)	1 – 4 of article (12)
13	4 2the. 2exp.	h	types of at-grade intersections, three-leg intersections, four-leg intersections , channelization at intersections	1-12 of article (11)	1 – 4 of article (12)
14	4 2the. 2exp.	i	Acceleration and deceleration lanes	1-12 of article (11)	1 – 4 of article (12)
15	4 2the. 2exp.	j	Mass – haul diagram	1-12 of article (11)	1 – 4 of article (12)

16	4 2the. 2exp.	j	Mass – haul diagram	1-12 of article (11)	1 – 4 of article (12)
17	4 2the. 2exp.	k	Types of pavement Flexible Rigid	1-12 of article (11)	1 – 4 of article (12)
18	4 2the. 2exp.	l	- asphalt concrete -desirable properties of asphalt cement	1-12 of article (11)	1 – 4 of article (12)
19	4 2the. 2exp.	l	asphalt types and testing	1-12 of article (11)	1 – 4 of article (12)
20	4 2the. 2exp .	l	-prime and tack coats -fractional components of asphalt cement	1-12 of article (11)	1 – 4 of article (12)
21	4 2the. 2exp.	l	rheological behavior	1-12 of article (11)	1 – 4 of article (12)
22	4 2the. 2exp.	m	aggregate and mineral filler	1-12 of article (11)	1 – 4 of article (12)
23	4 2the. 2exp.	n	job-mix formula	1-12 of article (11)	1 – 4 of article (12)
24	4 2the. 2exp.	o	asphalt mix design by Marshall test	1-12 of article (11)	1 – 4 of article (12)
25	4 2the. 2exp.	o	asphalt mix design by Marshall test	1-12 of article (11)	1 – 4 of article (12)
26	4 2the. 2exp.	p	layers of flexible pavement AASHTO design method for flexible pavements traffic loads	1-12 of article (11)	1 – 4 of article (12)
27	4	p	subgrade support	1-12 of	1 – 4 of article (12)

	2the. 2exp.		for flexible pavements flexible-pavement material	article (11)	
28	4 2the. 2exp.	p	structural numbers for flexible pavements determination of course thicknesses	1-12 of article (11)	1 – 4 of article (12)
29	4 2the. 2exp.	q	subbase for a rigid pavement types of concrete pavements jointed reinforced concrete pavement continuously reinforced concrete pavement reinforcing steel for concrete pavement	1-12 of article (11)	1 – 4 of article (12)
30	4 2the. 2exp.	q	reinforced concrete pavement slabs tie bars load-transfer devices joints in concrete pavement transverse expansion joints longitudinal joints construction joints	1-12 of article (11)	1 – 4 of article (12)

15. Infrastructure	
Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	1) "Principles of Highway Engineering and Traffic Analysis" by "Fred L. Mannering and Scott S. Washburn", Fifth Edition, 2013.

	2) "Traffic and Highway Engineering" by "Nicholas J. Garber and Lester A. Hoel", Fourth Edition, 2010. 3) "Transportation Infrastructure Engineering" by "Lester A. Hoel, Nicholas J. Garber and Adel W. Sadek" International Student Edition, 2008. 4) 'Highways: The Location, Design, Construction and Maintenance of Pavements" by "C. A. O'Flaherty", Fourth Edition, 2007. 5) "Highway Engineering" by "Paul H. Wright and Karen K. Dixon", Seventh Edition, 2004. 6) 'Pavement Analysis and Design" by "Yang H. Huang", Second Edition, 2004. 7) AASHTO. A Policy on Geometric Design of Highways and Streets, American Association State Highway and Transportation Officials, Washington, D.C.: 2004. 8) American Association of State Highways and Transportation Officials (1993), AASHTO Guide for Design of Pavement Structure, AASHTO, Washington, D.C. 9) ASTM (2003), American Society for Testing and Materials, vol. 04:03. 10) TRB. Highway Capacity Manual, Transportation Research Board, Washington D.C. 2000. 11) SCRB, (2003), "Standard Specification for Roads and Bridges." Republic of Iraq, Ministry of Housing and Construction. 12) SCRB, (2005), "Highway Design Manual" Republic of Iraq, Ministry of Housing and Construction.
Special requirements (include for example workshops, periodicals, IT software, websites)	a) Laboratory experiments in the (highway Lab) of the department. b) Available websites related to the subject. C) Extracurricular activities.

Community-based facilities (include for example, guest Lectures , internship , field studies)	/
16. Admissions	
Pre-requisites	CE 306 Course
Minimum number of students	20
Maximum number of students	40
17. Course Instructors	***Instructor:*** **Assistant Lecturer Zainab Adil Mohammed** Civil Engineering Department College of Engineering Uruk Private University Email: zainab.a.mohammed@uruk.edu.iq

1. Teaching Institution	College of Engineering Uruk Private University
2. University Department/Centre	Civil Engineering Department (CE)
3. Course title/code & Description	**FOURTH YEAR** **Sanitary and Environmental Engineering / CE 404** This course introduces: Water consumption, forecasting population, fire demand, water quality, water treatment /Intake and screens/ sedimentation by gravity/ sedimentation by chemicals/filtration/ disinfection/hardness removal. Type of distribution systems, flow in pipes, design methods, Hardy Cross & Equivalent pipe method in analyzing distribution systems. Waste water, physical, chemical and biological properties, aerobic and anaerobic decomposition of organic matter, BOD equation, quantity of wastewater, application of the rational formula, sewer system, corrosion in the sewer system, sewer system appurtenance, pumping stations, designing procedure using Manning formula , wastewater disposal, Streeter

	Philip equation, wastewater treatment/ screens/flotation tanks/girt chambers/primary sedimentation tanks/biological treatment/ trickling filters and activated sludge process/ secondary sedimentation tanks/ sludge treatment The course is taught through 5 hrs. per week, 2theories, 1 tutorial, and 2 experimental.
4. Programme(s) to which it Contributes	Civil Engineering (CE)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a "Day Program". The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects.
6. Semester/Year	1st & 2nd / Academic Year 2024 – 2025
7. Number of hours tuition (total)	150 hrs. / 5 hrs. per week
8. Date of production/revision of this specification	February – 2025
9. Aims of the Course	
1. Introduce basic definitions and introductory concepts of Sanitary and Environmental Engineering. 2. Introduce water quantities for different uses and consumptions. 3. Explain water impurities and treatment methods according to these impurities 4. Design of water distribution and sewer systems. 5. Explain waste water treatment methods. 6.Enviornmental strategies to avoid sewage pollution . 7. Provide a background to higher level courses involving water and waste water treatment	

10· Learning Outcomes

a. Define water properties, quality and quantity for different demands.
b. Understand and apply the principles of sedimentation, coagulation & flocculation, filtration and disinfection.
c. Understand and apply the principles of dissolved solid removal (hardness removal)
d. Design water treatment plants.
e .Analyze and design pipe networks
f. Define wastewater properties, quality and quantity from different sources
g. Analyze and design sewer systems
h. Understand and apply environmental laws for sewage disposal
i. Understand and apply the principles of the removal of inorganic and organic matters from wastewater
j. Design wastewater treatment plants

11. Teaching and Learning Methods

13. Lectures.
14. Tutorials.
15. Homework and Assignments.
16. Lab. Experiments.
17. Tests and Exams.
18. In-Class Questions and Discussions.
19. Connection between Theory and Application.
20. Field Trips.
21. Extracurricular Activities.
22. Seminars.
23. In- and Out-Class oral conservations.
24. Reports, Presentations, and Posters.

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Extracurricular Activities.
3. Student Engagement during Lectures.
4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor).

