

Module Information			
معلومات المادة الدراسية			
Module Title	Engineering Mathematics		Module Delivery
Module Type	S		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	CET2101		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	2	Semester of Delivery	3

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	<ol style="list-style-type: none"> 1. To develop problem solving skills and understanding of probability theory. 2. To distinguish aspects of probability terminology. 3. This course deals with the basic concept of Statistics. 4. To understand graphical representation of data measures. 5. To perform Simple Linear Regression.

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Basic terminology, Populations and Samples.
Week 2	Sample spaces and events. Axioms for probability and their consequences.
Week 3	Conditional probabilities. Bayes' formula. Independent events.
Week 4	Definition of random variable. Discrete random variables. Expectation and variance.
Week 5	Bayes Theorem, Discrete Probability Distributions, The cumulative distribution function.
Week 6	Probability density function. Expectation and variance of continuous random variables.
Week 7	Binomial Distribution, Poisson Distribution, The Normal Distribution
Week 8	Midterm Exam
Week 9	Joint distribution functions. Marginal distributions. Independent random variables. Distributions of sums of independent random variables.
Week 10	Expectation and variance of sums of random variables. Covariance and correlation.
Week 11	Conditional expectation. Prediction.
Week 12	Graphical Representation - frequency tables and charts, Measures of Central Tendency, and Dispersion.
Week 13	Relationship Modelling, Pearson's Correlation Co-efficient
Week 14	Significance of the correlation co-efficient, Simple Linear Regression
Week 15	Chi Square test for association, Chi Square test of goodness of fit
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Tutorial)

المنهاج الاسبوعي الاضافي

	Material Covered
	Each week, a question sheet related to the material presented in the theoretical lecture will be solved and debated.

Module Information			
معلومات المادة الدراسية			
Module Title	Object Oriented Programming		Module Delivery
Module Type	S		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	CET2102		
ECTS Credits	6		
SWL (hr/sem)	150		
Module Level	2	Semester of Delivery	3

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	<ol style="list-style-type: none"> 1. Understand and apply object-oriented programming principles. 2. Design and implement object-oriented solutions to programming problems. 3. Utilize C++ libraries and frameworks for application development. 4. Implement data abstraction and encapsulation for secure and efficient code. 5. Plan and execute testing strategies for reliable programs. 6. Debug and optimize program performance for efficient execution.

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction to Object-Oriented Programming
Week 2	Classes, Objects, and Relationships
Week 3	Inheritance and Polymorphism principles
Week 4	Encapsulation and Data Abstraction
Week 5	Problem Analysis and Requirements Gathering
Week 6	Object-Oriented Design Principles and Patterns
Week 7	Mid-term Exam
Week 8	C++ Language Essentials and Advanced Topics
Week 9	Implementing Classes and Objects in C++
Week 10	Implementing Inheritance and Polymorphism in C++
Week 11	Handling Exceptions in C++
Week 12	Utilizing C++ Libraries and Frameworks
Week 13	Testing Methodologies and Strategies in C++
Week 14	Debugging Techniques and Tools in C++
Week 15	Optimization and Performance Analysis in C++
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Introduction to C++ programming environment and basic syntax.
Week 2	Implementing simple classes and objects.
Week 3	Experimenting with inheritance and polymorphism in C++.
Week 4	Implementing data abstraction and encapsulation.
Week 5	Problem-solving exercise using object-oriented design principles and patterns.
Week 6	Utilizing C++ libraries and frameworks for application development.
Week 7	Midterm Exam (No lab session).
Week 8	Implementing exception handling techniques in C++.
Week 9	Testing and debugging strategies for object-oriented programs.
Week 10	Profiling and performance analysis of C++ programs.
Week 11	Code optimization techniques for object-oriented programming.
Week 12	Collaborative programming exercise utilizing version control systems.
Week 13	Implementing advanced data structures using object-oriented techniques.
Week 14	Project work and application development using object-oriented concepts.
Week 15	review and practice exercises, Preparatory for Final Exam.
Week 16	Final Exam (No lab session).

Module Information			
معلومات المادة الدراسية			
Module Title	Computer Organization and Applications		Module Delivery
Module Type	core		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	CET2103		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	2	Semester of Delivery	3

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	<ol style="list-style-type: none"> 1. Understand the basic components and organization of a computer system. 2. Explain the function and operation of the CPU, memory, and I/O devices. 3. Analyze and evaluate different computer architectures and their trade-offs. 4. Design and implement basic computer systems using appropriate hardware and software components. 5. Demonstrate an understanding of the relationship between computer organization and computer performance. 6. Apply knowledge of computer organization principles to solve real-world computing problems. 7. To develop essential skills in creating, saving, and opening documents in Microsoft Word, including formatting text and paragraphs and working with styles and themes. 8. To explore advanced features in Microsoft Word, such as page layout options, working with headers, footers, and page numbers, and incorporating tables, images, and objects.

