وزارة التعليم العالي والبحث العلمي
جامعة بابل
كلية الهندسة
قسم الهندسة المدنية

Ministry of Higher Education
and Scientific Research
University of Babylon
College of Engineering
Department of Civil Engineering

Academic Program

And Course Description

For the B.Sc. in Civil Engineering Program

2025

The course includes all the elements, components, methods, attributes,

And sources related to media economics.

Introduction:

The **Bachelor of Science in Civil Engineering** program is a cornerstone of the academic offerings at the College of Engineering, University of Babylon. The program is dedicated to producing graduates equipped to design, analyze, and manage the built environment. By integrating fundamental engineering principles with advanced technical knowledge, the program prepares students to develop **resilient infrastructure** and sustainable urban solutions that align with modern scientific advancements and national strategic goals.

Program Structure and Practical Experience

The program spans **four years** and is structured around a comprehensive coursework system. Students earn their degree upon the successful completion of eight semesters of study, which are complemented by:

- **Summer Internship Requirements:** Providing essential exposure to real-world engineering environments.
- **Final Graduation Project:** Allowing students to apply theoretical knowledge to solve complex, practical engineering challenges.

This rigorous approach ensures that graduates possess the practical skills and technical depth required to excel in the professional field.

Areas of Specialization

The curriculum is continuously updated to reflect global trends in engineering education and the evolving needs of the labor market. The program enhances student capabilities across a broad spectrum of disciplines, including:

- **Structural Engineering:** Designing safe and durable buildings and bridges.
- **Transportation and Highway Engineering:** Developing efficient transit networks and road systems.
- **Geotechnical Engineering:** Analyzing soil mechanics and foundation stability.
- **Water Resources and Hydraulic Engineering:** Managing dams, irrigation, and fluid transport.
- **Construction Management:** Overseeing project lifecycles, budgets, and site safety.

Career Prospects and Professional Values

The program fosters a strong sense of **professional ethics, creativity, and community service**. Graduates are prepared for leadership roles within both the public and private sectors, including:

- Ministries of Construction, Housing, and Water Resources.
- Municipalities and urban planning departments.
- International and local consulting and contracting firms.
- Quality control and materials testing laboratories.
- Infrastructure development and large-scale architectural projects.

نموذج وصف البرنامج الاكاديمي

الكلية/المعهد: كلية الهندسة

القسم العلمي: قسم الهندسة المدنية

اسم البرنامج الأكاديمي او المهني: بكالوريوس

اسم الشهادة النهائية: بكالوريوس في الهندسة المدنية

النظام الدراسي: فصلي

تاريخ اعداد الوصف: 2025/4/7

تاريخ ملء الملف: 2025/4/7

التوقيع:

اسم رئيس القسم: أ.د. **زيد حميد مجيد**

التاريخ:

التوقيع:

اسم المعاون العلمي: أ.د. علي حسون نهاب

التاريخ:

دقق الملف من قبل

شعبة ضمان الجودة والاداء الجامعي

اسم شعبة ضمان الجودة والاداء الجامعي: أ.م.د. زينب علي عمران

التوقيع:

التاريخ:

جامعة بابل
كلية الهندسة
مكتب العميد

مصادقة السيد العميد

1. Program Vision

The Bachelor of Civil Engineering program aspires to be a leader in engineering education and innovation, contributing to the advancement of sustainable infrastructure and the built environment. We strive to provide pioneering solutions to global urbanization and construction challenges through excellence in research and design.

2. Program Mission

The Bachelor of Civil Engineering program is committed to preparing highly skilled professional engineers equipped with the technical knowledge and practical expertise necessary to design, construct, and manage modern infrastructure. This is achieved through a rigorous academic environment, the promotion of cutting-edge scientific research, and the cultivation of strategic partnerships with industry leaders and community stakeholders.

3. Program Objectives

- **Technical Excellence:** To equip graduates with a solid foundation in scientific and engineering principles across civil engineering disciplines, including structures, transportation, geotechnics, and water resources.
- **Professional Collaboration:** To enable graduates to lead and work effectively within multidisciplinary teams in both the public and private sectors.
- **Analytical Problem-Solving:** To enhance the ability of graduates to analyze and solve complex engineering problems using evidence-based scientific and professional methodologies.
- **Innovation and Research:** To support scientific research and ensure the curriculum remains at the forefront of global engineering advancements and technological trends.
- **Ethics and Sustainability:** To instill strong professional ethics and social responsibility, encouraging graduates to prioritize safety, public welfare, and sustainable development in all engineering endeavors.

4. Program Accreditation

The program aligns its educational standards with the **Accreditation Board for Engineering and Technology (ABET)** guidelines. Currently, the program is working toward achieving formal program-level accreditation to ensure the highest quality of engineering education.

5. Other External Influences

The program integrates real-world experience into the academic journey through:

- **Professional Development:** Specialized training courses to enhance technical skills and software proficiency (e.g., AutoCAD, Revit, and Structural Analysis tools).
- **Field Visits:** On-site inspections of major construction projects, bridges, and infrastructure developments to bridge the gap between theory and practice.
- **Summer Training:** Mandatory internships with reputable engineering firms and government agencies to gain hands-on field experience.

6. Program Description

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Theoretical (hr/w)	Laboratory (hr/w)	Tutorial (hr/w)	ECTS
UGI	One	1	CIV1101	Mathematics I	رياضيات I	3		3	6.00
		2	CIV1102	Engineering Mechanics I	الميكانيك الهندسي I	3		3	6.00
		3	CIV1103	Engineering Drawing and Drawing by Computer	الرسم الهندسي والرسم بالحاسوب		4	2	6.00
		4	CIV1104	Engineering Statistics	الاحصاء الهندسي	2		2	4.00
		5	CIV1105	Building Materials	مواد البناء	2	2	2	6.00
		6	UOBAB1102	Arabic Language	اللغة العربية	2			2.00
					30	12	6	12	30.00

	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	CL (hr/w)	Lab (hr/w)	Tut (hr/w)	ECTS
	Two	1	CIV1211	Mathematics II	IIرياضيات	3		3	6.00
		2	CIV1212	Engineering Mechanics II	الميكانيك IIالهندسي	3		3	6.00
		3	CIV1203	Computer Langauge	لغات البرمجة	2	2	1	5.00
		4	CIV1204	Engineering Geology	الجيولوجيا الهندسية	2		1	3.00
		5	CIV1205	Building Construction	انشاء المباني	2		2	4.00
		6	UOBAB1104	Human Rights	حقوق الانسان	2			2.00
		7	UOBABb1101	English Language	اللغة الانكليزية	4			4.00
					30	18	2	10	30.00

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	CL (hr/w)	Lab (hr/w)	Tut (hr/w)	ECTS
UGII	Three	1	CIV2311	Mathematics	الرياضيات	3		3	6.00
		2	CIV2312	Strength of Materials I	Iمقاومة المواد	3		1	4.00
		3	CIV2303	Engineering Surveying I	المساحة Iالهندسية	2	2	1	6.00
		4	CIV2304	Concrete Technology	تكنلوجيا الخرسانة	2	2	2	6.00
		5	CIV2305	Fluid Mechanics I	Iميكانيك الموائع	2	2	1	6.00
		6	UOBAB2301	al baith - cricems	جرائم البعث	2			2.00
					28	14	6	8	30.00

	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	CL (hr/w)	Lab (hr/w)	Tut (hr/w)	ECTS
	Four	1	CIV2401	Engineering Analysis	التحليلات الهندسية	2		2	6.00
		2	CIV2412	Strength of Materials II	IIمقاومة المواد	3		1	4.00
		3	CIV2413	Engineering Surveying II	المساحة IIالهندسية	2	2	1	6.00
		4	CIV2414	Fluid Mechanics II	ميكانيك الموائع II	2	2	1	6.00
		5	UOBAB2001	Arabic Language	اللغة العربية	2			2.00
		6	UOBABb4	Computer Langauge 1	الحاسبات 1	2	2		3.00
		7	CIV2405	Design and Control of Concrete Mixtures	التصميم والسيطرة للخلطات الخرسانية	2		2	3.00
					28	15	6	7	30.00

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	CL (hr/w)	Lab (hr/w)	Tut (hr/w)	ECTS
UGIII	Five	1	CIV3501	Theory of Structures I	نظرية Iالانشاءات	3		1	5.00

		2	CIV3502	Soil Mechanics I	ميكانيك التربة I	2	2	1	6.00
		3	CIV3503	Design of Reinforced Concrete I	تصاميم الخرسانة المسلحة I	3		1	5.00
		4	CIV3514	Engineering Analysis and Numerical Methods	التحليلات الهندسية والطرق العددية	2	2	1	4.00
		5	CIV3505	Engineering Management & Economy	الادارة والاقتصاد الهندسي	2		2	4.00
		6	CIV3506	Selected Topic (I)	الدرس الاختياري I	2		2	3.00
		7	UOBAB2004	Computer Langauge 2	الحاسبات 2	2	2		3.00
					30	16	6	8	30.00

Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	CL (hr/w)	Lab (hr/w)	Tut (hr/w)	ECTS
Six	1	CIV3611	Theory of Structures II	نظرية الانشاءات II	3		1	5.00
	2	CIV3612	Soil Mechanics II	ميكانيك التربة II	2	2	1	6.00
	3	CIV3613	Design of Reinforced Concrete II	تصاميم الخرسانة المسلحة II	3		1	5.00
	4	CIV3604	Structural Drawing	الرسم الانشائي	2	2		3.00
	5	CIV3605	Irrigation and Drainage Engineering	هندسة الري والبزل	3		2	5.00
	6	CIV3606	Selected Topic (1I)	الدرس الاختياري II	2		2	3.00
	7	CIV3607	Traffic Engineering	هندسة المرور	2		2	3.00
				30	17	4	9	30.00

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	CL (hr/w)	Lab (hr/w)	Tut (hr/w)	ECTS
UGIV	Seven	1	CIV4701	Design of Concerte Structures	تصاميم المنشئات الخرسانية	3		2	4.00
		2	CIV4702	Method of Construction and Estimation	طرق الانشاء والتخمين	3		2	4.00
		3	CIV4703	Hydraulic Structures	المنشئات الهيدروليكية	2		2	4.00
		4	CIV4704	Foundation Engineering I	هندسة الاسس I	3		1	6.00
		5	CIV4705	Selected Topic (III)	الدرس الاختياري III	2		2	4.00
		6	CIV4706	Transportation Engineering 1	هندسة الطرق I	2	2		4.00
		7	CIV4707	Project (Annual)	المشروع الهندسي (سنوي)	4			4.00
					30	19	2	9	30.0

Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	CL (hr/w)	Lab (hr/w)	Tut (hr/w)	ECTS
Eight	1	CIV4801	Design of Steel Structures	تصاميم الحديد	3		2	5.00
	2	CIV4802	Sanitary Engineering	الهندسة الصحية	2	2	1	4.00
	3	CIV4803	Hydrology	الهيدرولوجي	3		1	4.00

		4	CIV4814	Foundation Engineering II	هندسة الاسس II	3		1	6.00
		5	CIV4815	Transportation Engineering II	IIهندسة الطرق	2	2		4.00
		6	CIV4806	Selected Topic (IV)	الدرس الاختياري IV	2		2	3.00
		7	CIV4817	Project (Annual)	المشروع الهندسي (سنوي)	4			4.00
					30	19	4	7	30
						130	36	70	240.0

7. Expected Learning Outcomes of the Program

Knowledge

- **A1:** Graduates will apply advanced mathematical, scientific, and engineering principles to identify, formulate, and solve complex **civil engineering** problems.
- **A2:** Graduates will incorporate the latest construction technologies, building codes, and best practices in the field of **civil and structural engineering**.
- **A3:** Graduates will demonstrate comprehensive knowledge of **mechanical and physical properties** of construction materials, soil behavior, and hydraulic systems.
- **A4:** Graduates will be familiar with local and international **building regulations, safety standards, and engineering specifications**.

Skills

- **B1:** Graduates will be able to design and conduct experiments, analyze and interpret engineering data, and provide innovative solutions to **infrastructure and construction** challenges.
- **B2:** Graduates will communicate effectively, both orally and in writing, through technical reports and **engineering drawings**, with technical and non-technical audiences.
- **B3:** Graduates will be able to work effectively as members or leaders in multidisciplinary teams to manage **large-scale construction projects**.
- **B4:** Graduates will be proficient in using modern engineering tools, such as **BIM (Building Information Modeling)**, AutoCAD, and structural analysis software.

Ethics

- **C1:** Graduates will recognize and address the ethical, social, and **safety implications** of their professional engineering practice.
- **C2:** Graduates will engage in lifelong learning to remain current with evolving **civil engineering technologies and urban development** requirements.
- **C3:** Graduates will demonstrate responsibility toward serving the community by ensuring the **safety and durability** of public infrastructure.
- **C4:** Graduates will commit to **sustainable construction practices** and minimizing the environmental footprint of engineering projects.

8. Teaching and Learning Strategies

Teaching Strategies

- **Interactive theoretical lectures:** Focusing on structural mechanics, fluid dynamics, and surveying.
- **Multimedia and Presentations:** Utilizing 3D modeling and structural simulations to visualize complex designs.
- **Field Visits and Practical Experiments:** Inspections of construction sites, bridges, and materials testing in laboratories.
- **Brainstorming:** Group sessions to solve design-based engineering problems.
- **Seminars and Discussion Groups:** Reviewing case studies of famous engineering projects and structural failures.

Learning Strategies

- **Self-learning:** Researching modern construction materials and summarizing international engineering journals.
- **Laboratory Experiments:** Hands-on testing of concrete strength, soil mechanics, and hydraulic flow.
- **Online Learning:** Utilizing digital platforms for specialized software training (e.g., Etabs, SAP2000).
- **Problem-Based Learning:** Completing complex design assignments and structural calculations.

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9. Evaluation Methods

1. **Written Exams:** Midterm and final examinations covering theoretical and mathematical concepts.
2. **Project Defense:** Presentation and discussion of the final graduation design project.
3. **Summer Training Reports:** Evaluation of the student's performance and learning during their internship at engineering firms.
4. **Practical and Laboratory Exams:** Assessment of skills in surveying, materials testing, and engineering software application.

10. Faculty Members

No.	Name	Degree	Academic Rank
1	Abdul Ridha Ibrahim Al-Karimi	Ph.D.	Professor
2	Namir Abdul Amir Alloush	Ph.D.	Professor
3	Ammar Yasser Ali	Ph.D.	Professor
4	Mustafa Balasim Dawood	Ph.D.	Professor
5	Nahla Yaasoub Ahmed	Ph.D.	Professor
6	Haitham Hassan Mutaib	Ph.D.	Professor
7	Abdul Hassan Khudhair	Ph.D.	Professor
8	Mr. Samer Abdul Amir	—	Professor
9	Mohammed Mansour Al-Khafaji	Ph.D.	Professor
10	Najm Abid Salem	Ph.D.	Professor
11	Hussein Ali Hussein	Ph.D.	Professor
12	Mr. Kadhim Nayef Kadhim	Ph.D.	Professor
13	Najah Kadhim Abbas	Ph.D.	Professor
14	Haider Mohammed Kadhim	Ph.D.	Professor
15	Mohammed Jawad Kadhim	Ph.D.	Professor
16	Khalid Karim Shadhan	Ph.D.	Professor
17	Thair Jabbar Mizher	Ph.D.	Professor
18	Mr. Haider Mohammed Majeed	Ph.D.	Professor
19	Zaid Hameed Majeed	Ph.D.	Professor
20	Rafe' Fleih Hassan	Ph.D.	Professor
21	Ms. Muna Hatem	—	Professor
22	Nabil Hassan Ali	Ph.D.	Professor
23	Haider Mohammed Owaid	Ph.D.	Professor
24	Ali Abdul Amir Alloush	Ph.D.	Professor
25	Saif Salah Mahdi	Ph.D.	Professor
26	Ruqayah Kadhim	Ph.D.	Professor

27	Abbas Salem Abbas	Ph.D.	Professor
28	Mr. Abdul Ridha Saleh	—	Assistant Professor
29	Basil Obaid Mahdi	Ph.D.	Assistant Professor
30	Ms. Jinan Jawad Hassan	—	Assistant Professor
31	Yahya Kadhim Hussein	Ph.D.	Assistant Professor
32	Ali Hassoun Nahaba	Ph.D.	Assistant Professor
33	Ibtihaj Taha Jawad	Ph.D.	Assistant Professor
34	Najlaa Hameed Abbas	Ph.D.	Assistant Professor
35	Bilal Ismail	Ph.D.	Assistant Professor
36	Faez Hussein Hashim	Ph.D.	Assistant Professor
37	Ahmed Talib Obaid	Ph.D.	Assistant Professor
38	Ms. Zahra Abid Saleh	—	Assistant Professor
39	Wissam Shamkhi Jaber	Ph.D.	Assistant Professor
40	Ms. Hanaa Mohammed Mahan	—	Assistant Professor
41	Mr. Haider Abbas	—	Assistant Professor
42	Ms. Zainab Ali Omran	Ph.D.	Assistant Professor
43	Ms. Hadeel Ali Abdul Hussein	—	Assistant Professor
44	Ms. Alaa Hamed Omran	—	Assistant Professor
45	Emad Habib	Ph.D.	Assistant Professor
46	Maitham Fadhil Abbas	Ph.D.	Assistant Professor
47	Hassanein Mousa Jaafar	Ph.D.	Assistant Professor
48	Muna Mohammed Karim	Ph.D.	Assistant Professor
49	Ali Nasser Hussein	Ph.D.	Assistant Professor
50	Hagar Faiq	Ph.D.	Assistant Professor
51	Riyadh Hamad Mohammed	Ph.D.	Assistant Professor
52	Majd Ahmed Jassim	Ph.D.	Assistant Professor
53	Majid Mohammed Ali Kadhim	Ph.D.	Professor
54	Mohammed Abdul Majeed	Ph.D.	Assistant Professor
55	Hussein Talab Nahaba	Ph.D.	Assistant Professor
56	Haider Mohammed Jawad	Ph.D.	Lecturer
57	Shamel Abdul Majeed Kadhim	Ph.D.	Lecturer
58	Mr. Abdul Karim Khalil	—	Lecturer
59	Ms. Rana Fallah Youssef	—	Lecturer
60	Ms. Nariman Yahya Othman	—	Lecturer
61	Ms. Iman Mahdi Hadi	—	Lecturer
62	Ms. Alia Ali Khudhair	—	Lecturer
63	Mr. Ammar Shaker Mahmoud	—	Lecturer
64	Ayoub Abbas Ibrahim	Ph.D.	Lecturer
65	Abeer Mohammed Abdul Amir	Ph.D.	Lecturer
66	Hassanein Salam	Ph.D.	Lecturer
67	Harith Khalil Kadhim	Ph.D.	Lecturer
68	Raad Kamil Hashim	Ph.D.	Lecturer

69	Yahya Hamza Jaber	Ph.D.	Lecturer
70	Amir Tu'ma Kamal	Ph.D.	Lecturer
71	Miead Taha Yassin	Ph.D.	Lecturer
72	Mr. Samer Mohammed Jawad	—	Lecturer

11. Professional Development

Monitoring and Orientation of New Faculty Members
New faculty members undergo a comprehensive orientation process to familiarize them with essential legislative frameworks, including the **Civil Service Code** and the **University Service Code**. This ensures a clear understanding of their professional duties and administrative responsibilities. Furthermore, the department encourages active integration into the academic community through participation in seminars, guest lectures, and collaborative activities. These initiatives are designed to foster mentorship between seasoned professors and new staff, creating a unified front dedicated to advancing the educational institution and strengthening cooperative bonds.

Professional Development of Faculty Members
Continuous professional growth is prioritized through:

- **Annual Specialized Seminars:** Hosting sessions on emerging trends in **civil engineering**, such as sustainable construction materials, smart city infrastructure, and seismic design.
- **Global Knowledge Exchange:** Encouraging participation in national and international engineering conferences to stay updated on modern construction technologies and advanced pedagogical methods.
- **Skill Transfer:** Utilizing international scientific experiences to modernize the intellectual framework of both students and teachers, ensuring the program remains at the cutting edge of the engineering sector.

12. Acceptance Criterion

Central Admission: Student intake is managed through the national central admission system regulated by the Ministry of Higher Education and Scientific Research, based on the applicant's academic performance and departmental capacity.

13. The Most Important Sources of Information About the Program

- **Official Websites:** The University of Babylon and College of Engineering digital portals.
- **University Academic Guide:** Official brochures outlining departmental policies, faculty profiles, and graduation requirements.
- **Specialized Library Resources:** Key engineering textbooks, international codes (e.g., ACI, AISC, ASTM), and leading civil engineering journals.

14. Program Development Plan

The **Bachelor of Civil Engineering** program is dedicated to graduating highly competent engineers specialized in the design, construction, and management of infrastructure, utilizing the latest **internationally accredited curricula** and **BIM (Building Information Modeling)** technologies.
The plan focuses on:

- **National Infrastructure Support:** Aligning student projects with the country’s current needs for housing, transportation networks, and hydraulic structures.
- **High-Quality Environment:** Providing state-of-the-art laboratories and a research-driven educational atmosphere to empower students in nation-building.
- **Civilizational Contribution:** Highlighting the vital role of the civil engineer in driving urban development, ensuring public safety, and promoting the scientific and industrial progress of the community.

