University of Shat Al-Arab جامعة شط العرب

Collage of Engineering كلية الهندسة

Bachelor's degree (B.Sc.) درجة بكالوريوس هندسة مدنية

نبذة هندسية عن كلية الهندسة

تم تأسيس كلية الهندسة في جامعة شط العرب عام 2024، وذلك عقب صدور القرار الوزاري القاضي بتحويل كلية شط العرب الجامعة إلى جامعة رسمية. تهدف الكلية إلى دعم البنية التحتية البشرية في القطاع الهندسي من خلال إعداد كوادر هندسية مؤهلة تلبي احتياجات سوق العمل المحلي في العراق، مع تركيز خاص على محافظة البصرة والمنطقة الجنوبية.

Engineering Overview – College of Engineering

The College of Engineering was established in 2024 following the ministerial decree that transformed Al-Shatt Al-Arab University College into a full-fledged university. The college aims to strengthen Iraq's engineering workforce by preparing highly qualified engineers to meet the demands of the national labor market, with a particular focus on Basra Governorate and the southern region.

الأقسام الأكاديمية الحالية والمستقبلية

- **قسم الهندسة المدنية :**يشكل النواة الأساسية للكلية، ويُعنى بتأهيل مهندسين في مجالات التصميم الإنشائي، إدارة المشاريع، هندسة النقل، والموارد المائية.
- **قسم هندسة النفط والغاز:** *(قيد الافتتاح في العام الأكاديمي القادم)* يهدف إلى إعداد مهندسين متخصصين في استكشاف وإنتاج ومعالجة الموارد الهيدروكربونية، بما يتماشى مع متطلبات قطاع الطاقة في العراق.

Current and Upcoming Academic Departments:

- **Department of Civil Engineering**: Serves as the foundational unit of the college, specializing in structural design, project management, transportation engineering, and water resources.
- **Department of Petroleum and Gas Engineering** *(scheduled to launch next academic year)*: Designed to produce engineers skilled in exploration, production, and processing of hydrocarbon resources, aligned with the needs of Iraq's energy sector.

الرؤية المستقبلية

تتبنى الكلية خطة تطوير استراتيجية لافتتاح أقسام هندسية إضافية، مع التركيز على التخصصات ذات الطلب العالي في كل من القطاع الحكومي والقطاع الخاص، مثل:

- **هندسة الطاقة المتجددة**
- **هندسة الحاسبات**
- **هندسة الاتصالات**
- **هندسة البيئة**

تهدف هذه التوسعات إلى تعزيز التكامل بين مخرجات التعليم الهندسي ومتطلبات التنمية الصناعية والاقتصادية في البلاد. كذلك تهدف الى التميز في تقديم الخدمات التعليمية والبحثية في كافة مجالات الهندسة والتكنولوجيا واعداد المتخصصين من المهندسين

الذين يمكن ان يتقلدوا المراكز المختلفة في الدولة والقطاع الخاص بما يسهم في تطوير المجتمع والاقتصاد المحلي والإقليمي وفي نفس الوقت اعدادهم كمواطنين صالحين مؤمنين بالقيم الانسانية والاخلاقية ومدركين لمسؤوليتهم تجاه دينهم ووطنهم وشعبهم.

Strategic Vision:

The college is pursuing an ambitious development plan to introduce additional engineering departments, emphasizing disciplines that are in high demand across both public institutions and the private sector, such as:

- Renewable Energy Engineering
- Computer Engineering
- Communications Engineering
- Environmental Engineering

This expansion strategy is intended to align academic output with the evolving industrial and economic landscape of the country. The college also aspires to excel in delivering high-quality educational and research services across all fields of engineering and technology. It is committed to preparing specialized engineers capable of assuming diverse roles within governmental institutions and the private sector, thereby contributing to the advancement of society and the development of both the local and regional economy. Simultaneously, the college emphasizes the cultivation of responsible citizens who uphold human and ethical values and are fully aware of their duties toward their faith, homeland, and community.