	<p>9. To introduce spreadsheets and worksheets in Microsoft Excel, and develop students' skills in data entry, manipulation, and basic formulas and functions.</p> <p>10. To delve into advanced Microsoft Excel features, including working with ranges and cells, sorting and filtering data, and creating charts and graphs.</p> <p>11. To guide students in creating and editing slides in Microsoft PowerPoint, applying themes and templates, and adding text, images, and multimedia elements.</p> <p>12. To explore advanced PowerPoint features, such as slide transitions, animations, using SmartArt and shapes, and utilizing presenter tools and slide show options.</p>
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Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction to Computer system organization and architecture.
Week 2	Von Neumann architecture and its components
Week 3	Interfacing devices and system buses <ul style="list-style-type: none"> • Tristate buffer • Decoder • Multiplexer • Address bus, data bus and control bus (specifications, function and interfacing)
Week 4	Memory hierarchy <ul style="list-style-type: none"> • Review of memory classification • Cache memory levels, Replacement Techniques, effective access time, read and write protocol
Week 5-6	Memory organization <ul style="list-style-type: none"> • Memory requirements and memory expansion • Memory addresses and memory map
Week 7	Midterm Exam
Week 8	Basic computer microoperations <ul style="list-style-type: none"> • Registers types, registers interconnection and data transfer • Arithmetic microoperation

	<ul style="list-style-type: none"> • Logical microoperation
Week 9	<p>Computer instructions</p> <ul style="list-style-type: none"> • instruction type and format • instruction addressing mode
Week 10	<p>Control and timing unit</p> <ul style="list-style-type: none"> • decoding and executing instruction • instruction cycle
Week 11-12	<p>Instruction Set</p> <ul style="list-style-type: none"> • register reference instruction • memory reference instruction • I/O reference instruction
Week 13	Stack memory
Week 14	Input/output (I/O) Organization
Week 15	Interrupt and subroutines

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Introduction to Computer Organization ,Familiarization with the lab environment and tools
Week 2	hardware components: CPU, memory, and I/O devices
Week 3	Introduction to Assembly Language Programming, microprocessor instruction set
Week 4	register and memory transfer instructions
Week 5	Arithmetic instructions
Week 6	Logical Instructions
Week 7	Stack instructions
Week 8	Loop and Subroutine programs
Week 9	Writing and executing simple assembly language programs
Week 10	Introduction to Lab Environment and Office Suite: Microsoft Word Lab - Creating, editing, and formatting documents. Inserting and formatting images and tables.
Week 11	Microsoft Excel Lab - Creating spreadsheets and entering data. Formulas and functions for calculations.

Week 12	Data Analysis Lab with Excel - Advanced formula and function exercises. Sorting, filtering, and analyzing data.
Week 13	Microsoft PowerPoint Lab - Creating, editing, and designing slides. Adding multimedia elements and animations.
Week 14	Dealing with google form, customized the design, control the access, presents answers.

Module Information			
معلومات المادة الدراسية			
Module Title	Electronic Fundamentals		Module Delivery
Module Type	Core		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	CET2104		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	2	Semester of Delivery	3

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	<p>13. To understand materials conductivity, semiconductor materials, and types</p> <p>14. This is the basic subject for all electronic circuits and devices.</p> <p>15. This course deals with first and the simplest semiconductor device, diode, diode physical construction, biasing, characteristics, application circuits and Zener</p> <p>16. Mathematical derivation and implementation of the load line analysis, and Q point with in diode characteristics curve to develop problem solving skills and understanding of diode circuits</p> <p>17. This course deals with second semiconductor device, BJT This course deals with BJT physical construction, biasing, configuration methods, input and output characteristics</p> <p>18. To understand the D.C biasing of BJT and circuit types , analysis and calculations of BJT parameters</p> <p>19. To understand and construct re model for BJT circuits</p> <p>20. To deal with small signal analysis of BJT</p>

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction, Semiconductor Materials, Energy Levels , Extrinsic Materials—n- and p-Type
Week 2	Semiconductor Diode construction, biasing, characteristics, Zener region
Week 3	Load-Line Analysis, RESISTANCE LEVELS, DIODE EQUIVALENT CIRCUITS
Week 4	Series Diode Configurations with DC Inputs , Parallel and Series- Parallel Configurations
Week 5	Sinusoidal Inputs; Half-Wave Rectification, Full-Wave Rectification
Week 6	Midterm Exam
Week 7	Clipper's series and parallel ,Clampers , Zener Diodes, Introduction , Transistor Construction
Week 8	Transistor Operation, Common-Base Configuration Transistor, Amplifying Action , Common-Emitter Configuration , Limits of Operation
Week 9	Operating Point, Fixed-Bias Circuit ,Emitter-Stabilized Bias Circuit ,
Week 10	Voltage-Divider Bias , DC Bias with Voltage Feedback , Miscellaneous Bias Configurations
Week 11	Design Operations , Transistor Switching Networks
Week 12	Amplification in the AC Domain, BJT Transistor Modeling ,The Important Parameters: Z_i , Z_o , A_v , A_{re} Transistor Model
Week 13	Small signal analysis
Week 14	Common-Emitter Fixed-Bias Configuration Voltage-Divider Bias
Week 15	CE Emitter-Bias Configuration Emitter-Follower Configuration Common-Base Configuration