Program skills outline

Level	Sem.	Code	Module Name	Required program Learning outcomes											
				Knowledge				Skills				Ethics			
				A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4
UGI	1	CIV1101	Mathematics I	✓											
		CIV1102	Engineering Mechanics I	✓											
		CIV1103	Eng. Drawing & Computer Drawing						✓		✓				
		CIV1104	Engineering Statistics	✓				✓							
		CIV1105	Building Materials			✓		✓							
		UOBAB1102	Arabic Language						✓						
UGI	2	CIV1211	Mathematics II	✓											
		CIV1212	Engineering Mechanics II	✓											
		CIV1203	Computer Language								✓		✓		
		CIV1204	Engineering Geology			✓									
		CIV1205	Building Construction		✓		✓							✓	
		UOBAB1104	Human Rights									✓		✓	
		UOBABb1101	English Language						✓						
UGII	3	CIV2311	Mathematics	✓											
		CIV2312	Strength of Materials I	✓		✓		✓							
		CIV2303	Engineering Surveying I					✓			✓				
		CIV2304	Concrete Technology		✓	✓		✓							
		CIV2305	Fluid Mechanics I	✓											
		UOBAB2301	al baith - cricems									✓			
UGII	4	CIV2401	Engineering Analysis	✓							✓				
		CIV2412	Strength of Materials II	✓		✓		✓							
		CIV2413	Engineering Surveying II					✓			✓				
		CIV2414	Fluid Mechanics II	✓				✓							
		UOBAB2001	Arabic Language						✓						
		UOBABb4	Computer Language 1								✓				
		CIV2405	Design & Control of Concrete Mixes		✓	✓		✓							✓

UGIII	**5**	CIV3501	Theory of Structures I	✓											
		CIV3502	Soil Mechanics I			✓		✓							
		CIV3503	Design of Reinforced Concrete I	✓	✓		✓							✓	
		CIV3514	Eng. Analysis & Numerical Methods	✓							✓				
		CIV3505	Eng. Management & Economy							✓					✓
		CIV3506	Selected Topic (I)		✓								✓		
		UOBAB2004	Computer Language 2								✓				
UGIII	**6**	CIV3611	Theory of Structures II	✓											
		CIV3612	Soil Mechanics II			✓		✓							
		CIV3613	Design of Reinforced Concrete II	✓	✓		✓							✓	
		CIV3604	Structural Drawing						✓		✓				
		CIV3605	Irrigation & Drainage Engineering												✓
		CIV3606	Selected Topic (II)		✓								✓		
		CIV3607	Traffic Engineering											✓	
UGIV	**7**	CIV4701	Design of Concrete Structures	✓	✓		✓							✓	
		CIV4702	Method of Construction & Estimation				✓			✓					
		CIV4703	Hydraulic Structures	✓										✓	
		CIV4704	Foundation Engineering I	✓		✓									
		CIV4705	Selected Topic (III)										✓		
		CIV4706	Transportation Engineering I	✓											
		CIV4707	Project (Annual)	✓				✓	✓	✓	✓	✓	✓	✓	✓
UGIV	**8**	CIV4801	Design of Steel Structures	✓	✓		✓				✓			✓	
		CIV4802	Sanitary Engineering												✓
		CIV4803	Hydrology	✓											
		CIV4814	Foundation Engineering II	✓		✓									
		CIV4815	Transportation Engineering II	✓											
		CIV4806	Selected Topic										✓		

			(IV)												
		CIV4817	Project (Annual)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

COURSE DESCRIPTION

FIRST STAGE - FIRST SEMESTER

Module Information معلومات المادة الدراسية					
Module Title	**Mathematics I**			**Module Delivery**	
Module Type	**Support**			☐ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	CIV1101				
ECTS Credits	**6**				
SWL (hr/sem)	150				
Module Level			**Semester of Delivery**		
Administering Department	CIVIL		**College**	Engineering	
Module Leader	Bilal Ismaeel Al-Shraify		**e-mail**	eng.bilal.ismaeel@uobabylon.edu.iq	
Module Leader's Acad. Title	Assistant Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	None		**e-mail**	None	
Peer Reviewer Name	None		**e-mail**	None	
Scientific Committee Approval Date	01/06/2023		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	None
Co-requisites module	None	**Semester**	None

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	• The aim of this course is for students to learn to draw basic functions and how to derive them. • Benefit from derivation in solving engineering applications, • Benefit from integration in solving many engineering applications such as Area Between Curves, Volume of Solids of Revolution, Length of Plane Curves, Area of Surface of Revolution. • In addition, learn to calculate conic sections.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	• After successful completion of this module, students should be able to: • Ability to learn to graph basic functions. • Ability to use calculus, in solving engineering applications. • Mastery of mathematics to relate it to the stereoscopic geometry of a purpose the answer in descriptive engineering • Ability to work as a team.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: **Part A: Line and trigonometric function, Domain and range, [8 hrs]** **Part B: Limits and compositions of functions, Continuous functions and derivatives, [12 hrs]** **Part C: Application of derivatives, Inverse of trigonometric function,[21 hrs].** **Part D: Domain and range of inverse of trigonometric function, [3 hrs]** **Part E: Conic sections and other plane curves [3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	1) Learning Technologies on Campus using data show or TV screen. 2) White board. 3) Hand out lecture notes. 4) Hand out some kinds of pictures related to specific topics.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	93	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	57	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	**Midterm Exam**	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Welcome to this course, syllabus, and expectations. Textbook. Distribution of data, tabular presentation of data.
Week 2	Intervals and Analytical Geometry.
Week 3	Functions and Their Graphs.
Week 4	Combining Functions
Week 5	Trigonometric Functions
Week 6	Limits and continuous functions.
Week 7	Differentiation Rules and Derivatives of Trigonometric Functions
Week 8	The Chain Rule and Implicit Differentiation
Week 9	Derivatives of Transcendental Functions
Week 10	Related rates changes, Extreme Values of Functions
Week 11	Concavity and Curve Sketching, Applied Optimization
Week 12	Indefinite Integrals and Definite Integrals
Week 13	Integral of Transcendental Functions.
Week 14	Length of Plane Curves and Area of Surface of Revolution
Week 15	Integration by Parts and Integration by Trigonometric Substitutions.
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	None

Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	**Mid-term Exam**
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	- Finney, Weir, C.W. and Giordano, "Tomas Calculus", eleven teen Edition, 2000. - Finney, Weir, C.W. and Giordano, "Tomas Calculus", fourteenth Edition, 2017	Yes
Recommended Texts	- Haward, Bivens and Davis., "Calculus ", Pearson Education, Seven Edition, 2002. - James Stewart, "Calculus ", fifth Edition, 2020	No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية		
Module Title	**Engineering Mechanics I**	**Module Delivery**
Module Type	**Core**	☐ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**
Module Code	CIV1102	
ECTS Credits	**6**	

SWL (hr/sem)	**150**		
Module Level		**Semester of Delivery**	
Administering Department	**CIVIL**	**College**	**Engineering**
Module Leader	**Kahlad Kareem Shadhan**	**e-mail**	**eng.khalid.karim@uobabylon.edu.iq**
Module Leader's Acad. Title	**Assistant Professor**	**Module Leader's Qualification**	**Ph.D.**
Module Tutor	**None**	**e-mail**	**None**
Peer Reviewer Name	**None**	**e-mail**	**None**
Scientific Committee Approval Date	**01/06/2023**	**Version Number**	**1.0**

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**None**	**Semester**	**None**
Co-requisites module	**None**	**Semester**	**None**

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	• **Engineering Mechanics courses teach students about the applications of mechanics to solve problems involving typical engineering elements.** • **Engineering Mechanics courses cover several topics such Newton's Law of motion and gravitation problems , Determine the moment forces and resultant of moments of a body.** • **Engineering Mechanics courses are offered at several levels, including undergraduate, postgraduate, and diploma programs.**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**After successful completion of this module, students should be able to:** • **Illustrate the different types of mechanics problems and issues that can arise in civil engineering;** • **Explain and apply correctly the fundamental principles of mechanics;** • **Solve problems in statics way such that solutions can be communicated for verification;** • **Model basic static and dynamic systems relevant to structural, geotechnical and fluid mechanics and be proficient in applying appropriate analysis methods.**
Indicative Contents المحتويات الإرشادية	**Indicative content includes the following:** **Part A: Basic Concept [8 hrs]** **Part B: Resultant of Force System [12 hrs]** **Part C: Equilibrium [21 hrs].** **Part D: Analysis of structures [3 hrs]** **Part E: Friction [3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**5) Learning Technologies on Campus using data show or TV screen.** **6) White board.** **7) Hand out lecture notes.** **8) Hand out some kinds of pictures related to specific topics.**

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	**93**	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	**6**
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	**57**	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	**3.466**
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	Midterm Exam	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Welcome to this course, syllabus, and expectations. Textbook. Distribution of data, tabular presentation of data.
Week 2	Apply Newton's Law of motion and gravitation problems.
Week 3	Perform of rigid-body equilibrium problems using the equations of equilibrium
Week 4	Calculate the moment of a force, the resultant of a force in two and three dimensions.
Week 5	Reduce a simple distributed loading to a resultant force having a specified location.
Week 6	Determine the resultant of forces in the plane and space
Week 7	Analysis of the forces in space and calculate their components.
Week 8	Determine the moment forces and resultant of moments of a body.
Week 9	Determining the moment of couple and resultant of couples in plane.
Week 10	Determining the resultant of some types of distributed load shapes.
Week 11	Definitions of equilibrium and how to recognize the types of supports and draw the FBD.
Week 12	Analysis and determination of reaction and internal forces in the structure using equilibrium equations.
Week 13	Analysis and determination the reactions, internal forces in truss.
Week 14	Determine the forces in trusses types using joint method.
Week 15	Determine the forces in trusses types using section method.
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	None
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	Mid-term Exam
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	1- Higdon, A. and Stiles, W. B. "Engineering Mechanics", 3rd Ed., Prentice-	Yes

	2- Hall India,1974. 3- - Hibbeler, R. C. and Fan, S. C., "Engineering Mechanics", Prentice Hall, 4- 1997.	
Recommended Texts	- Meriam, J. L. and Kraige, L. G. "Engineering Mechanics", 5th Ed., John Wiley and Sons Inc., 2002..	**No**
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A - Excellent**	امتياز	**90 - 100**	**Outstanding Performance**
	B - Very Good	جيد جدا	**80 - 89**	**Above average with some errors**
	C - Good	جيد	**70 - 79**	**Sound work with notable errors**
	D - Satisfactory	متوسط	**60 - 69**	**Fair but with major shortcomings**
	E - Sufficient	مقبول	**50 - 59**	**Work meets minimum criteria**
Fail Group (0 – 49)	**FX – Fail**	راسب (قيد المعالجة)	**(45-49)**	**More work required but credit awarded**
	F – Fail	راسب	**(0-44)**	**Considerable amount of work required**

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية				
Module Title	**Engineering Drawing and Drawing by Computer**		**Module Delivery**	
Module Type	**Core**		☐ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	CIV1103			
ECTS Credits	**6**			
SWL (hr/sem)	**150**			
Module Level		**Semester of Delivery**		
Administering Department	**CIVIL**	**College**	**Engineering**	
Module Leader	**Muhammad Jawad Kadhim**	**e-mail**	**eng.muhammed.jawad@uobabylon.edu.iq**	
Module Leader's Acad. Title	**Assistant Professor**	**Module Leader's Qualification**	**Ph.D.**	
Module Tutor	**None**	**e-mail**	**None**	
Peer Reviewer Name	**None**	**e-mail**	**None**	
Scientific Committee Approval Date	**01/06/2023**	**Version Number**	**1.0**	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**None**	**Semester**	**None**
Co-requisites module	**None**	**Semester**	**None**

Module Evaluation تقييم المادة الدراسية					
As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	Midterm Exam	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	• The student can draw geometric shapes, stereoscopic drawings, and sections, and he can read ready-made engineering drawings. • The student will be able to draw geometric shapes using AutoCAD. • The student imagines the final shape of the engineering drawing • The student will be familiar with the tools of engineering drawing. • The student is familiar with drawing geometric shapes (lines, circles, arcs). • The student learns applications and exercises in vertical and stereo projection and drawing sections.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After successful completion of this module, students should be able to: • The student will be familiar with the AutoCAD interface and its contents. • The student will be familiar with the methods of drawing lines and geometric shapes using the computer. • The student learns how to use drawing aids. • The student learns about the modification commands represented by displacement, erasure, transfer, rotation, ... etc.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: Part A: Principles previews, Lines in engineering drawing [8 hrs] Part B: Geometric operations. [12 hrs] Part C: Introductory lecture AutoCAD drawing program (a full explanation for the program interface), [21 hrs]. Part D: Complete explanation of the program interface, identify the units of measurement and how to give commands [3 hrs] Part E: Dimension, Pectorial Drawing, Sections.[3 hrs]
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	9) Learning Technologies on Campus using data show or TV screen. 10) White board. 11) Hand out lecture notes. 12) Hand out some kinds of pictures related to specific topics.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	93	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	57	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	Material Covered
Week 1	Welcome to this course, syllabus, and expectations. Textbook. underline the importance and significance of engineering drawing
Week 2	Draw and write a Kufic Letters Draw a parallel line to other line, bisecting the straight lines, bisect the angles, drawing an arc

	touches two intersecting lines, bisect the angles; an arc touches two lines.
Week 3	**Draw different types of shapes gradient from simple to complicated shapes of decoration Draw projection of three dimension shape with inclined surfaces.**
Week 4	**Drawing the dimensions of projection views using specifications of dimensions. Drawing complete projections of complicated three dimensions shape**
Week 5	**Drawing Isometric of three dimension shape with planed and inclined surfaces using three projections only.**
Week 6	**Drawing Isometric of three dimension shape with planed and inclined surfaces using three projections only.**
Week 7	**Drawing Isometric of three dimension shape with planed and inclined surfaces using three projections only.**
Week 8	**Draw Isometric of three dimension shapes with cylindrical surfaces using three projections only.**
Week 9	**Draw Isometric of three dimension shapes with dimensions.**
Week 10	**Draw Isometric of three dimension shapes with dimensions.**
Week 11	**Draw Isometric of three dimension shapes with dimensions.**
Week 12	**Draw Isometric with different scale.**
Week 13	**Draw Isometric with different scale.**
Week 14	**Draw section with different views and locations.**
Week 15	**Draw Isometric using two projections only.**
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	**General introduction to the course outline and the AutoCAD Program**
Week 2	**Identifying the AutoCAD's interface, working environment, how to save and open files ,drop-down menus and toolbars**
Week 3	**Specifying measurement units, drawing scale, drawing limits and grid style**
Week 4	**Presenting and defining the commands; Line, pline, erase, copy, and move with examples**
Week 5	**Selection methods, views, zoom (in, out, window, all, extents, and object) snap setting, and orthogonal setting, with examples**
Week 6	**Presenting the commands; construction line, rectangular, polygon, arc, mirror, offset, and rotate with examples**
Week 7	**Presenting the commands; construction line, rectangular, polygon, arc, mirror, offset, and rotate with examples**
Week 8	**Mid-term Exam**
Week 9	**Presenting the commands; construction line, rectangular, polygon, arc, mirror, offset, and rotate with examples**
Week 10	**Presenting the commands; construction line, rectangular, polygon, arc, mirror, offset, and rotate with examples**
Week 11	**Presenting the commands; construction line, rectangular, polygon, arc, mirror, offset, and rotate with examples**
Week 12	**Presenting the commands; construction line, rectangular, polygon, arc, mirror, offset, and rotate with examples**
Week 13	**Presenting the commands; construction line, rectangular, polygon, arc, mirror, offset, and rotate with examples**
Week 14	**Presenting the commands; construction line, rectangular, polygon, arc, mirror, offset, and rotate with examples**
Week 15	**Application examples (mapping (structural plan) of structural buildings**
Week 16	**Presenting the commands; output page setup manager, layout and printing (plot), with examples**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	- **Lectures of manual engineering drawing by Ass. Prof. Dr. Mohmad Abd Muslim.**	**Yes**
Recommended Texts	**- Fundamentals of 2017 AutoCAD by Ali Mahdi** **- AutoCAD Tutorials by Fangfang.**	**No**
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A - Excellent**	امتياز	**90 - 100**	**Outstanding Performance**
	B - Very Good	جيد جدا	**80 - 89**	**Above average with some errors**
	C - Good	جيد	**70 - 79**	**Sound work with notable errors**
	D - Satisfactory	متوسط	**60 - 69**	**Fair but with major shortcomings**
	E - Sufficient	مقبول	**50 - 59**	**Work meets minimum criteria**
Fail Group	**FX – Fail**	راسب (قيد المعالجة)	**(45-49)**	**More work required but credit awarded**

(0 – 49)	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية					
Module Title	**Engineering Statistics**			**Module Delivery**	
Module Type	**Basic**			☐ Theory ☒ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	CIV1104				
ECTS Credits	**4**				
SWL (hr/sem)	**100**				
Module Level			**Semester of Delivery**		
Administering Department	**CIVIL**		**College**	**Engineering**	
Module Leader	**Faiz Hussein Al-Merib**		**e-mail**	**eng.faiz.hussein@uobabylon.edu.iq**	
Module Leader's Acad. Title	**Lecture**		**Module Leader's Qualification**		**Ph.D.**
Module Tutor	**None**		**e-mail**	**None**	
Peer Reviewer Name	**None**		**e-mail**	**None**	
Scientific Committee Approval Date	**01/06/2023**		**Version Number**		**1.0**

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**None**	**Semester**	**None**
Co-requisites module	**None**	**Semester**	**None**

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	**The objectives of these courses are to introduce Engineering Statistic to civil engineering** • **Undergraduate students and to familiarize the students with statistic terminology** • **Concepts commonly encountered in engineering practices and applications**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**After successful completion of this module, students should be able to:** • **The ability to use of probability theory and probability distributions in** • **predicting the results of engineering tests.** • **Ability to use a software, such as MS Excel, in the calculations**
Indicative Contents المحتويات الإرشادية	**Indicative content includes the following:** **Part A: Statistical notations Fundamentals , Frequency and Probability distributions , [8 hrs]** **Part B: Measures of Central location [12 hrs]** **Part C: Measures of Variation or dispersion [21 hrs].** **Part D: Measures of Dispersion , Probability theory , [3 hrs]** **Part E: Elementary probability theory, Special distributions , Sampling Methods [3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**13) Learning Technologies on Campus using data show or TV screen.** **14) White board.** **15) Hand out lecture notes.** **16) Hand out some kinds of pictures related to specific topics.**

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	**63**	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	**4**
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	**37**	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	**3.466**
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**100**		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	**2**	**15% (15)**	**5 , 8**	**LO # 2, 3,4 and 6, 7**
	Assignments	**2**	**10% (10)**	**6, 12**	**LO # 3, 4 , 5 and 9, 10 and 11**
	Projects / Lab.	**1**	**10% (10)**	**Continuous**	
	Report	**1**	**5% (5)**	**13**	**Continuous**
Summative assessment	**Midterm Exam**	**2 hr**	**10% (10)**	**10**	**LO # 1-9**
	Final Exam	**3hr**	**50% (50)**	**16 or 17**	**All**
Total assessment			**100% (100 Marks)**		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	**Welcome to this course, syllabus, and expectations. Textbook. Distribution of data, tabular presentation of data.**
Week 2	**Definition of engineering statistics, statistical concepts, and types of variables. Distribution of data, tabular presentation of data.**
Week 3	**Frequency distribution, cumulative frequency distribution, and relative frequency distribution. Engineering presentation of data, the histogram frequency, polygon ascending and descending frequency curve.**
Week 4	**Measures of central tendency, arithmetic mean, harmonic mean, geometric mean, root mean squares, the medium, the mode, and mid-range. Quartiles, deciles, and percentiles.**
Week 5	**measures of dispersion (variance), absolute measures of variance, the range, the mean deviation, standard deviation, the variance, relative measures of variance standard class, coefficient of mean deviation, coefficient of variance, and standard error. Measures of shape of distribution such as measure of skewness, and measure of kurtosis.**
Week 6	**Probability theory, Venn diagram, conditional probability, probability distribution, and permutations and combinations.**
Week 7	**Special probability distributions, discrete probability distributions such as binomial distribution, multinomial distribution, Poisson distribution, and hyper geometric distribution. Continuous probability distributions such as normal distribution.**
Week 8	**Sampling theory, random sample, systematic sample, multi stage sample, and sample distribution theorems.**
Week 9	**Correlation and regression, linear correlation, partial correlation, simple linear regression, and multiple linear regression.**
Week 10	**Forecasting and forecasting errors.**
Week 11	**Estimation theory, point or interval estimation, confidence limits in estimation and limits for means.**
Week 12	**Statistical decision theory, test of hypothesis and significance, and statistical errors.**
Week 13	**Time series analysis, smoothing techniques, parametric techniques,**
Week 14	**Time series analysis, smoothing techniques, parametric techniques,**
Week 15	**Time series analysis, smoothing techniques, parametric techniques,**
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

Week	Material Covered

Week 1	**Non**
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	**Mid-term Exam**
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	-والتكنولوجًا العلوم جامعة -المزاح محمد محمد. د) والتطبيقية الادارة للعلوم والاحتمالات الاحصاء مباديء -ة الثالث الطبعة- صنعاء	**Yes**
Recommended Texts	**- Jim Morrison, 2001 , Statistics for Engineers: An Introduction, Wily and sons**	**No**
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A - Excellent**	امتياز	**90 - 100**	**Outstanding Performance**
	B - Very Good	جيد جدا	**80 - 89**	**Above average with some errors**
	C - Good	جيد	**70 - 79**	**Sound work with notable errors**
	D - Satisfactory	متوسط	**60 - 69**	**Fair but with major shortcomings**
	E - Sufficient	مقبول	**50 - 59**	**Work meets minimum criteria**
Fail Group (0 – 49)	**FX – Fail**	راسب (قيد المعالجة)	**(45-49)**	**More work required but credit awarded**
	F – Fail	راسب	**(0-44)**	**Considerable amount of work required**

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية		
Module Title	**Building Materials**	**Module Delivery**
Module Type	**Support**	☐ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**
Module Code	CIV1105	
ECTS Credits	**6**	
SWL (hr/sem)	**150**	

Module Level		**Semester of Delivery**	
Administering Department	**CIVIL**	**College**	**Engineering**
Module Leader	**Abbas Salim Abbas**	**e-mail**	**abbas.alameeri.eng@uobabylon.edu.iq**
Module Leader's Acad. Title	**Professor**	**Module Leader's Qualification**	**Ph.D.**
Module Tutor	**None**	**e-mail**	**None**
Peer Reviewer Name	**None**	**e-mail**	**None**
Scientific Committee Approval Date	**01/06/2023**	**Version Number**	**1.0**

Relation with other Modules. العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**None**	**Semester**	**None**
Co-requisites module	**None**	**Semester**	**None**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**17) Learning Technologies on Campus using data show or TV screen.** **18) White board.** **19) Hand out lecture notes.** **20) Hand out some kinds of pictures related to specific topics.**

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	• **Study and comprehend the general concepts of the physical and chemical composition of structural materials used in civil engineering works**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**After successful completion of this module, students should be able to:** • **The student learns about the quality of construction materials** • **The student learns about the physical and chemical composition of structural materials.**
Indicative Contents المحتويات الإرشادية	**Indicative content includes the following:** **Part A: Classification of material , Properties of material [8 hrs]** **Part B: Mechanical properties of material clay Brick , Types of Brick according of material [12 hrs]** **Part C: Types of Mortar Bonding Materials [21 hrs].** **Part D:Manufactories of Lime , Manufactories of cement , [3 hrs]** **Part E: Type of Material use covering the floors production of Tiles ,[3 hrs]**

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	**96**	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	**6**
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	**54**	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	**3.466**
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	**2**	**15% (15)**	**5 , 8**	**LO # 2, 3,4 and 6, 7**
	Assignments	**2**	**10% (10)**	**6, 12**	**LO # 3, 4 , 5 and 9, 10 and 11**
	Projects / Lab.	**1**	**10% (10)**	**Continuous**	
	Report	**1**	**5% (5)**	**13**	**Continuous**
Summative assessment	**Midterm Exam**	**2 hr**	**10% (10)**	**10**	**LO # 1-9**
	Final Exam	**3hr**	**50% (50)**	**16 or 17**	**All**
Total assessment			**100% (100 Marks)**		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	**Material Covered**
Week 1	**Welcome to this course, syllabus, and expectations. Textbook. underline the importance and significance of engineering drawing**
Week 2	**Classification and properties of construction materials**
Week 3	**Mechanical properties of materials**
Week 4	**Exercise of mechanical properties**
Week 5	**Exercise of mechanical properties**
Week 6	**An understanding of Clayey brick and brick products used in civil engineering construction and the manufacturing stage**
Week 7	**An understanding of Clayey brick and brick products used in civil engineering construction and the manufacturing stage**
Week 8	**An understanding of gypsum and gypsum products used in civil Engineering construction and the common acceptance tests on gypsum.**
Week 9	**An understanding of gypsum and gypsum products used in civil Engineering construction and the common acceptance tests on gypsum.**
Week 10	**An understanding of lime used in civil engineering construction and the Common acceptance tests on lime**
Week 11	**An understanding of lime used in civil engineering construction and the Common acceptance tests on lime**
Week 12	**An understanding of Cement used in civil engineering construction and the Common acceptance tests on Cement**
Week 13	**An understanding of Cement used in civil engineering construction and the Common acceptance tests on Cement**
Week 14	**An understanding of the various types of tiles used in civil engineering construction and the common acceptance tests on tile.**
Week 15	**An understanding of the various types of tiles used in civil engineering construction and the common acceptance tests on tile.**
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	**How can save yourself and your colleges and how can write Report**
Week 2	**Conduct tests on Bricks**
Week 3	**Conduct tests on Bricks**
Week 4	**Conduct tests on Gypsum**
Week 5	**Conduct tests on Gypsum**
Week 6	**Conduct tests on Wood**
Week 7	**Conduct tests on Lime**
Week 8	**Mid-term Exam**
Week 9	**Conduct tests on Lime**
Week 10	**Conduct tests on Tile**
Week 11	**Conduct tests on Tile**
Week 12	**Conduct tests on Cement**
Week 13	**Conduct tests on Cement**
Week 14	**Conduct tests on Cement**
Week 15	**Conduct tests on Aggregate**
Week 16	**Conduct tests on Aggregate**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	- **Tests in Building Materials, Talib, A. &, Abdul- Muni, S. 2011.** - **IQS- Iraqi Specifications.**	**Yes**
Recommended Texts	- **Building Materials in Civil Engineering: H. Zhang, Second Edition, Woodheed Publishing, 2010.** - **BS Specifications**	**No**
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A - Excellent**	امتياز	**90 - 100**	**Outstanding Performance**
	B - Very Good	جيد جدا	**80 - 89**	**Above average with some errors**
	C - Good	جيد	**70 - 79**	**Sound work with notable errors**
	D - Satisfactory	متوسط	**60 - 69**	**Fair but with major shortcomings**
	E - Sufficient	مقبول	**50 - 59**	**Work meets minimum criteria**
Fail Group (0 – 49)	**FX – Fail**	راسب (قيد المعالجة)	**(45-49)**	**More work required but credit awarded**
	F – Fail	راسب	**(0-44)**	**Considerable amount of work required**