سياسة ضمان الجودة لمسار بولونا في كلية الهندسة-جامعة شط العرب

أولاً: مقدمة

تهدف الكلية، بصفتها مؤسسة رائدة للتعليم العالي في العراق، إلى تحقيق التميز الأكاديمي والارتقاء بجودة مخرجاتها التعليمية بما يتوافق مع المعايير الدولية. وفي هذا السياق، تسعى الكلية إلى تبني معايير مسار بولونيا لضمان جودة التعليم العالي، بما يضمن توفير بيئة تعليمية محفزة، وإنتاج خريجين مؤهلين لسوق العمل، والمساهمة في التنمية المستدامة للبلد

Quality Assurance Policy for the Bologna Process

College of Engineering – Shatt Al-Arab University

1. Introduction

As a leading institution of higher education in Iraq, the College of Engineering aims to achieve academic excellence and enhance the quality of its educational outcomes in alignment with international standards. In this context, the college is committed to adopting the Bologna Process framework to ensure the quality of higher education, foster a stimulating learning environment, produce graduates equipped for the labor market, and contribute to the sustainable development of the country.

ثانياً: الرؤية والرسالة والأهداف

- **أن تكون الكلية معترف بها بتميزها الأكاديمي، وجودة مخرجاتها، ومساهمتها في التنمية المستدامة**
- **تقديم تعليم عالي الجودة من خلال دعم التعليم المتمحور حول الطالب، وتوفير خدمات مجتمعية تساهم في تطوير المجتمع العراقي**

2. Vision, Mission, and Objectives

- **Vision**: To be recognized for academic excellence, high-quality outcomes, and impactful contributions to sustainable development.
- **Mission**: To deliver high-quality education through student-centered learning and provide community services that support the advancement of Iraqi society.

ثالثاً: الأهداف

- **تطوير برامج أكاديمية متوافقة مع متطلبات سوق العمل والمعايير الدولية.**
- **رفع كفاءة أعضاء هيئة التدريس والباحثين.**
- **تحسين بيئة التعلم والتعلم والبحث العلمي.**
- **تعزيز التعاون الدولي والشراكات الأكاديمية.**
- **ضمان جودة التعليم والتعلم من خلال تطبيق معايير مسار بولونيا.**

3. Strategic Objectives

- Develop academic programs aligned with labor market needs and international standards.
- Enhance the competencies of faculty members and researchers.
- Improve the learning environment and promote scientific research.
- Strengthen international cooperation and academic partnerships.
- Ensure the quality of teaching and learning through the implementation of Bologna Process standards.

رابعاً: مبادئ ضمان الجودة

- **الشفافية: اعتماد مبدأ الشفافية في كافة عمليات ضمان الجودة.**
- **المشاركة: تعزيز مشاركة جميع أعضاء المجتمع الجامعي في عملية ضمان الجودة.**
- **التطوير المستمر: الالتزام بتحسين نظام ضمان الجودة بصورة مستمرة.**
- **الاستقلالية: ضمان استقلالية الجهات المسؤولة عن ضمان الجودة بعيداً عن الإدارات الأكاديمية.**
- **العدالة: تطبيق معايير الجودة بشكل عادل ومنصف على جميع الكليات والبرامج.**

4. Principles of Quality Assurance

- **Transparency**: Upholding transparency across all quality assurance processes.
- **Participation**: Encouraging active involvement of all university stakeholders in quality assurance activities.
- **Continuous Improvement**: Committing to the ongoing enhancement of the quality assurance system.
- **Independence**: Ensuring the autonomy of quality assurance bodies from academic administration.
- **Fairness**: Applying quality standards equitably across all colleges and academic programs.

خامساً: أغراض ضمان الجودة

- **تطوير المناهج الدراسية بما يتوافق مع متطلبات سوق العمل المحلي والمعايير الدولية.**
- **اعتماد نظام الوحدات الدراسية لأوروبية.*(ECTS)***

- توفير مرونة في اختيار المسارات الدراسية.

5. Purposes of Quality Assurance

- Curriculum development in accordance with local labor market demands and international benchmarks.
- Adoption of the European Credit Transfer and Accumulation System (ECTS).
- Providing flexibility in academic pathways and course selection.

سادساً: آليات ضمان الجودة

- التقييم الذاتي: الداخلي: من خلال إجراء تقييم ذاتي دوري لكافة الخدمات والبرامج.
- التقييم الخارجي: الاستعانة بخبراء خارجيين لتقييم جودة البرامج والمؤسسات.
- متابعة تطبيق معايير الجودة: من خلال متابعة التطورات في تطوير وتطبيق معايير واضحة لضمان الجودة في جميع المجالات
- مؤشرات الأداء: قياس التقدم المحرز من جراء تطبيق مؤشرات ضمان الجودة في مسار بولونيا.
- نظام إدارة البيانات: تطوير نظام متكامل لإدارة للبيانات والمعلومات بهدف جمع وتحليل البيانات المتعلقة بضمان الجودة.