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: Introduction
Week 2	Lab 2: Diode characteristics
Week 3	Lab 3 Zener diode characteristics
Week 4	Lab 4 Half wave rectifier
Week 5	Lab 5: full wave rectifier
Week 6	Half and full wave rectifier with filter
Week 7	Lab 7: clippers

Module Information معلومات المادة الدراسية			
Module Title	Communication Fundamentals		Module Delivery
Module Type	Core		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	CET2105		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	2	Semester of Delivery	

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	<ol style="list-style-type: none"> 1. Understanding the communication systems and signals. 2. Viewing and knowledge block diagram communication system 3. Analyzing the advantage and disadvantage of each type of signals and systems. 4. Analyzing signals in Fourier series and Fourier transform. 5. To develop problem solving skills and understanding of filters types and design

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Basic Principles of Communication: Introduction to Communication, The Block Diagram of a Communication System
Week 2	Signals: Principles of Signals & Definition, Difference between Analog and Digital Signals
Week 3	Types of continuous-time signals: (Unit–Step Function, Unit –Ramp Function, Impulse Function, Unit –Parabola Function, Signum Function, Rectangular Function, Triangular Function, Real Exponential Signal, Sinusoidal Function & Sampling Function)
Week 4	Classification of Signals , Continuous –Time Signal, Discrete- Time Signals ,Even Signals, Odd Signals , Deterministic Signals, Random Signals, Sinusoidal Signals, Complex Exponential Signals
Week 5	Solved Problems: Periodic Signals, Aperiodic Signals ,Solved Problems: Energy Signals ,Power Signals
Week 6	Fourier series: The Fourier Series in Continuous Domain, Trigonometric Fourier series and Solved Examples , Exponential Fourier series and Solved Examples . Fourier Transform : Fourier Transform Examples
Week 7	Midterm Exam
Week 8	Inverse Fourier Transform Example: The Inverse Fourier Transform
Week 9	Filters : Types of filters : Classification Based on Construction and Design RC-LPF, RC-HPF BPF (Low Pass Filter Stage and High Pass Filter Stage) (Type 1& Type 2) Band Stop Filter
Week 10	Passive Filters : Formula and Procedure of Design RL-LPF, RL-HPF
Week 11	LC- LPF, Constant-K-(T& π Section) LC- HPF, Constant-K-(T& π Section) LC- BPF, Constant-K-(T& π Section)
Week 12	Band Pass Filter Stage) (Type 1& Type 2)
Week 13	Active Filters Comparison Between Passive & Active Filters
Week 14	First- Order LPF First- Order HPF
Week 15	BPF Active Filter & Band reject or Notch Filter
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: Introduction to Lab Instruments
Week 2	Lab 2: Function Generator and Oscilloscope.
Week 3	Lab 3: Introduction to filters types construction
Week 4	Lab 4: Fourier series and Fourier Transform examples using the Math Function
Week 5	Lab 5: Introduction to filters types design
Week 6	Lab 6: Introduction to Passive filters
Week 7	Lab 7: Introduction to active filters
Week 8	Lab 8: Constant-K-(T& π Section) construction
Week 9	Lab 9: Constant-K-(T& π Section) design
Week 10	Lab 10: Constant-K-(T& π Section) LC- LPF
Week 11	Lab 11: Constant-K-(T& π Section) LC-HPF
Week 12	Lab 12: Constant-K-(T& π Section)- BPF
Week 13	Lab 13: Constant-K-(T& π Section)- BPF – Type-1
Week 14	Lab 14: Constant-K-(T& π Section)-BPF –Type-2

Module Information معلومات المادة الدراسية			
Module Title	English Language II		Module Delivery
Module Type	B		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	MTU1003		
ECTS Credits	2		
SWL (hr/sem)	50		
Module Level	1	Semester of Delivery	1

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Objectives أهداف المادة الدراسية	<ol style="list-style-type: none"> 1. Provide students with essential information in the English language in association with reading, writing and speaking skills, and knowing more English vocabulary. 2. To understand sentences, tenses, and practicing writing. 3. This module works towards enhancing students' English language competencies along with their technical or professional knowledge. 4. Enhancing students' communication skills in English can result in better job opportunities in the future