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية					
Module Title	**Arabic Language**			**Module Delivery**	
Module Type	**Basic**			☐ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	UOBAB1102				
ECTS Credits	**2**				
SWL (hr/sem)	50				
Module Level			**Semester of Delivery**		
Administering Department	CIVIL		**College**	Engineering	
Module Leader	Sawsan Abdulsettar Ghaffoori		**e-mail**	eng.sawsan.ghaffori@uobabylon.edu.iq	
Module Leader's Acad. Title	Assistant Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	None		**e-mail**	None	
Peer Reviewer Name	None		**e-mail**	None	
Scientific Committee Approval Date	01/06/2023		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	None
Co-requisites module	None	**Semester**	None

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	• تعليم الطلبة مهارات الكتابة على مستوى الأملاء والنحو والصرف • فضلا عن تعليم الطلبة اسلوب تحليل النص الادبي بالرجوع الى نصوص ادبية معتبرة • فضلا عن تحليل النص القرآني وتعلم قواعد الاملا ء

Module Learning Outcomes مخرجات التعلم للمادة الدراسية	• اكتساب ما تم توضيحه من المفردات في حقل" المواضيع المطلوب بحثها و شمولها" • - اكتساب مهارات الكتابة الادبية الصحيحة. • -التأكد من ان الطالب قادر عل ي الكتابة الموافقة لقواعد اللغة وعلامات الترقيم • تطوير قدرة الطالب للعمل عل ى أداء الواجبات وتسليمها ف ي الموعد المقرر. • التفكير الادبي التحليلي القادر على تحليل النصوص الادبية. • تطوير قدرة الطالب عل ى الحوار والمناقشة.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: - قواعد رسم الهمزة - علامات التنقيط - تحليل نص شعري قديم - الابتداء ونواسخه - العدد واحكامة - علامات الاعراب الاصلية والفرعية

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	21) Learning Technologies on Campus using data show or TV screen. 22) White board. 23) Hand out lecture notes. 24) Hand out some kinds of pictures related to specific topics.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	33	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	17	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	50		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	**Midterm Exam**	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	تعليم الطلبة كيفية رسم الهمزة
Week 2	تعليم الطلبة كيفية رسم الهمزة
Week 3	تعليم الطلبة كيفية رسم الهمزة
Week 4	تعليم الطلبة كيفية وضع علامات الترقيم
Week 5	تعليم الطلبة كيفية وضع علامات الترقيم
Week 6	تعليم الطلبة كيفية وضع علامات الترقيم
Week 7	تعليم الطلبة كيفية وضع علامات الترقيم
Week 8	تعليم الطلبة كيفية تحليل نص شعري قديم
Week 9	تعليم الطلبة كيفية تحليل نص شعري قديم
Week 10	تعليم الطلبة كيفية تحليل نص شعري قديم

Week 11	تعليم الطلبة كيفية تحليل نص شعري قديم
Week 12	تعليم الطلبة بقواعد الابتداء ونواسخه
Week 13	تعليم الطلبة بقواعد الابتداء ونواسخه
Week 14	تعليم الطلبة بقواعد الابتداء ونواسخه
Week 15	تعليم الطلبة بقواعد الابتداء ونواسخه
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	None
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	**Mid-term Exam**
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	كتاب اللغة العربية لغير الاختصاص تأليف الدكتور رشيد العبيدي وأخر ين كتاب الأملاء الواضح تاليف علي الجارم و احمد امي ن النحو الوافي عباس حس ن النحو الوافي : عباس حسن -	No
Recommended Texts	الادب العربي شوقي ضيف -	No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

FIRST STAGE - SECOND SEMESTER

Module Information معلومات المادة الدراسية					
Module Title	**Mathematics II**			**Module Delivery**	
Module Type	**Support**			☐ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	CIV1211				
ECTS Credits	**6**				
SWL (hr/sem)	150				
Module Level			**Semester of Delivery**		
Administering Department	CIVIL		**College**	Engineering	
Module Leader	Bilal Ismaeel Al-Shraify		**e-mail**	eng.bilal.ismaeel@uobabylon.edu.iq	
Module Leader's Acad. Title	Assistant Professor		**Module Leader's Qualification**		Ph.D.
Module Tutor	None		**e-mail**	None	
Peer Reviewer Name	None		**e-mail**	None	
Scientific Committee Approval Date	01/06/2023		**Version Number**		1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	CIV1101	**Semester**	One
Co-requisites module	None	**Semester**	None

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	• The aim of this course is for students to learn to draw basic functions and how to derive them. • Benefit from derivation in solving engineering applications, • Benefit from integration in solving many engineering applications such as Area Between Curves, Volume of Solids of Revolution, Length of Plane Curves, Area of Surface of Revolution. • In addition, learn to calculate conic sections.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	• After successful completion of this module, students should be able to: • Ability to learn to graph basic functions. • Ability to use calculus, in solving engineering applications. • Mastery of mathematics to relate it to the stereoscopic geometry of a purpose the answer in descriptive engineering • Ability to work as a team.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: **Part A: Integration,[8 hrs]** **Part B: Area under the curve, [12 hrs]** **Part C: Trapezoidal and Simpsons rule, Volumes, Surface area,[21 hrs].** **Part D: Natural logarithm functions, Exponential functions, [3 hrs]** **Part E: Methods of integration, Improper integral. [3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	25) Learning Technologies on Campus using data show or TV screen. 26) White board. 27) Hand out lecture notes. 28) Hand out some kinds of pictures related to specific topics.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	93	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	57	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	**Midterm Exam**	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Welcome to this course, syllabus, and expectations. Textbook. Distribution of data, tabular presentation of data.
Week 2	Indefinite Integrals and Definite Integrals
Week 3	Integral of Transcendental Functions.
Week 4	Length of Plane Curves and Area of Surface of Revolution
Week 5	Integration by Parts and Integration by Trigonometric Substitutions.
Week 6	Integration by Parts and Integration by Trigonometric Substitutions.
Week 7	Integration of Rational Function by Partial Fractions and Integrating of the Roots.
Week 8	Integration of Rational Function by Partial Fractions and Integrating of the Roots.
Week 9	Calculate Conic Sections
Week 10	Calculate Conic Sections
Week 11	Integration of Rational Function by Partial Fractions and Integrating of the Roots.
Week 12	Related rates changes, Extreme Values of Functions
Week 13	Differentiation Rules and Derivatives of Trigonometric Functions
Week 14	Differentiation Rules and Derivatives of Trigonometric Functions
Week 15	Integration of Rational Function by Partial Fractions and Integrating of the Roots.
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	None
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	**Mid-term Exam**
Week 9	
Week 10	
Week 11	
Week 12	

Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	- Finney, Weir, C.W. and Giordano, "Tomas Calculus", eleven teen Edition, 2000. - Finney, Weir, C.W. and Giordano, "Tomas Calculus", fourteenth Edition, 2017	Yes
Recommended Texts	- Haward, Bivens and Davis., "Calculus ", Pearson Education, Seven Edition, 2002. - James Stewart, "Calculus ", fifth Edition, 2020	No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية				
Module Title	**Engineering Mechanics II**		**Module Delivery**	
Module Type	**Core**		☐ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	CIV1212			
ECTS Credits	**6**			
SWL (hr/sem)	150			
Module Level		**Semester of Delivery**		
Administering Department	CIVIL	**College**	Engineering	
Module Leader	Kahlad Kareem Shadhan	**e-mail**	eng.khalid.karim@uobabylon.edu.iq	
Module Leader's Acad. Title	Assistant Professor	**Module Leader's Qualification**	Ph.D.	
Module Tutor	None	**e-mail**	None	
Peer Reviewer Name	None	**e-mail**	None	
Scientific Committee Approval Date	01/06/2023	**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	CIV1102	**Semester**	One
Co-requisites module	None	**Semester**	None

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	• Engineering Mechanics courses teach students about the applications of mechanics to solve problems involving typical engineering elements. • Engineering Mechanics courses cover several topics such as Center of Gravity , Centroid of Areas , Center of Pressure, Moment of Inertia, Kinematics-Absolute Motion . • Engineering Mechanics courses are offered at several levels, including undergraduate, postgraduate, and diploma programs.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After successful completion of this module, students should be able to: • Illustrate the different types of mechanics problems and issues that can arise in civil engineering; • Explain and apply correctly the fundamental principles of mechanics; • Solve problems in statics way such that solutions can be communicated for verification; • Model basic static and dynamic systems relevant to structural, geotechnical and fluid mechanics and be proficient in applying appropriate analysis methods.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: **Part A: Center of Gravity [8 hrs]** **Part B: Centroid of Areas [12 hrs]** **Part C: Center of Pressure [21 hrs].** **Part D: Moment of Inertia [3 hrs]** **Part E: Kinematics-Absolute Motion [3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	29) Learning Technologies on Campus using data show or TV screen. 30) White board. 31) Hand out lecture notes. 32) Hand out some kinds of pictures related to specific topics.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	93	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	57	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	**Midterm Exam**	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	**Material Covered**
Week 1	Welcome to this course, syllabus, and expectations. Textbook. Distribution of data, tabular presentation of data.
Week 2	Analysis and determination of reaction and internal forces in the structure using equilibrium equations.
Week 3	Analysis and determination the reactions, internal forces in truss.
Week 4	Determine the forces in trusses types using joint method.
Week 5	Determine the forces in trusses types using section method
Week 6	Determine the location of the center of gravity, center of mass and centroid for a system of discrete particles and a body of arbitrary shape
Week 7	Determine the location of the center of gravity, center of mass and centroid for a system of discrete particles and a body of arbitrary shape
Week 8	Determine the location of the centroid arbitrary line, area or volume.
Week 9	Determine the location of the centroid arbitrary line, area or volume.
Week 10	Determining the polar moment of inertia for an area, radius of gyration
Week 11	Determining the polar moment of inertia for an area, radius of gyration
Week 12	Determining the moment of inertia for a composite area.
Week 13	Determining the product of inertia of areas. Calculations of the maximum and minimum of inertia for an area
Week 14	Determining the product of inertia of areas. Calculations of the maximum and minimum of inertia for an area
Week 15	Determining the product of inertia of areas. Calculations of the maximum and minimum of inertia for an area
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	None
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	**Mid-term Exam**
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	5- Higdon, A. and Stiles, W. B. "Engineering Mechanics", 3rd Ed., Prentice-6- Hall India,1974. 7- - Hibbeler, R. C. and Fan, S. C., "Engineering Mechanics", Prentice Hall, 8- 1997.	Yes
Recommended Texts	- Meriam, J. L. and Kraige, L. G. "Engineering Mechanics", 5th Ed., John Wiley and Sons Inc., 2002..	No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**

Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية					
Module Title	**Computer Language**			**Module Delivery**	
Module Type	**Basic**			☐ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	CIV1203				
ECTS Credits	**5**				
SWL (hr/sem)	125				
Module Level			**Semester of Delivery**		
Administering Department	CIVIL		**College**	Engineering	
Module Leader	Alaa Hamid Omran		**e-mail**	eng.alaa.omran@uobabylon.edu.iq	
Module Leader's Acad. Title	Lecture		**Module Leader's Qualification**		Ph.D.
Module Tutor	None		**e-mail**	None	
Peer Reviewer Name	None		**e-mail**	None	
Scientific Committee Approval Date	01/06/2023		**Version Number**		1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	None
Co-requisites module	None	**Semester**	None

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The objectives of these courses are to introduce Computer language to civil engineering • Undergraduate students and to familiarize the students with statistic terminology • Concepts commonly encountered in engineering practices and applications
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After successful completion of this module, students should be able to: • The ability to use of probability theory and probability distributions in • predicting the results of engineering tests. • Ability to use a software, such as MS Excel, in the calculations
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: **Part A:** Computer Programming Introduction , Numbers systems**, [8 hrs]** **Part B:** Algorithms and Flow charts , Input , Output and control statements **[12 hrs]**

	Part C: Two dimensional Matrices , Sub Programs, Functions **[21 hrs].** **Part D:** Introducing Visual Basic , Visual Basic Fundamentals , Branching And Looping**, [3 hrs]** **Part E:** Visual Basic Control Fundamentals , Menus And Dialog Boxes , **[3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	33) Learning Technologies on Campus using data show or TV screen. 34) White board. 35) Hand out lecture notes. 36) Hand out some kinds of pictures related to specific topics.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	47	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	**Midterm Exam**	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Welcome to this course, syllabus, and expectations. Textbook. Distribution of data, tabular presentation of data.
Week 2	Computer Programming Introduction
Week 3	Numbers systems
Week 4	Algorithms and Flow charts
Week 5	Algorithms and Flow charts
Week 6	Two dimensional Matrices
Week 7	Sub Programs
Week 8	Functions
Week 9	Introducing Visual Basic
Week 10	Visual Basic Fundamentals
Week 11	Branching And Looping
Week 12	Visual Basic Control Fundamentals
Week 13	Menus And Dialog Boxes
Week 14	Procedures
Week 15	Arrays
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	Numbers systems
Week 2	Algorithms and Flow charts
Week 3	Algorithms and Flow charts
Week 4	Two dimensional Matrices
Week 5	Sub Programs
Week 6	Functions
Week 7	Functions
Week 8	**Mid-term Exam**
Week 9	Visual Basic Fundamentals
Week 10	Branching And Looping
Week 11	Visual Basic Control Fundamentals
Week 12	Menus And Dialog Boxes
Week 13	Procedures
Week 14	Arrays
Week 15	Arrays
Week 16	Arrays

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	-والتكنولوجًا العلوم جامعة -المزاح محمد محمد. د) والتطبيقية الادارة للعلوم والاحتمالات الاحصاء مباديء -ة الثالث الطبعة- صنعاء	Yes
Recommended Texts	- Jim Morrison, 2001 , Statistics for Engineers: An Introduction, Wily and sons	No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية					
Module Title	**Engineering Geology**			**Module Delivery**	
Module Type	**Support**			☐ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	CIV1204				
ECTS Credits	**3**				
SWL (hr/sem)	75				
Module Level			**Semester of Delivery**		
Administering Department	CIVIL		**College**	Engineering	
Module Leader	Alyaa Ali Khudheyer		**e-mail**	eng.alyaaa.ali@uobabylon.edu.iq	
Module Leader's Acad. Title	Lecture		**Module Leader's Qualification**	Msc.	
Module Tutor	None		**e-mail**	None	
Peer Reviewer Name	None		**e-mail**	None	
Scientific Committee Approval Date	01/06/2023		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	None
Co-requisites module	None	**Semester**	None

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	Engineering Geology teaches civil engineering students to learn the fundamental of soil formations, minerals of the different layer.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After successful completion of this module, students should be able to: • An ability to apply knowledge of Engineering Geology, science and engineering
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: **Part A:** The origin of rocks and nature , Geological origin of soil its Geometric properties **[8 hrs]** **Part B:** The origin of rocks and nature , Geological origin of soil its Geometric properties **[12 hrs]** **Part C:** River Geology , Structural Geology and Maps **[21 hrs].** **Part D:** Geological investigations for building materials and roads Construction**, [3 hrs]** **Part E:** Geotechnical investigations for Geometric buildings positions **[3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	37) Learning Technologies on Campus using data show or TV screen. 38) White board. 39) Hand out lecture notes. 40) Hand out some kinds of pictures related to specific topics.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	48	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	3
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	27	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	75		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	Midterm Exam	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Welcome to this course, syllabus, and expectations. Textbook. Distribution of data, tabular presentation of data.
Week 2	Learning the students the basic of geology
Week 3	Understanding the minerals , Igneous Rocks , Sedimentary Rocks And etamorphic Rocks.
Week 4	Physical Properties of Rock
Week 5	Physical Properties of Rock
Week 6	Joints & Folds
Week 7	Faults
Week 8	Earthquakes
Week 9	Denudation
Week 10	Underground Water
Week 11	Water Geology
Week 12	Geological investigations for building materials and roads Construction
Week 13	Geological and Geotechnical investigations for Geometric buildings positions
Week 14	Geophysical methods in civil Engineering , General preview and different examples
Week 15	Geophysical methods in civil Engineering , General preview and different examples
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	Non
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	**Mid-term Exam**
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	- Engineering Geology by Basim Rassady, Baghdad University, 1991.	No

Recommended Texts	- Engineering Geology, by F. G. Bell, USA, 2007. - A Geology for Engineers, by F.G.H. Blyth and M. H. de Freitas, 2005	No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية			
Module Title	**Building Construction**	**Module Delivery**	
Module Type	**Support**	☐ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	CIV1205		
ECTS Credits	**4**		
SWL (hr/sem)	100		
Module Level		**Semester of Delivery**	
Administering Department	CIVIL	**College**	Engineering
Module Leader	Jinan Jawad Alwash	**e-mail**	eng.jinan.jawad@uobabylon.edu.iq
Module Leader's Acad. Title	Assistant Professor	**Module Leader's Qualification**	Msc.
Module Tutor	None	**e-mail**	None
Peer Reviewer Name	None	**e-mail**	None
Scientific Committee Approval Date	01/06/2023	**Version Number**	1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	None
Co-requisites module	None	**Semester**	None

Module Evaluation
تقييم المادة الدراسية

Strategies As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	Midterm Exam	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Module Aims, Learning Outcomes and Indicative Contents
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسية	The objective of the course is to learn the students how to deal with reinforced concrete structural systems and design them according to design codes.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After successful completion of this module, students should be able to: • An ability to apply knowledge of Building Construction, science and engineering
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: **Part A:** Building construction stages , Buildings classifications **[8 hrs]** **Part B:** Earth works , Foundation , Piles works , brick works **[12 hrs]** **Part C:** Forms and scaffoldings , Columns , Beams and girders , Concrete works , arches lintels and sills **[21 hrs].** **Part D:** Damping proofing , Kind of stairs and their execution , **[3 hrs]** **Part E:** Doors and Windows , Joins in buildings **[3 hrs]**

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	37	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Welcome to this course, syllabus, and expectations. Textbook. Distribution of data, tabular presentation of data.
Week 2	Building construction stages
Week 3	Buildings classifications (Types of construction) and building construction development ,
Week 4	earth works
Week 5	Foundation
Week 6	Piles works
Week 7	brick works
Week 8	masonry works
Week 9	Forms and scaffoldings
Week 10	Columns
Week 11	Beams and girders
Week 12	Concrete works
Week 13	arches lintels and sills
Week 14	Damping proofing
Week 15	Kind of stairs and their execution , Doors and Windows , Joins in buildings
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	Non
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	**Mid-term Exam**
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	- Building Materials in Civil Engineering: H. Zhang, Second Edition, Woodheed Publishing, 2010.	No
Recommended Texts	- Tests in Building Materials, Talib, A. &, Abdul- Muni, S. 2011	No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية					
Module Title	**Human Rights**			**Module Delivery**	
Module Type	**Support**			☐ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	UOBAB1104				
ECTS Credits	**2**				
SWL (hr/sem)	**50**				
Module Level			**Semester of Delivery**		
Administering Department	**CIVIL**		**College**	**Engineering**	
Module Leader	**Hatham obid Abd Al-zahrah**		**e-mail**	**eng.hatham.oh@uobabylon.edu.iq**	
Module Leader's Acad. Title	**Assistant Professor**		**Module Leader's Qualification**		**Ph.D.**
Module Tutor	**None**		**e-mail**	**None**	
Peer Reviewer Name	**None**		**e-mail**	**None**	
Scientific Committee Approval Date	**01/06/2023**		**Version Number**	**1.0**	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**None**	**Semester**	**None**
Co-requisites module	**None**	**Semester**	**None**

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	• تعليم الطلبة المبادئ الأساسية في الديمقراطية وحقوق الإنسان وتوفير رؤية للأطر القانونية المتعلقة بها ووسائل التعبير عن الرأي، والأسس الأيديولوجية للديمقراطية ومبادئ حقوق الإنسان.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	• شرح مفردات المنهج وتوضيحها للطلبة. • إسقاط النظريات والأفكار المتعلقة بالمادة على الواقع الاجتماع ي
Indicative Contents المحتويات الإرشادية	• **Indicative content includes the following:** • التطور التاريخي لحقوق الإنسان • حقوق الإنسان في القانون الدولي

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**45) Learning Technologies on Campus using data show or TV screen.** **46) White board.** **47) Hand out lecture notes.** **48) Hand out some kinds of pictures related to specific topics.**

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	**33**	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	**2**
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	**17**	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	**3.466**

Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	50

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	Midterm Exam	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	سرد تأريخي لتعليم الطلبة التطور التاريخي لحقوق الإنسان
Week 2	تعليم الطلبة مفردات حقوق الإنسان في القانون لدولي
Week 3	تعليم الطلبة مفردات حقوق الإنسان في القانون لدولي
Week 4	تعليم الطلبة صور الديمقراطية
Week 5	تعليم الطلبة صور الديمقراطية
Week 6	تعليم الطلبة الديمقراطية غير المباشرة(النيابية أو التمثيلية)
Week 7	تعليم الطلبة الديمقراطية غير المباشرة(النيابية أو التمثيلية)
Week 8	تعليم الطلبة الحكومة بين حرية الإنسان وضرورة الدول
Week 9	تعليم الطلبة الحكومة بين حرية الإنسان وضرورة الدول
Week 10	تعليم الطلبة الحكومة بين حرية الإنسان وضرورة الدول
Week 11	تعليم الطلبة الحكومة بين حرية الإنسان وضرورة الدول
Week 12	تعليم الطلبة الحكومة بين حرية الإنسان وضرورة الدول
Week 13	تعليم المرأة حقوق المرأة والمشكلات التي تعترض ذلك
Week 14	تعليم المرأة حقوق المرأة والمشكلات التي تعترض ذلك
Week 15	تعليم المرأة حقوق المرأة والمشكلات التي تعترض ذلك
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	None
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	Mid-term Exam
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	الدستور العراقي الصادر عام**2005**	**No**
Recommended Texts	مجموعة مؤلفات متفرقة حول الديمقراطية وحقوق الإنسان	**No**
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A - Excellent**	امتياز	**90 - 100**	**Outstanding Performance**
	B - Very Good	جيد جدا	**80 - 89**	**Above average with some errors**
	C - Good	جيد	**70 - 79**	**Sound work with notable errors**
	D - Satisfactory	متوسط	**60 - 69**	**Fair but with major shortcomings**
	E - Sufficient	مقبول	**50 - 59**	**Work meets minimum criteria**
Fail Group (0 – 49)	**FX – Fail**	راسب (قيد المعالجة)	**(45-49)**	**More work required but credit awarded**
	F – Fail	راسب	**(0-44)**	**Considerable amount of work required**

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية			
Module Title	**English Language**	**Module Delivery**	
Module Type	**Basic**	☐ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**UOBABb1101**		
ECTS Credits	**4**		
SWL (hr/sem)	**100**		
Module Level		**Semester of Delivery**	
Administering Department	**CIVIL**	**College**	**Engineering**
Module Leader	**ayoob abbas ibrahim**	**e-mail**	**eng.ayoob.ibrahim.lec@uobabylon.edu.iq**
Module Leader's Acad. Title	**Assistant Professor**	**Module Leader's Qualification**	**Ph.D.**
Module Tutor	**None**	**e-mail**	**None**
Peer Reviewer Name	**None**	**e-mail**	**None**
Scientific Committee Approval Date	**01/06/2023**	**Version Number**	**1.0**

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**None**	**Semester**	**None**
Co-requisites module	**None**	**Semester**	**None**