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13. Grading Policy

1. Quizzes:
- There will be about (5-10) closed books and notes quizzes during the academic year. The quizzes will count 20% of the total course grade.
2. Tests
- There will be about (1-2) closed books and notes examination during the academic year and will count 10% of the total course grade.

3.Lab work
-There will about (9-12) experimental water and waste water tests. This work will a count 10% of the total course grade
4. Final Exam:
- The final exam will be comprehensive, closed books and Notes. The final exam will count 60% of the total course grade

14. Course Structure

Week	Hours	LOs (Article 10)	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	5 2the. 1tut. 2exp.	a	Introduction	1-12 of article (11)	1 – 4 of article (12)
2	5 2the. 1tut. 2exp.	a	Quantity of water for various purposes	1-12 of article (11)	1 – 4 of article (12)
3	5 2the. 1tut. 2exp.	a	Methods of Forecasting population	1-12 of article (11)	1 – 4 of article (12)
4	5 2the. 1tut. 2exp.	a	Water impurities	1-12 of article (11)	1 – 4 of article (12)
5	5 2the. 1tut. 2exp.	a , b , d	Water treatment plants - Screens	1-12 of article (11)	1 – 4 of article (12)
6	5 2the. 1tut. 2exp.	a , b , d	Theory of sedimentation	1-12 of article (11)	1 – 4 of article (12)
7	5 2the. 1tut. 2exp.	a , b , d	Design of sedimentation tanks	1-12 of article (11)	1 – 4 of article (12)
8	5 2the. 1tut. 2exp.	a , b , d	Coagulation and Flocculation	1-12 of article (11)	1 – 4 of article (12)
9	5 2the. 1tut. 2exp.	a , b , d	Design of flash mixer, flocculators and clarifiers	1-12 of article (11)	1 – 4 of article (12)
10	5 2the. 1tut. 2exp.	a , b , d	Filtration and design of filters	1-12 of article (11)	1 – 4 of article (12)
11	5	a , b , d	Disinfection	1-12 of	1 – 4 of article (12)

	2the. 1tut. 2exp.			article (11)	
12	5 2the. 1tut. 2exp.	c	Methods of Hardness removal	1-12 of article (11)	1 – 4 of article (12)
13	5 2the. 1tut. 2exp.	c	Design of zeolite filters	1-12 of article (11)	1 – 4 of article (12)
14	5 2the. 1tut. 2exp.	e	Water distribution systems	1-12 of article (11)	1 – 4 of article (12)
15	5 2the. 1tut. 2exp.	e	Hydraulic design and analysis of the distribution system	1-12 of article (11)	1 – 4 of article (12)
16	5 2the. 1tut. 2exp.		Term Exam	1-12 of article (11)	1 – 4 of article (12)
17	5 2the. 1tut. 2exp.	f	Wastewater characteristics and types	1-12 of article (11)	1 – 4 of article (12)
18	5 2the. 1tut. 2exp.	f	BOD definition, derivation and determination	1-12 of article (11)	1 – 4 of article (12)
19	5 2the. 1tut. 2exp.	f	Runoff discharge determination	1-12 of article (11)	1 – 4 of article (12)
20	5 2the. 1tut. 2exp.	f , g	Sewer system design	1-12 of article (11)	1 – 4 of article (12)
21	5 2the. 1tut. 2exp.	f , g	Storm water system design	1-12 of article (11)	1 – 4 of article (12)
22	5 2the.	f , g	Sewer system appurtenance	1-12 of article (11)	1 – 4 of article (12)

	1tut. 2exp.				
23	5 2the. 1tut. 2exp.	h	Sewage disposal	1-12 of article (11)	1 – 4 of article (12)
24	5 2the. 1tut. 2exp.	i , j	Wastewater treatment plants - Screens	1-12 of article (11)	1 – 4 of article (12)
25	5 2the. 1tut. 2exp.	i , j	Physical treatment – Flotation, Grit chamber and sedimentation tanks	1-12 of article (11)	1 – 4 of article (12)
26	5 2the. 1tut. 2exp.	i , j	Biological concepts in wastewater treatment	1-12 of article (11)	1 – 4 of article (12)
27	5 2the. 1tut. 2exp.	i , j	Trickling filters	1-12 of article (11)	1 – 4 of article (12)
28	5 2the. 1tut. 2exp.	i , j	Activated sludge process	1-12 of article (11)	1 – 4 of article (12)
29	5 2the. 1tut. 2exp.	i , j	Sludge treatment	1-12 of article (11)	1 – 4 of article (12)
30	5 2the. 1tut. 2exp.		Term Exam	1-12 of article (11)	1 – 4 of article (12)

15. Infrastructure

Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	**Text books :** 1.Water Supply and Sewerage by Steel and McGhee 2.Water Supply and Wastewater Eng. by D.Lalan and A.K. Upadhyay

Special requirements (include for example workshops, periodicals, IT software, websites)	Laboratory experiments in water and wastewater properties according to WHO standard methods *Available web sites related to the subject
Community-based facilities (include for example, guest Lectures , internship , field studies)	Field and scientific visits.
16. Admissions	
Pre-requisites	CE 205 Course
Minimum number of students	/
Maximum number of students	93
17. Course Instructors	**Instructor :** **Assistant Lecturer Fatima Muqdad** Civil Engineering Department College of Engineering Uruk Private University Email : fatima.muqdad@uruk.edu.iq

1. Teaching Institution	College of Engineering Uruk Private University
2. University Department/Centre	Civil Engineering Department (CE)
3. Course title/code & Description	**FOURTH YEAR** **Constructional Methods and Quantity Surveying / CE 405** This course introduces: Constructional Methods : description of procedure and techniques associated with fluid flow. Topics covered: Machines Make it possible, Introduction , Equipment Economic, Mobile Equipment Power Requirements, Compaction Equipment, Dozers, Scrapers, Excavators, Draglines and Clamshells, Finishing Equipment and Cranes, Trucks and Hauling Equipment, Forming Systems. The course is designed to provide a background to with Construction Equipment which utilized in construction industry, and to Contracting

	Environment, planning equipment utilization and Safety. Define and Calculate the Cost of Capital, Evaluating Investment Alternatives, Elements of Ownership Cost, Operating Cost, and Replacement Decisions. Understand and apply the principles of Production Estimating and Production Cycle analysis Operational Consideration. Formulate and solve Production and Cost Estimating problems. Design and conduct site preparation and layout and selecting the balance fleet of trucks with best rout from quarry to work site. Design and analyses site preparation and layout and selecting the balance fleet. Quantity Surveying : Quantity surveying measurement, pricing studies, bill of quantity preparation, contracts bids documents The course is taught through 3 hrs. per week, 2theories, 1 tutorial.
4. Programme(s) to which it Contributes	Civil Engineering (CE)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a "Day Program". The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects.
6. Semester/Year	1st & 2nd / Academic Year 2024 – 2025
7. Number of hours tuition (total)	90 hrs. / 3 hrs. per week
8. Date of production/revision of this specification	February - 2025
9. Aims of the Course	
Constructional Methods : 1. Introduce basic definitions and introductory concepts of cost accounting and performance. 2. Introduce the history of Construction Equipment(stream power machines,	

