

First Semester**Discrete structures (1)**

Week No.	Syllabus
1.	Set Theory: Definition of Sets, Sets and elements, Universal set
2.	Empty set, Subsets, Set operation, Algebra of set
3.	Power sets, Classes of Set, Mathematical induction.
4.	Relations: Introduction, product sets, Relations,
5.	Pictorial representation of relations, inverse relations,
6.	Composition of relations, Properties of relations, Partitions.
7.	Functions: Fundamental concepts of functions
8.	Functions: Type of functions (one-to-one & invertible function)
9.	Functions: Indexed classes of sets.
10.	Vectors & Matrices: Introduction, Vectors, Matrices.
11.	Matrix addition and scalar multiplication.
12.	Square matrix, Matrix multiplication.
13.	Invertible matrices.
14.	Transpose.
15.	Determinations.

Second Semester**Discrete structures (2)**

Week No.	Syllabus
1.	Graph Theory: Introduction, Graph and multigraphs, Sub graph.
2.	Degree of graph, Connectivity, Traversable multigraphs.
3.	Special graph, Matrices and graphs, Labeled graphs.
4.	Planar Graph: Introduction, Maps.
5.	Euler's formula, colored graph.
6.	Four color theorem, Trees, Rooted trees.
7.	Direct Graph: Introduction, Pruning algorithm for Minimal path.
8.	Combinational Analysis: Factorial notation
9.	Binomial coefficients, Important Concepts, Formulas, and Theorems
10.	Permutations and repetitions
11.	Combinations.
12.	Counting, Basic Counting, Important Concepts, Formulas, and Theorems
13.	Counting Lists, Permutations, and Subsets
14.	The Bijection Principle
15.	k -element permutations of a set.

**First Semester
Logic Design (1)**

Week No.	Syllabus
1.	Data representation
2.	Numbering Systems
3.	The Decimal System
4.	The Binary system
5.	The octal system
6.	The hexadecimal system
7.	Number system conversion
8.	Number system conversion
9.	Signed integer representation
10.	1's and 2's complements of binary number.
11.	Subtraction with complement
12.	Number system operation codes: binary coded
13.	Number system operation code : decimal and digital codes
14.	Digital system arithmetic : Addition
15.	Digital system arithmetic : Subtraction

**Second Semester
Logic Design (2)**

Week No.	Syllabus
1.	Logic gates
2.	Logic gates
3.	Half adder, full adder.
4.	Half subtraction, full subtraction
5.	Boolean algebra and logic simplification
6.	Simplification by karnaugh map(three and four- variable k-map)
7.	Simplification by karnaugh map(three and four- variable k-map)
8.	Combinational logic(NAND and NOR gates)
9.	bit parallel adder
10.	Decoder and encoder
11.	Decoder and encoder
12.	Multiplexer and de-multiplexer
13.	Multiplexer and de-multiplexer
14.	Flip-flop(SR,D and JK)
15.	Flip-flop(SR,D and JK)

First Semester**Computer Fundamentals (1)**

Week No.	Syllabus
1.	Computer history
2.	Computer generations
3.	Computer and its types
4.	Computer architecture
5.	Slots and ports
6.	Input technologies
7.	output technologies
8.	Computer memory
9.	Primary storage
10.	ROM types
11.	RAM types
12.	Secondary storage
13.	CPU and its portions
14.	BUS Interconnection
15.	Computer Performance

Second Semester**Computer Fundamentals (2)**

Week No.	Syllabus
1.	Computer software
2.	System software
3.	Programming language generations
4.	Application software
5.	Examples of finding RAM size and I/O ports
6.	Instruction and registers
7.	Instruction sets
8.	Examples of instruction sets
9.	Convert high level programs to instruction sets
10.	Examples of converting high level programs to instruction sets
11.	Convert instruction sets programs to machine code
12.	Examples of converting instruction sets programs to machine code
13.	Communications and telecommunications
14.	Network and network devices and mediums
15.	Internet and intranet

**First Semester
Programming Language (C++)**

Week No.	Syllabus
1.	Introduction, Procedural Programming Principles.
2.	Algorithm properties, Examples.
3.	Flowcharts, Flowchart Figure, Examples.
4.	C++ Language Basics, Character set, Identifiers, Variables and Variables Declaration, Constants.
5.	Arithmetic Operations, Assignment Operators, Relational Operators,
6.	Logical Operators, Bitwise Operator.
7.	Unary Minus, Increment and /decrement Operators.
8.	Conditions: The Single If Statement Structure.
9.	The If/else Statement Structure, Nested If and If/else Statements
10.	The Switch Selection Statement and Conditional Statement.
11.	Break and Continue Control Statements
12.	The If/else Statement Structure, Nested If and If/else Statements
13.	Counters.
14.	Do/While Statement.
15.	For Statement and Nested Loops