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	• **Learning varying technical English vocabulary for different topics in the scope of civil engineering, in addition to tenses, affixes, and English abbreviations..**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	• **After successful completion of this module, students should be able to:** **Dealing with technical vocabularies in other courses materials**
Indicative Contents المحتويات الإرشادية	**Indicative content includes the following:** **Part A: Line and trigonometric function, Domain and range, [8 hrs]** **Part B: Limits and compositions of functions, Continuous functions and derivatives, [12 hrs]** **Part C: Application of derivatives, Inverse of trigonometric function,[21 hrs].** **Part D: Domain and range of inverse of trigonometric function, [3 hrs]** **Part E: Conic sections and other plane curves [3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**49) Learning Technologies on Campus using data show or TV screen.** **50) White board.** **51) Hand out lecture notes.** **52) Hand out some kinds of pictures related to specific topics.**

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	**63**	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	**4**
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	**37**	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	**3.466**
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**100**		

Module Evaluation تقييم المادة الدراسية					
As		**Time/Number**	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	**2**	**15% (15)**	**5 , 8**	**LO # 2, 3,4 and 6, 7**
	Assignments	**2**	**10% (10)**	**6, 12**	**LO # 3, 4 , 5 and 9, 10 and 11**
	Projects / Lab.	**1**	**10% (10)**	**Continuous**	
	Report	**1**	**5% (5)**	**13**	**Continuous**
Summative assessment	**Midterm Exam**	**2 hr**	**10% (10)**	**10**	**LO # 1-9**
	Final Exam	**3hr**	**50% (50)**	**16 or 17**	**All**
Total assessment			**100% (100 Marks)**		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	**Material Covered**
Week 1	**Welcome to this course, syllabus, and expectations. Textbook. Distribution of data, tabular presentation of data.**
Week 2	**Indicate the importance and significance of studying English language**
Week 3	**Knowing and using every day English greetings and short conversations**
Week 4	**Knowing and using every day English greetings and short conversations**
Week 5	**Knowing the primary rules for grammar and other topics of every day English such parts of speech, tenses, conjunctions in English.**
Week 6	**Knowing the primary rules for grammar and other topics of every day English such parts of speech, tenses, conjunctions in English.**
Week 7	**Learning the use of numbers and mathematical equations in correct English language**
Week 8	**Learning the use of numbers and mathematical equations in correct English language**
Week 9	**Speak and write some technical English engineering vocabularies in the scope of civil engineering**
Week 10	**Speak and write some technical English engineering vocabularies in the scope of civil engineering**
Week 11	**Speak and write some technical English engineering vocabularies in the scope of civil engineering**
Week 12	**Derivate or convert nouns, verbs, adjectives and adverbs by using appropriate suffixes or prefixes.**
Week 13	**Derivate or convert nouns, verbs, adjectives and adverbs by using appropriate suffixes or prefixes.**
Week 14	**Derivate or convert nouns, verbs, adjectives and adverbs by using appropriate suffixes or prefixes.**
Week 15	**Using abbreviations in English.**
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	**None**
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	**Mid-term Exam**
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	**- New headway plus student's book (By John and Liz Soars)** **- Technical English-Civil Engineering** **- (By Markner Gager, 1st edition 2013.)**	**No**
Recommended Texts	**- English in a simplified way** **(By Tahir Al-Bayaty, 3rd edition 1984).**	**No**
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A - Excellent**	امتياز	**90 - 100**	**Outstanding Performance**
	B - Very Good	جيد جدا	**80 - 89**	**Above average with some errors**
	C - Good	جيد	**70 - 79**	**Sound work with notable errors**
	D - Satisfactory	متوسط	**60 - 69**	**Fair but with major shortcomings**

	E - Sufficient	مقبول	**50 - 59**	**Work meets minimum criteria**
Fail Group (0 – 49)	**FX – Fail**	راسب (قيد المعالجة)	**(45-49)**	**More work required but credit awarded**
	F – Fail	راسب	**(0-44)**	**Considerable amount of work required**

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

SECOND STAGE - THIRD SEMESTER

Module Information معلومات المادة الدراسية					
Module Title	**Mathematics**			**Module Delivery**	
Module Type	**Support**			☐ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	CIV2311				
ECTS Credits	**6**				
SWL (hr/sem)	150				
Module Level			**Semester of Delivery**		
Administering Department	CIVIL		**College**	Engineering	
Module Leader	Hayder Mohammed Jawad ali alkhafaji		**e-mail**	eng.hayder.mj@uobabylon.edu.iq	
Module Leader's Acad. Title	Assistant Professor		**Module Leader's Qualification**		Ph.D.
Module Tutor	None		**e-mail**	None	
Peer Reviewer Name	None		**e-mail**	None	
Scientific Committee Approval Date	01/06/2023		**Version Number**		1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	CIV1211	**Semester**	Two
Co-requisites module	None	**Semester**	None

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	• The aim of this course is for students to learn to draw basic functions and how to derive them. • Benefit from derivation in solving engineering applications, • Benefit from integration in solving many engineering applications such as Area Between Curves, Volume of Solids of Revolution, Length of Plane Curves, Area of Surface of Revolution. • In addition, learn to calculate conic sections.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	• After successful completion of this module, students should be able to: • Ability to learn to graph basic functions. • Ability to use calculus, in solving engineering applications. • Mastery of mathematics to relate it to the stereoscopic geometry of a purpose the answer in descriptive engineering • Ability to work as a team.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: **Part A: Integration,[8 hrs]**

	Part B: Area under the curve, [12 hrs] **Part C: Trapezoidal and Simpsons rule, Volumes, Surface area,[21 hrs].** **Part D: Natural logarithm functions, Exponential functions, [3 hrs]** **Part E: Methods of integration, Improper integral. [3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	53) Learning Technologies on Campus using data show or TV screen. 54) White board. 55) Hand out lecture notes. 56) Hand out some kinds of pictures related to specific topics.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	93	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	57	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	**Midterm Exam**	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Welcome to this course, syllabus, and expectations. Textbook. Distribution of data, tabular presentation of data.
Week 2	Indefinite Integrals and Definite Integrals
Week 3	Integral of Transcendental Functions.
Week 4	Length of Plane Curves and Area of Surface of Revolution
Week 5	Integration by Parts and Integration by Trigonometric Substitutions.
Week 6	Integration by Parts and Integration by Trigonometric Substitutions.
Week 7	Integration of Rational Function by Partial Fractions and Integrating of the Roots.
Week 8	Integration of Rational Function by Partial Fractions and Integrating of the Roots.
Week 9	Calculate Conic Sections
Week 10	Calculate Conic Sections
Week 11	Integration of Rational Function by Partial Fractions and Integrating of the Roots.
Week 12	Related rates changes, Extreme Values of Functions
Week 13	Differentiation Rules and Derivatives of Trigonometric Functions
Week 14	Differentiation Rules and Derivatives of Trigonometric Functions
Week 15	Integration of Rational Function by Partial Fractions and Integrating of the Roots.
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	None
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	**Mid-term Exam**
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	- Finney, Weir, C.W. and Giordano, "Tomas Calculus", eleven teen Edition, 2000. - Finney, Weir, C.W. and Giordano, "Tomas Calculus", fourteenth Edition, 2017	No
Recommended Texts	- Haward, Bivens and Davis., "Calculus ", Pearson Education, Seven Edition, 2002. - James Stewart, "Calculus ", fifth Edition, 2020	No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية					
Module Title	**Strength of Materials I**			**Module Delivery**	
Module Type	**Core**			☐ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	CIV2312				
ECTS Credits	**4**				
SWL (hr/sem)	100				
Module Level			**Semester of Delivery**		
Administering Department	CIVIL		**College**	Engineering	
Module Leader	Ammar Yasir Ali		**e-mail**	eng.ammar.yaser@uobabylon.edu.iq	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**		PhD
Module Tutor	None		**e-mail**	None	
Peer Reviewer Name	None		**e-mail**	None	
Scientific Committee Approval Date	01/06/2023		**Version Number**		1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	CIV1212	**Semester**	Two
Co-requisites module	None	**Semester**	None

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The mechanics of materials teaches civil engineering students the basics for calculating the different types of internal stresses (normal and shear) and related deformation occurred in the body due to external effects.This course is needed for all subsequent structural design courses. In general ,students get knowledge about all the subjected mentioned within the description of the two courses. The adopted syllabus is the base for the related subjects that the students will get during the third study stage.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After successful completion of this module, students should be able to: 1. An ability to apply knowledge of strength of materials, science and engineering. 2. An ability to design and conduct experiments, as well as to analyze and interpret data. 3. An ability to identify, formulate, and solve engineering problems .
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: **Part A:** Fundamentals principles of mechanics and simple stresses **[8 hrs]** **Part B:** Simple strain and deformation of axially loaded members **[12 hrs]** **Part C:** Torsion **[21 hrs].** **Part D:** Shear Force and bending moment diagrams **[3 hrs]** **Part E:** Shear Force and bending moment diagrams **[3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	57) Learning Technologies on Campus using data show or TV screen. 58) White board. 59) Hand out lecture notes. 60) Hand out some kinds of pictures related to specific topics.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	37	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	**Midterm Exam**	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Welcome to this course, Textbook. Distribution of data, tabular presentation of data.
Week 2	Fundamentals principles of mechanics and simple stresses **,**
Week 3	Plotting methods of shear and bending moment diagrams are studied according to two methods, equations and graphical methods.
Week 4	Plotting methods of shear and bending moment diagrams are studied according to two methods, equations and graphical methods.
Week 5	Plotting methods of shear and bending moment diagrams are studied according to two methods, equations and graphical methods.
Week 6	The simple strain represented by axial deformations for the determinate or indeterminate systems.
Week 7	The simple strain represented by axial deformations for the determinate or indeterminate systems.
Week 8	Simple strain and deformation of axially loaded members
Week 9	Methods that used to determine the deflection in beams is given herein
Week 10	Methods that used to determine the deflection in beams is given herein
Week 11	Torsion
Week 12	Torsion
Week 13	Shear Force and bending moment diagrams .
Week 14	Shear Force and bending moment diagrams .
Week 15	Shear Force and bending moment diagrams .
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	None
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	

Week 7	
Week 8	
Week 9	**Mid-term Exam**
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	1. Egor Popov, "Introduction to Mechanics of Solids". 1968 by Prentice-Hall, 2. Englewood Cliffs, New Jersey. 3. Singer S.,"Strength of Materials" Fourth ed." .	No
Recommended Texts	**Optional Text:** "Gere"Mechanics of material "Hibbler" Mechanics of material	No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية			
Module Title	**Engineering Surveying I**		**Module Delivery**
Module Type	**Core**		☐ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**
Module Code	CIV2303		
ECTS Credits	**6**		
SWL (hr/sem)	150		
Module Level		**Semester of Delivery**	

Administering Department	CIVIL	**College**	Engineering
Module Leader	Kadhim Naief Kadhim	**e-mail**	eng.kadhim.naief@uobabylon.edu.iq
Module Leader's Acad. Title	Professor	**Module Leader's Qualification**	Ph.D.
Module Tutor	None	**e-mail**	None
Peer Reviewer Name	None	**e-mail**	None
Scientific Committee Approval Date	01/06/2023	**Version Number**	1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	None
Co-requisites module	None	**Semester**	None

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	• This course aims to introduce and develop the basic understanding of the principles of engineering surveying
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After successful completion of this module, students should be able to: • An ability to apply knowledge of engineering surveying, science and engineering • An ability to design and conduct experiments, as well as to analyze and interpret data • An ability to identify, formulate, and solve engineering problems..
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: **Part A:** Introduction**,[8 hrs]** **Part B:** Measurement distance by tape **[12 hrs]** **Part C:** Leveling **[21 hrs].** **Part D:** Sections **[3 hrs]** **Part E:** Directions**. [3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	61) Learning Technologies on Campus using data show or TV screen. 62) White board. 63) Hand out lecture notes. 64) Hand out some kinds of pictures related to specific topics.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	72	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation تقييم المادة الدراسية					
As		**Time/Number**	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11

	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	**Midterm Exam**	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	**Material Covered**
Week 1	Welcome to this course, syllabus, and expectations. Textbook. Distribution of data, tabular presentation of data.
Week 2	Units-rounding off numbers-scale-significant figures-Setting out straight-line using tape only
Week 3	Error sources-Precision- Accuracy-Redundant measurements-Setting out angle by tape only
Week 4	random errors- probability normal distribution-mean and weighted mean weights- balance adjustment- Setting out a map by tape only
Week 5	level types-refraction and curvature errors- Measure angle by tape only
Week 6	Leveling methods adjustment leveling network- Tachometry method
Week 7	Distance measurement methods-taping- Two pegs test
Week 8	EDM- Differential Leveling
Week 9	Angle, Azimuth, and Bearing
Week 10	Angle measurement
Week 11	Angle measurements and distance measurements
Week 12	Profile cross section contour map
Week 13	Regular area- irregular area cross sections
Week 14	Volume computation-mass haul diagram
Week 15	Revision class
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	None
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	**Mid-term Exam**
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	- Ghilani, C. D. and P. R. WOLF (2014). Elementary Surveying: An Introduction to Geomatics. New Jersey/ The United State of America, PEARSON.	No
Recommended Texts	Nadolinets, L., et al. (2017). Surveying Instruments and Technology. New York, Taylor & Francis.	No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية					
Module Title	**Concrete Technology**			**Module Delivery**	
Module Type	**Core**			☐ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	CIV2304				
ECTS Credits	**6**				
SWL (hr/sem)	150				
Module Level			**Semester of Delivery**		
Administering Department	CIVIL		**College**	Engineering	
Module Leader	Mohammed Mansour kadhum		**e-mail**	eng.mohammed.mansour@uobabylon.edu.iq	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	Ph.D.	
Module Tutor	None		**e-mail**	None	
Peer Reviewer Name	None		**e-mail**	None	
Scientific Committee Approval Date	01/06/2023		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	None
Co-requisites module	None	**Semester**	None

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	• Study and comprehend the general concepts of the physical and chemical composition of structural materials used in civil engineering works
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After successful completion of this module, students should be able to: • The student learns about the quality of construction materials • The student learns about the physical and chemical composition of structural materials.
Indicative Contents	Indicative content includes the following:

المحتويات الإرشادية	**Part A: Classification of material , Properties of material [8 hrs]** **Part B: Mechanical properties of material clay Brick , Types of Brick according of material [12 hrs]** **Part C: Types of Mortar Bonding Materials [21 hrs].** **Part D:Manufactories of Lime , Manufactories of cement , [3 hrs]** **Part E: Type of Material use covering the floors production of Tiles ,[3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	65) Learning Technologies on Campus using data show or TV screen. 66) White board. 67) Hand out lecture notes. 68) Hand out some kinds of pictures related to specific topics.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	93	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	6
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	57	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	**Midterm Exam**	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Welcome to this course, syllabus, and expectations. Textbook. underline the importance and significance of engineering drawing
Week 2	Classification and properties of construction materials
Week 3	Mechanical properties of materials
Week 4	Exercise of mechanical properties
Week 5	Exercise of mechanical properties
Week 6	An understanding of Clayey brick and brick products used in civil engineering construction and the manufacturing stage
Week 7	An understanding of Clayey brick and brick products used in civil engineering construction and the manufacturing stage
Week 8	An understanding of gypsum and gypsum products used in civil Engineering construction and the common acceptance tests on gypsum.
Week 9	An understanding of gypsum and gypsum products used in civil Engineering construction and the common acceptance tests on gypsum.
Week 10	An understanding of lime used in civil engineering construction and the Common acceptance tests on lime
Week 11	An understanding of lime used in civil engineering construction and the Common acceptance tests on lime
Week 12	An understanding of Cement used in civil engineering construction and the Common acceptance tests on Cement

Week 13	An understanding of Cement used in civil engineering construction and the Common acceptance tests on Cement
Week 14	An understanding of the various types of tiles used in civil engineering construction and the common acceptance tests on tile.
Week 15	An understanding of the various types of tiles used in civil engineering construction and the common acceptance tests on tile.
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	How can save yourself and your colleges and how can write Report
Week 2	Conduct tests on Bricks
Week 3	Initial and Final Setting Time of Cement Paste
Week 4	Soundness of Cement
Week 5	Compressive Strength of Cement
Week 6	Fineness of Cement
Week 7	Consistency of Cement Paste
Week 8	**Mid-term Exam**
Week 9	Sieve Analysis of Coarse Aggregate
Week 10	Specific Gravity and Absorption
Week 11	Density
Week 12	Shape and Surface Texture
Week 13	Sieve Analysis of Fine Aggregate
Week 14	Conduct tests on Cement
Week 15	Slump Test
Week 16	Compacting Factor

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	- Tests in Building Materials, Talib, A. &, Abdul- Muni, S. 2011. - IQS- Iraqi Specifications.	Yes
Recommended Texts	- Building Materials in Civil Engineering: H. Zhang, Second Edition, Woodheed Publishing, 2010. - BS Specifications	No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية					
Module Title	**Fluid Mechanics I**			**Module Delivery**	
Module Type	**Support**			☐ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	CIV2305				
ECTS Credits	**6**				
SWL (hr/sem)	150				
Module Level			**Semester of Delivery**		
Administering Department	CIVIL		**College**	Engineering	
Module Leader	Thair Jabbar Mizhir Alfatlawi		**e-mail**	thairjm@uobabylon.edu.iq	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**		Ph.D.
Module Tutor	None		**e-mail**	None	
Peer Reviewer Name	None		**e-mail**	None	
Scientific Committee Approval Date	01/06/2023		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**None**	**Semester**	None
Co-requisites module	None	**Semester**	None

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	• The course will introduce fluid mechanics and establish its relevance in civil engineering. • Recognition of and develop the knowledge about the fundamental hydraulic definitions and the • principle fluid properties underlying the subject. • Establish how these definitions and properties are utilized to solve the elementary hydrostatical and • hydro dynamical problems that may face the civil engineer.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After successful completion of this module, students should be able to: • Ability to apply knowledge of mathematics, science and engineering • An ability to design and conduct experiments, as well as to analyze and interpret data • An ability to identify, formulate, and solve engineering problems.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: **Part A:** Fluid Properties **[8 hrs]** **Part B:** Fluid Static **[12 hrs]** **Part C:** Hydrostatic Force on Immersed Plane Surfaces **[21 hrs].** **Part D:** , Dimensional Analysis **[3 hrs]** **Part E:** Momentum Equation**. [3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	69) Learning Technologies on Campus using data show or TV screen. 70) White board. 71) Hand out lecture notes. 72) Hand out some kinds of pictures related to specific topics.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5

Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	72	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	**Midterm Exam**	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Welcome to this course, syllabus, and expectations. Textbook. Distribution of data, tabular presentation of data.
Week 2	Support and describe a fine define of the fluid, fluid mechanics, dimensions and units related with its study and comprehend its relevance to civil engineering.
Week 3	Fluid Static(Fluid Pressure and its Measurement Methods ,
Week 4	Hydrostatic Force on Immersed Plane Surfaces, Hydrostatic Force on Immersed Curved Surfaces.
Week 5	Relative Equilibrium Linear Acceleration
Week 6	Uniform Rotation about a Vertical Axis
Week 7	Dimensional Analysis
Week 8	Dynamic Similitude
Week 9	Kinematics of Fluid Flow (Flow Types)
Week 10	Continuity Equation
Week 11	Energy Equation
Week 12	Momentum Equation
Week 13	Calculate forces and moments for jets, vanes, nozzles and pipe sections.
Week 14	How can measure flow rate by wieres and flumes
Week 15	How can measure flow rate by wieres and flumes
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	DENSITY AND SPECIFIC GRAVITY
Week 2	VISCOSITY
Week 3	SURFACE TENSION
Week 4	CAPILLARITY
Week 5	CENTER OF PRESSURE
Week 6	FLOW THROUGH A CIRCULAR ORIFICE
Week 7	TRAJECTORY OF A HORIZONTAL JET
Week 8	**Mid-term Exam**
Week 9	TIME TO EMPTY A VESSEL
Week 10	IMPACT OF JETS
Week 11	VERIFICATION OF BERNOULLI'S EQUATION
Week 12	DEMONSTRATION OF LAMINAR AND TURBULENT FLOW
Week 13	PIPE FLOW MEASUREMENT (FLOW THROUGH VENTURI TUBE)
Week 14	FRICTION LOSSES IN PIPES.
Week 15	MINOR LOSSES IN PIPES
Week 16	MINOR LOSSES IN PIPES

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	- ***Engineering Fluid Mechanics***, Crowe, C. T., D. F. Elger, B. C.Williams and J. A. Roberson, John Wiley & Sons, New York, 2010..	No
Recommended Texts	**Elementary Fluid Mechanics**, Vennard, J. K., John Wiley & Sons, New York.	No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

SECOND STAGE - FOURTH SEMESTER

Module Information معلومات المادة الدراسية					
Module Title	**Engineering Analysis**			**Module Delivery**	
Module Type	**Support**			☐ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	CIV2401				
ECTS Credits	**6**				
SWL (hr/sem)	150				
Module Level			**Semester of Delivery**		
Administering Department	CIVIL		**College**	Engineering	
Module Leader	Ahmed Al-Janabi		**e-mail**	eng.ahmed.talib@uobabylon.edu.iq	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**		MSc
Module Tutor	None		**e-mail**	None	
Peer Reviewer Name	None		**e-mail**	None	
Scientific Committee Approval Date	01/06/2023		**Version Number**		1.0

Relation with other Modules العلاقة مع المواد الدراسية			
Prerequisite module	**None**	**Semester**	None
Co-requisites module	None	**Semester**	None

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The aim of this course is for all engineering students to introduce them to mathematical modeling and the development of numerical techniques to solve different types of models. A course that develops students to transform real-life problems into mathematical equations and provide the appropriate numerical schemes to approximate solutions of such models. and development of numerical algorithms to provide solutions to common problems formulated in science and engineering. The primary objective of the course is to develop a basic understanding of the construction of numerical algorithms, and perhaps more importantly, the applicability and limits of their appropriate us.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After successful completion of this module, students should be able to: 4. An ability to apply knowledge of mathematics, science and engineering. 5. An ability to design and conduct experiments, as well as to analyze and interpret data. 6. An ability to identify, formulate, and solve engineering problems .
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: **Part A: Simultaneous Linear Ordinary Differential Equations [8 hrs]** **Part B: Fourier Series [12 hrs]** **Part C: Partial Differential Equations [21 hrs].** **Part D: Solution of Nonlinear Equations in one real variable [3 hrs]** **Part E: Solution of partial Differentiation equation [3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	73) Learning Technologies on Campus using data show or TV screen. 74) White board. 75) Hand out lecture notes. 76) Hand out some kinds of pictures related to specific topics.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	87	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	63	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	**Midterm Exam**	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Welcome to this course, Textbook. Distribution of data, tabular presentation of data.
Week 2	Simultaneous Linear Ordinary Differential Equations ,
Week 3	Simultaneous Linear Ordinary Differential Equations ,
Week 4	Fourier Series ,
Week 5	Partial Differential Equations and Boundary Value Problems.
Week 6	Partial Differential Equations and Boundary Value Problems.
Week 7	Solution of Nonlinear Equations in one real variable
Week 8	Solution of Nonlinear Equations in one real variable
Week 9	Numerical Integration,
Week 10	Solution of linear System of equation,
Week 11	Solution of partial Differentiation equation,
Week 12	matrix inversion,
Week 13	Interpolation,
Week 14	curve fitting,
Week 15	Numerical Ordinary solution Differentiation Equations,
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	None
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	
Week 9	**Mid-term Exam**
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	4. Applied Numerical Analysis." Gerald, third edition" .	No
Recommended Texts	**Optional Text:** Numerical Analysis. " Burdeu, seventh edition" " البياتي عادل .د .الالوسي احمد .د ".العددية التحليلات في مقدمة	No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية					
Module Title	**Strength of Materials II**			**Module Delivery**	
Module Type	**Core**			☐ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	CIV2412				
ECTS Credits	**4**				
SWL (hr/sem)	100				
Module Level			**Semester of Delivery**		
Administering Department	CIVIL		**College**	Engineering	
Module Leader	Ammar Yasir Ali		**e-mail**	eng.ammar.yaser@uobabylon.edu.iq	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	PhD	
Module Tutor	None		**e-mail**	None	
Peer Reviewer Name	None		**e-mail**	None	
Scientific Committee Approval Date	01/06/2023		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	CIV2312	**Semester**	Three
Co-requisites module	None	**Semester**	None