internal combustion, construction industry, Contracting Environment, planning equipment utilization, and Safety).
3. Introduce the calculate Cost of Capital, Evaluating Investment Alternatives, Elements of Ownership Cost, Operating Cost, Replacement Decisions, Rent & Lease Considerations.
4. Study the Excavators : Front Shovels(Basic Parts & Operation, Selecting of Front Shovel, Calculating shovel Production). Hoes (Basic Parts & Operation, Bucket Rating, Selecting of Hoe, Calculating Hoe Production). Loader (Type and Size, Loader Buckets/Attachments, Operating Specification, Calculating "Wheel Loader Production - Track loader" Production). Draglines(Dragline Components, operation of Dragline, dragline production). Clamshell(Lattice Boom Clamshells, Clamshell Buckets, Production Rates for Clamshells).
5. Introduce the principles of Required Power (Rolling Resistance- Grade resistance), Available Power(Rimpull-Drawbar Pull), Usable Power(Coefficient of Traction-Altitude Effect) performance Charts.
6. Introduce the Type of Compaction Equipment, Tamping Rollers, Vibrating compactors, Pneumatic-Tired rollers, Towed Impact Compactors, Compaction Wheels, Manually operated Compactors, Rolling Production Estimating.
7. Dozer Performance, Crawler dozer - wheel Dozers, Blade performance, Dozer Employment (Stripping- Backfill-Spreading-Slot dozing-Blade-to-blade dozing), Dozer Production Estimating, Estimating Format, Land Clearing Operation.
7. Enable the student to analyze and estimating of potential cost of equipment .
8. Enable the student to use the chart productions of different type of construction equipment.
9. Provide a strong physical and analytical understanding of suitable procedure of estimating methods and procedures of cost and productivity .
10. Provide a background to higher level courses involving equipment and plant management.

Quantity Surveying :
Student must have got a good knowledge to preparing an estimate cost of works.

10· Learning Outcomes

Constructional Methods :

At the end of the class, the student will be able to:

a. Be familiar with Construction Equipment(stream power machines - internal combustion, construction industry, Contracting Environment, planning equipment utilization and Safety.
b. Define and Calculate the Cost of Capital, Evaluating Investment

Alternatives, Elements of Ownership Cost, Operating Cost, Replacement Decisions, Rent & Lease Considerations.

c. Understand and apply the principles of Production Estimating and Production Cycle analysis Operational Consideration.
d. Formulate and solve Production and Cost Estimating .
e. Define Mobile Equipment Power Requirements and Calculate Required Power (Rolling Resistance- Grade resistance), Available Power(Rimpull-Drawbar Pull), Usable Power(Coefficient of Traction-Altitude Effect) and performance Charts.
f. Calculate Dozer Performance, Dozer Employment Production Estimating, Estimating Format, Land Clearing Operation. Scrapers Types, Scraper Operation, Scraper Performance Charts, Scraper Production Cycle, Estimating Format, Operational Consideration.
g. Define and be familiar with the operating specifications, Basic Parts & Calculating Production of the hydraulic excavators (Front Shovels, Hoes , Loader
h. Define the Classification of Forming Systems, Formwork Design, formwork Economic, Vertical Systems, Horizontal System.
i. Analyze, Uses and operations of graders, Cranes(Mobile Cranes, Tower Cranes, Rigging).
j. Be able to analyze the work situations of different work sites .
k. Be able to apply modern knowledge and to apply mathematics, science, engineering and technology to construction equipment problems and applications.
L. Know the type of Compaction Equipment, Tamping Rollers, Vibrating compactors, Pneumatic-Tired rollers, Towed Impact Compactors, Compaction Wheels, Manually operated Compactors, Rolling Production Estimating.
m. Design and conduct site preparation and layout and selecting the balance fleet of trucks with best rout from quarry to work site.
n. Work in groups and function on multi-disciplinary teams.
o. Identify, formulate and solve engineering construction methods problems.
p. Understand professional, social and ethical responsibilities.
q. Communicate effectively.
r. Use the techniques, skills, and modern engineering tools necessary for engineering practice in fluid mechanics applications.

Quantity Surveying :

a. Preparing an Approximate estimate
b. Preparing an earth work Estimate.
c. Preparing an estimate cost of work.
d. Preparing bill of quantity of project.
e. Type of contract.

f. Knowledge about Contract bids documents.

11. Teaching and Learning Methods

13. Lectures.
14. Tutorials.
15. Homework and Assignments.
16. Lab. Experiments.
17. Tests and Exams.
18. In-Class Questions and Discussions.
19. Connection between Theory and Application.
20. Field Trips.
21. Extracurricular Activities.
22. Seminars.
23. In- and Out-Class oral conservations.
24. Reports, Presentations, and Posters.

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Extracurricular Activities.
3. Student Engagement during Lectures.
4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor).

13. Grading Policy

1. Quizzes:
- There will be a a (20 – 25) for Cionstruction Methods and (3– 5) closed books and notes quizzes for Quantity Surveying during the academic year.
- The quizzes will count 20% of the total course grade.
2. Tests, 2-3 Nos. and will count 10% of the total course grade.
3. Extracurricular Activities, this is optional and will count extra marks (1 – 5 %) for the student, depending on the type of activity.
4. Final Exam:
- closed books notes, and will take place on June 2014 from 9:00 AM - 12:00 PM in Civil dept. class rooms.
- The final exam will count 70% of the total course grade.

14. Course Structure

Week	Hours	LOs Article) 10)	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	3 2 the. 1tut	a, c, m	Constructiun Methods : Introduction	1-12 of article (11)	1 – 4 of article (12)
2	3 2 the. 1tut	a, c, m	Machines Make it possible	1-12 of	1 – 4 of article (12)
3	3 2 the. 1tut	b, d	Equipment Economic	article (11)	1 – 4 of article (12)
4	3 2 the. 1tut	b, d	Equipment Economic	1-12 of	1 – 4 of article (12)
5	3 2 the. 1tut	b, d	Equipment Economic	article (11)	1 – 4 of article (12)
6	3 2 the. 1tut	e, d	Mobile Equipment Power Requirements	1-12 of	1 – 4 of article (12)
7	3 2 the. 1tut	e, d	Mobile Equipment Power Requirements	article (11)	1 – 4 of article (12)
8	3 2 the. 1tut	e, d	Mobile Equipment Power Requirements	1-12 of	1 – 4 of article (12)
9	3 2 the. 1tut	L, k, n, o, p, q, r	Compaction Equipment	article (11)	1 – 4 of article (12)
10	3 2 the. 1tut	L, k, n, o, p, q, r	Compaction Equipment	1-12 of	1 – 4 of article (12)
11	3 2 the. 1tut	f, c, d, k, n, o, p, q, r	Dozers	article (11)	1 – 4 of article (12)
12	3 2 the. 1tut	f, c, d, k, n, o, p, q, r	Dozers	1-12 of	1 – 4 of article (12)
13	3 2 the. 1tut	f, c, d, k, n, o, p, q, r	Scrapers	article (11)	1 – 4 of article (12)
14	3	f, c, d,	Scrapers	1-12 of	1 – 4 of article (12)