**Second Semester
Programming Language (C++)**

Week No.	Syllabus
1.	Functions : defining a function, return statement, types of functions
2.	Actual and formal arguments, local and global variables.
3.	Parameters passing, recursive functions.
4.	Arrays : Type of arrays .
5.	One dimensional array (declaration, initialization, Accessing)
6.	One dimensional array (declaration, initialization, Accessing)
7.	Two dimensional array (declaration, initialization, Accessing).
8.	Two dimensional array (declaration, initialization, Accessing).
9.	String manipulation
10.	Structures, Type of Structure declaration , Array of Structures
11.	structure within structure
12.	functions and structures
13.	Pointers : pointers declaration
14.	pointers and functions passing parameters
15.	pointers and arrays

First Semester Arabic

Week No.	Syllabus
1.	نشأة النحو العربي
2.	الكلام واقسامه
3.	علامات الترقيم
4.	الهمزة في اللغة العربية
5.	العدد
6.	المبتدأ والخبر
7.	كان وأخواتها
8.	إنَّ وأخواتها
9.	الإعراب والبناء
10.	النداء
11.	الاستثناء
12.	النفي
13.	امثلة عن النفي
14.	الميزان الصرفي
15.	مقدمات عن الصوت

Second Semester English (2)

Week No.	Syllabus
1.	Student life, Reading (ways of reading) ,Writing(punctuation, linking ideas, rules)
2.	Daily routines Reading(predicating contents, skimming),Writing(handwriting, linking ideas)
3.	People and environment: Reading(scanning, meaning from context),writing(punctuation)
4.	Architecture, Reading (making notes)
5.	Architecture: Research (finding information, focusing your search)
6.	Architecture :Writing (linking ideas, words and phrases)
7.	Education: Reading (predicating contents, linking ideas), Writing(formal letters&emails)
8.	Technology: Reading (getting information from websites ,using visuals from websites)
9.	Technology : Writing (writing definition, giving examples)
10.	Food, drink and culture, Reading (topic sentences, writer's opinion), writing.
11.	Cities of the world, Reading (looking at data, getting facts from text) Writing (comparing data, linking ideas)
12.	Brain power, Reading (using pronouns and synonyms, making notes)
13.	Brain power ,Writing(notes and summaries, common mistakes)
14.	Staying alive : Reading (using what you know, using references to understand a text)
15.	Staying alive: Writing (linking ideas, words and phrases)

**First Semester
Mathematic**

Week No.	Syllabus
1.	One dimension matrices (vectors)
2.	Two dimension matrices
3.	Matrix addition and subtraction
4.	Matrix multiplication
5.	Matrix transpose and rank
6.	Determinant and identity matrix
7.	Inverse of matrix
8.	Application about inverse of matrix, matrix division
9.	Cramer's rule for solving system of equation
10.	Functions, odd and even function
11.	Graphing of functions
12.	Functions domain and range
13.	Functions limits, definition of limits
14.	Theorems' of limits, type of limits
15.	Functions continuity

**Second Semester
Mathematic**

Week No.	Syllabus
1.	Mathematical definition of derivatives, derivatives rules
2.	Higher order derivatives, chain rule, implicit derivation
3.	Derivatives of trigonometric functions
4.	Derivatives of inverse trigonometric functions
5.	Derivatives of logarithmic functions
6.	Derivatives of exponential functions
7.	Derivatives of hyperbolic functions
8.	Indefinite integral, integrals rules
9.	Integrals of trigonometric functions
10.	Integrals of inverse trigonometric functions
11.	Integrals of logarithmic functions
12.	Integrals of exponential functions
13.	Integrals of hyperbolic functions
14.	Methods of integrals, double integrals
15.	Definite integral, application of integral area under the curve

First Semester

حقوق الانسان

Week No.	Syllabus
1.	تعريف وخصائص وانواع واهم حقوق الانسان الاساسية
2.	فئات حقوق الانسان
3.	التطور التاريخي لحقوق الانسان
4.	حقوق الانسان في العصور الوسطى
5.	حقوق الانسان في الاسلام
6.	الحقوق السياسية والمدنية
7.	الحقوق الاقتصادية
8.	حقوق الانسان الاساسية التي وردت في القرآن الكريم والسنة النبوية الشريفة
9.	حقوق الانسان في العصر الحديث
10.	المواثيق الدولية لحقوق الانسان
11.	حقوق الطفل
12.	ظاهرة الفساد الاداري
13.	انواع الفساد الاداري
14.	اسباب الفساد الاداري
15.	انعكاسات ظاهرة الفساد الاداري على حقوق الانسان والمجتمع

Second Semester

الديمقراطية

Week No.	Syllabus
16.	تعريف وخصائص وانواع الديمقراطية والحريات العامة
17.	مميزات وخصائص الديمقراطية
18.	التطور التاريخي لحقوق الانسان
19.	الحرية من ناحية السلبية والايجابية
20.	اشكال الحريات
21.	انواع الحريات الفكرية
22.	التطور التاريخي للديمقراطية والحريات العامة
23.	الحضارة المصرية (وادي النيل)
24.	الديمقراطية والحريات العامة في العصور الوسطى
25.	الديمقراطية والحريات العامة في العصر الحديث
26.	الضمانات الاساسية لنجاح الحريات العامة
27.	الضمانات الاجتماعية
28.	الضمانات القانونية
29.	النظام القانوني للحريات العامة
30.	ضوابط ممارسة الحريات العامة