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The mechanics of materials teaches civil engineering students the basics for calculating the different types of internal stresses (normal and shear) and related deformation occurred in the body due to external effects.This course is needed for all subsequent structural design courses. In general ,students get knowledge about all the subjected mentioned within the description of the two courses. The adopted syllabus is the base for the related subjects that the students will get during the third study stage.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After successful completion of this module, students should be able to: 7. An ability to apply knowledge of strength of materials, science and engineering. 8. An ability to design and conduct experiments, as well as to analyze and interpret data. 9. An ability to identify, formulate, and solve engineering problems .
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: **Part A:** Stresses in beams **, [8 hrs]** **Part B:** Compound stresses and transformation of stresses and strains **[12 hrs]** **Part C:** Deflection of Beams **[21 hrs].** **Part D:** Columns **[3 hrs]** **Part E:** Columns **[3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	77) Learning Technologies on Campus using data show or TV screen. 78) White board. 79) Hand out lecture notes. 80) Hand out some kinds of pictures related to specific topics.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	37	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	**Midterm Exam**	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Welcome to this course, Textbook. Distribution of data, tabular presentation of data.
Week 2	Stresses in beams
Week 3	Stresses in beams
Week 4	Compound stresses and transformation of stresses and strains
Week 5	Plotting methods of shear and bending moment diagrams are studied according to two methods, equations and graphical methods.
Week 6	Deflection of Beams
Week 7	The simple strain represented by axial deformations for the determinate or indeterminate systems.
Week 8	Simple strain and deformation of axially loaded members
Week 9	Methods that used to determine the deflection in beams is given herein
Week 10	Methods that used to determine the deflection in beams is given herein

Week 11	Columns .
Week 12	Columns .
Week 13	Shear Force and bending moment diagrams .
Week 14	Shear Force and bending moment diagrams .
Week 15	Shear Force and bending moment diagrams .
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	None
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	
Week 9	**Mid-term Exam**
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	5. Egor Popov, “Introduction to Mechanics of Solids”. 1968 by Prentice-Hall, 6. Englewood Cliffs, New Jersey. 7. Singer S.,”Strength of Materials” Fourth ed." .	No
Recommended Texts	**Optional Text:** "Gere"Mechanics of material "Hibbler" Mechanics of material	No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية					
Module Title	**Engineering Surveying II**			**Module Delivery**	
Module Type	**Core**			☐ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	CIV2413				
ECTS Credits	**6**				
SWL (hr/sem)	150				
Module Level			**Semester of Delivery**		
Administering Department	CIVIL		**College**	Engineering	
Module Leader	Kadhim Naief Kadhim		**e-mail**	eng.kadhim.naief@uobabylon.edu.iq	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**		Ph.D.
Module Tutor	None		**e-mail**	None	
Peer Reviewer Name	None		**e-mail**	None	
Scientific Committee Approval Date	01/06/2023		**Version Number**		1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	CIV2303	**Semester**	Three
Co-requisites module	None	**Semester**	None

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	• This course aims to introduce and develop the basic understanding of the principles of engineering surveying
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After successful completion of this module, students should be able to: • An ability to apply knowledge of engineering surveying, science and engineering • An ability to design and conduct experiments, as well as to analyze and interpret data • An ability to identify, formulate, and solve engineering problems..
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: **Part A:** Theodolite and Total Station **[8 hrs]** **Part B:** Areas **[12 hrs]** **Part C:** Curves **[21 hrs].** **Part D:** Tachometry **[3 hrs]** **Part E:**Topography , Earth working**. [3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	81) Learning Technologies on Campus using data show or TV screen. 82) White board. 83) Hand out lecture notes. 84) Hand out some kinds of pictures related to specific topics.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	72	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	**Midterm Exam**	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Welcome to this course, syllabus, and expectations. Textbook. Distribution of data, tabular presentation of data.
Week 2	Digital mapping and surface models
Week 3	Setting out construction map using theodolite and tape
Week 4	Setting out construction map using Total Station
Week 5	level types-refraction and curvature errors- Measure angle by tape only
Week 6	Leveling methods adjustment leveling network- Tachometry method
Week 7	Distance measurement methods-taping- Two pegs test
Week 8	EDM- Differential Leveling
Week 9	Angle, Azimuth, and Bearing
Week 10	Angle measurement
Week 11	Angle measurements and distance measurements
Week 12	Profile cross section contour map
Week 13	Regular area- irregular area cross sections
Week 14	Volume computation-mass haul diagram
Week 15	Revision class
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	None
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	**Mid-term Exam**
Week 9	
Week 10	

Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	- Ghilani, C. D. and P. R. WOLF (2014). Elementary Surveying: An Introduction to Geomatics. New Jersey/ The United State of America, PEARSON.	No
Recommended Texts	Nadolinets, L., et al. (2017). Surveying Instruments and Technology. New York, Taylor & Francis.	No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية				
Module Title	**Fluid Mechanics II**		**Module Delivery**	
Module Type	**Support**		☐ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	CIV2414			
ECTS Credits	**6**			
SWL (hr/sem)	**150**			
Module Level		**Semester of Delivery**		
Administering Department	**CIVIL**	**College**	**Engineering**	
Module Leader	**Thair Jabbar Mizhir Alfatlawi**	**e-mail**	**thairjm@uobabylon.edu.iq**	
Module Leader's Acad. Title	**Professor**	**Module Leader's Qualification**	**Ph.D.**	
Module Tutor	**None**	**e-mail**	**None**	
Peer Reviewer Name	**None**	**e-mail**	**None**	

Scientific Committee Approval Date	01/06/2023	Version Number	1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	CIV2304	**Semester**	**Three**
Co-requisites module	**None**	**Semester**	**None**

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	• **The course will introduce fluid mechanics and establish its relevance in civil engineering.** • **Recognition of and develop the knowledge about the fundamental hydraulic definitions and the** • **principle fluid properties underlying the subject.** • **Establish how these definitions and properties are utilized to solve the elementary hydrostatical and** • **hydro dynamical problems that may face the civil engineer.**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**After successful completion of this module, students should be able to:** • **Ability to apply knowledge of mathematics, science and engineering** • **An ability to design and conduct experiments, as well as to analyze and interpret data** • **An ability to identify, formulate, and solve engineering problems.**
Indicative Contents المحتويات الإرشادية	**Indicative content includes the following:** **Part A: Losses in Pipes [8 hrs]** **Part B: Pipes in Series [12 hrs]** **Part C: Pipes in Parallel [21 hrs].** **Part D: Open Channel Flow Equations [3 hrs]** **Part E: Critical Flow and Its Applications, Pumps Hydraulic. [3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**85) Learning Technologies on Campus using data show or TV screen.** **86) White board.** **87) Hand out lecture notes.** **88) Hand out some kinds of pictures related to specific topics.**

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	**78**	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	**5**
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	**72**	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	**3.466**
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation تقييم المادة الدراسية					
As		**Time/Number**	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	**2**	**15% (15)**	**5 , 8**	**LO # 2, 3,4 and 6, 7**
	Assignments	**2**	**10% (10)**	**6, 12**	**LO # 3, 4 , 5 and 9, 10 and 11**
	Projects / Lab.	**1**	**10% (10)**	**Continuous**	
	Report	**1**	**5% (5)**	**13**	**Continuous**
Summative assessment	**Midterm Exam**	**2 hr**	**10% (10)**	**10**	**LO # 1-9**
	Final Exam	**3hr**	**50% (50)**	**16 or 17**	**All**
Total assessment			**100% (100 Marks)**		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	**Material Covered**
Week 1	**Welcome to this course, syllabus, and expectations. Textbook. Distribution of data, tabular presentation of data.**
Week 2	**Losses in Pipes**
Week 3	**Pipes in Series**
Week 4	**Pipes in Parallel , Branching Pipes**
Week 5	**Pipes Network , Open Channel Flow ,**
Week 6	**Support and describe a fine define of the fluid, fluid mechanics, dimensions and units related with its study and comprehend its relevance to civil engineering.**
Week 7	**Fluid Static(Fluid Pressure and its Measurement Methods ,**
Week 8	**Hydrostatic Force on Immersed Plane Surfaces, Hydrostatic Force on Immersed Curved Surfaces.**
Week 9	**Open Channel Flow Equations ,.**
Week 10	**Critical Flow and Its Applications**
Week 11	**Energy Equation**
Week 12	**Momentum Equation**
Week 13	**Calculate forces and moments for jets, vanes, nozzles and pipe sections.**
Week 14	**How can measure flow rate by wieres and flumes**
Week 15	**Pumps Hydraulic**
Week 16	**Preparatory week before the final Exam**
Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	**DENSITY AND SPECIFIC GRAVITY**
Week 2	**VISCOSITY**
Week 3	**SURFACE TENSION**
Week 4	**CAPILLARITY**
Week 5	**CENTER OF PRESSURE**
Week 6	**FLOW THROUGH A CIRCULAR ORIFICE**
Week 7	**TRAJECTORY OF A HORIZONTAL JET**
Week 8	**Mid-term Exam**
Week 9	**TIME TO EMPTY A VESSEL**
Week 10	**IMPACT OF JETS**
Week 11	**VERIFICATION OF BERNOULLI'S EQUATION**
Week 12	**DEMONSTRATION OF LAMINAR AND TURBULENT FLOW**
Week 13	**PIPE FLOW MEASUREMENT (FLOW THROUGH VENTURI TUBE)**
Week 14	**FRICTION LOSSES IN PIPES.**
Week 15	**MINOR LOSSES IN PIPES**
Week 16	**MINOR LOSSES IN PIPES**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	- ***Engineering Fluid Mechanics*, Crowe, C. T., D. F. Elger, B. C.Williams and J. A. Roberson, John Wiley & Sons, New York, 2010..**	**No**
Recommended Texts	**Elementary Fluid Mechanics, Vennard, J. K., John Wiley & Sons, New York.**	**No**
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A - Excellent**	امتياز	**90 - 100**	**Outstanding Performance**
	B - Very Good	جيد جدا	**80 - 89**	**Above average with some errors**
	C - Good	جيد	**70 - 79**	**Sound work with notable errors**
	D - Satisfactory	متوسط	**60 - 69**	**Fair but with major shortcomings**
	E - Sufficient	مقبول	**50 - 59**	**Work meets minimum criteria**
Fail Group (0 – 49)	**FX – Fail**	راسب (قيد المعالجة)	**(45-49)**	**More work required but credit awarded**
	F – Fail	راسب	**(0-44)**	**Considerable amount of work required**

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

THIRD STAGE - FIFTH SEMESTER

Module Information معلومات المادة الدراسية					
Module Title	**Engineering Analysis and Numerical Methods**			**Module Delivery**	
Module Type	**Core**			☐ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☒ **Practical** ☐ **Seminar**	
Module Code	**CIV3514**				
ECTS Credits	**4**				
SWL (hr/sem)	100				
Module Level			**Semester of Delivery**		
Administering Department	CIVIL		**College**	Engineering	
Module Leader	Samer Almashhadi		**e-mail**	eng.samer.abdul@uobabylon.edu.iq	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**	MSc	
Module Tutor	None		**e-mail**	None	
Peer Reviewer Name	None		**e-mail**	None	
Scientific Committee Approval Date	01/06/2023		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**CIV2401**	**Semester**	Four
Co-requisites module	None	**Semester**	None

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The aim of this course is for all engineering students to introduce them to mathematical modeling and the development of numerical techniques to solve different types of models. A course that develops students to transform real-life problems into mathematical equations and provide the appropriate numerical schemes to approximate solutions of such models. and development of numerical algorithms to provide solutions to common problems formulated in science and engineering. The primary objective of the course is to develop a basic understanding of the construction of numerical algorithms, and perhaps more importantly, the applicability and limits of their appropriate us.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After successful completion of this module, students should be able to: 10. An ability to apply knowledge of mathematics, science and engineering. 11. An ability to design and conduct experiments, as well as to analyze and interpret data. 12. An ability to identify, formulate, and solve engineering problems .
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: **Part A: Simultaneous Linear Ordinary Differential Equations [8 hrs]** **Part B: Fourier Series [12 hrs]** **Part C: Partial Differential Equations [21 hrs].** **Part D: Solution of Nonlinear Equations in one real variable [3 hrs]** **Part E: Solution of partial Differentiation equation [3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	89) Learning Technologies on Campus using data show or TV screen. 90) White board. 91) Hand out lecture notes. 92) Hand out some kinds of pictures related to specific topics.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	22	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	**Midterm Exam**	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	**Material Covered**

Week 1	Welcome to this course, Textbook. Distribution of data, tabular presentation of data.
Week 2	Simultaneous Linear Ordinary Differential Equations ,
Week 3	Simultaneous Linear Ordinary Differential Equations ,
Week 4	Fourier Series ,
Week 5	Partial Differential Equations and Boundary Value Problems.
Week 6	Partial Differential Equations and Boundary Value Problems.
Week 7	Solution of Nonlinear Equations in one real variable
Week 8	Solution of Nonlinear Equations in one real variable
Week 9	Numerical Integration,
Week 10	Solution of linear System of equation,
Week 11	Solution of partial Differentiation equation,
Week 12	matrix inversion,
Week 13	Interpolation,
Week 14	curve fitting,
Week 15	Numerical Ordinary solution Differentiation Equations,
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

Week	**Material Covered**
Week 1	None
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	
Week 9	**Mid-term Exam**
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	**Available in the Library?**
Required Texts	8. Applied Numerical Analysis." Gerald, third edition" .	Yes
Recommended Texts	**Optional Text:** Numerical Analysis. " Burdeu, seventh edition" " البياتي عادل .د .الالوسي احمد .د ."العددية التحليلات في مقدمة	No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية				
Module Title	**Theory of Structures I**		**Module Delivery**	
Module Type	**Core**		☐ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CIV3501**			
ECTS Credits	**5**			
SWL (hr/sem)	125			
Module Level		**Semester of Delivery**		
Administering Department	CIVIL	**College**	Engineering	
Module Leader	Nameer AA Alwash	**e-mail**	eng.nameer.abdul@uobabylon.edu.iq	
Module Leader's Acad. Title	Professor	**Module Leader's Qualification**	Ph.D.	
Module Tutor	None	**e-mail**	None	
Peer Reviewer Name	None	**e-mail**	None	
Scientific Committee Approval Date	01/06/2023	**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	None
Co-requisites module	None	**Semester**	None

Module Aims, Learning Outcomes and Indicative Contents
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسية	The objective of the course is to learn the students how to deal with the analysis of different types of structural systems. Moreover, this course is needed for all subsequent structural design courses.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After successful completion of this module, students should be able to: A-Program Outcomes – Knowledge and Understanding A1- An ability to apply knowledge of mathematics, science and engineering A4- An ability to identify, formulate, and solve engineering problems
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: **Part A: Types of loads Equilibrium [8 hrs]** **Part B: Stability and Determinacy of Structures [12 hrs]** **Part C: Analysis of Different Types of Determinate Trusses [21 hrs].** **Part D: Shearing Force and Bending Moment Diagrams for Frames Axial Force [3 hrs]** **Part E: Influence Line for Statically Determinate Structures [3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Learning Technologies on Campus using data show or TV screen. (93 White board. (94 Hand out lecture notes. (95 Hand out some kinds of pictures related to specific topics. (96

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	**Midterm Exam**	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Welcome to this course, Textbook. Distribution of data, tabular presentation of data.
Week 2	Types of loads Equilibrium ,
Week 3	Stability and Determinacy of Structures ,
Week 4	Types of Trusses ,
Week 5	Analysis of Different Types of Determinate Trusses ,
Week 6	Shearing Force and Bending Moment Diagrams for Frames Axial Force ,
Week 7	Axial Force ,
Week 8	Shearing Force and Bending Moment Diagrams for Frames ,
Week 9	Shearing Force and Bending Moment Diagrams for Frames ,
Week 10	Floor Beam Systems , Influence Line for Statically Determinate Structures ,
Week 11	Floor Beam Systems , Influence Line for Statically Determinate Structures ,
Week 12	Series of concentrated moving loads on statically determinate Structures ,
Week 13	Series of concentrated moving loads on statically determinate Structures ,
Week 14	Approximate Analysis of Statically Indeterminate Structures.
Week 15	Approximate Analysis of Statically Indeterminate Structures.
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	None
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	**Mid-term Exam**
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Hibbeler, R.C. "Structural Analysis", Sixth Edition, Pearson Prentice Hall, 2006. -9 Aslam Kassimali "Structural Analysis" 1993, PWS KENT Publishing Company- -10	Yes
Recommended Texts	**Optional Text:** Mckenzie W.M.C. Examples in Structural Analysis, Taylor & Francis Publishing Company, 2006. **-1**	No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية		
Module Title	**Soil Mechanics I**	**Module Delivery**

Module Type	**Core**	☐ **Theory** ☒ **Lecture** ☒ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**
Module Code	**CIV3502**	
ECTS Credits	**6**	
SWL (hr/sem)	150	

Module Level		**Semester of Delivery**	
Administering Department	CIVIL	**College**	Engineering
Module Leader	Hassnen M. Jafer	**e-mail**	eng.hassnen.mosa@uobabylon.edu.iq
Module Leader's Acad. Title	Assistant Professor	**Module Leader's Qualification**	Ph.D.
Module Tutor	None	**e-mail**	None
Peer Reviewer Name	None	**e-mail**	None
Scientific Committee Approval Date	01/06/2023	**Version Number**	1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	None
Co-requisites module	None	**Semester**	None

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The objectives of these courses are to introduce soil mechanics to civil engineering undergraduate students and to familiarize the students with soil terminology and concepts commonly encountered in engineering practice.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After successful completion of this module, students should be able to: An ability to identify soil properties and soil classification. .1 An ability to calculate and determine the stresses in soil for different loading shapes. .2 An ability to identify, formulate, and solve engineering problems .3
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: **Part A: Soil nature , origin of soils [8 hrs]** **Part B: structural units of clay mineral particle, soil gradation (particle size characteristics) [12 hrs]** **Part C: plastic of soil and Atterbic limit [21 hrs].** **Part D: soil classification and soil descriptie, phase relations [3 hrs]** **Part E: stresses within soil masses and concept of effective stresses [3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Learning Technologies on Campus using data show or TV screen. (97 White board. (98 Hand out lecture notes. (99 Hand out some kinds of pictures related to specific topics. (100

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	72	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation
تقييم المادة الدراسية

	Time/Numbe	Weight (Marks)	Week Due	Relevant Learning Outcome

As		r			
Formative assessment	Quizzes	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	Midterm Exam	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	**Material Covered**
Week 1	Welcome to this course, Textbook. Distribution of data, tabular presentation of data.
Week 2	Soil nature .
Week 3	origin of soils.
Week 4	structural units of clay mineral particle.
Week 5	structural units of clay mineral particle.
Week 6	soil gradation (particle size characteristics).
Week 7	soil gradation (particle size characteristics).
Week 8	soil classification and soil description.
Week 9	soil classification and soil description.
Week 10	phase relations,
Week 11	compaction ,
Week 12	stresses within soil masses and concept of effective stresses,
Week 13	stresses within soil masses and concept of effective stresses,
Week 14	principle stress and Mohor circle,
Week 15	stress path concept.
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	Moisture Content
Week 2	Moisture Content
Week 3	Organic Content
Week 4	Organic Content
Week 5	Specific Gravity
Week 6	Specific Gravity
Week 7	Atterberg Limits
Week 8	Atterberg Limits
Week 9	**Mid-term Exam**
Week 10	Soil particle distribution (sieve analysis)
Week 11	Soil particle distribution (sieve analysis)
Week 12	Soil particle distribution (hydrometer)
Week 13	Soil particle distribution (hydrometer)
Week 14	Soil compaction (standard proctor test)
Week 15	Soil compaction (Modified proctor test)
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	.9 Das, B. M., 2009, Principles of Geotechnical Engineering, 7th Edition, Brooks-Cole, Pacific Grove, California, ISBN 0-495-41130-2. .10 Lectures of Soil Mechanics by Prof. Dr. Mohammed Shaker Al Shakerchy from http://eng.uokufa.edu.iq/staff/mohammedsh/index.html. .11 The laboratory textbook for this course is: booklet of soil laboratory prepared by laboratory staff.	Yes

Recommended Texts	**Optional Text:**	No
Websites	http://elearning7.uokufa.edu.iq/eng/course/view.php?id=1245 .1	

Grading Scheme
مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information
معلومات المادة الدراسية

Module Title	**Design of Reinforced Concrete I**	**Module Delivery**	
Module Type	**Core**	☐ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CIV3503**		
ECTS Credits	**5**		
SWL (hr/sem)	125		
Module Level		**Semester of Delivery**	
Administering Department	CIVIL	**College**	Engineering
Module Leader	Nabeel Al-Salim	**e-mail**	eng.nabeel.hasan@uobabylon.edu.iq
Module Leader's Acad. Title	Assistant Professor	**Module Leader's Qualification**	Ph.D.
Module Tutor	None	**e-mail**	None
Peer Reviewer Name	None	**e-mail**	None
Scientific Committee Approval Date	01/06/2023	**Version Number**	1.0

Relation with other Modules
العلاقة مع المواد الدراسية الأخرى

Prerequisite module	None	**Semester**	None
Co-requisites module	None	**Semester**	None

Module Aims, Learning Outcomes and Indicative Contents
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims	The objective of the course is to learn the students how to deal with reinforced concrete structural systems and design

أهداف المادة الدراسية	them according to design codes. Moreover, the course introduces the pre-stressed concrete structures for simple structures
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After successful completion of this module, students should be able to: A- An ability to apply knowledge of mathematics, science and engineering. A3- An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability . A4- An ability to identify, formulate, and solve engineering problems
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: **Part A: stresses in concrete [8 hrs]** **Part B: ultimate strength design method [12 hrs]** **Part C: working strength design method [21 hrs].** **Part D: shear design, length of development [3 hrs]** **Part E: cut-off points, crack of concert beams [3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	101) Learning Technologies on Campus using data show or TV screen. 102) White board. 103) Hand out lecture notes. 104) Hand out some kinds of pictures related to specific topics.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	**Midterm Exam**	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Welcome to this course, Textbook. Distribution of data, tabular presentation of data.
Week 2	Introduction ,
Week 3	stresses in concrete, ultimate strength design method,
Week 4	stresses in concrete, ultimate strength design method,
Week 5	stresses in concrete, ultimate strength design method,
Week 6	working strength design method ,
Week 7	working strength design method ,
Week 8	working strength design method ,
Week 9	shear design,
Week 10	shear design,
Week 11	length of development, cut-off points,
Week 12	length of development, cut-off points,
Week 13	crack of concert beams ,
Week 14	deflection of concert beams.
Week 15	deflection of concert beams.
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	None
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	**Mid-term Exam**
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	1. Darwin D., Dolan, C.W. and Nilson, A.H., "Design of Concrete Structures", McGraw-Hill, Fifteenth Edition, 2016. 2. American Concrete Institute, "Building Code Requirements for Structural Concrete (ACI 318-19)", Farmington Hills, Michigan, 2019. 3. Wight, J.K., "Reinforced Concrete, Mechanics and Design", Pearson Education, Inc., Seventh Edition, 2016.	Yes
Recommended Texts	**Optional Text:** 1. Hassoun, M.N. and Al-Manaseer, A., "Structural Concrete, Theory and Design", John Wiley & Sons, Inc., Seventh Edition, 2020.	No
Websites		

Grading Scheme
مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية		
Module Title	**Engineering Management & Economy**	**Module Delivery**
Module Type	**Basic**	☐ **Theory**

Module Code	**CIV3505**	☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**
ECTS Credits	**4**	
SWL (hr/sem)	100	

Module Level		**Semester of Delivery**	
Administering Department	CIVIL	**College**	Engineering
Module Leader	Hajer Al-Dahash	**e-mail**	eng.hajer.fack@uobabylon.edu.iq
Module Leader's Acad. Title	Assistant Professor	**Module Leader's Qualification**	Ph.D.
Module Tutor	None	**e-mail**	None
Peer Reviewer Name	None	**e-mail**	None
Scientific Committee Approval Date	01/06/2023	**Version Number**	1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	None
Co-requisites module	None	**Semester**	None

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The objectives of these courses are to introduce engineering management & economy to civil engineering undergraduate students; in addition to enable, the students to possess the necessary skills to work as residential engineer or executing engineer in construction projects, beside function ethically in their professional civil engineering roles
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	• An ability to apply knowledge of mathematics, science and engineering • An ability to design a system, component, or process to meet desired needs within realistic
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: **Part A:** Introduction to engineering management **[8 hrs]** **Part B:** Relationship between project achieving team and project phases, planning techniques **[12 hrs]** **Part C:** general limitation for engineering civil work in Iraq**,[21 hrs].** **Part D:** method of tendering **[3 hrs]** **Part E:** Project for Estimation **[3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	105) Learning Technologies on Campus using data show or TV screen. 106) White board. 107) Hand out lecture notes. 108) Hand out some kinds of pictures related to specific topics.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	37	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	Midterm Exam	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Welcome to this course, syllabus, and expectations. Textbook. Distribution of data, tabular presentation of data.
Week 2	Introduction to engineering management
Week 3	Relationship between project achieving team and project phases,
Week 4	planning techniques
Week 5	general limitation for engineering civil work in Iraq, engineering contract,
Week 6	project execution approaches, method of tendering
Week 7	Planning for engineering projects
Week 8	Types of Estimation
Week 9	Methods for calculation of construction materials
Week 10	Quantity tables and measurements
Week 11	Methods for calculation of quantity and volumes of materials
Week 12	Time – cost relationship, operation research, linear programming and its application, types of costs.
Week 13	Pricing of Quantity
Week 14	Technical specification
Week 15	Project for Estimation
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	None
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	**Mid-term Exam**
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?