6. Mechanisms of Quality Assurance

- **Internal Self-Assessment**: Conducting periodic evaluations of all services and programs.
- **External Evaluation**: Engaging external experts to assess the quality of programs and institutions.
- **Monitoring Quality Standards**: Tracking the evolution and implementation of clear quality assurance criteria across all domains.
- **Performance Indicators**: Measuring progress through Bologna-aligned quality assurance metrics.
- **Data Management System**: Developing an integrated system for collecting and analyzing quality-related data.

سابعاً: الهيكل التنظيمي لضمان الجودة

- لجان ضمان الجودة: تتولى مسؤولية تنفيذ سياسة ضمان الجودة على مستوى الكلية.

7. Organizational Structure for Quality Assurance

- **Quality Assurance Committees**: Responsible for implementing the quality assurance policy at the college level.

ثامناً: الاستنتاج

إن تبني معايير مسار بولونيا يعد خطوة مهمة نحو تحقيق التميز الأكاديمي في الكلية. ومن خلال تطبيق هذه السياسة، ستتمكن الكلية من رفع جودة مخرجاتها التعليمية، وتعزيز مكانتها كمركز للتعليم والبحث العلمي في المنطقة.

8. Conclusion

Adopting the Bologna Process standards represents a significant step toward achieving academic excellence at the College of Engineering. Through the implementation of this policy, the college will enhance the quality of its educational outcomes and solidify its position as a regional hub for education and scientific resear

Vision Statement

Civil Engineering department seeks to achieve discrimination locally regionally and globally as a pioneer section providing software engineering and development engineering services to the community and in accordance with international standards of TQM

Mission Statement

Civil engineering department aims to prepare the engineering staffs that contribute to the building of institution and development of engineering work. and work on research and applied studies, depending on system distinguished academic plan of study and modern scientific laboratories

1. Program Specification

Programmer code:	**BSc-CE**	**ECTS**	**240**
Duration:	4 levels, 8 Semesters	Method of Attendance:	Full Time

2. Program Goals

1- Contribute to the preparation of specialized engineers in the field of Civil engineering to provide the society with engineering expertise and competencies.

2- Rehabilitation graduates to do the planning, design and implementation of engineering projects through the introduction of modern technological means in the curriculum of the department.

3- Building an integrated and balanced personality of the graduate and deepen understanding of the moral responsibilities necessary professional future for them and their needs.

4- Encourage scientific research by providing all forms of support for him as well as the development of partnership relations between scientific research and scientific

problems in all sectors including the service industries .

5- Substrate configuration informed sober be reference to solve technical problems in construction projects through the provision of engineering consultancy.

Student Learning Outcomes

The Civil Engineering Department at the Collage of engineering- Shat Al-Arab University offers a program that provides students with the following upon graduation:

1. An ability to apply knowledge of mathematics, science, and engineering.
2. An ability to design and conduct laboratory experiments, as well as to analyze and interpret data.
3. 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.
4. An ability to function on multi-disciplinary teams.
5. An ability to identify, formulate, and solve engineering problems.
6. An understanding of professional and ethical responsibility.
7. An ability to communicate effectively.
8. The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.
9. Recognition of the need for, and an ability to engage in life-long learning.
10. Knowledge of contemporary issues.
11. An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

6- Academic Staff

جمال عبدالصمد خضير	Ph.D. in civil engineering	Professor
احسان قاسم محمد Assistant Prof.	Ph.D. in civil engineering	
جاسم محسن ياسر	Ph.D. in civil engineering	Lecturer
جواد كاظم مريس Lecturer	Ph.D. in civil engineering	
ايمان حميد مجيد Lecturer	Ph.D. in civil engineering	