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Unit 1: Grammar: Tenses (Present, Past, and Future), Questions, Questions word Vocabulary: Parts of speech, adjective, preposition, word with more than one meaning Reading and writing Skill, Everyday English (Social Expression)
Week 2	Unit 2: Grammar: Present Tenses (Present Simple, Present Continuous) Tens, have/have got Vocabulary: Description countries, Collection Reading and writing Skill, make conversation, Asking question
Week 3	Unit 3: Grammar: Past Tenses (Past Simple, Past Continuous) Vocabulary: Irregular verbs, making connections, nouns, verbs, and adjectives, Making negatives Reading and writing Skill, Everyday English (Time Expression)
Week 4	Unit 4: Grammar: Quantity, Articles, and some and Any Vocabulary: Buying Things Reading and writing Skill, Everyday English (Prices and shopping)
Week 5	Midterm Exam
Week 6	Unit 5: Grammar: Verb Patterns 1, Future intentions Vocabulary: Hot verbs Reading and writing skills, Everyday English (How do you feel?) Unit 6: Grammar: What's it like?, Comparative and superlative adjectives. Vocabulary: Talking about towns, Money, Synonyms and antonyms Reading and writing Skill, Everyday English (Directions)
Week 7	Unit 7: Grammar: Present Perfect and Past Simple, for and since, Tense revision Vocabulary: Past participles, Adverbs, Word pairs. Reading and writing Skill, Everyday English (short answers)
Week 8	Unit 8: Grammar: Have (got) to, Should, Must Vocabulary: Jobs, Traveling abroad, Words that go together, Compound nouns Reading and writing Skill, Everyday English (At the doctor's)
Week 9	Unit 9: Grammar: Time and Conditional Clauses, What if? Vocabulary: Hot verbs, Hotels Reading and writing Skill, Everyday English (In a hotel)
Week 10	Unit 10: Grammar: Verb Patterns 2, Infinitives, Purpose, (What, etc.+ infinitive), (something, etc.+ infinitive) Vocabulary: Shops, describe feelings and situations. Reading and writing Skill, Everyday English (Exclamations)
Week 11	Unit 11: Grammar: Active and Passive Voice Vocabulary: Verbs and past participles, verbs and nouns that go together Reading and writing Skill, Everyday English (Notices)
Week 12	Unit 12: Grammar: Second conditional, might Vocabulary: Phrasal verbs Reading and writing Skill, Everyday English (Social expression 2)
Week 13	Unit 13: Grammar: Present Perfect Continuous, Present Perfect Simple versus Continuous

	Vocabulary: Job and the alphabet game, Word formation, Adverb Reading and writing Skill, Everyday English (Telephoning)
Week 14	Unit 14: Grammar: Past Perfect, Reported statements Vocabulary: Word in context Reading and writing Skill, Everyday English (Saying goodbye)
Week 15	Grammar: Distinguish make and do, will and would, like, alike, unlike, and dislike, and other, another, and others Vocabulary Reading and writing Skill

Module Information			
معلومات المادة الدراسية			
Module Title	The crimes of the Ba'ath regime		Module Delivery
Module Type	B		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	MTU1007		
ECTS Credits	2		
SWL (hr/sem)	50		
Module Level	2	Semester of Delivery	3

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	<p>يهدف هذا المقرر الدراسي إلى تعزيز فهم الطلاب للجرائم والانتهاكات التي وقعت خلال فترة نظام البعث في العراق وتأثيرها على الأفراد والمجتمع، وتشجيع التحليل والنقاش حول هذه القضايا المهمة. ومن أبرز الأهداف للمادة الدراسية هي اني يكون الطالب قادراً على أن :</p> <ol style="list-style-type: none"> 1. فهم مفهوم الجرائم وأقسامها. 2. دراسة جرائم نظام البعث والقوانين المتعلقة بها. 3. التعرف على الجرائم النفسية والاجتماعية وآثارها على الفرد والمجتمع. 4. تحليل الانتهاكات القانونية في العراق، بما في ذلك الانتهاكات لحقوق الإنسان والجرائم ذات الصلة. 5. فهم الجرائم البيئية وآثارها، بما في ذلك التلوث وتدمير المدن والقرى وتجفيف الأهوار. 6. دراسة جرائم المقابر الجماعية وفهم أحداث المقابر والتصنيف الزمني لها في العراق.