Required Texts	- Equipment and methods of construction / translated by Dr. Mohammad Ayub Al-Izzi / publications of University of Technology, 1985	Yes
Recommended Texts	- Cost analyzing guideline for building and construction / Ministry of Construction and Housing, 2014	No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية			
Module Title	**Selected Topic (I)**		**Module Delivery**
Module Type	**Elective**		☐ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**
Module Code	**CIV3506**		
ECTS Credits	**3**		
SWL (hr/sem)	75		
Module Level		**Semester of Delivery**	
Administering Department	CIVIL	**College**	Engineering
Module Leader	Nameer AA Alwash	**e-mail**	eng.nameer.abdul@uobabylon.edu.iq
Module Leader's Acad. Title	Professor	**Module Leader's Qualification**	Ph.D.
Module Tutor	None	**e-mail**	None
Peer Reviewer Name	None	**e-mail**	None
Scientific Committee Approval Date	01/06/2023	**Version Number**	1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	None
Co-requisites module	None	**Semester**	None

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The objective of the course is to learn the students how to deal with the analysis of different types of structural systems. Moreover, this course is needed for all subsequent structural design courses.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After successful completion of this module, students should be able to: A-Program Outcomes – Knowledge and Understanding A1- An ability to apply knowledge of mathematics, science and engineering A4- An ability to identify, formulate, and solve engineering problems
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: **Part A: Types of loads Equilibrium [8 hrs]** **Part B: Stability and Determinacy of Structures [12 hrs]** **Part C: Analysis of Different Types of Determinate Trusses [21 hrs].** **Part D: Shearing Force and Bending Moment Diagrams for Frames Axial Force [3 hrs]** **Part E: Influence Line for Statically Determinate Structures [3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	109) Learning Technologies on Campus using data show or TV screen. 110) White board. 111) Hand out lecture notes. 112) Hand out some kinds of pictures related to specific topics.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	12	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	75		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	**Midterm Exam**	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	**Material Covered**
Week 1	Welcome to this course, Textbook. Distribution of data, tabular presentation of data.
Week 2	Types of loads Equilibrium ,
Week 3	Stability and Determinacy of Structures ,
Week 4	Types of Trusses ,
Week 5	Analysis of Different Types of Determinate Trusses ,
Week 6	Shearing Force and Bending Moment Diagrams for Frames Axial Force ,
Week 7	Axial Force ,
Week 8	Shearing Force and Bending Moment Diagrams for Frames ,
Week 9	Shearing Force and Bending Moment Diagrams for Frames ,

Week 10	Floor Beam Systems , Influence Line for Statically Determinate Structures ,
Week 11	Floor Beam Systems , Influence Line for Statically Determinate Structures ,
Week 12	Series of concentrated moving loads on statically determinate Structures ,
Week 13	Series of concentrated moving loads on statically determinate Structures ,
Week 14	Approximate Analysis of Statically Indeterminate Structures.
Week 15	Approximate Analysis of Statically Indeterminate Structures.
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	None
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	**Mid-term Exam**
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	11- Hibbeler, R.C. "Structural Analysis", Sixth Edition, Pearson Prentice Hall, 2006. 12- Aslam Kassimali "Structural Analysis" 1993, PWS KENT Publishing Company-	Yes
Recommended Texts	**Optional Text:** **2-** Mckenzie W.M.C. Examples in Structural Analysis, Taylor & Francis Publishing Company, 2006.	No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

THIRD YEAR / SIXTH SEMESTER

Module Information معلومات المادة الدراسية					
Module Title	**Theory of Structures II**			**Module Delivery**	
Module Type	**Core**			☐ Theory ☒ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	**CIV3611**				
ECTS Credits	**5**				
SWL (hr/sem)	**125**				
Module Level			**Semester of Delivery**		
Administering Department	**CIVIL**		**College**	**Engineering**	
Module Leader	**Nameer AA Alwash**		**e-mail**	**eng.nameer.abdul@uobabylon.edu.iq**	
Module Leader's Acad. Title	**Professor**		**Module Leader's Qualification**		**Ph.D.**
Module Tutor	**None**		**e-mail**	**None**	
Peer Reviewer Name	**None**		**e-mail**	**None**	
Scientific Committee Approval Date	**01/06/2023**		**Version Number**		**1.0**

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**CIV3501**	**Semester**	**Five**
Co-requisites module	**None**	**Semester**	**None**

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	**The objective of the course is to learn the students how to deal with the analysis of different types of structural systems. Moreover, this course is needed for all subsequent structural design courses.**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**After successful completion of this module, students should be able to:** **A-Program Outcomes – Knowledge and Understanding** **A1- An ability to apply knowledge of mathematics, science and engineering** **A4- An ability to identify, formulate, and solve engineering problems**
Indicative Contents المحتويات الإرشادية	**Indicative content includes the following:** **Part A: Types of loads Equilibrium [8 hrs]** **Part B: Stability and Determinacy of Structures [12 hrs]** **Part C: Analysis of Different Types of Determinate Trusses [21 hrs].** **Part D: Shearing Force and Bending Moment Diagrams for Frames Axial Force [3 hrs]** **Part E: Influence Line for Statically Determinate Structures [3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**113) Learning Technologies on Campus using data show or TV screen.** **114) White board.** **115) Hand out lecture notes.** **116) Hand out some kinds of pictures related to specific topics.**

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	Midterm Exam	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Welcome to this course, Textbook. Distribution of data, tabular presentation of data.
Week 2	Deflection of Statically Determinate Structures by '' Unit Load Method ''
Week 3	Deflection of Statically Determinate Structures by '' Unit Load Method ''
Week 4	Deflection of Statically Determinate Structures by '' Unit Load Method ''
Week 5	Analysis of Statically Indeterminate Structures by " Consistent Deformation Method ''
Week 6	Analysis of Statically Indeterminate Structures by " Consistent Deformation Method ''
Week 7	Analysis of Statically Indeterminate Structures by " Consistent Deformation Method ''
Week 8	Analysis of Statically Indeterminate Structures by " Consistent Deformation Method ''
Week 9	Analysis of Statically Indeterminate Structures by " Slope - Deflection Method ''
Week 10	Analysis of Statically Indeterminate Structures by " Slope - Deflection Method ''
Week 11	Analysis of Statically Indeterminate Structures by " Slope - Deflection Method ''
Week 12	Analysis of Statically Indeterminate Structures by " Slope - Deflection Method ''
Week 13	Analysis of Statically Indeterminate Structures by " Moment Distribution Method '' .
Week 14	Analysis of Statically Indeterminate Structures by " Moment Distribution Method '' .
Week 15	Analysis of Statically Indeterminate Structures by " Moment Distribution Method '' .
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	None
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	Mid-term Exam
Week 9	
Week 10	

Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	13- Hibbeler, R.C. "Structural Analysis", Sixth Edition, Pearson Prentice Hall, 2006. 14- Aslam Kassimali "Structural Analysis" 1993, PWS KENT Publishing Company-	Yes
Recommended Texts	Optional Text: 3- Mckenzie W.M.C. Examples in Structural Analysis, Taylor & Francis Publishing Company, 2006.	No
Websites		

Grading Scheme مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية			
Module Title	Soil Mechanics II		Module Delivery
Module Type	Core		☐ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	CIV3612		
ECTS Credits	6		
SWL (hr/sem)	150		
Module Level		Semester of Delivery	
Administering Department	CIVIL	College	Engineering
Module Leader	Hassnen M. Jafer	e-mail	eng.hassnen.mosa@uobabylon.edu.iq

Module Leader's Acad. Title	Assistant Professor	Module Leader's Qualification	Ph.D.
Module Tutor	None	e-mail	None
Peer Reviewer Name	None	e-mail	None
Scientific Committee Approval Date	01/06/2023	Version Number	1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	CIV3502	Semester	Five
Co-requisites module	None	Semester	None

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The objectives of these courses are to introduce soil mechanics to civil engineering undergraduate students and to familiarize the students with soil terminology and concepts commonly encountered in engineering practice.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After successful completion of this module, students should be able to: 4. An ability to identify pore water pressure and soil permeability. 5. An ability to calculate and determine total, elevation and pressure heads in soil and drawing flow nets for two dimensional flow. 6. An ability to identify, and calculate the consolidation properties in fine grained soils. 7. The ability to calculate and identify shear and principle stresses in soils.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: Part A: Response of effective stress to change in total stress [8 hrs] Part B: consolidation analogy [12 hrs] Part C: Influence of seepage on effective stresses [21 hrs]. Part D: liquefaction in sands [3 hrs] Part E: drained shear strength parameters [3 hrs]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	117) Learning Technologies on Campus using data show or TV screen. 118) White board. 119) Hand out lecture notes. 120) Hand out some kinds of pictures related to specific topics.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	72	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	Midterm Exam	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All

Total assessment	**100% (100 Marks)**		

Delivery Plan (Weekly Syllabus) **المنهاج الاسبوعي النظري**	
Week	**Material Covered**
Week 1	**Welcome to this course, Textbook. Distribution of data, tabular presentation of data.**
Week 2	**Response of effective stress to change in total stress**
Week 3	**consolidation analogy ,**
Week 4	**Influence of seepage on effective stresses ,**
Week 5	**Influence of seepage on effective stresses ,**
Week 6	**Shear failure**
Week 7	**Mohr – Colomb failure law**
Week 8	**shear strength parameters**
Week 9	**Basic relationships**
Week 10	**Shear strength tests: Laboratory tests (tri – axial compression and direct shear),**
Week 11	**Shear strength of sands,**
Week 12	**liquefaction in sands**
Week 13	**normally consolidated and over consolidated soils,**
Week 14	**Flow in soil, permeability in soil, permeability tests.**
Week 15	**Flow in soil, permeability in soil, permeability tests.**
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) **المنهاج الاسبوعي للمختبر**	
Week	**Material Covered**
Week 1	**Field compaction test (fine grained soils)**
Week 2	**Field compaction test (fine grained soils)**
Week 3	**Field compaction test (coarse grained soils)**
Week 4	**Field compaction test (coarse grained soils)**
Week 5	**Direct shear test**
Week 6	**Direct shear test**
Week 7	**Vane shear test**
Week 8	**Vane shear test**
Week 9	**Mid-term Exam**
Week 10	**Unconfined compressive strength test UCS**
Week 11	**Unconfined compressive strength test UCS**
Week 12	**One dimensional consolidation test**
Week 13	**One dimensional consolidation test**
Week 14	**Triaxial test**
Week 15	**Triaxial test**
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources **مصادر التعلم والتدريس**		
	Text	**Available in the Library?**
Required Texts	**12. Das, B. M., 2009, Principles of Geotechnical Engineering, 7th Edition, Brooks-Cole, Pacific Grove, California, ISBN 0-495-41130-2.** **13. Lectures of Soil Mechanics by Prof. Dr. Mohammed Shaker Al Shakerchy from http://eng.uokufa.edu.iq/staff/mohammedsh/index.html.** **14. The laboratory textbook for this course is: booklet of soil laboratory prepared by laboratory staff.**	**Yes**
Recommended Texts	**Optional Text:**	**No**

Websites	2. http://elearning7.uokufa.edu.iq/eng/course/view.php?id=1245

Grading Scheme
مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information
معلومات المادة الدراسية

Module Title	Design of Reinforced Concrete II	Module Delivery	
Module Type	Core		☐ Theory ☒ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar
Module Code	CIV3613		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level		Semester of Delivery	
Administering Department	CIVIL	College	Engineering
Module Leader	Nabeel Al-Salim	e-mail	eng.nabeel.hasan@uobabylon.edu.iq
Module Leader's Acad. Title	Assistant Professor	Module Leader's Qualification	Ph.D.
Module Tutor	None	e-mail	None
Peer Reviewer Name	None	e-mail	None
Scientific Committee Approval Date	01/06/2023	Version Number	1.0

Relation with other Modules
العلاقة مع المواد الدراسية الأخرى

Prerequisite module	CIV3503	Semester	Five
Co-requisites module	None	Semester	None

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The objective of the course is to learn the students how to deal with reinforced concrete structural systems and design them according to design codes. Moreover, the course introduces the pre-stressed concrete structures for simple structures
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After successful completion of this module, students should be able to: A- An ability to apply knowledge of mathematics, science and engineering. A3- An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability . A4- An ability to identify, formulate, and solve engineering problems
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: Part A: Slabs, one way solid [8 hrs] Part B: one way ribbed [12 hrs] Part C: two-way solid and two-way ribbed [21 hrs]. Part D: Compression members (columns) [3 hrs] Part E: Torsion, Stairways [3 hrs]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	121) Learning Technologies on Campus using data show or TV screen. 122) White board. 123) Hand out lecture notes. 124) Hand out some kinds of pictures related to specific topics.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	Midterm Exam	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	**Material Covered**
Week 1	Welcome to this course, Textbook. Distribution of data, tabular presentation of data.
Week 2	Slabs,
Week 3	one way solid, one way ribbed
Week 4	one way solid, one way ribbed
Week 5	one way solid, one way ribbed
Week 6	two-way solid, two-way ribbed,
Week 7	two-way solid, two-way ribbed,
Week 8	two-way solid, two-way ribbed,
Week 9	two-way solid, two-way ribbed,

Week 10	Compression members (columns),
Week 11	Compression members (columns),
Week 12	Compression members (columns),
Week 13	Torsion, Stairways
Week 14	Torsion, Stairways
Week 15	Torsion, Stairways
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	Material Covered
Week 1	None
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	Mid-term Exam
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	4. Darwin D., Dolan, C.W. and Nilson, A.H., "Design of Concrete Structures", McGraw-Hill, Fifteenth Edition, 2016. 5. American Concrete Institute, "Building Code Requirements for Structural Concrete (ACI 318-19)", Farmington Hills, Michigan, 2019. 6. Wight, J.K., "Reinforced Concrete, Mechanics and Design", Pearson Education, Inc., Seventh Edition, 2016.	Yes
Recommended Texts	Optional Text: 2. Hassoun, M.N. and Al-Manaseer, A., "Structural Concrete, Theory and Design", John Wiley & Sons, Inc., Seventh Edition, 2020.	No
Websites		

Grading Scheme مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية					
Module Title	**Structural Drawing**			**Module Delivery**	
Module Type	**Basic**			☐ Theory ☒ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	**CIV3604**				
ECTS Credits	**3**				
SWL (hr/sem)	**75**				
Module Level			**Semester of Delivery**		
Administering Department	**CIVIL**		**College**	**Engineering**	
Module Leader	**Wisam Shamkhi Jaber**		**e-mail**	**eng.wisam.jaber@uobabylon.edu.iq**	
Module Leader's Acad. Title	**Assistant Professor**		**Module Leader's Qualification**		**Ph.D.**
Module Tutor	**None**		**e-mail**	**None**	
Peer Reviewer Name	**None**		**e-mail**	**None**	
Scientific Committee Approval Date	**01/06/2023**		**Version Number**	**1.0**	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**None**	**Semester**	**None**
Co-requisites module	**None**	**Semester**	**None**

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims **أهداف المادة الدراسية**	• **The student can draw geometric shapes, stereoscopic drawings, and sections, and he can read ready-made engineering drawings.** • **The student will be able to draw geometric shapes using AutoCAD.** • **The student imagines the final shape of the engineering drawing** • **The student will be familiar with the tools of engineering drawing.** • **The student is familiar with drawing geometric shapes (lines, circles, arcs).** • **The student learns applications and exercises in vertical and stereo projection and drawing sections.**
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	**After successful completion of this module, students should be able to:** • **The student will be familiar with the AutoCAD interface and its contents.** • **The student will be familiar with the methods of drawing lines and geometric shapes using the computer.** • **The student learns how to use drawing aids.** • **The student learns about the modification commands represented by displacement, erasure, transfer, rotation, ... etc.**
Indicative Contents **المحتويات الإرشادية**	**Indicative content includes the following:** **Part A: Principles previews, Lines in engineering drawing [8 hrs]** **Part B: Geometric operations. [12 hrs]** **Part C: Introductory lecture AutoCAD drawing program (a full explanation for the program interface), [21**

	hrs]. Part D: Complete explanation of the program interface, identify the units of measurement and how to give commands [3 hrs] Part E: Dimension, Pectorial Drawing, Sections.[3 hrs]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	125) Learning Technologies on Campus using data show or TV screen. 126) White board. 127) Hand out lecture notes. 128) Hand out some kinds of pictures related to specific topics.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	12	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	75		

Module Evaluation تقييم المادة الدراسية					
As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	Midterm Exam	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	Material Covered
Week 1	Welcome to this course, syllabus, and expectations. Textbook. underline the importance and significance of engineering drawing
Week 2	Draw and write a Kufic Letters Draw a parallel line to other line, bisecting the straight lines, bisect the angles, drawing an arc touches two intersecting lines, bisect the angles; an arc touches two lines.
Week 3	Draw different types of shapes gradient from simple to complicated shapes of decoration Draw projection of three dimension shape with inclined surfaces.
Week 4	Drawing the dimensions of projection views using specifications of dimensions. Drawing complete projections of complicated three dimensions shape
Week 5	Drawing Isometric of three dimension shape with planed and inclined surfaces using three projections only.
Week 6	Drawing Isometric of three dimension shape with planed and inclined surfaces using three projections only.
Week 7	Drawing Isometric of three dimension shape with planed and inclined surfaces using three projections only.
Week 8	Draw Isometric of three dimension shapes with cylindrical surfaces using three projections only.
Week 9	Draw Isometric of three dimension shapes with dimensions.
Week 10	Draw Isometric of three dimension shapes with dimensions.
Week 11	Draw Isometric of three dimension shapes with dimensions.
Week 12	Draw Isometric with different scale.
Week 13	Draw Isometric with different scale.

Week 14	Draw section with different views and locations.
Week 15	Draw Isometric using two projections only.
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	Material Covered
Week 1	Non
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	Mid-term Exam
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	- Lectures of manual engineering drawing by Ass. Prof. Dr. Mohmad Abd Muslim.	Yes
Recommended Texts	- Fundamentals of 2017 AutoCAD by Ali Mahdi - AutoCAD Tutorials by Fangfang.	No
Websites		

Grading Scheme مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية			
Module Title	**Irrigation and Drainage Engineering**	**Module Delivery**	
Module Type	**Support**	☐ Theory ☒ Lecture ☐ Lab ☒ Tutorial ☐ Practical ☐ Seminar	
Module Code	**CIV3605**		
ECTS Credits	**5**		
SWL (hr/sem)	**125**		
Module Level		**Semester of Delivery**	
Administering Department	**CIVIL**	**College**	**Engineering**
Module Leader	**Imad Habeeb Obead**	**e-mail**	**eng.imad.habeeb@uobabylon.edu.iq**
Module Leader's Acad. Title	**Assistant Professor**	**Module Leader's Qualification**	**Ph.D.**
Module Tutor	**None**	**e-mail**	**None**
Peer Reviewer Name	**None**	**e-mail**	**None**
Scientific Committee Approval Date	**01/06/2023**	**Version Number**	**1.0**

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**None**	**Semester**	**None**
Co-requisites module	**None**	**Semester**	**None**

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	**The objectives of these courses are to introduce irrigation and drainage engineering to students in order to build a new civil engineers generations that are capable of comprehend the science of Irrigation and drainage engineering.**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**A-Program Outcomes – Knowledge and Understanding** **A1- An ability to apply knowledge of mathematics, science and engineering** **A3- An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability .** **A4- An ability to identify, formulate, and solve engineering problems** **D-Program Outcomes – General and transferable skills (other skills relevant to employability and Personal development)** **D1- An ability to function on multidisciplinary teams .**
Indicative Contents المحتويات الإرشادية	**Indicative content includes the following:** **Part A: Irrigation and Drainage Concept [8 hrs]** **Part B: Irrigation and Drainage System [12 hrs]** **Part C: Water content and consumptive Use and Water Duty. [21 hrs].** **Part D: Cross @ Longitudinal Section Design [3 hrs]** **Part E: Drainage Systems [3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**129) Learning Technologies on Campus using data show or TV screen.** **130) White board.** **131) Hand out lecture notes.** **132) Hand out some kinds of pictures related to specific topics.**

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	47	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	Midterm Exam	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Welcome to this course, Textbook. Distribution of data, tabular presentation of data.
Week 2	Irrigation and Drainage Concept.
Week 3	Irrigation and Drainage Concept
Week 4	Irrigation and Drainage System
Week 5	Irrigation and Drainage System
Week 6	Water content and consumptive Use and Water Duty
Week 7	Water content and consumptive Use and Water Duty
Week 8	Cross @ Longitudinal Section Design
Week 9	Cross @ Longitudinal Section Design
Week 10	Seepage and canal lining
Week 11	Seepage and canal lining
Week 12	Levelling and Land Grading
Week 13	Levelling and Land Grading
Week 14	Methods of Irrigation
Week 15	Drainage Systems .
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	None
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	
Week 9	
Week 10	

Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources **مصادر التعلم والتدريس**		
	Text	**Available in the Library?**
Required Texts	**1. Irrigation and Drainage (Dr.Liath K. Ismaeel)** **2. Irrigation (Dr. Mohammed A. Al-najem)** **3. Water Resources systems and Management(R. Gupta)** **4. Open Channel Hydraulic (V. T. Chow)**	**Yes**
Recommended Texts	**Optional Text:**	**No**
Websites	**http://elearning7.uokufa.edu.iq/eng/user/profile.php?id=598**	

Grading Scheme **مخطط الدرجات**				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A - Excellent**	**امتياز**	**90 - 100**	**Outstanding Performance**
	B - Very Good	**جيد جدا**	**80 - 89**	**Above average with some errors**
	C - Good	**جيد**	**70 - 79**	**Sound work with notable errors**
	D - Satisfactory	**متوسط**	**60 - 69**	**Fair but with major shortcomings**
	E - Sufficient	**مقبول**	**50 - 59**	**Work meets minimum criteria**
Fail Group (0 – 49)	**FX – Fail**	**راسب (قيد المعالجة)**	**(45-49)**	**More work required but credit awarded**
	F – Fail	**راسب**	**(0-44)**	**Considerable amount of work required**

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information **معلومات المادة الدراسية**			
Module Title	**Selected Topic (II)**		**Module Delivery**
Module Type	**Elective**		☐ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**
Module Code	**CIV3606**		
ECTS Credits	**3**		
SWL (hr/sem)	**75**		
Module Level		**Semester of Delivery**	
Administering Department	**CIVIL**	**College**	**Engineering**
Module Leader	**Nabeel Al-Salim**	**e-mail**	**eng.nabeel.hasan@uobabylon.edu.iq**