	2 the. 1tut	k, n, o, p, q, r			
15	3 2 the. 1tut	g, c, d, k, n, o, p, q, r	Excavators	article (11)	1 – 4 of article (12)
16	3 2 the. 1tut	g, c, d, k, n, o, p, q, r	Excavators	1-12 of	1 – 4 of article (12)
17	3 2 the. 1tut	g, c, d, k, n, o, p, q, r	Excavators	article (11)	1 – 4 of article (12)
18	.3 2 the. 1tut	g,	Draglines and Clamshells	1-12 of	1 – 4 of article (12)
19	3 2 the. 1tut	g, c, d, k, n, o, p, q, r	Draglines and Clamshells	article (11)	1 – 4 of article (12)
20	3 2 the. 1tut	i, k, n, o, p, q, r	Finishing Equipment and Cranes	1-12 of	1 – 4 of article (12)
21	3 2 the. 1tut	i, k, n, o, p, q, r	Finishing Equipment and Cranes	article (11)	1 – 4 of article (12)
22	3 2 the. 1tut	m, c, d, k, n, o, p, q, r	Trucks and Hauling Equipment	1-12 of	1 – 4 of article (12)
23	3 2 the. 1tut	m, c, d, k, n, o, p, q, r	Trucks and Hauling Equipment	article (11)	1 – 4 of article (12)
24	3 2 the. 1tut	m, c, d, k, n, o, p, q, r	Trucks and Hauling Equipment	1-12 of	1 – 4 of article (12)
25	3 2 the. 1tut	m, c, d, k, n, o, p, q, r	Trucks and Hauling Equipment	article (11)	1 – 4 of article (12)
26	3 2 the. 1tut	m, c, d, k, n, o, p, q, r	Trucks and Hauling Equipment	1-12 of	1 – 4 of article (12)
27	3 2 the.	h, c, d, k, n, o,	Forming Systems	article (11)	1 – 4 of article (12)

	1tut	p, q, r			
28	3 2 the. 1tut	h, c, d, k, n, o, p, q, r	Forming Systems	1-12 of	1 – 4 of article (12)
29	3 2 the. 1tut	h, c, d, k, n, o, p, q, r	Forming Systems	article (11)	1 – 4 of article (12)
30	3 2 the. 1tut	h, c, d, k, n, o, p, q, r	Forming Systems	1-12 of	1 – 4 of article (12)

14. Course Structure					
Week	Hours	LOs (Article 10)	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	3 2 the. 1tut		Quantity Surveying : Introduction to quantity surveying ,roles and tasks of quantity surveying engineer.	1-12 of article (11)	1 – 4 of article (12)
2	3 2 the.		Introduction to quantity surveying	1-12 of article (11)	1 – 4 of article (12)

	1tut		,roles and tasks of quantity surveying engineer.		
3	3 2 the. 1tut	a	Approximate estimate.	1-12 of article (11)	1 – 4 of article (12)
4	3 2 the. 1tut	a	Approximate estimate.	1-12 of article (11)	1 – 4 of article (12)
5	3 2 the. 1tut	a	Approximate estimate.	1-12 of article (11)	1 – 4 of article (12)
6	3 2 the. 1tut	b . c . d	Detailed estimate.	1-12 of article (11)	1 – 4 of article (12)
7	3 2 the. 1tut	b . c . d	Detailed estimate.	1-12 of article (11)	1 – 4 of article (12)
8	3 2 the. 1tut	b . c . d	Detailed estimate.	1-12 of article (11)	1 – 4 of article (12)
9	3 2 the. 1tut	b . c . d	Detailed estimate.	1-12 of article (11)	1 – 4 of article (12)
10	3 2 the. 1tut	b . c . d	Detailed estimate.	1-12 of article (11)	1 – 4 of article (12)
11	3 2 the. 1tut	b . c . d	Detailed estimate.	1-12 of article (11)	1 – 4 of article (12)
12	3 2 the. 1tut	b . c . d	Detailed estimate.	1-12 of article (11)	1 – 4 of article (12)
13	3 2 the.	b . c . d	Detailed estimate.	1-12 of article (11)	1 – 4 of article (12)

	1tut				
14	3 2 the. 1tut	b . c . d	Detailed estimate.	1-12 of article (11)	1 – 4 of article (12)
15	3 2 the. 1tut	b . c . d	Detailed estimate.	1-12 of article (11)	1 – 4 of article (12)
16	3 2 the. 1tut	b . c . d	Detailed estimate.	1-12 of article (11)	1 – 4 of article (12)
17	3 2 the. 1tut	b . c . d	Detailed estimate.	1-12 of article (11)	1 – 4 of article (12)
18	3 2 the. 1tut	b . c . d	Construction materials quantities measurement.	1-12 of article (11)	1 – 4 of article (12)
19	3 2 the. 1tut	b . c . d	Construction materials quantities measurement.	1-12 of article (11)	1 – 4 of article (12)
20	3 2 the. 1tut	b . c . d	Construction materials quantities measurement.	1-12 of article (11)	1 – 4 of article (12)
21	3 2 the. 1tut	b . c . d	Construction materials quantities measurement.	1-12 of article (11)	1 – 4 of article (12)
22	3 2 the. 1tut	b . c . d	Construction materials quantities measurement.	1-12 of article (11)	1 – 4 of article (12)
23	3 2 the. 1tut	b . c . d	Construction materials quantities measurement.	1-12 of article (11)	1 – 4 of article (12)
24	3 2 the. 1tut	b . c . d	Construction materials quantities	1-12 of article (11)	1 – 4 of article (12)

			measurement.		
25	3 2 the. 1tut	b . c . d	Construction materials quantities measurement.	1-12 of article (11)	1 – 4 of article (12)
26	3 2 the. 1tut	b , c d	Construction materials quantities measurement.	1-12 of article (11)	1 – 4 of article (12)
27	3 2 the. 1tut	e , f	Contract bids documents.	1-12 of article (11)	1 – 4 of article (12)
28	3 2 the. 1tut	b , c , d	Technical specifications.	1-12 of article (11)	1 – 4 of article (12)
29	3 2 the. 1tut	b , c , d	A comprehensive of project report	1-12 of article (11)	1 – 4 of article (12)
30	3 2 the. 1tut		A comprehensive of project report.	1-12 of article (11)	1 – 4 of article (12)

15. Infrastructure

Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	Construction Methods : "Construction Planning, Equipment, and Methods) peurifoy, seventh edition 2006. □ □ References 1. Construction Equipment Management for Engineers, Estimators, and Owners) Douglas Gransberg , 2006 2. العزي محمد ايوب صبري ، تخطيط وطرق ومعدات " الانشاء الجامعة التكنولوجية بغداد " 3. Notebook prepared by the instructor of the course 4. Collection of sheets of solved and unsolved problems and Exams questions.

	Quantity Surveying : 1- Elements of Quantity Surveying)) Br: A.J Willis and C.J Willis ,London (7th ed.) 2- Quantity Surveying for Buildings and Civil eng. Works.)) By: P.L Bhasin and S.Chand, New Delhi 1975. 3-Civil Estimating ,Costing and Valuation)) By :Amargit Aggarwal S.Kumar ,New Delhi 19997. 4- Quantity Surveying and Costing 1& 2)) By G.C Malhotar , Khanna Publishers 1986. 5- building construction course 6-construction drawing course 7-surveying course 8-concret course
Special requirements (include for example workshops, periodicals, IT software, websites)	Construction Methods : 1. different models of equipment with movies and pictures in the (computer Lab) of the department. 2. Available websites related to the subject. 3. Extracurricular activities. Quantity Surveing : • Available websites ,IT software related to the subject. • Extracurricular activities.
Community-based facilities (include for example, guest Lectures , internship , field studies)	• Field and scientific visits. Extra lectures by foreign guest lecturers.
16. Admissions	
Pre-requisites	GE 101 , CE 108 , CE 202 & CE 201 Courses
Minimum number of students	/
Maximum number of students	100
17. Course Instructors	**Instructor:** **Dr. Salah Khazaal Zamim** Civil Engineering Department College of Engineering Uruk Private University

	Email: dr.salah@uruk.edu.iq **Assistant Lecturer Reem Amer Mezher** Civil Engineering Department College of Engineering Uruk Private University Email: Reem.a.mazhar@uruk.edu.iq