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	تعريف الجريمة لغة واصطلاحًا، مفهوم الجريمة، اقسام الجريمة	الأسبوع الأول
	جرائم نظام البعث وفق توثيق قانون المحكمة الجنائية العراقية العليا عام 2005	الأسبوع الثاني
	الجرائم النفسية لنظام البعث وفهم الآثار النفسية لجرائم نظام البعث على الأفراد والمجتمع.	الاسبوع الثالث
	الجرائم الاجتماعية لنظام البعث وفهم الآثار الاجتماعية لجرائم نظام البعث على الأفراد والمجتمع.	الأسبوع الرابع
	انتهاكات القوانين العراقية	الأسبوع الخامس
	بعض قرارات الانتهاكات السياسية والعسكرية لنظام البعث	الأسبوع السادس
	امتحان نصف الفصل	الأسبوع السابع
	الجرائم البيئية لنظام البعث في العراق (التلوث الحربي وسياسة الأرض المحروقة)	الأسبوع الثامن
	تجفيف الاهوار و تجريف بساتين النخيل والأشجار والمزروعات	الأسبوع التاسع والعاشر
	جرائم المقابر الجماعية واحداث مقابر الإبادة الجماعية المرتكبة من النظام البعث في العراق	الاسبوع الحادي عشر و الاسبوع الثاني عشر
	التصنيف الزمني لمقابر الإبادة الجماعية في العراق للمدة من (1963-2003) م	الأسبوع الثالث عشر والرابع عشر والخامس عشر
	التهيئة لامتحان النهائي	الأسبوع السادس عشر

Module Information			
معلومات المادة الدراسية			
Module Title	Advanced Engineering Mathematics		Module Delivery
Module Type	S		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	CET2201		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	2	Semester of Delivery	

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	<ol style="list-style-type: none"> 1. To develop problem solving skills complex analysis. 2. To understand power series. 3. To the way around Fourier series. 4. To get the grip on using Laplace transform. 5. To develop a good understanding of ODEs. 6. This course deals with Advanced Engineering Mathematics.

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Complex Numbers. Polar Form of Complex Numbers. Powers and Roots. Complex variables.
Week 2	Complex Function. Derivative. Analytic Function. Cauchy–Riemann and Laplace’s Equation.
Week 3	Exponential, Trigonometric and Hyperbolic Functions. Euler’s Formula. Logarithm.
Week 4	Line Integral in the Complex Plane. Cauchy’s Integral Formula. Derivatives of Analytic Functions
Week 5	Power Series. Functions Given by Power Series.
Week 6	Fourier Series. Arbitrary Period. Even and Odd Functions. Fourier Analysis for Periodic Functions. Fourier series Formula of a function. Differentiation and Integration of Fourier Series
Week 7	Laplace Transform. Transforms of Derivatives and Integrals. Table of Laplace Transforms. inverse Laplace transform
Week 8	Midterm Exam
Week 9	First-Order ODEs. Separable ODEs. Exact ODEs. Integrating Factors. Linear ODEs. Bernoulli Equation. Population Dynamics.
Week 10	Second-Order Linear ODEs. Homogeneous. Homogeneous with Constant Coefficients.
Week 11	Nonhomogeneous ODEs. Solution by Variation of Parameters.
Week 12	Higher Order Linear ODEs. Homogeneous Linear ODEs. Homogeneous Linear ODEs with Constant Coefficients. Nonhomogeneous Linear ODEs.
Week 13	Power Series solution of ODE.
Week 14	Fourier Series solution of ODE.
Week 15	Laplace Transform solution of ODE.

Delivery Plan (Weekly Tutorial)

المنهاج الاسبوعي الاضافي

	Material Covered
	Each week, a question sheet related to the material presented in the theoretical lecture will be solved and debated.

Module Information			
معلومات المادة الدراسية			
Module Title	Python Programming		Module Delivery
Module Type	S		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	CET2202		
ECTS Credits	4		
SWL (hr/sem)	100		
Module Level	2	Semester of Delivery	4
Module Aims, Learning Outcomes and Indicative Contents			
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية			
Module Aims أهداف المادة الدراسية	<ol style="list-style-type: none"> 1. Introduce students to the fundamental concepts and principles of Python programming language. 2. Develop students' proficiency in writing Python code and solving programming problems. 3. Familiarize students with essential programming constructs, such as variables, data types, control flow structures, and functions. 4. Provide students with a solid foundation in object-oriented programming (OOP) and its application in Python. 5. Enable students to work with various data structures and perform operations on them. 6. Prepare students for practical application of Python in real-world scenarios, such as data manipulation, web scraping, and GUI development. 		