Module Leader's Acad. Title	**Assistant Professor**	**Module Leader's Qualification**	**Ph.D.**
Module Tutor	**None**	**e-mail**	**None**
Peer Reviewer Name	**None**	**e-mail**	**None**
Scientific Committee Approval Date	**01/06/2023**	**Version Number**	**1.0**

Relation with other Modules **العلاقة مع المواد الدراسية الأخرى**			
Prerequisite module	**None**	**Semester**	**None**
Co-requisites module	**None**	**Semester**	**None**

Module Aims, Learning Outcomes and Indicative Contents **أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية**	
Module Aims **أهداف المادة الدراسية**	**The objective of the course is to learn the students how to deal with reinforced concrete structural systems and design them according to design codes. Moreover, the course introduces the pre-stressed concrete structures for simple structures**
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	**After successful completion of this module, students should be able to:** **A- An ability to apply knowledge of mathematics, science and engineering.** **A3- An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability .** **A4- An ability to identify, formulate, and solve engineering problems**
Indicative Contents **المحتويات الإرشادية**	**Indicative content includes the following:** **Part A: Slabs, one way solid [8 hrs]** **Part B: one way ribbed [12 hrs]** **Part C: two-way solid and two-way ribbed [21 hrs].** **Part D: Compression members (columns) [3 hrs]** **Part E: Torsion, Stairways [3 hrs]**

Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**	
Strategies	**133) Learning Technologies on Campus using data show or TV screen.** **134) White board.** **135) Hand out lecture notes.** **136) Hand out some kinds of pictures related to specific topics.**

Student Workload (SWL) **الحمل الدراسي للطالب**			
Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	**63**	**Structured SWL (h/w)** **الحمل الدراسي المنتظم للطالب أسبوعيا**	**4**
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	**12**	**Unstructured SWL (h/w)** **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	**3.466**
Total SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	**75**		

Module Evaluation
تقييم المادة الدراسية

As		**Time/Number**	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	**2**	**15% (15)**	**5 , 8**	**LO # 2, 3,4 and 6, 7**
	Assignments	**2**	**10% (10)**	**6, 12**	**LO # 3, 4 , 5 and 9, 10 and 11**
	Projects / Lab.	**1**	**10% (10)**	**Continuous**	
	Report	**1**	**5% (5)**	**13**	**Continuous**
Summative assessment	**Midterm Exam**	**2 hr**	**10% (10)**	**10**	**LO # 1-9**
	Final Exam	**3hr**	**50% (50)**	**16 or 17**	**All**
Total assessment			**100% (100 Marks)**		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	**Material Covered**
Week 1	**Welcome to this course, Textbook. Distribution of data, tabular presentation of data.**
Week 2	**Slabs,**
Week 3	**one way solid, one way ribbed**
Week 4	**one way solid, one way ribbed**
Week 5	**one way solid, one way ribbed**
Week 6	**two-way solid, two-way ribbed,**
Week 7	**two-way solid, two-way ribbed,**
Week 8	**two-way solid, two-way ribbed,**
Week 9	**two-way solid, two-way ribbed,**
Week 10	**Compression members (columns),**
Week 11	**Compression members (columns),**
Week 12	**Compression members (columns),**
Week 13	**Torsion, Stairways**
Week 14	**Torsion, Stairways**
Week 15	**Torsion, Stairways**
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	**None**
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	**Mid-term Exam**
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	**7. Darwin D., Dolan, C.W. and Nilson, A.H., "Design of Concrete Structures", McGraw-Hill, Fifteenth Edition, 2016.** **8. American Concrete Institute, "Building Code Requirements for Structural Concrete (ACI 318-19)", Farmington Hills, Michigan, 2019.** **9. Wight, J.K., "Reinforced Concrete, Mechanics and Design", Pearson Education, Inc., Seventh Edition, 2016.**	**Yes**
Recommended Texts	**Optional Text:** **3. Hassoun, M.N. and Al-Manaseer, A., "Structural Concrete, Theory and Design", John Wiley & Sons, Inc., Seventh Edition, 2020.**	**No**
Websites		

Grading Scheme مخطط الدرجات

Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية				
Module Title	Traffic Engineering		Module Delivery	
Module Type	Support		☐ Theory ☒ Lecture ☒ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	CIV3607			
ECTS Credits	3			
SWL (hr/sem)	75			
Module Level		Semester of Delivery		
Administering Department	CIVIL	College	Engineering	
Module Leader	Abdul Rudha Ibrahim Ahmed	e-mail	eng.abdul.rudha@uobabylon.edu.iq	
Module Leader's Acad. Title	Professor	Module Leader's Qualification	Ph.D	
Module Tutor	None	e-mail	None	
Peer Reviewer Name	None	e-mail	None	
Scientific Committee Approval Date	01/06/2023	Version Number	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	Semester	None
Co-requisites module	None	Semester	None

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The objective of this course is to introduce students to key topics, issues, and design procedures in the field of traffic engineering. Students are exposed to current design guidelines and are introduced to the basic issues dealing with traffic engineering.

Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	**After successful completion of this module, students should be able to:** **1. Analytical ability** **2. Comparison between Species different ways.**
Indicative Contents **المحتويات الإرشادية**	**Indicative content includes the following:** **Part A: Driver, vehicle and pedestrian characteristics [8 hrs]** **Part B: Highway planning and administration [12 hrs]** **Part C: Fundamental relationship between speed-flow-density. [21 hrs].** **Part D: Linear and nonlinear relation (Speed-Density) [3 hrs]** **Part E: Traffic signs type, shapes and colors and road marking [3 hrs]**

Learning and Teaching Strategies **استراتيجيات التعلم والتعليم**	
Strategies	**137) Learning Technologies on Campus using data show or TV screen.** **138) White board.** **139) Hand out lecture notes.** **140) Hand out some kinds of pictures related to specific topics.**

Student Workload (SWL) **الحمل الدراسي للطالب**			
Structured SWL (h/sem) **الحمل الدراسي المنتظم للطالب خلال الفصل**	**63**	**Structured SWL (h/w)** **الحمل الدراسي المنتظم للطالب أسبوعيا**	**4**
Unstructured SWL (h/sem) **الحمل الدراسي غير المنتظم للطالب خلال الفصل**	**12**	**Unstructured SWL (h/w)** **الحمل الدراسي غير المنتظم للطالب أسبوعيا**	**3.466**
Total SWL (h/sem) **الحمل الدراسي الكلي للطالب خلال الفصل**	**75**		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	**2**	**15% (15)**	**5 , 8**	**LO # 2, 3,4 and 6, 7**
	Assignments	**2**	**10% (10)**	**6, 12**	**LO # 3, 4 , 5 and 9, 10 and 11**
	Projects / Lab.	**1**	**10% (10)**	**Continuous**	
	Report	**1**	**5% (5)**	**13**	**Continuous**
Summative assessment	**Midterm Exam**	**2 hr**	**10% (10)**	**10**	**LO # 1-9**
	Final Exam	**3hr**	**50% (50)**	**16 or 17**	**All**
Total assessment			**100% (100 Marks)**		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	**Welcome to this course, Textbook. Distribution of data, tabular presentation of data.**
Week 2	**Driver,**
Week 3	**vehicle and pedestrian characteristics ,**
Week 4	**Highway planning and administration ,**
Week 5	**Highway planning and administration ,**
Week 6	**Types of sight distances ,**
Week 7	**Geometric design (Elements and control) ,**
Week 8	**Traffic studies (Volume, speed, capacity, delay, and headway)**
Week 9	**Traffic studies (Volume, speed, capacity, delay, and headway)**
Week 10	**Fundamental relationship between speed-flow-density.**
Week 11	**Linear and nonlinear relation (Speed-Density) ,**
Week 12	**Types of at grade intersections and interchange ,**
Week 13	**Design of traffic signals (Webster method) ,**
Week 14	**Traffic signs type, shapes and colors and road marking , Parking types ,**
Week 15	**Type of weaving section , Traffic accident causes, types, reporting surveys, and accident rates**
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	**Videos of data collected from field**
Week 2	**Collecting flow data from field**
Week 3	**Collecting speed data from field**
Week 4	**Collecting headway data**
Week 5	**Analysis and determining flow relationship from field data- PHF**
Week 6	**Understanding how to use the HCS for different facilities such as basic freeway, multi-lane, two-lane, weaving, merging and intersections**
Week 7	**Understanding how to use the HCS for different facilities such as basic freeway, multi-lane, two-lane, weaving, merging and intersections**
Week 8	**Mid-term Exam**
Week 9	**Collecting data for urban transportation planning**
Week 10	**Collecting data for urban transportation planning**
Week 11	**Videos of data collected from field**
Week 12	**Collecting flow data from field**
Week 13	**Collecting speed data from field**
Week 14	**Collecting headway data**
Week 15	**Analysis and determining flow relationship from field data- PHF**
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	**1. Garber, N. and Hoel L. *Traffic and Highway ngineering*, 4th Edition, Cengage Learning, Toronto ON.** **2. HCM (2000). *Highway Capacity Manual.* Transportation Research Board, TRB Special Report 209, USA**	**Yes**
Recommended Texts	**Optional Text:** **1. HCM (2010). *Highway Capacity Manual*. Transportation Research Board, TRB Special Report 616, USA** ***2.* Institute of Transportation Engineering, ITE. (2010). *Traffic Engineering Handbook*. 6th Edition, USA: Washington.**	**No**
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A - Excellent**	**امتياز**	**90 - 100**	**Outstanding Performance**
	B - Very Good	**جيد جدا**	**80 - 89**	**Above average with some errors**
	C - Good	**جيد**	**70 - 79**	**Sound work with notable errors**
	D - Satisfactory	**متوسط**	**60 - 69**	**Fair but with major shortcomings**
	E - Sufficient	**مقبول**	**50 - 59**	**Work meets minimum criteria**
Fail Group (0 – 49)	**FX – Fail**	**راسب (قيد المعالجة)**	**(45-49)**	**More work required but credit awarded**
	F – Fail	**راسب**	**(0-44)**	**Considerable amount of work required**

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

FORTH YEAR / SEVENTH SEMESTER

Module Information معلومات المادة الدراسية					
Module Title	**Design of Concrete Structures**			**Module Delivery**	
Module Type	**Core**			☐ Theory ☒ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	**CIV4701**				
ECTS Credits	**4**				
SWL (hr/sem)	**100**				
Module Level			**Semester of Delivery**		
Administering Department	**CIVIL**		**College**	**Engineering**	
Module Leader	**Mustafa B. Dawood**		**e-mail**	**eng.mustafa.balasum@uobabylon.edu.iq**	
Module Leader's Acad. Title	**Professor**		**Module Leader's Qualification**		**Ph.D.**
Module Tutor	**None**		**e-mail**	**None**	
Peer Reviewer Name	**None**		**e-mail**	**None**	
Scientific Committee Approval Date	**01/06/2023**		**Version Number**	**1.0**	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**None**	**Semester**	**None**
Co-requisites module	**None**	**Semester**	**None**

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims **أهداف المادة الدراسية**	**The objective of the course is to learn the students how to deal with reinforced concrete structural systems and design them according to design codes. Moreover, the course introduces the prestressed concrete structures for simple structures.**
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	• **An ability to apply knowledge of mathematics, science and engineering** • **An ability to design a system, component, or process to meet desired needs within realistic** • **constraints such as economic, environmental, social, political, ethical, health and safety,** • **manufacturability, and sustainability .** • **An ability to identify, formulate, and solve engineering problems.**
Indicative Contents **المحتويات الإرشادية**	**Indicative content includes the following:** **Part A: Deflection control of two - way slabs , Direct design method of two - way slabs , Shear in two – way slabs, [8 hrs]** **Part B: Equivalent frame method of two – way slabs, [12 hrs]** **Part C: Yield – line analysis (Virtual – work) of slabs,[21 hrs].** **Part D: , Prestressed concrete [3 hrs]** **Part E: analysis and design of beams [3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	141) Learning Technologies on Campus using data show or TV screen. 142) White board. 143) Hand out lecture notes. 144) Hand out some kinds of pictures related to specific topics.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	22	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	Midterm Exam	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Welcome to this course, syllabus, and expectations. Textbook. Distribution of data, tabular presentation of data.
Week 2	Deflection control of two - way slabs
Week 3	Deflection control of two - way slabs
Week 4	Direct design method of two - way slabs
Week 5	Direct design method of two - way slabs
Week 6	Direct design method of two - way slabs
Week 7	Shear in two – way slabs.
Week 8	Shear in two – way slabs.
Week 9	Equivalent frame method of two – way slabs
Week 10	Equivalent frame method of two – way slabs
Week 11	Equivalent frame method of two – way slabs
Week 12	Yield – line analysis (Virtual – work) of slabs
Week 13	Yield – line analysis (Virtual – work) of slabs
Week 14	Prestressed concrete / analysis and design of beams
Week 15	Prestressed concrete / analysis and design of beams
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	**None**
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	**Mid-term Exam**
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	- Darwin D., Dolan, C.W. and Nilson, A.H., "Design of Concrete Structures", McGraw-Hill, Fifteenth Edition, 2016. - American Concrete Institute, "Building Code Requirements for Structural Concrete (ACI 318-19)", Farmington Hills, Michigan, 2019 .	**Yes**
Recommended Texts	- Wight, J.K., "Reinforced Concrete, Mechanics and Design", Pearson Education, Inc., Seventh Edition, 2016. - Hassoun, M.N. and Al-Manaseer, A., "Structural Concrete, Theory and Design", John Wiley & Sons, Inc., Seventh Edition, 2020.	**No**
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A - Excellent**	**امتياز**	**90 - 100**	**Outstanding Performance**
	B - Very Good	**جيد جدا**	**80 - 89**	**Above average with some errors**
	C - Good	**جيد**	**70 - 79**	**Sound work with notable errors**
	D - Satisfactory	**متوسط**	**60 - 69**	**Fair but with major shortcomings**
	E - Sufficient	**مقبول**	**50 - 59**	**Work meets minimum criteria**
Fail Group (0 – 49)	**FX – Fail**	**راسب (قيد المعالجة)**	**(45-49)**	**More work required but credit awarded**
	F – Fail	**راسب**	**(0-44)**	**Considerable amount of work required**

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية			
Module Title	**Method of Construction and Estimation**	**Module Delivery**	
Module Type	**Core**	☐ Theory ☒ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar	
Module Code	**CIV4702**		
ECTS Credits	**4**		
SWL (hr/sem)	**100**		
Module Level		**Semester of Delivery**	
Administering Department	**CIVIL**	**College**	**Engineering**
Module Leader	**Ali Hasson Nahhab**	**e-mail**	**eng.ali.hasson@uobabylon.edu.iq**
Module Leader's Acad. Title	**Assistant Professor**	**Module Leader's Qualification**	**Ph.D.**
Module Tutor	**None**	**e-mail**	**None**
Peer Reviewer Name	**None**	**e-mail**	**None**
Scientific Committee Approval Date	**01/06/2023**	**Version Number**	**1.0**

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**None**	**Semester**	**None**
Co-requisites module	**None**	**Semester**	**None**

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims **أهداف المادة الدراسية**	**The objectives of these courses are to introduce Construction Methods and Estimation to civil engineering undergraduate students; in addition to enable, the students to possess the necessary skills to work as residential engineer or executing engineer in construction projects, beside function ethically in their professional civil engineering roles**
Module Learning Outcomes **مخرجات التعلم للمادة الدراسية**	• **An ability to apply knowledge of mathematics, science and engineering** • **An ability to design a system, component, or process to meet desired needs within realistic**
Indicative Contents **المحتويات الإرشادية**	**Indicative content includes the following:** **Part A: Construction equipment , Production of construction equipments Stabilization and compaction of the soil, [8 hrs]** **Part B: Method of production and transport of ready mix concrete and asphalt Concrete , Formwork design for roofs and walls, [12 hrs]** **Part C: Quantity survey , Planning for engineering projects , Types of Estimation , Methods for calculation of construction materials,[21 hrs].** **Part D: Methods for calculation of quantity and volumes of materials , Center line method [3 hrs]** **Part E: Project for Estimation [3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**145) Learning Technologies on Campus using data show or TV screen.** **146) White board.** **147) Hand out lecture notes.** **148) Hand out some kinds of pictures related to specific topics.**

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	22	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	Midterm Exam	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Welcome to this course, syllabus, and expectations. Textbook. Distribution of data, tabular presentation of data.
Week 2	Construction equipment
Week 3	Production of construction equipment's Stabilization and compaction of the soil
Week 4	Method of production and transport of ready mix concrete and asphalt Concrete
Week 5	Formwork design for roofs and walls
Week 6	Quantity survey
Week 7	Planning for engineering projects
Week 8	Types of Estimation
Week 9	Methods for calculation of construction materials
Week 10	Quantity tables and measurements
Week 11	Methods for calculation of quantity and volumes of materials
Week 12	Centre line method
Week 13	Pricing of Quantity
Week 14	Technical specification
Week 15	Project for Estimation
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	None
Week 2	
Week 3	
Week 4	
Week 5	

Week 6	
Week 7	
Week 8	Mid-term Exam
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts	- Equipment and methods of construction / translated by Dr. Mohammad Ayub Al-Izzi / publications of University of Technology, 1985	Yes
Recommended Texts	- Cost analyzing guideline for building and construction / Ministry of Construction and Housing, 2014	No
Websites		

Grading Scheme مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية		
Module Title	Hydraulic Structures	Module Delivery
Module Type	Core	☐ Theory ☒ Lecture ☐ Lab ☐ Tutorial ☐ Practical
Module Code	CIV4703	
ECTS Credits	4	

SWL (hr/sem)	100	☐ Seminar	
Module Level		Semester of Delivery	
Administering Department	CIVIL	College	Engineering
Module Leader	Abdul-Hassan K. Al-Shukur	e-mail	eng.abdul.hassan@uobabylon.edu.iq
Module Leader's Acad. Title	Professor	Module Leader's Qualification	Ph.D.
Module Tutor	None	e-mail	None
Peer Reviewer Name	None	e-mail	None
Scientific Committee Approval Date	01/06/2023	Version Number	1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	Semester	None
Co-requisites module	None	Semester	None

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	Introduce students to the most important hydraulic structures and teach them the basics of design and analysis for these facilities.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After students complete the course they will be able to known them to most water structures and teaching them how to design and analyze these facilities. The fact that the civil engineer must be familiar with these structures such as dams
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: Part A: Hydraulic Structures an permeable foundation, [8 hrs] Part B: Hydraulic jump [12 hrs] Part C: Energy dissipate devices,[21 hrs]. Part D: design of canal structures [3 hrs] Part E: Storage works [3 hrs]

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	149) Learning Technologies on Campus using data show or TV screen. 150) White board. 151) Hand out lecture notes. 152) Hand out some kinds of pictures related to specific topics.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	37	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	Midterm Exam	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	Material Covered
Week 1	Welcome to this course, syllabus, and expectations. Textbook. Distribution of data, tabular presentation of data.
Week 2	Designing floors and checking the seepage under them by different ways
Week 3	Compute the depth of piles at upstream and down stream of the structure
Week 4	Types of gates, how they work, and the equations used in their analysis
Week 5	Types of head and cross regulators
Week 6	The hydraulic jump and how its energy is dispersed by this basin. Types of basins and how to design and analyze them
Week 7	Design and analysis of flow within the culvert. Types of these structures and the way to classify them. Study the control of flow by the inlet or outlet. Types of entrance and exit losses.
Week 8	The types and importance of this structure, the method of its design and analysis
Week 9	Types of these structures, their importance, design and analysis
Week 10	Types of these structures, their importance, design and analysis
Week 11	Types of these structures, their importance, design and analysis
Week 12	Types of these structures, their importance, design and analysis
Week 13	Types and functions of these structures. Identify the most important forces affecting it. structural analysis in terms of stability and slippage
Week 14	Types of this structure and its function. The design of the ogee-type spillway and identify its equation
Week 15	Types of this structure and its function. The design of the ogee-type spillway and identify its equation
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	Material Covered
Week 1	None
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	Mid-term Exam
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	**- Open-Channel Hydraulics by Ven Te Chow, 1959 - Irrigation engineering and hydraulic structure by SANTOSH**	**No**
Recommended Texts	**- Water resources engineering by Chin**	**No**
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A - Excellent**	**امتياز**	**90 - 100**	**Outstanding Performance**
	B - Very Good	**جيد جدا**	**80 - 89**	**Above average with some errors**
	C - Good	**جيد**	**70 - 79**	**Sound work with notable errors**
	D - Satisfactory	**متوسط**	**60 - 69**	**Fair but with major shortcomings**
	E - Sufficient	**مقبول**	**50 - 59**	**Work meets minimum criteria**
Fail Group (0 – 49)	**FX – Fail**	**راسب (قيد المعالجة)**	**(45-49)**	**More work required but credit awarded**
	F – Fail	**راسب**	**(0-44)**	**Considerable amount of work required**

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية					
Module Title	**Foundation Engineering I**			**Module Delivery**	
Module Type	**Core**			**☐ Theory ☒ Lecture ☐ Lab ☐ Tutorial ☐ Practical ☐ Seminar**	
Module Code	**CIV4704**				
ECTS Credits	**6**				
SWL (hr/sem)	**150**				
Module Level			**Semester of Delivery**		
Administering Department	**CIVIL**		**College**	**Engineering**	
Module Leader	**Ibtehaj Taha Jawad**		**e-mail**	**Eng.ibtehaj.taha@uobabylon.edu.iq**	
Module Leader's Acad. Title	**Assistant Professor**		**Module Leader's Qualification**		**Ph.D.**
Module Tutor	**None**		**e-mail**	**None**	
Peer Reviewer Name	**None**		**e-mail**	**None**	
Scientific Committee Approval Date	**01/06/2023**		**Version Number**		**1.0**

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**None**	**Semester**	**None**
Co-requisites module	**None**	**Semester**	**None**

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	**Foundation engineering course gets the students the ability to describe the in-situ problems and how to use the all necessary engineering concepts to overcome these problems safely and economically.**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	• **An ability to apply knowledge of mathematics, science and engineering** • **An ability to identify, formulate, and solve engineering problems**
Indicative Contents المحتويات الإرشادية	**Indicative content includes the following:** **Part A: Site investigations, [8 hrs]** **Part B: Slope stability [12 hrs]** **Part C: Calculation of settlement,[21 hrs].** **Part D: Methods for calculation of bearing capacity [3 hrs]** **Part E: Factor of safety [3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**153) Learning Technologies on Campus using data show or TV screen.** **154) White board.** **155) Hand out lecture notes.** **156) Hand out some kinds of pictures related to specific topics.**

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	**63**	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	**4**
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	**87**	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	**3.466**
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**150**		

Module Evaluation تقييم المادة الدراسية					
As		**Time/Number**	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	**2**	**15% (15)**	**5 , 8**	**LO # 2, 3,4 and 6, 7**
	Assignments	**2**	**10% (10)**	**6, 12**	**LO # 3, 4 , 5 and 9, 10 and 11**
	Projects / Lab.	**1**	**10% (10)**	**Continuous**	
	Report	**1**	**5% (5)**	**13**	**Continuous**
Summative assessment	**Midterm Exam**	**2 hr**	**10% (10)**	**10**	**LO # 1-9**
	Final Exam	**3hr**	**50% (50)**	**16 or 17**	**All**
Total assessment			**100% (100 Marks)**		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	**Material Covered**
Week 1	**Welcome to this course, syllabus, and expectations. Textbook. Distribution of data, tabular presentation of data.**
Week 2	**Problems of foundations in the field and the use of foundation engineering in solving them.**
Week 3	**Introduction to the site investigation process.**
Week 4	**Compute the settlement of shallow foundations**
Week 5	**Review of consolidation settlement and study of some factors affect the degree of consolidation.**
Week 6	**Methods of estimating of ultimate bearing capacity for different soils**
Week 7	**Effect of some factors on the ultimate bearing capacity.**
Week 8	**Proportioning and designing of shallow foundations.**
Week 9	**General introduction to the pile foundation, uses and types.**
Week 10	**Methods of estimating pile capacity for different types of soil**
Week 11	**Computation of pile efficiency and group settlement.**
Week 12	**Study the stability of retaining (retaining walls and sheet piles**
Week 13	**Analyze the unsupported slopes of soils**
Week 14	**Calculate the lateral earth pressure**
Week 15	**Calculate the lateral earth pressure**
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	**None**
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	**Mid-term Exam**
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	**- Foundation Analysis and Design, by: J. E. Bowles**	**No**
Recommended Texts	**- Principles of Foundation Engineering, by: B. M. Das** **- Geotechnical Engineering, by: V. N. S. Murthy**	**No**
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	**التقدير**	**Marks (%)**	**Definition**

Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية					
Module Title	**Selected Topic (III)**			**Module Delivery**	
Module Type	**Elective**			☐ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	**CIV4705**				
ECTS Credits	**4**				
SWL (hr/sem)	100				
Module Level			**Semester of Delivery**		
Administering Department	CIVIL		**College**	Engineering	
Module Leader	Mustafa B. Dawood		**e-mail**	eng.mustafa.balasum@uobabylon.edu.iq	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**		Ph.D.
Module Tutor	None		**e-mail**	None	
Peer Reviewer Name	None		**e-mail**	None	
Scientific Committee Approval Date	01/06/2023		**Version Number**		1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	None
Co-requisites module	None	**Semester**	None

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The objective of the course is to learn the students how to deal with reinforced concrete structural systems and design them according to design codes. Moreover, the course introduces the prestressed concrete structures for simple structures.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	• An ability to apply knowledge of mathematics, science and engineering • An ability to design a system, component, or process to meet desired needs within realistic • constraints such as economic, environmental, social, political, ethical, health and safety, • manufacturability, and sustainability . • An ability to identify, formulate, and solve engineering problems.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: **Part A:** Deflection control of two - way slabs , Direct design method of two - way slabs , Shear in two – way slabs**, [8 hrs]** **Part B:** Equivalent frame method of two – way slabs**, [12 hrs]** **Part C:** Yield – line analysis (Virtual – work) of slabs**,[21 hrs].** **Part D:** , Prestressed concrete **[3 hrs]** **Part E:** analysis and design of beams **[3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Learning Technologies on Campus using data show or TV screen. (157 White board. (158 Hand out lecture notes. (159 Hand out some kinds of pictures related to specific topics. (160

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	37	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	**Midterm Exam**	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Welcome to this course, syllabus, and expectations. Textbook. Distribution of data, tabular presentation of data.
Week 2	Deflection control of two - way slabs
Week 3	Deflection control of two - way slabs
Week 4	Direct design method of two - way slabs
Week 5	Direct design method of two - way slabs
Week 6	Direct design method of two - way slabs
Week 7	Shear in two – way slabs.