1. Teaching Institution	College of Engineering Uruk Private University
2. University Department/Centre	Civil Engineering Department (CE)
3. Course title/code & Description	**FOURTH YEAR** **Reinforced Concrete Design / CE 406** This course introduces: Two-Way Slab System, Computation of slab thickness ,Direct Design Method, imitation and requirement, Total moment in slab. Positive and negative moments in slab. Moment of column strip and middle strip. Shear strength (flat slab and flat plate), Beam action (one way shear action). Punching shear (two way shear action), Flat slab, Flat plate, Drop Panel and Column Capital. Transformation of moment to column. Equivalent Frame Method, Computation of beam and slab stiffness. Computation of column stiffness. Torsion stiffness of beam (K_t). Effective stiffness of column (K_{ec}). carry over factor and distribution factors of frame(Cof, D.F.,FEM), Yield Line theory. Prestressed concrete. Design of stairs. The course is taught through 4 hrs. per week, 2theories, 2 tutorial.
4. Programme(s) to which it Contributes	Civil Engineering (CE)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a “Day

	Program". The students are full time Students, and on campus. They attend full day program in face-to-face mode. The academic year is Composed of 30-week regular subjects.
6. Semester/Year	1st & 2nd / Academic Year 2024 – 2025
7. Number of hours tuition (total)	120 hrs. / 4 hrs. per week
8. Date of production/revision of this specification	February – 2025

9. Aims of the Course

1. help students to understand the fundamental principles and procedures of two-way reinforced concrete system design;
2. Learning Fundamental Behavior of Reinforced Concrete Structural Building Systems and their Members; Basis for Design and Code Constraints
3. Analysis and design of two-way floor systems by: coefficient method and yield line theory. Analysis and design of irregular (circular, triangular and trapezoidal) slabs; and
4. Learning the principles of pre-stressed concrete design.

10· Learning Outcomes

a. Apply the basic requirements of the American Concrete Institute ACI 318 in the design specification.
b. help students understand the fundamental principles and procedures of reinforced concrete buildings design;
c. help students learn to apply the principles of reinforced concrete design to real world problems; and
d. help students learn to apply the principles of pre-stress reinforced concrete design to practical problems; and
e. prepare students for entry level structural engineering employment

11. Teaching and Learning Methods

13. Lectures.
14. Tutorials.

15. Homework and Assignments.
16. Lab. Experiments.
17. Tests and Exams.
18. In-Class Questions and Discussions.
19. Connection between Theory and Application.
20. Field Trips.
21. Extracurricular Activities.
22. Seminars.
23. In- and Out-Class oral conservations.
24. Reports, Presentations, and Posters.

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Extracurricular Activities.
3. Student Engagement during Lectures.
4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor).

13. Grading Policy

1- Quizzes:
- There will be a (5 – 8) closed books and notes quizzes during the academic year.
- The quizzes will count 25% of the total course grade.

2. Extracurricular Activities, this is optional and will count extra marks (5 %) for the student, depending on the type of activity.

3. Final Exam:
- The final exam will be comprehensive, closed books and notes, and will take place on June 2014 from 9:00 AM - 12:00 PM in class rooms of the civil department.
- The final exam will count 70% of the total course grade

14. Course Structure

Week	Hours	LOs (Article 10)	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	4 2 the. 2tut	a,b,c,e	Types and definition of Two-Way Slab System	1-12 of article (11)	1 – 4 of article (12)
2	4 2 the. 2tut	a,b,c,e	Computation of slab thickness.	1-12 of article (11)	1 – 4 of article (12)
3	4 2 the. 2tut	a,b,c,e	Direct Design Method, limitation and requirement	1-12 of article (11)	1 – 4 of article (12)
4	4 2 the. 2tut	a,b,c,e	Direct Design Method, limitation and requirement	1-12 of article (11)	1 – 4 of article (12)
5	4 2 the. 2tut	a,b,c,e	Total moment in slab	1-12 of article (11)	1 – 4 of article (12)
6	4 2 the. 2tut	a,b,c,e	Positive and negative moments in slab.	1-12 of article (11)	1 – 4 of article (12)
7	4 2 the. 2tut	a,b,c,e	Moment of column strip and middle strip.	1-12 of article (11)	1 – 4 of article (12)
8	4 2 the. 2tut	a,b,c,e	Moment of column strip and middle strip.	1-12 of article (11)	1 – 4 of article (12)
9	4 2 the. 2tut	a,b,c,e	Shear strength (flat slab and flat plate)	1-12 of article (11)	1 – 4 of article (12)
10	4 2 the. 2tut	a,b,c,e	Beam action (one way shear action)	1-12 of article (11)	1 – 4 of article (12)
11	4	a,b,c,e	Punching shear	1-12 of	1 – 4 of article (12)

	2 the. 2tut		(two way shear action), Flat slab, Flat plate, Drop Panel and Column Capital.	article (11)	
12	4 2 the. 2tut	a,b,c,e	Punching shear (two way shear action), Flat slab, Flat plate, Drop Panel and Column Capital.	1-12 of article (11)	1 – 4 of article (12)
13	4 2 the. 2tut	a,b,c,e	Transformation of moment to column.	1-12 of article (11)	1 – 4 of article (12)
14	4 2 the. 2tut	a,b,c,e	Transformation of moment to column.	1-12 of article (11)	1 – 4 of article (12)
15	4 2 the. 2tut	a,b,c,e	Equivalent Frame Method	1-12 of article (11)	1 – 4 of article (12)
16	4 2 the. 2tut	a,b,c,e	Equivalent Frame Method	1-12 of article (11)	1 – 4 of article (12)
17	4 2 the. 2tut	a,b,c,e	Computation of beam and slab stiffness	1-12 of article (11)	1 – 4 of article (12)
18	4 2 the. 2tut	a,b,c,e	Computation of column stiffness.	1-12 of article (11)	1 – 4 of article (12)
19	4 2 the. 2tut	a,b,c,e	Torsion stiffness of beam (Kt).	1-12 of article (11)	1 – 4 of article (12)
20	4 2 the. 2tut	a,b,c,e	Torsion stiffness of beam (Kt).	1-12 of article (11)	1 – 4 of article (12)

21	4 2 the. 2tut	a,b,c,e	Effective stiffness of column (Kec).	1-12 of article (11)	1 – 4 of article (12)
22	4 2 the. 2tut	a,b,c,e	carry over factor and distribution factors of frame(Cof, D.F.,FEM)	1-12 of article (11)	1 – 4 of article (12)
23	4 2 the. 2tut	a,b,c,e	carry over factor and distribution factors of frame(Cof, D.F.,FEM)	1-12 of article (11)	1 – 4 of article (12)
24	4 2 the. 2tut	a,b,c,e	Yield Line theory	1-12 of article (11)	1 – 4 of article (12)
25	4 2 the. 2tut	a,b,c,e	Yield Line theory	1-12 of article (11)	1 – 4 of article (12)
26	4 2 the. 2tut	a,b,c,e	Yield Line theory	1-12 of article (11)	1 – 4 of article (12)
27	4 2 the. 2tut	a,d,e	Prestressed concrete.	1-12 of article (11)	1 – 4 of article (12)
28	4 2 the. 2tut	a,d,e	Prestressed concrete.	1-12 of article (11)	1 – 4 of article (12)
29	4 2 the. 2tut	a,b,c,e	Design of stairs.	1-12 of article (11)	1 – 4 of article (12)
30	4 2 the. 2tut	a,b,c,e	Design of stairs.	1-12 of article (11)	1 – 4 of article (12)