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction to Python, Variables, Data Types, and Basic Operators
Week 2	Control Flow and Conditional Statements
Week 3	Loops and Iterations
Week 4	Strings and String Manipulation
Week 5	Lists and List Manipulation
Week 6	Dictionaries and Sets
Week 7	Midterm Exam
Week 8	Functions and Function Arguments
Week 9	File Handling and Input/Output Operations
Week 10	Exception Handling and Error Management
Week 11	Modules and Packages
Week 12	Object-Oriented Programming (OOP) Concepts
Week 13	Classes and Objects
Week 14	Inheritance and Polymorphism
Week 15	Working with Files and Directories

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Introduction to Python, Variables, and Basic Operators
Week 2	Control Flow and Conditional Statements
Week 3	Loops and Iterations
Week 4	Strings and String Manipulation
Week 5	Lists and List Manipulation
Week 6	Dictionaries and Sets
Week 7	Midterm Exam (No lab session).
Week 8	Functions and Function Arguments
Week 9	File Handling and Input/Output Operations
Week 10	Exception Handling and Error Management
Week 11	Modules and Packages
Week 12	Object-Oriented Programming (OOP) Concepts
Week 13	Classes and Objects
Week 14	Inheritance and Polymorphism
Week 15	Working with Files and Directories
Week 16	Final Exam (No lab session).

Module Information			
معلومات المادة الدراسية			
Module Title	Microprocessors		Module Delivery
Module Type	Core		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	CET2203		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	2	Semester of Delivery	4

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	<ol style="list-style-type: none"> 7. To understand the basic operating concept of specific microprocessor. 8. To study the hardware architecture of specific microprocessor. 9. To encode programs based on the specific processor language. 10. To solve problems encountered in the architecture of a specific microprocessor

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction - microprocessor evolution
Week 2	Basics specific microprocessor architecture and its specifications
Week 3	Microprocessor signals and machine cycle
Week 4	Memory organization, interfacing and memory map
Week 5	Input devices interfacing, Output devices interfacing
Week 6	Midterm Exam
Week 7	Introduction to microprocessor assembly language and addressing mode
Week 8	Data transfer instruction
Week 9	Arithmetic instructions
Week 10	logical instruction
Week 11	Stack register , stack area and related instructions
Week 12	Branching instruction
Week 13	Delay and counters
Week 14	Interrupt concept and types
Week 15	Subroutine

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: Introduction to microprocessor kit
Week 2	Lab 2: key function definition, read/write memory location, read/write registers
Week 3	Lab 3: Data transfer instructions
Week 4	Lab 4: Arithmetic instructions
Week 5	Lab 5: logical instruction
Week 6	Lab 6: Stack instructions
Week 7	Lab 7: Branching instruction

Module Information			
معلومات المادة الدراسية			
Module Title	Analog Communications		Module Delivery
Module Type	Core		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	CET2204		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	2	Semester of Delivery	

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	<ol style="list-style-type: none"> 1. Understanding the modulation and de-modulation 2. Viewing and knowledge Amplitude modulation and Frequency modulation. 3. Analyzing the advantage and disadvantage of AM over FM. 4. Analyzing the generation and detection each of AM and FM. 5. To develop problem solving skills and understanding of PM equations

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	MODULATION AND DEMODULATION: Forms of Amplitude Modulation , Methods of Amplitude Modulation
Week 2	Carrier Wave, Radio Frequency Spectrum, Sound, Radio Broadcasting
Week 3	Need for Modulation,
Week 4	Methods of Modulation:
Week 5	Amplitude Modulation Percent Modulation, Upper and Lower Sidebands,
Week 6	Mathematical Analysis of a Modulated Carrier Wave. Power Relation in an AM Wave,
Week 7	Midterm Exam
Week 8	Modulating Amplifier Circuit: AM- Transmitter
Week 9	Radio Receiver Essential Parameter
Week 10	Generation of SSB, DSB-SC Balanced Modulators :(Cowan &Ring) Demodulation of AM Signal: AM-Detector (Envelope & Synchronous
Week 11	Frequency Modulation: Modulation Index, Deviation Ratio , Percent Modulation, FM Side bands FM Receiver :FM Discriminator (Foster –Seeley &Ratio Detector),
Week 12	Modulation Index and Number of Side bands, Demodulation or Detection, Comparison between AM and FM, The Four Fields of FM
Week 13	FM Generation (Direct& Indirect Method)
Week 14	Phase modulation (PM) Definition
Week 15	PM equation and PM wave forms

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: Methods of Modulation Process and why modulation
Week 2	Lab2: Demodulation methods Process and detection.
Week 3	Lab 3:Methods of Amplitude Modulation
Week 4	Lab4: Calculating the time and a frequency of carrier wave
Week 5	Lab 5: Calculating of Index Modulation AM and Percent Modulation.
Week 6	Lab 6:Calculating of Upper and Lower Side bands frequencies of AM
Week 7	Lab 7: Modulation AM wave.
Week 8	Lab 8:Calculating power content of AM
Week 9	Lab 9: DE-modulation wave of AM
Week 10	Lab 10:Frequency modulation Process
Week 11	Lab 11:Calculating the maximum and minimum frequency
Week 12	Lab 12: Calculating carrier frequency of FM
Week 13	Lab 13: Index Modulation and Percent Modulation of FM
Week 14	Lab 14: Modulation wave of FM
Week 15	Lab 15: De-Modulation wave of FM