نور الهدى سامي بدر	Ph.D. in civil engineering	Lecturer
وسام عبدالله نجم	Ph.D. in civil engineering	Lecturer
نبيل نجم عبد الله	Master in civil engineering	Lecturer
احمد عبد الرزاق ديوان	Master in civil engineering	Assistant Lecturer.
خالد عبد الجبار صبر	Master in civil engineering	Assistant Lecturer
خالد طاهر حبيب	Master in civil engineering	Assistant Lecturer
محمد مصطفى محمد	Master in civil engineering	Assistant Lecturer
قاسم محمد خضير	Master in civil engineering	Assistant Lecturer
علي حسين علي	Master in civil engineering	Assistant Lecturer
شهيد محمد علي	Master in civil engineering	Assistant Lecturer

7- Credits, Grading and GPA

Grading

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	A – Excellent	امتياز	90-100	Outstanding Performance
	B - Very Good	جيد جداً	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
	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 with				

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

Calculation of the Cumulative Grade Point Average (CGPA)

8- Curriculum/Modules
First Stage

Semester 1 | 30 ECTS |

Code	Module	SSWL	USSWL	ECTS	Type	Prerequisite Module
E122-1	Mathmatics I	70	53	5	Basic	-
CE131-1	Engineering Mechanics I	84	64	6	Core	-
CE126	Construction Material	84	64	6	Core	-
E115	Chemistry	42	31	3	Basic	-
U111-1	English Language	28	20	2	Support	
E126	Crime of Baath party	28	20	2	Basic	
CE116	Engineering geology	84	64	6	Basic	-

Semester 2 | 30 ECTS |

Code	Module	SSWL	USSWL	ECTS	Type	Prerequisite Module
E122-2	Mathmatics II	70	53	5	Basic	-
CE131-2	Engineering Mechanics II	84	64	6	Core	-
CE118	Engineering	112	86	8	Core	-
E125	Drawings Statistics	42	31	3	Basic	
E116	Computer Programming	42	31	3	Support	-
E128	Workshop	42	31	3	Basic	-
U121	Physics	28	20	2	Support	
E122-2	Arabic	70	53	5	Basic	

Second Stage

Semester 1 | 30ECTS |

Code	Module	SSWL	USSWL	ECTS	Type	Prerequisite Module
E212-1	Mathmatics	98	75	7	Basic	
CE214-1	fluid mechanics I	70	53	5	Core	
CE213-1	strength of material I	70	53	5	Core	
CE228	building construction	42	31	3	Core	
CE217	Computer program	42	31	3	Basic	
CE215-1	engineering surveying I	70	53	5	Core	
U221	Arabic	28	20	2	Support	

Semester 2 | 30ECTS |

Code	Module	SSWL	USSWL	ECTS	Type	Prerequisite Module
CE214-2	fluid mechanics II	70	53	5	Core	
CE213-2	strength of material II	70	53	5	Core	
CE215-2	engineering surveying II	70	53	5	Core	
CE227	Statistics	56	42	4	Basic	
CE216	concrete tecnology	98	75	7	Core	
U212	Crime of Baath party	28	20	2	Support	
U211-2	English	48	2	2	Support	

9- Contact

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Table of Contents

1. Overview

This catalogue is about the courses (modules) given by the program of Civil Engineering to gain

the Bachelor of Science degree. The program delivers (48) Modules with about (800) total student workload

hours and 240 total ECTS. The module delivery is based on the Bologna Process.

2. Undergraduate Courses 2024-2025

Code	Module title	SSWL	USSWL	SWL	ECTS	semester
E111	Mathmatics I	65	85	150	6	1
Description						
Good understanding of General Mathematics: To give information about derivations and how they are used in the physics field, Helping students to connect mathematics with physics, solving mathematical examples in their physics modules. better understanding of derivations and their importance of them in physics.						

Code	Module title	SSWL	USSWL	SWL	ECTS	semester
CE115	Engineering Mechanics I	65	85	150	6	1

Description

Develop an understanding of the principles of statics, and the ability to analyze problem rationally in a systematic and logical manner including the ability to draw free-body diagrams. Ability to analyze the statics of trusses, frames. The student will develop an understanding on the effects of forces on rigid bodies in order to carry out a structural analysis in civil engineering. This understanding requires a knowledge not only about physics and mathematics of mechanics, but also to; visualize the geometry configuration, the type of the materials, and types of constraints that govern the behavior of the mechanics of materials and thus the structures.