15. Infrastructure

Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	1- Nilson, A., Darwin, D., and Dolan, C., Design of concrete Structures, McGraw Hill Inc., Thirteen Edition, 2004. 2- Chu-Kia, W., Charles, G. S., and Jose, A. P., Reinforced Concrete Design, John Wiley & Sons, Inc., Seventh Edition,2007. 3- Ferguson, P. M., Reinforced concrete fundamentals. John Wiley & Son, 2008. 4- Nawy, Edward G. Reinforced concrete: a fundamental approach, Prentice Hall, 1996.
Special requirements (include for example workshops, periodicals, IT software, websites)	• Available websites related to the subject
Community-based facilities (include for example, guest Lectures , internship , field studies)	1-Field and scientific visits. 2– Extra lectures by foreign guest lecturers
16. Admissions	
Pre-requisites	CE 203 & CE 303 Courses
Minimum number of students	/
Maximum number of students	120
17. Course Instructors	**Instructor :** **Assistant Lecturer Anas Nahidh Hassooni** Civil Engineering Department College of Engineering Uruk Private University Email: Anas_nahidh@uruk.edu.iq

1. Teaching Institution	College of Engineering Uruk Private University
2. University Department/Centre	Civil Engineering Department (CE)
3. Course title/code & Description	**FOURTH YEAR** **Hydrology / CE 409** This course introduces: **CH.1** Introduction: Hydrology, engineering

	hydrology, hydrologic cycle, hydrology applications. PRECIPITATION: Measurement of precipitation, Average depth of precipitation over an area, Precipitation gage networks, Estimation of missing data. SURFACE RUNOFF: Flow mass curve, Double mass curve, Flow duration curve, River behavior, Floods, Rational method, empirical method. HYDROGRAPHS: Unit hydrograph, Summation curve, Derivation of hydrograph, separation of hydrograph in to its components. RESERVOIRS: Purposes of reservoirs, Classification of reservoirs, Storage zones of reservoirs, Flood routing, Area capacity curve, Elevation capacity relation, sedimentations. EVAPORATION: Factors affecting evaporation, Measurement of evaporation, Estimation of evaporation in field , Estimation of evaporation by empirical relations, Transpiration, Measurement of transpiration, Estimation of transpiration by empirical relation. WIND: Thermal turbulence, Mechanical turbulence, Wind speed variation with altitude, Topographical effects, Wind

	rose, Plume behavior, strucure effects on wind. GROUND WATER: Physical properties, Storativity, Transmissivity, Hydraulic equilibrium of wells, Hydraulic nonequilibrium of wells. HYDROPOWER DEVELOPMENT: Demand for electrical power, Hydraulic efficiency of the plant, Penstocks, Surge tank, Typical layout of hydroelectric power plant. The course is taught through 3 hrs. per week, 2theories, 1 tutorial.
4. Programme(s) to which it Contributes	Civil Engineering (CE)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a "Day Program". The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects.
6. Semester/Year	1st & 2nd / Academic Year 2024 – 2025
7. Number of hours tuition (total)	90 hrs. / 3 hrs. per week
8. Date of production/revision of this specification	February / 2025
9. Aims of the Course	
The aims of this course are 1 the graduate Civil Engineers to serve in Dams and Reservoirs projects. 2-to learn them how to estimate the dimension of hydraulic structures like canals and spillways. 3-to learn them how to determine the magnitude of discharges and velocities of the river. 4- to learn them to estimate the peak flood and the time of occurrence.	

10· Learning Outcomes

a. An ability to apply knowledge of mathematics, science, and engineering.
b. An ability to design and conduct experiments, as well as to analyze and interpret data.
c. An ability to design a system, component, or process to meet desired needs.
d. An ability to function on multi-disciplinary teams (Our interpretation of multidisciplinary teams includes teams of individuals with similar educational backgrounds focusing on different aspects of a project as well as teams of individuals with different educational backgrounds).
e. An ability to identify, formulates, and solves engineering problems.
f. An understanding of professional and ethical responsibility.
g. An ability to communicate effectively.
h. The broad education necessary to understand the impact of engineering Solutions in a global and societal context.
i. A recognition of the need for, and an ability to engage in life-long learning (Our interpretation of this includes teaching students that the underlying theory is important because the technology changes, coupled with enhancing their self-learning ability).
j. Knowledge of contemporary issues (Our interpretation of this includes
4
presenting students with issues such as the impact of globalization, the outsourcing of both engineering and other support jobs as practiced by modern international companies).
k. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

11. Teaching and Learning Methods

13. Lectures.
14. Tutorials.
15. Homework and Assignments.
16. Lab. Experiments.
17. Tests and Exams.
18. In-Class Questions and Discussions.
19. Connection between Theory and Application.
20. Field Trips.
21. Extracurricular Activities.
22. Seminars.
23. In- and Out-Class oral conservations.

24. Reports, Presentations, and Posters.

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Extracurricular Activities.
3. Student Engagement during Lectures.
4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor).

13. Grading Policy

1. Tests take 15% of the total course grade
2. Home works take 10% of the total course grade
3. Seminars take 5% of the total course grade
4. Final exam take 70% of the total course grade

14. Course Structure

Week	Hours	LOs (Article 10)	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	3 2 the. 1tut	a	Introduction in engineering hydrology, Hydrological cycle	1-12 of article (11)	1 – 4 of article (12)
2	3 2 the. 1tut	a , b	Precipitation, Ppt. types	1-12 of article (11)	1 – 4 of article (12)
3	3 2 the. 1tut	a , b	Precipitation measurement, ppt. gauge networks	1-12 of article (11)	1 – 4 of article (12)
4	3 2 the. 1tut	a , b , c	Average depth of ppt., Test of consistancy	1-12 of article (11)	1 – 4 of article (12)
5	3 2 the. 1tut	a , b , c	Estimation of missing data, Terminal velocity	1-12 of article (11)	1 – 4 of article (12)
6	3 2 the. 1tut	a , b , c	Runoff, flow mass curve	1-12 of article (11)	1 – 4 of article (12)
7	3 2 the. 1tut	a , b , c	Flow duration curve, floods	1-12 of article (11)	1 – 4 of article (12)
8	3 2 the. 1tut	a,b, c,d	Hydrograph	1-12 of article (11)	1 – 4 of article (12)
9	3 2 the. 1tut	a,b, c,d	S curve method,	1-12 of article (11)	1 – 4 of article (12)
10	3 2 the. 1tut	a,b, c,d	Separation of hydrograph in to its components	1-12 of article (11)	1 – 4 of article (12)

11	3 2 the. 1tut	a,b, c,d	Reservoirs , storage equation	1-12 of article (11)	1 – 4 of article (12)
12	3 2 the. 1tut	a,b, c,d	Rating curve	1-12 of article (11)	1 – 4 of article (12)
13	3 2 the. 1tut	a,b, c,d	Reservoir sedimentations	1-12 of article (11)	1 – 4 of article (12)
14	3 2 the. 1tut	a,b, c,d , e	Area elevation relation, capacity elevation relation	1-12 of article (11)	1 – 4 of article (12)
15	3 2 the. 1tut	a,b, c,d , e	Evaporation	1-12 of article (11)	1 – 4 of article (12)
16	3 2 the. 1tut	a,b, c,d , e	Transpiration	1-12 of article (11)	1 – 4 of article (12)
17	3 2 the. 1tut	a,b, c,d , e	wind	1-12 of article (11)	1 – 4 of article (12)
18	3 2 the. 1tut	a,b, c,d , e	Aerodynamic effects on structures	1-12 of article (11)	1 – 4 of article (12)
19	3 2 the. 1tut	a,b, c,d , e, f	Ground water	1-12 of article (11)	1 – 4 of article (12)
20	3 2 the. 1tut	a,b, c,d , e, f, j	Hydraulic equilibrium of wells	1-12 of article (11)	1 – 4 of article (12)
21	3 2 the. 1tut	a,b, c,d , e, f,j	Non equilibrium of wells	1-12 of article (11)	1 – 4 of article (12)
22	3	a,b, c,d	Hydraulic design	1-12 of	1 – 4 of article (12)