Module Information			
معلومات المادة الدراسية			
Module Title	Electronic Circuits		Module Delivery
Module Type	Core		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	CET2205		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	2	Semester of Delivery	

Module Aims, Learning Outcomes and Indicative Contents	
أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	<ol style="list-style-type: none"> 11. This course deals with Third semiconductor or device, FET physical construction, biasing, configuration s , output and transfer characteristics 12. To understand the D.C biasing of BJT and circuit types , analysis and calculations of FET parameters 13. To understand and construct re FET modeling, and circuits analysis 14. To deal with small signal analysis of FET 15. Deals with Depletion-Type MOSFET , and Enhancement-Type MOSFETs and Combination ,and Design 6. Deals with Operational amplifiers (OP_AMP) their advantages, classifications and types and application circuits

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction ,Field effect transistor FET, Introduction , CONSTRUCTION AND CHARACTERISTICS
Week 2	TRANSFER CHARACTERISTICS, Applying Shockley's Equation, and short hand method
Week 3	DEPLETION-TYPE MOSFET, Basic Construction, c Operation and Characteristics
Week 4	p-Channel Depletion-Type MOSFET, ENHANCEMENT-TYPE MOSFET, Basic construction
Week 5	Enhancement MOSEFET Basic Operation and Characteristics, MOSFET HANDLING
Week 6	FET DC. Biasing , FIXED-BIAS CONFIGURATION,
Week 7	FET SELF-BIAS CONFIGURATION, VOLTAGE-DIVIDER BIASING
Week 8	DEPLETION-TYPE MOSFETs, ENHANCEMENT-TYPE MOSFETs. DESIGN
Week 9	Midterm Exam
Week 10	FET SMALL-SIGNAL MODEL, Graphical Determination of gm, Mathematical Definition of gm
Week 11	FET AC Equivalent Circuit, JFET VOLTAGE-DIVIDER CONFIGURATION, JFET SOURCE-FOLLOWER (COMMON-DRAIN) CONFIGURATION,
Week 12	JFET COMMON-GATE CONFIGURATION, DEPLETION-TYPE MOSFETs, ENHANCEMENT-TYPE MOSFETs
Week 13	Operational amplifier, DIFFERENTIAL AND COMMONMODE OPERATIO, OP-AMP BASICS
Week 14	Operational amplifier applications
Week 15	Operational amplifier applications
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: Introduction
Week 2	Lab 2: Clampers
Week 3	Lab 3 Input characteristic of CBC BJT
Week 4	Lab 4 output characteristic of CBC BJT
Week 5	Lab 5: Input characteristic of CEC BJT
Week 6	Lab 6: output characteristic of CEC BJT
Week 7	Lab 7:review

Module Information معلومات المادة الدراسية			
Module Title	Instrumentation and Measurement		Module Delivery
Module Type	Core		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	CET2206		
ECTS Credits	4		
SWL (hr/sem)	100		
Module Level	2	Semester of Delivery	4

Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية	
Module Aims أهداف المادة الدراسية	16. Identify and analyze factors affecting the performance of measuring systems and errors types and cause 17. Understand voltage and current measurements from a given circuit. 18. Choose appropriate instruments for the measurement of voltage, and current in ac and dc measurements 19. Describe the operating principle of DC and AC bridges 20. Identify Oscilloscopes, signal generators, and transducers

Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction - System of Units- Basics of Measurements
Week 2	Accuracy, Precision, Resolution
Week 3	Reliability, Repeatability, Validity
Week 4	Types of Errors
Week 5	Errors analysis
Week 6	Standard of Measurements
Week 7	Bridge Measurement .DC bridges- Wheatstone Bridge, Kelvin Bridge
Week 8	AC bridges, Capacitance Comparison Bridges, Maxwell's Bridge, Wein's bridge
Week 9	Midterm Exam
Week 10	Measuring of Basic Electrical Parameters- DC Voltmeter
Week 11	DC Ammeter- Extension of DC Voltmeter and Ammeter Range
Week 12	Cathode Ray Tube Oscilloscope
Week 13	High Bandwidth Digital Storage Oscilloscope- Spectrum Analyzer -BER Tester
Week 14	Signal Generator - Arbitrary Waveform Generator
Week 15	Transducers

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1: Introduction to Galvanometer – sensitivity of Galvanometer
Week 2	Lab 2: measurement of DC current
Week 3	Lab 3: measurement of DC voltage
Week 4	Lab 4: measurement of AC current
Week 5	Lab 5: measurement of AC Voltage
Week 6	Lab 6: loading effect on the voltmeter
Week 7	Lab 7: Wheatstone Bridge
Week 8	Lab 8: Maxwell's Bridge
Week 9	Lab 9: Mid-term Exam