Code	Module title	SSWL	USSWL	SWL	ECTS	semester
U114	Computer Programming	97	66	150	6	1

Description

Demonstrate a foundational understanding of computer and programming concepts and terminology, specifically in the context of QuickBasic.
Apply knowledge of Microsoft Office and QuickBasic syntax and data types to write basic programs.
Analyze and interpret QuickBasic examples to understand their functionality.
Design and implement QuickBasic programs that utilize control flow, variables, and data structures effectively.
Solve simple coding problems using QuickBasic programming techniques

Code	Module title	SSWL	USSWL	SWL	ECTS	semester
U116	English Language	34	16	50	2	1

Description

The Basic English Language Course is designed to provide students with a solid foundation in the English language, focusing on essential skills in reading, writing, listening, and speaking. This course is suitable for students who have little to no prior knowledge of English or for those who wish to enhance their basic language abilities. Through a combination of interactive activities, engaging exercises, and practical assignments, students will develop their language skills and gain confidence in using English in various everyday situations.

Code	Module title	SSWL	USSWL	SWL	ECTS	semester
CE112	Engineering Drawings	93	57	150	6	1

Description

1. Give the students the engineering knowledge and practical experience they need to understand the drawings as well as the main determinants of how they are drawn and illustrated so that they are easy to understand and implement by the implementing engineer.
2. Acquisition of knowledge of how structural, architectural and mechanical plans and their components work.

Code	Module title	SSWL	USSWL	SWL	ECTS	semester
E113	Chemistry	63	55	100	4	1

Description

Understand the fundamental principles and concepts of chemistry, including atomic structure, chemical bonding, and chemical reactions.
Apply chemical knowledge to analyze and predict the properties and behavior of materials used in mechanical engineering, such as metals and composites.
Demonstrate an understanding of the relationship between chemical processes and mechanical engineering applications, such as corrosion, combustion, and heat transfer.

Code	Module title	SSWL	USSWL	SWL	ECTS	semester
CE121	Mathmatics II	65	41	150	6	2

Description

After successful completion of the module, students should be able to:
•Work with transcendental functions represented in various ways: graphical, numerical, analytical, or verbal. They should understand the connections among these representations. exponential, logarithmic, trigonometric, inverse trigonometric, hyperbolic, and inverse hyperbolic,
•Define and apply the concepts of limits and continuity to the mentioned functions and study them graphically and analytically.
• Understand the meaning of the definite integral both as a limit of Riemann sums as the net accumulation of change and should be able to use integrals to solve a variety of problems.
•Use various integration techniques to obtain anti-derivatives without an integral table or calculator.
•Use various operations matrices

Code	Module title	SSWL	USSWL	SWL	ECTS	semester
CE122	Engineering Mechanics II	65	100	150	6	2

Description

After Accomplishing the course requirements, the student will be able to:
1. solve the problems of statically determinate structures that are subjected to distributed load and point loads and apply the equilibrium equations to them
2. Compute the centroid and the center of mass of bodies in plane and in space and implement this in equilibrium and the ability to determine the reactions of structure supports due to the self-weight of the structure.

3. Compute the moment of inertia and the radius of gyration of different types of shapes in plane.

4. Develop the understanding on the effect of static friction on structures and how to analyze the free body diagram due to the friction forces.

Code	Module title	SSWL	USSWL	SWL	ECTS	semester
CE126	Statistics	63	61	100	4	2

Description

1. Data-driven decision making: Statistics allows us to analyze and interpret data, providing evidence-based insights that can inform decision making in various fields such as business, healthcare, and policy-making.

2. Understanding complex phenomena: Statistics helps us understand and make sense of complex phenomena by identifying patterns, trends, and relationships in data. This can lead to a deeper understanding of the world around us.

3. Prediction and forecasting: By analyzing historical data and identifying patterns, statistics can help predict future outcomes and make accurate forecasts. This is particularly useful in fields such as finance, weather forecasting, and market research.

4. Risk assessment and management: Statistics enables us to quantify and assess risks by analyzing data and calculating probabilities. This helps individuals and organizations make informed decisions about potential risks and their potential impact.

5. Quality improvement: Statistics plays a crucial role in quality control processes by analyzing data and identifying areas for improvement. This can lead to enhanced product and service quality, increased efficiency, and cost savings.

6. Research and experimentation: Statistics is essential in scientific research and experimentation. It helps researchers design studies, collect and analyze data, and draw valid conclusions. It also allows for the replication and verification of research findings.