	2 the. 1tut	, e, f,j,k	of hydroelectric power plants	article (11)	
23	3 2 the. 1tut	a,b, c,d , e, f,j,k	Penstock and surge tank design	1-12 of article (11)	1 – 4 of article (12)
24	3 2 the. 1tut		seminars	1-12 of article (11)	1 – 4 of article (12)
25	3 2 the. 1tut		seminars	1-12 of article (11)	1 – 4 of article (12)
26	3 2 the. 1tut		seminars	1-12 of article (11)	1 – 4 of article (12)
27	3 2 the. 1tut		seminars	1-12 of article (11)	1 – 4 of article (12)
28	3 2 the. 1tut		Tests	1-12 of article (11)	1 – 4 of article (12)
29	3 2 the. 1tut		Tests	1-12 of article (11)	1 – 4 of article (12)
30	3 2 the. 1tut		Tests	1-12 of article (11)	1 – 4 of article (12)

15. Infrastructure

Required reading:
· CORE TEXTS
· COURSE MATERIALS
· OTHER

References :

1-Irrigation, water power and water resources engineering by Dr. ARORA, 2009
2-Water power engineering by SHARMA, 2008

Special requirements (include for example workshops, periodicals, IT software, websites)	Available websites related to the subjects
Community-based facilities (include for example, guest Lectures , internship , field studies)	Field and scientific visits
16. Admissions	
Pre-requisites	CE 205 Course
Minimum number of students	/
Maximum number of students	103
17. Course Instructors	**Instructor :** **Assistant Lecturer Rehab Kareem Jbbar** Civil Engineering Department College of Engineering Uruk Private University Email: rehab_karim@uruk.edu.iq

1. Teaching Institution	College of Engineering Uruk Private University
2. University Department/Centre	Civil Engineering Department (CE)
3. Course title/code & Description	**FOURTH YEAR** **Selected Topics / CE 410** This course introduces: Design of Reinforced Concrete One-Way Slab Deck Bridges , Design of Reinforced Concrete Girder- Deck Bridges , Design of Composite Concrete Slab – Steel Girder Bridges , Beam on Elastic Foundation , Design of Reinforced Concrete Circular Tanks , Design of Reinforced Concrete Rectangular Tanks , Design of Barrage , Design of Reinforced Concrete Box Culverts .

	The course is taught through 3 hrs. per week, 2theories, 1 tutorial.
4. Programme(s) to which it Contributes	Civil Engineering (CE)
5. Modes of Attendance offered	Annual System ; There is only one mode of delivery, which is a "Day Program". The students are full time students, and on campus. They attend full day program in face-to-face mode. The academic year is composed of 30-week regular subjects.
6. Semester/Year	1st & 2nd / Academic Year 2024 – 2025
7. Number of hours tuition (total)	90 hrs. / 3 hrs. per week
8. Date of production/revision of this specification	February –2025
9. Aims of the Course	
Improving students skill in design of hydraulic structures and improving their ability to comply with relevant codes and design specifications.	

10· Learning Outcomes
At the end of the class, the student will be able to: a- Design of structures other than buildings (hydraulic structures like barrages and culverts) b- Design of different types of concrete bridges (superstructures) c- Design of water retaining structures (concrete tanks) d- Identify and comply with relevant codes and specification. e- e- Advanced method of structural analysis.
11. Teaching and Learning Methods
13. Lectures. 14. Tutorials. 15. Homework and Assignments.

16. Lab. Experiments.
17. Tests and Exams.
18. In-Class Questions and Discussions.
19. Connection between Theory and Application.
20. Field Trips.
21. Extracurricular Activities.
22. Seminars.
23. In- and Out-Class oral conservations.
24. Reports, Presentations, and Posters.

12. Assessment Methods

1. Examinations, Tests, and Quizzes.
2. Extracurricular Activities.
3. Student Engagement during Lectures.
4. Responses Obtained from Students, Questionnaire about Curriculum and Faculty Member (Instructor).

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13. Grading Policy

1. Quizzes:
- There will be (20 – 25) closed books and notes quizzes during the academic year.
- The quizzes will count 25% of the total course grade.
2. Extracurricular Activities, this is optional and will count extra marks (5 %) for the student, depending on the type of activity.
4. Final Exam:
- The final exam will be comprehensive, closed books and notes, and will take place on June 2014 from 9:00 AM - 12:00 PM in class rooms of the civil department.
- The final exam will count 70% of the total course grade.

14. Course Structure					
Week	Hours	LOs (Article 10)	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	3 2 the. 1tut	b , d	Bridges :Introduction , Types of Reinforced Concrete Bridges	1-12 of article (11)	1 – 4 of article (12)
2	3 2 the. 1tut	b , d	AASHTO Specification , AASHTO Truck Loading	1-12 of article (11)	1 – 4 of article (12)
3	3 2 the. 1tut	b , d	Design of Slab Deck Bridges	1-12 of article (11)	1 – 4 of article (12)
4	3 2 the. 1tut	b , d	Design of Girder – Deck Concrete Bridges	1-12 of article (11)	1 – 4 of article (12)
5	3 2 the. 1tut	b , d	Design of Composite Concrete Slab – Steel Girder Bridges	1-12 of article (11)	1 – 4 of article (12)
6	3 2 the. 1tut	b , d	Construction Details in Bridges	1-12 of article (11)	1 – 4 of article (12)
7	3 2 the. 1tut	e	Beam on elastic foundation :Introduction , Assumption ,Derivation and Solution of Govern Differential Equation	1-12 of article (11)	1 – 4 of article (12)
8	3 2 the. 1tut	e	Relative Stiffness of Beam on Elastic Foundation	1-12 of article (11)	1 – 4 of article (12)
9	3 2 the.	e	Beam on elastic foundation	1-12 of article (11)	1 – 4 of article (12)

	1tut		:Application for Different Boundary Conditions and Loading		
10	3 2 the. 1tut	e	Beam on elastic foundation :Application for Different Boundary Conditions and Loading	1-12 of article (11)	1 – 4 of article (12)
11	3 2 the. 1tut	e	Beam on elastic foundation :Application for Different Boundary Conditions and Loading	1-12 of article (11)	1 – 4 of article (12)
12	3 2 the. 1tut	c , d	Reinforced concrete tanks : Circular reinforced concrete tanks , Introduction , Derivation and Solution of Govern Differential Equation Using Beams on Elastic Foundation Theory	1-12 of article (11)	1 – 4 of article (12)
13	3 2 the. 1tut	c , d	Application for Different Boundary Conditions and Loading	1-12 of article (11)	1 – 4 of article (12)
14	3 2 the.	c , d	Analysis of Circular Tanks	1-12 of article (11)	1 – 4 of article (12)