Week 10	Lab 10: DC Voltmeter Design
Week 11	Lab 11: DC Ammeter Design
Week 12	Lab 12: Oscilloscope and frequency measurement
Week 13	Lab 13: Project Discussion
Week 14	Lab 14: A preparatory week before the Final Exam
Week 15	Lab 15: Final Exam

10/15/2024

Arabic Language (2)

MTU1009

Zahraa abbas
Al-Qaisar Technologies

Arabic Language (2) (MTU1009)

Module Information		معلومات المادة الدراسية	
Module Title	Arabic Language (2)		Module Delivery
Module Type	Basic		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	MTU1009		
ECTS Credits	2		
SWL (hr/sem)	50		
Module Level	2	Semester of Delivery	2

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

<p>Module Aims أهداف المادة الدراسية</p>	<p>أهداف المادة الدراسية هي اني يكون الطالب قادراً على أن:</p> <ol style="list-style-type: none"> 1. يتعرف على ماهية التعبير القرآني. 2. يتعلم القواعد النحوية المستعملة في التعبير القرآني، والأثر البلاغي والفني الذي يترتب على كيفية التعبير القرآني، وأن يفهم الطالب كيفية التحليل للنصوص القرآنية. 3. يتعرف على شخصية من أهم شخصيات الأدب والشعر العربي والعراقي، بدر شاكر السياب، ومعرفة شعره. 4. ويتعلم استعمالها في اللغة العربية، ويفهم الفرق بين يتعرف على علامات الإعراب الأصلية والفرعية، علامات الإعراب الفرعية والاصولية. 5. يتعلم الفرق بين الجمل الأسمية والفعلية، ويتعرف على أنواع المبتدأ، وأنواع الخبر، ويفهم الفرق بينهما. 6. ويتعلم القواعد الخاصة بها، يتعرف على إن وأخواتها. 7. يفهم الفرق بين إنَّ وأنَّ، وأنَّ وأنَّ، ويطبق ذلك عند استعمال كل منها في النصوص. 8. يتعرف على كان وأخواتها، ويتعلم عمل كل منها في اللغة، ويتمكن من استعمالها الصحيح في اللغة. 9. ويستطيع استعمالها بشكل صحيح في الخطاب وعلامات إعرابها، يتعرف على عمل الأفعال الخمسة، أو النص. 10. يتعرف على الأخطاء اللغوية، ويتعلم تجنبها أثناء الكتابة. 11. والفرق اللغوية، والمعاملات النحوية، ويفهم الفرق يدرس معلومات لغوية: الأضداد والمرادفات، بينها، ويتمكن من تحليلها. 12. يتعلم إعراب المثني. 13. يتعرف على أنواع الجموع، ويتعلم التفريق بينها، ويفهم كيفية إعرابها. 14. يتعلم كيفية كتابة قواعد اللغة العربية في لوحة بيانية، ويتمكن من تصويب الأخطاء اللغوية.
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المنهاج الاسبوعي النظري

Delivery Plan (Weekly Syllabus)

التعبير القرآني، نحوياً من حيث تركيب الجملة والنص. بلاغياً من حيث التأثير الفني، والرجوع إلى المصدر (كتاب التعبير القرآني) للدكتور فاضل السامرائي.	الأسبوع الأول، والثاني
الشاعر بدر شاكر السياب.	الاسبوع الثالث
علامات الإعراب الأصلية: (الفتحة والضمة، والكسرة)، وعلامات الإعراب الفرعية: (الألف، والواو، والياء).	الأسبوع الرابع
الجمل الأسمية – المبتدأ والخبر، وأنواع المبتدأ، وأنواع الخبر.	الأسبوع الخامس
إنَّ وأخواتها	الأسبوع السادس
الفرق بين إنَّ وأنَّ، وأنَّ وإنَّ.	الأسبوع السابع
كان وأخواتها.	الأسبوع الثامن
الأفعال الخمسة.	الأسبوع التاسع والعاشر
الأخطاء اللغوية الجزء (2)	الاسبوع الحادي عشر
معلومات لغوية: المرادفات والاضداد، وفروق لغوية. ومعادلات نحوية.	الاسبوع الثاني عشر
المثني وإعرابه.	الأسبوع الثالث عشر والرابع عشر
أنواع الجموع: جمع المذكر السالم- جمع المؤنث السالم- جمع التذكير.	الأسبوع الخامس عشر
هندسة النحو: قواعد اللغة العربية في لوحة تعليمية، وتصويبات لغوية	الأسبوع السادس عشر