Code	Module title	SSWL	USSWL	SWL	ECTS	semester
CE125	Construction Material	127	23	150	6	2

Description

1. Understanding of important physical and chemical properties of the construction materials.

2. Describe the physical & mechanical properties of construction materials.

3. Production and quality control of construction materials, describe and carry out tests relevant

Code	Module title	SSWL	USSWL	SWL	ECTS	semester
CE124	Engineering geology	63	37	100	4	2

Description

1- Understanding the processes that have formed the earth and the characteristics of its components.
2- Understanding the chemical classification of minerals supported with examples.
3- Identifying the types of minerals that cause soil swelling.
4- Understanding the main three types of rocks (Igneous, sedimentary and Metamorphic rocks) and their formation processes, physical and chemical characteristics and their types.
5- Understanding the different types of mechanical and chemical weathering
6- Understanding soil types and the features and classification of each type in addition to the engineering classification of soil based on particles size
7- Understanding the different types of geological structures and their components and types.
8- Understanding the engineering properties of rocks and the related calculations
9- Interpreting geological maps including topographic and geological cross-sections

Code	Module title	SSWL	USSWL	SWL	ECTS	semester
E123	Physics	63	37	100	4	1

Description

1. Static Fluids:
- Understand the principles of fluid pressure and its measurement.
- Apply Bernoulli's equation to analyze fluid flow in various situations.
- Explain the concept of surface tension and its practical applications.
- Understand the behavior of fluids under turbulent conditions.
- Analyze and solve problems related to fluid viscosity and flow.

2. Material Properties:
- Describe different types of crystalline solids and their structures.
- Analyze stress and strain in materials and understand their behavior under different loading conditions.
- Calculate elasticity modulus and Poisson's ratio for materials.
- Evaluate the energy stored in stressed bodies and understand their elastic and plastic behavior.

Code	Module title	SSWL	USSWL	SWL	ECTS	semester
CE211	strength of material I	63	87	150	6	1

Description

1. The course aims to provide the students with basic knowledge of material behavior, stress-strain relations, and their analysis.
2. During the course, students will review mechanics first and obtain knowledge of stress-strain relations, and their types.
3. Students will review modern sources, and show the problems and their solving methods for all issues related to the strength of materials
4. At the end students will have a basic concept of the theory of shear, flexure, deflection, and column buckling.

Code	Module title	SSWL	USSWL	SWL	ECTS	semester
E212	Mathmatics I	63	62	125	5	1

Description

After completing this module, students should demonstrate competency in the following skills:
1. Use conical sections in real life applications.
2. Sketch the graph of a function using polar coordinate.
3. Convert point and functions from rectangular coordinate to polar coordinate.
4. Calculate area of shapes by use polar coordinate.
5. Evaluate integrals both by using Riemann sums and by using the Fundamental Theorem of Calculus.
6. Apply dot product and cross product of vectors to compute volumes and areas.

Code	Module title	SSWL	USSWL	SWL	ECTS	semester
CE213	fluid mechanics I	80	45	125	5	1

Description

The fluid mechanics staff's goal is to give students a thorough understanding of fluid mechanics' foundational ideas, theories, and practical applications. We want to foster a profound understanding of the importance of fluid dynamics in diverse engineering fields and sectors.
Our course aims to provide a solid grounding in the fundamentals of fluid mechanics through interesting lectures, lively discussions, and practical experiments. We work hard

Code	Module title	SSWL	USSWL	SWL	ECTS	semester
CE214	engineering surveying I	82	43	125	5	1

Description

students will be able to:

1- apply the rules of significant figures to surveying measurements and calculations
2- identify sources and types of error in surveying measurements,
3- compute the standard error of a set of repeated measurements and establish an acceptable range of observed values based upon a specified level of confidence,
4- adjust a set of measured angles and compute line directions for a closed traverse,
5- compute and adjust by compass rule the departures and latitudes of a closed traverse

apply coordinate geometry methods to compute coordinates, direction, distance, and area.

Code	Module title	SSWL	USSWL	SWL	ECTS	semester
CE216	concrete tecnology	93	32	125	6	1

Description

1. Understanding of hydration of cement as well as important physical and chemical properties of the hydration products.

2. Describe the physical & mechanical properties of aggregates.

3. Production and quality control of concrete at its fresh and hardened state, describe and carry out tests relevant to the use of concrete on site.