	1tut		Using PCA Design Aids , Section Subjected to Shrinkage and Hoop Tension		
15	3 2 the. 1tut	c , d	Design Examples	1-12 of article (11)	1 – 4 of article (12)
16	3 2 the. 1tut	c , d	Design Examples	1-12 of article (11)	1 – 4 of article (12)
17	3 2 the. 1tut	c , d	Rectangular reinforced concrete tanks : Introduction	1-12 of article (11)	1 – 4 of article (12)
18	3 2 the. 1tut	c , d	Using PCA Design Aids for Analysis of Rectangular Reinforced Concrete Tanks	1-12 of article (11)	1 – 4 of article (12)
19	3 2 the. 1tut	c , d	Design Examples	1-12 of article (11)	1 – 4 of article (12)
20	3 2 the. 1tut	c , d	Design Examples	1-12 of article (11)	1 – 4 of article (12)
21	3 2 the. 1tut	c , d	Construction Details in Reinforced Concrete Tanks	1-12 of article (11)	1 – 4 of article (12)
22	3 2 the. 1tut	a , d	Barrage : Introduction and Description	1-12 of article (11)	1 – 4 of article (12)
23	3 2 the. 1tut	a , d	Design of Barrage floor Using Beams on Elastic Foundation Theory	1-12 of article (11)	1 – 4 of article (12)
24	3	a , d	Design Examples	1-12 of	1 – 4 of article (12)

	2 the. 1tut			article (11)	
25	3 2 the. 1tut	a , d	Design Examples	1-12 of article (11)	1 – 4 of article (12)
26	3 2 the. 1tut	a , d	Construction Details in Barrage	1-12 of article (11)	1 – 4 of article (12)
27	3 2 the. 1tut	a , d	Reinforced concrete culverts : Introduction	1-12 of article (11)	1 – 4 of article (12)
28	3 2 the. 1tut	a , d	Calculation of live load effects on buried structures using AASHTO specification	1-12 of article (11)	1 – 4 of article (12)
29	3 2 the. 1tut	a , d	Analysis of single cell box culverts using design aids or moment distribution method for different load cases	1-12 of article (11)	1 – 4 of article (12)
30	3 2 the. 1tut	a , d	Design Examples	1-12 of article (11)	1 – 4 of article (12)

15. Infrastructure

Required reading: · CORE TEXTS · COURSE MATERIALS · OTHER	There is no text can covered all the course contains **References :** 1- Hetenyi , M. "Beams on elastic foundation " 2- Nilson , A. and Winter , G. "Design of concrete structures "

	3- Anchor , R. " Design of liquid retaining concrete structures" Sehgal , P. "Design of irrigation structures"
Special requirements (include for example workshops, periodicals, IT software, websites)	/
Community-based facilities (include for example, guest Lectures , internship , field studies)	/
16. Admissions	
Pre-requisites	CE 203 & CE 301 Courses
Minimum number of students	/
Maximum number of students	/
17. Course Instructors	**Instructor :** **Prof. Dr. Hisham Mohammed Ali Al-Hassani** Civil Engineering Department College of Engineering Uruk Private University Email: dr.hisham_mohamed @uruk.edu.iq

English Language Course

Prepared by: Assist. Lect. Maisa Ahmed

Course Purpose/Objectives

By the end of the course:

1. Students are supposed to be able to: recognize and understand many English terms used in topics related to different situations in public life with relation to the context.
2. Participate effectively in a short conversation using appropriate language; answer questions; form simple sentences that enable them to communicate their ideas and knowledge.
3. Produce a range of text types in the form of a logical and cohesive paragraph.
4. Select appropriate vocabulary to talk about feelings, opinions and experiences.
5. Recognize, understand and use a number of phrasal verbs and collocations.
6. Use effective organizational strategies that include introductions, paragraphs, transitions, and conclusions.

Teaching Methods

Lectures, groups and pair work discussion, warm up activity, problem solving, role play, information gab, jigsaw…., etc.

Modes of Assessment

Homework, assignments, quizzes and mid exams.

Intended Learning Outcomes

Developing students' Knowledge and understanding, and developing their cognitive and communicative Skills as below:

1. **Reading**
   - Discussing the topic with students in small discussion groups and encouraging students to present their point of view and work individually or within a team.
   - Identifying main ideas and how they are presented in a text.
   - Developing their own critical thinking skills.
   - Predicting text content through the use of synonyms linking words reference words title clue pictures and illustrations.
   - Using different reading strategies for different texts; skimming and scanning techniques.
2. **Listening**
   - Comprehending different dialogues and conversation by native speakers.
   - Understanding different accents.
   - Learning about idiomatic expressions and slang words.
3. **Writing**
   - Identifying topic sentences.
   - Evaluating good and bad paragraphs.

- Analysing paragraphs elements.
- Finally writing coherent paragraphs.

4. **Speaking**
   - Producing clear language.

Uruk University / College of Engineering Course Description (2024-2025)	
Subject: English Language	Instructor: Assist. Lect. Maisa Ahmed
Class: 4th Year	Theoretical Hrs/week: 2
Semester: First	

Week No.	Topics	Lectures Main Title

1	• Warm-up activity
	• Grammar
	  o Tenses: Simple, Continuous, Perfect, Active and Passive
	• Vocabulary
	  o Compound Words Lifestyle home town, House-proud
	  o Words with more than one meanings
	• Everyday English: Social Expressions
		No Place Like Home(p6)

2	• Warm-up activity
	• Reading
	  o A home from home-two people describe their experience of living abroad
	  o The many ways we communicate
	• Speaking
	  o Information gap
	  o Discussion
	  o Information about two neighbours
	• Listening: Things I miss from home.
	• Writing: Applying for a job	

3	• Warm-up activity
	• Grammar: Tenses: Present perfect, Simple, Continuous.
	• Vocabulary
	  o Hot verbs-make, do, make way, do damage
	  o Collocation : Daily life and talk to my friends
	• Everyday English
	  o Making conversation
	  o Asking questions
		Been their done that! (p16)

4	• Warm-up activity
	• Reading: " Paradise lost
	• Speaking
	  o Information gab and role play
	  o Exchanging information about emigrants
	• Listening; An interview with Tashi Wheeler
	• Writing
	  o Informal letter	

5	• Warm-up activity • Grammar: Narrative tenses (simple, continuous and perfect) • Vocabulary o Book and films • Everyday English: Time expressions	What a story! (26)

6	• Warm-up activity • Reading: Jane Austen • Speaking: Re telling a new story • Listening: The money jigsaw • Writing o Narrative writting	

7	• Warm-up activity
	• Grammar
	• Question and negative Vocabulary: Buying things
	• Everyday English
	  o Prices and shopping
	  o What is the exchange rate? Who much and how many
		Nothing but the truth (p 34)

8	• Warm-up activity • Reading: Diana and Elvis shot JFK- three of the world's most popular conspiracy theories. • Speaking o Discussion: good and bad lies • Listening: My most memorable lies • Writing: linking idea Conjunctions	
9	• Warm-up activity • Grammar o Future intentions: going to and will • Vocabulary: : Hot verbs-take, put, take years to do sth, put pressure on sb • Everyday English: Telephone conversations	An eye to the future (p44)
10	• Warm-up activity • Reading: "Today's teenagers are just fine" • Speaking: Future possibilities in your life • Listening: Arranging to meet • Writing: Writing a postcard (WB)	
11	• Warm-up activity • Grammar: Expression quantity • Vocabulary: word with variable stress • Everyday English: Business expressions	Making it big (p54)

12	• Warm-up activity
	• Reading: A tale of two millionaires
	• Speaking
	  o Information gap and comparing cities
	  o Discussion
	• Listening: Living in another country
	• Writing
	  o Relative clauses I: who, that and which (WB)
	  o Describing a place (WB)	

13	• Warm-up activity • Grammar: Modals and related verbs1 • Vocabulary: Hot verb-get, get angry, get in touch, get out of doing • Everyday English: Expression and understatement	Getting on Together(p62)
14	• Warm-up activity • Writing; Arguing your case for and against Speaking: the pros and cons of arranged marriages	Getting on Together(p62)
15	Grammar revision and general re-overview	
Textbook • **Headway Plus (Upper-intermediate), John and Liz Soars, Oxford University Press, 2016**		