Week 8	Shear in two – way slabs.
Week 9	Equivalent frame method of two – way slabs
Week 10	Equivalent frame method of two – way slabs
Week 11	Equivalent frame method of two – way slabs
Week 12	Yield – line analysis (Virtual – work) of slabs
Week 13	Yield – line analysis (Virtual – work) of slabs
Week 14	Prestressed concrete / analysis and design of beams
Week 15	Prestressed concrete / analysis and design of beams
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	None
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	**Mid-term Exam**
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Darwin D., Dolan, C.W. and Nilson, A.H., "Design of Concrete Structures", McGraw-Hill, Fifteenth Edition, 2016. - American Concrete Institute, "Building Code Requirements for Structural Concrete (ACI 318-19)", Farmington Hills, Michigan, 2019 .	Yes
Recommended Texts	- Wight, J.K., "Reinforced Concrete, Mechanics and Design", Pearson Education, Inc., Seventh Edition, 2016. - Hassoun, M.N. and Al-Manaseer, A., "Structural Concrete, Theory and Design", John Wiley & Sons, Inc., Seventh Edition, 2020.	No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية					
Module Title	**Transportation Engineering**			**Module Delivery**	
Module Type	**Core**			☐ **Theory** ☒ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	CIV4706				
ECTS Credits	**4**				
SWL (hr/sem)	**100**				
Module Level			**Semester of Delivery**		
Administering Department	**CIVIL**		**College**	**Engineering**	
Module Leader	**Ali AA Alwash**		**e-mail**	**eng.ali.abdul@uobabylon.edu.iq**	
Module Leader's Acad. Title	**Professor**		**Module Leader's Qualification**	**Ph.D.**	
Module Tutor	**None**		**e-mail**	**None**	
Peer Reviewer Name	**None**		**e-mail**	**None**	
Scientific Committee Approval Date	**01/06/2023**		**Version Number**	**1.0**	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	**None**	**Semester**	**None**
Co-requisites module	**None**	**Semester**	**None**

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	**The objective of this course is to introduce students to key topics, issues, and design procedures in the field of traffic engineering. Students are exposed to current design guidelines and are introduced to the basic issues dealing with traffic engineering.**
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	**After successful completion of this module, students should be able to:** **Analytical ability** .3 **Comparison between Species different ways.**
Indicative Contents المحتويات الإرشادية	**Indicative content includes the following:** **Part A: Driver, vehicle and pedestrian characteristics [8 hrs]** **Part B: Highway planning and administration [12 hrs]** **Part C: Fundamental relationship between speed-flow-density. [21 hrs].** **Part D: Linear and nonlinear relation (Speed-Density) [3 hrs]** **Part E: Traffic signs type, shapes and colors and road marking [3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	**Learning Technologies on Campus using data show or TV screen.** (161 **White board.** (162 **Hand out lecture notes.** (163 **Hand out some kinds of pictures related to specific topics.** (164

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	**63**	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	**4**
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	**37**	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	**3.466**
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	**100**		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	Midterm Exam	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Welcome to this course, Textbook. Distribution of data, tabular presentation of data.
Week 2	Driver,
Week 3	vehicle and pedestrian characteristics ,
Week 4	Highway planning and administration ,
Week 5	Highway planning and administration ,
Week 6	Types of sight distances ,
Week 7	Geometric design (Elements and control) ,
Week 8	Traffic studies (Volume, speed, capacity, delay, and headway)
Week 9	Traffic studies (Volume, speed, capacity, delay, and headway)
Week 10	Fundamental relationship between speed-flow-density.
Week 11	Linear and nonlinear relation (Speed-Density) ,
Week 12	Types of at grade intersections and interchange ,
Week 13	Design of traffic signals (Webster method) ,
Week 14	Traffic signs type, shapes and colors and road marking , Parking types ,
Week 15	Type of weaving section , Traffic accident causes, types, reporting surveys, and accident rates
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	Videos of data collected from field
Week 2	Collecting flow data from field
Week 3	Collecting speed data from field
Week 4	Collecting headway data
Week 5	Analysis and determining flow relationship from field data- PHF
Week 6	Understanding how to use the HCS for different facilities such as basic freeway, multi-lane, two-lane, weaving, merging and intersections
Week 7	Understanding how to use the HCS for different facilities such as basic freeway, multi-lane, two-lane, weaving, merging and intersections
Week 8	Mid-term Exam
Week 9	Collecting data for urban transportation planning
Week 10	Collecting data for urban transportation planning
Week 11	Videos of data collected from field

Week 12	**Collecting flow data from field**
Week 13	**Collecting speed data from field**
Week 14	**Collecting headway data**
Week 15	**Analysis and determining flow relationship from field data- PHF**
Week 16	**Preparatory week before the final Exam**

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	**Garber, N. and Hoel L. *Traffic and Highway ngineering*, 4th Edition, Cengage Learning, Toronto ON.** .3 **HCM (2000). *Highway Capacity Manual.* Transportation Research Board, TRB Special Report 209, USA** -15	**Yes**
Recommended Texts	**Optional Text:** **HCM (2010). *Highway Capacity Manual*. Transportation Research Board, TRB Special Report 616, USA** .3 **Institute of Transportation Engineering, ITE. (2010). *Traffic Engineering Handbook*. 6th Edition, USA: Washington.** *.4* **-4**	**No**
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A - Excellent**	امتياز	**90 - 100**	**Outstanding Performance**
	B - Very Good	جيد جدا	**80 - 89**	**Above average with some errors**
	C - Good	جيد	**70 - 79**	**Sound work with notable errors**
	D - Satisfactory	متوسط	**60 - 69**	**Fair but with major shortcomings**
	E - Sufficient	مقبول	**50 - 59**	**Work meets minimum criteria**
Fail Group (0 – 49)	**FX – Fail**	راسب (قيد المعالجة)	**(45-49)**	**More work required but credit awarded**
	F – Fail	راسب	**(0-44)**	**Considerable amount of work required**

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

FORTH YEAR / EIGHTH SEMESTER

Module Information معلومات المادة الدراسية			
Module Title	**Design of Steel Structures**		**Module Delivery**
Module Type	**Core**		☐ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**
Module Code	CIV4801		
ECTS Credits	**5**		
SWL (hr/sem)	125		
Module Level		**Semester of Delivery**	
Administering Department	CIVIL	**College**	Engineering
Module Leader	Haitham H. Muteb	**e-mail**	eng.haitham.hassan@uobabylon.edu.iq

Module Leader's Acad. Title	Professor	**Module Leader's Qualification**	Ph.D.
Module Tutor	None	**e-mail**	None
Peer Reviewer Name	None	**e-mail**	None
Scientific Committee Approval Date	01/06/2023	**Version Number**	1.0

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	None
Co-requisites module	None	**Semester**	None

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The objective of the course is to learn the students how to deal with reinforced concrete structural systems and design them according to design codes. Moreover, the course introduces the prestressed concrete structures for simple structures.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	An ability to apply knowledge of mathematics, science and engineering • An ability to design a system, component, or process to meet desired needs within realistic • constraints such as economic, environmental, social, political, ethical, health and safety, • manufacturability, and sustainability . • An ability to identify, formulate, and solve engineering problems. •
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: **Part A:** Properties of structural steel W, S, C, MC, L, T rolled sections , AISC manual and specifications , Design approach **[8 hrs]** **Part B:** Factor of safety, permissible and working stresses, elastic method **[12 hrs]** **Part C:** Net and effective area, permissible stresses**,[21 hrs].** **Part D:** Mode of failure of a column **[3 hrs]** **Part E:** built-up compression members **[3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Learning Technologies on Campus using data show or TV screen. (165 White board. (166 Hand out lecture notes. (167 Hand out some kinds of pictures related to specific topics. (168

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	47	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation تقييم المادة الدراسية					
As		**Time/Number**	**Weight (Marks)**	**Week Due**	**Relevant Learning Outcome**
Formative assessment	**Quizzes**	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative	**Midterm Exam**	2 hr	10% (10)	10	LO # 1-9

assessment	**Final Exam**	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
Week	**Material Covered**
Week 1	Welcome to this course, syllabus, and expectations. Textbook. Distribution of data, tabular presentation of data.
Week 2	Properties of structural steel W, S, C, MC, L, T rolled sections
Week 3	AISC manual and specifications , Design approach
Week 4	Factor of safety, permissible and working stresses
Week 5	Elastic method
Week 6	Plastic method
Week 7	Tension Members
Week 8	Net and effective area, permissible stresses
Week 9	Design of axially loaded tension member
Week 10	Design of axial tension and bending
Week 11	Compression Members
Week 12	Mode of failure of a column
Week 13	Buckling failure, Eula's theory
Week 14	Effective length, slenderness ratio
Week 15	Design formula, built-up compression members, laced and battened columns.
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	None
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	**Mid-term Exam**
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Darwin D., Dolan, C.W. and Nilson, A.H., "Design of Concrete Structures", McGraw-Hill, Fifteenth Edition, 2016. - American Concrete Institute, "Building Code Requirements for Structural Concrete (ACI 318-19)", Farmington Hills, Michigan, 2019 .	Yes
Recommended Texts	- Wight, J.K., "Reinforced Concrete, Mechanics and Design", Pearson Education, Inc., Seventh Edition, 2016.	No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية					
Module Title	**Sanitary Engineering**			**Module Delivery**	
Module Type	**Core**			☐ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	CIV4802				
ECTS Credits	**4**				
SWL (hr/sem)	100				
Module Level			**Semester of Delivery**		
Administering Department	CIVIL		**College**	Engineering	
Module Leader	Saif salah Alquzweeni		**e-mail**	eng.saif.salah@uobabylon.edu.iq	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**		Ph.D.
Module Tutor	None		**e-mail**	None	
Peer Reviewer Name	None		**e-mail**	None	
Scientific Committee Approval Date	01/06/2023		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	None
Co-requisites module	None	**Semester**	None

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The aims of this course are to introduce the basic concepts of sanitary and environmental engineering to civil engineering undergraduate students, especially the fundamentals of conventional water and wastewater treatment processes, and to familiarize the students with sanitary and environmental engineering subject and concepts commonly encountered in engineering practice

Module Learning Outcomes مخرجات التعلم للمادة الدراسية	An ability to apply knowledge of mathematics, science and engineering • An ability to design a system, component, or process to meet desired needs within realistic •
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: **Part A:** Quantity of water, Population Estimation, **[8 hrs]** **Part B:** Hydraulics, Fire Demand , Aqueducts water pipes, Collection and Distribution of water **[12 hrs]** **Part C:** coagulation processes, Flocculation Processes, Filtration of water,**,[21 hrs].** **Part D** Disinfection, Sewage- general consideration, Storm water flow, **[3 hrs]** **Part E:** Design criteria.**[3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Learning Technologies on Campus using data show or TV screen. (169 White board. (170 Hand out lecture notes. (171 Hand out some kinds of pictures related to specific topics. (172

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	22	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	**Midterm Exam**	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Welcome to this course, syllabus, and expectations. Textbook. Distribution of data, tabular presentation of data.
Week 2	Quantity of water
Week 3	Population Estimation
Week 4	Hydraulics
Week 5	Fire Demand
Week 6	Aqueducts water pipes
Week 7	Collection and Distribution of water
Week 8	Intakes, Clarification of water
Week 9	Sedimentation of discrete particles
Week 10	coagulation processes
Week 11	Flocculation Processes
Week 12	Filtration of water
Week 13	Disinfection
Week 14	Sewage- general consideration
Week 15	Storm water flow, Sewer appurtenances, Design criteria

Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	None
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	**Mid-term Exam**
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Gilbert M. Master and Wendell P. Ela, Introduction to Environmental Engineering and Science, 3rd ed., Pearson Education, Inc., Upper Saddle River, NJ (2008). ISBN 0-13 148193-2 -	No
Recommended Texts	Cost analyzing guideline for building and construction / Ministry of Construction and Housing, 2014 Terence J. McGhee & E. W. Steel, edition 6th, 1991, Water Supply and Sewerage, McGraw Hill, ISBN-13: 978-0070609389 -	No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية					
Module Title	**Hydrology**			**Module Delivery**	
Module Type	**Core**			☐ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	CIV4803				
ECTS Credits	**4**				
SWL (hr/sem)	100				
Module Level			**Semester of Delivery**		
Administering Department	CIVIL		**College**	Engineering	
Module Leader	Ruqayah Mohammed		**e-mail**	eng.ruqaya.mohammed@uobabylon.edu.iq	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**		Ph.D.
Module Tutor	None		**e-mail**	None	
Peer Reviewer Name	None		**e-mail**	None	
Scientific Committee Approval Date	01/06/2023		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	None
Co-requisites module	None	**Semester**	None

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	Introduce students to the most important hydraulic structures and teach them the basics of design and analysis for these facilities.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	After students complete the course they will be able to known them to most water structures and teaching them how to design and analyze these facilities. The fact that the civil engineer must be familiar with these structures such as dams
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: **Part A:** Hydraulic Structures an permeable foundation, **[8 hrs]** **Part B:** Hydraulic jump **[12 hrs]** **Part C:** Energy dissipate devices,**[21 hrs].** **Part D:** design of canal structures **[3 hrs]** **Part E:** Storage works **[3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Learning Technologies on Campus using data show or TV screen. (173 White board. (174 Hand out lecture notes. (175 Hand out some kinds of pictures related to specific topics. (176

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	37	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466

Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	**Midterm Exam**	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Welcome to this course, syllabus, and expectations. Textbook. Distribution of data, tabular presentation of data.
Week 2	Designing floors and checking the seepage under them by different ways
Week 3	Compute the depth of piles at upstream and down stream of the structure
Week 4	Types of gates, how they work, and the equations used in their analysis
Week 5	Types of head and cross regulators
Week 6	The hydraulic jump and how its energy is dispersed by this basin. Types of basins and how to design and analyze them
Week 7	Design and analysis of flow within the culvert. Types of these structures and the way to classify them. Study the control of flow by the inlet or outlet. Types of entrance and exit losses.
Week 8	The types and importance of this structure, the method of its design and analysis
Week 9	Types of these structures, their importance, design and analysis
Week 10	Types of these structures, their importance, design and analysis
Week 11	Types of these structures, their importance, design and analysis
Week 12	Types of these structures, their importance, design and analysis
Week 13	Types and functions of these structures. Identify the most important forces affecting it. structural analysis in terms of stability and slippage
Week 14	Types of this structure and its function. The design of the ogee-type spillway and identify its equation
Week 15	Types of this structure and its function. The design of the ogee-type spillway and identify its equation
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	None
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	**Mid-term Exam**
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	

Week 14	
Week 15	
Week 16	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	- Engineering Hydrology by Subramanya	No
Recommended Texts	- Engineering Hydrology by Linsley	No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية			
Module Title	**Foundation Engineering II**		**Module Delivery**
Module Type	**Core**		☐ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**
Module Code	CIV4814		
ECTS Credits	**6**		
SWL (hr/sem)	150		
Module Level		**Semester of Delivery**	
Administering Department	CIVIL	**College**	Engineering
Module Leader	Ibtehaj Taha Jawad	**e-mail**	Eng.ibtehaj.taha@uobabylon.edu.iq
Module Leader's Acad. Title	Assistant Professor	**Module Leader's Qualification**	Ph.D.
Module Tutor	None	**e-mail**	None
Peer Reviewer Name	None	**e-mail**	None
Scientific Committee Approval Date	01/06/2023	**Version Number**	1.0

Relation with other Modules
العلاقة مع المواد الدراسية الأخرى

Prerequisite module	CIV4704	**Semester**	Seven
Co-requisites module	None	**Semester**	None

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	Foundation engineering course gets the students the ability to describe the in-situ problems and how to use the all necessary engineering concepts to overcome these problems safely and economically.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	• An ability to apply knowledge of mathematics, science and engineering • An ability to identify, formulate, and solve engineering problems
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: **Part A:** Site investigations, **[8 hrs]** **Part B:** Slope stability **[12 hrs]** **Part C:** Calculation of settlement,**[21 hrs].** **Part D:** Methods for calculation of bearing capacity **[3 hrs]** **Part E:** Factor of safety **[3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Learning Technologies on Campus using data show or TV screen. (177 White board. (178 Hand out lecture notes. (179 Hand out some kinds of pictures related to specific topics. (180

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	87	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	**Midterm Exam**	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Welcome to this course, syllabus, and expectations. Textbook. Distribution of data, tabular presentation of data.
Week 2	Problems of foundations in the field and the use of foundation engineering in solving them.
Week 3	Introduction to the site investigation process.
Week 4	Compute the settlement of shallow foundations

Week 5	Review of consolidation settlement and study of some factors affect the degree of consolidation.
Week 6	Methods of estimating of ultimate bearing capacity for different soils
Week 7	Effect of some factors on the ultimate bearing capacity.
Week 8	Proportioning and designing of shallow foundations.
Week 9	General introduction to the pile foundation, uses and types.
Week 10	Methods of estimating pile capacity for different types of soil
Week 11	Computation of pile efficiency and group settlement.
Week 12	Study the stability of retaining (retaining walls and sheet piles
Week 13	Analyze the unsupported slopes of soils
Week 14	Calculate the lateral earth pressure
Week 15	Calculate the lateral earth pressure
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	None
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	
Week 7	
Week 8	**Mid-term Exam**
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	- Foundation Analysis and Design, by: J. E. Bowles	No
Recommended Texts	- Principles of Foundation Engineering, by: B. M. Das - Geotechnical Engineering, by: V. N. S. Murthy	No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.

Module Information معلومات المادة الدراسية					
Module Title	**Selected Topic (IV)**			**Module Delivery**	
Module Type	**Elective**			☐ **Theory** ☒ **Lecture** ☐ **Lab** ☐ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	CIV4806				
ECTS Credits	**3**				
SWL (hr/sem)	75				
Module Level			**Semester of Delivery**		
Administering Department	CIVIL		**College**	Engineering	
Module Leader	Haitham H. Muteb		**e-mail**	eng.haitham.hassan@uobabylon.edu.iq	
Module Leader's Acad. Title	Professor		**Module Leader's Qualification**		Ph.D.
Module Tutor	None		**e-mail**	None	
Peer Reviewer Name	None		**e-mail**	None	
Scientific Committee Approval Date	01/06/2023		**Version Number**	1.0	

Relation with other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	None
Co-requisites module	None	**Semester**	None

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	The objective of the course is to learn the students how to deal with reinforced concrete structural systems and design them according to design codes. Moreover, the course introduces the prestressed concrete structures for simple structures.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	An ability to apply knowledge of mathematics, science and engineering • An ability to design a system, component, or process to meet desired needs within realistic • constraints such as economic, environmental, social, political, ethical, health and safety, • manufacturability, and sustainability . • An ability to identify, formulate, and solve engineering problems. •
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: **Part A:** Properties of structural steel W, S, C, MC, L, T rolled sections , AISC manual and specifications , Design approach **[8 hrs]** **Part B:** Factor of safety, permissible and working stresses, elastic method **[12 hrs]** **Part C:** Net and effective area, permissible stresses**,[21 hrs].** **Part D:** Mode of failure of a column **[3 hrs]** **Part E:** built-up compression members **[3 hrs]**

Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Learning Technologies on Campus using data show or TV screen. (181 White board. (182 Hand out lecture notes. (183

	Hand out some kinds of pictures related to specific topics. (184

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	12	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3.466
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	75		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	15% (15)	5 , 8	LO # 2, 3,4 and 6, 7
	Assignments	2	10% (10)	6, 12	LO # 3, 4 , 5 and 9, 10 and 11
	Projects / Lab.	1	10% (10)	Continuous	
	Report	1	5% (5)	13	Continuous
Summative assessment	**Midterm Exam**	2 hr	10% (10)	10	LO # 1-9
	Final Exam	3hr	50% (50)	16 or 17	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	Welcome to this course, syllabus, and expectations. Textbook. Distribution of data, tabular presentation of data.
Week 2	Properties of structural steel W, S, C, MC, L, T rolled sections
Week 3	AISC manual and specifications , Design approach
Week 4	Factor of safety, permissible and working stresses
Week 5	Elastic method
Week 6	Plastic method
Week 7	Tension Members
Week 8	Net and effective area, permissible stresses
Week 9	Design of axially loaded tension member
Week 10	Design of axial tension and bending
Week 11	Compression Members
Week 12	Mode of failure of a column
Week 13	Buckling failure, Eula's theory
Week 14	Effective length, slenderness ratio
Week 15	Design formula, built-up compression members, laced and battened columns.
Week 16	**Preparatory week before the final Exam**

Delivery Plan (Weekly Lab. Syllabus)
المنهاج الاسبوعي للمختبر

Week	Material Covered
Week 1	None
Week 2	
Week 3	
Week 4	
Week 5	
Week 6	

Week 7	
Week 8	**Mid-term Exam**
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	
Week 16	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Darwin D., Dolan, C.W. and Nilson, A.H., "Design of Concrete Structures", McGraw-Hill, Fifteenth Edition, 2016. - American Concrete Institute, "Building Code Requirements for Structural Concrete (ACI 318-19)", Farmington Hills, Michigan, 2019 .	No
Recommended Texts	- Wight, J.K., "Reinforced Concrete, Mechanics and Design", Pearson Education, Inc., Seventh Edition, 2016.	No
Websites		

Grading Scheme مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.