4. Explain factors affecting strength of concrete.

Code	Module title	SSWL	USSWL	SWL	ECTS	semester
U215	Human rights and democracy	31	36	75	3	1

Description

After completing this module, students should demonstrate competency in the following:
The main rules that organize human rights. Admitting of rights under the authority of the modern state of law
The intellectual base of the principle of rights and freedoms in Islam.
Properties and the nature of rights and freedoms in Islam. The non-organized rights and freedoms in Islam.

Code	Module title	SSWL	USSWL	SWL	ECTS	semester
CE221	strength of material II	59	111	150	6	2

Description

On completion of the module, the student is expected to be able to:
LO#1- Understand the basics of the strength of materials, and the effect of forces, moments, stresses, and strains on materials' behavior.
LO#2- applies the principle of static, forces, and moments equilibrium to rigid bodies and 2D structures to determine internal stresses.
LO#3- applies the principle of static, forces, and moments equilibrium to rigid bodies and 2D structures to determine internal strains.
LO# 4-Discusses and solves problems related to Hooke’s law, deformations in axially loaded bars, deformations in a system of axially loaded bars, statically indeterminate axially loaded members, and thermal effects on axial deformation.
LO# 5- Learn the fundamentals of shear force and bending moment diagrams.

Code	Module title	SSWL	USSWL	SWL	ECTS	semester
E222	Mathmatics II	75	86	125	5	2

Description
After successful completion of the module, students should be able to: • Understand the concept of partial differential, partial derivative and directional derivative.

• The student should understand how to finding the maximum and minimum points and areas of increasing, decreasing and how to link the concepts of these topics to the practical reality of courses related to civil engineering. • Understand the concept of integration and its importance in engineering applications and calculate the area and volume. •Students will be able to perform arithmetic operations with complex numbers, convert between rectangular and polar forms, and find complex conjugates. •Understand the first order differential equation

Code	Module title	SSWL	USSWL	SWL	ECTS	semester
CE223	fluid mechanics II	89	86	125	5	2

Description
The fluid mechanics staff's goal is to give students a thorough understanding of fluid mechanics' foundational ideas, theories, and practical applications. We want to foster a profound understanding of the importance of fluid dynamics in diverse engineering fields and sectors. Our course aims to provide a solid grounding in the fundamentals of fluid mechanics through interesting lectures, lively discussions, and practical experiments. We work hard to help students hone their analytical and problem-solving abilities so they can accurately assess and forecast fluid behavior in real-world situations. We are dedicated to fostering a welcoming and inclusive learning atmosphere that promotes critical thinking, active involvement, and teamwork. By placing a strong emphasis on how fluid mechanics principles may be applied to actual problems, we give students the tools they need to successfully handle challenging engineering issues.

Code	Module title	SSWL	USSWL	SWL	ECTS	semester
CE224	engineering surveying II	63	86	125	5	2

Description
Course Outcomes: After the course the student will be able to • Have product and theoretical knowledge of using a Total Station, describe the functions and uses of the Total station, describe use of correct surveying terminology when using a total station, and demonstrate how to use the Total station in a practical situation. • List the main design parameters of traditional control networks • Determine the accuracy, precision and limitations of the survey data Understand the significant figures and their relation to work accuracy tolerances and final accuracy

Code	Module title	SSWL	USSWL	SWL	ECTS	semester
CE225	Computer program	91	111	150	6	2

Description
1. Writing Visual Basic code in modules and classes. 2. Windows common dialogs are used when creating dialogs, menus, and windows. 3. Visual Basic programs are tested and fixed. 4. Students will learn the principles of programming in the MATLAB language in the section MATLAB Programming. 5. After successful completion of this module, students will be able to: • Undertake arithmetic on scalars, vectors and matrices Create 2D and 3D plots of mathematical functions and data

Code	Module title	SSWL	USSWL	SWL	ECTS	semester
CE226	building construction	66	34	100	4	2

Description
After successful completion of the module, students should be able to: • How to use the multiples and sub-multiples of SI units likely to be used in the construction industry. • The nature and the function of a building and recognize the building as a technology. • How to use the various options of excavation and trench support methods. With the primary function of any trench and excavation support method. • Explains type of buildings and their usage aims. • Explains construction stages. • Explain properties of building elements and prepare the drawings. • Explains functions of building elements. • Explains types and properties of foundations • The student prepares foundation plans of buildings. • Expresses properties of different structures walls. • Expresses properties of different structures floors. • Expresses properties of different types of doors and windows • Draws details of foundation, walls and floors. Finally, all types of stairs with their functional requirements

جمهورية العراق/ وزارة التعليم العالي والبحث العلمي .....

Republic of Iraq - Ministry of Higher Education and Scientific Research	جمهورية العراق - وزارة التعليم العالي والبحث العلمي
Name of University: Shat Al-Arab University	اسم الجامعة: جامعة شط العرب
Bachelor's degree in civil Engineering (First cycle)	بكالوريوس في الهندسة المدنية (الدورة الأولى)
Four years (Eight semesters) - 240 ECTS credits - 1 ECTS = 25 hr	أربع سنوات (ثمانية فصول دراسية) - ٢٤٠ وحدة اوربية - كل وحدة اوربية = ٢٥ ساعة
Program Curriculum (2024 - 2025)	2025-2024

Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/sem	SSWL hr/sem	USSWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
							CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Sema (hr/w)						
UGI	One	1	E122-1	Mathematics1	الرياضيات 1									70	53	5	Basic	
		2	CE131-1	Engineering Mechanics 1	الميكانيك الهندسي 1									84	64	6	Core	
		3	CE126	Building Materials	علم مواد البناء									84	64	6	Core	
		4	E115	Chemistry	الكيمياء									42	31	3	Basic	
		5	U111-1	English Language	اللغة الانكليزية I									28	20	2	Support	
		6	E126	Democracy and Human Rights	الديمقراطية وحقوق الانسان									28	20	2	Basic	
		7	CE116	Earth Science	علم الأرض									84	64	6	Basic	
UGI	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/sem	SSWL hr/sem	USSWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
							CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Sema (hr/w)						
	Two	1	E122-2	Mathematics2	الرياضيات 2									70	53	5	Basic	
		2	CE131-2	Engineering Mechanics 2	الميكانيك الهندسي 2									84	64	6	Core	
		3	CE118	Engineering Drawing	الرسم الهندسي									112	86	8	Core	
		4	E125	Computer Science 1	علم الحاسوب I									42	31	3	Basic	
		5	E116	Engineering Workshops	الورش الهندسية									42	31	3	Support	
		6	E128	Physics	الفيزياء									42	31	3	Basic	
		7	U121	Arabic Language	اللغة العربية I									28	20	2	Support	
Level	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/sem	SSWL hr/sem	USSWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
							CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Sema (hr/w)						
	one	1	E212-1	Mathmatics	الرياضيات التطبيقية									98	75	7	Basic	
		2	CE214-1	fluid mechanics I	ميكانيك الموائع I									70	53	5	Core	
		3	CE213-1	strength of material I	مقاومة المواد I									70	53	5	Core	
		4	CE228	building construction	البناء المعماري									42	31	3	Core	
		5	CE217	Computer program	علم الحاسوب II									42	31	3	Basic	
		6	CE215-1	engineering surveying I	المساحة الهندسية I									70	53	5	Core	
		7	U221	Arabic	اللغة العربية II									28	20	2	Support	
UGII	Semester	No.	Module Code	Module Name in English	اسم المادة الدراسية	Language	SSWL (hr/w)						Exam hr/sem	SSWL hr/sem	USSWL hr/sem	ECTS	Module Type	Prerequisite Module(s) Code
							CL (hr/w)	Lect (hr/w)	Lab (hr/w)	Pr (hr/w)	Tut (hr/w)	Sema (hr/w)						
	Two	1	CE214-2	Fluid Mechanics II	ميكانيك الموائع II									70	53	5	Core	
		2	CE213-2	Strength of Materials II	مقاومة المواد II									70	53	5	Core	
		3	CE215-2	Engineering Surveying II	المساحة الهندسية II									70	53	5	Core	
		4	CE227	Statistics	الاحصاء									56	42	4	Basic	
		5	CE216	Concrete Technology	تكنلوجيا الخرسانة									98	75	7	Core	
		6	U212	Crimes of the Baath Party	جرائم حزب البعث									28	20	2	Support	
		7	U211-2	English Language	اللغة الانكليزية II									48	2	2	Support	