

DIGITAL CIRCUITS DESIGN Programme Course Description

CODE	NAME OF THE COURSE UNIT	SEMESTER	IN-CLASS HOURS (T+P)	CREDIT	ECTS CREDIT
AIK121	Digital Circuits Design	2	2+2	3	5

GENERAL INFORMATION

Language of Instruction:	English
Level of the Course Unit:	Bachelor's Degree
Type of the Course:	Compulsory
Mode of Delivery of the Course Unit	Face to Face
Coordinator of the Course Unit	Ahmed Safaa Salman
Instructor(s) of the Course Unit	Ahmed Safaa Salman

OBJECTIVES AND CONTENTS

Objectives of the Course Unit:	- To learn the basic techniques and methodologies for designing and analyzing digital circuits such as Adder – subtractor circuits. - To learn the Decoder and Encoder circuits. - To learn the Comparator, Multiplexer and Demultiplexer circuits. - To learn and analysis sequential circuits such as flip-flop circuits and Registers. - To learn the types of counters.
Contents of the Course Unit:	1 – Functions of Combinational Logic. 2 – Latches, Flip-Flops, and Timers. 3 – Counters 4 – Shift Registers

Week	KEY LEARNING OUTCOMES OF THE COURSE UNIT On successful completion of this course unit, students/learners will or will be able to dealing with:
1	1- Functions of Combinational Logic. Basic Adders; Half and Full Adders.
2	1- Functions of Combinational Logic. Basic Subtractors; Half and Full Subtractors.
3	1- Functions of Combinational Logic. Parallel Binary Adders and Subtractors. 1's, 2's Complement Subtractor, 2's Complement Adder-Subtractor, BCD Adder, etc.
4	1- Functions of Combinational Logic. Comparators, Code converters.
5	1- Functions of Combinational Logic. Decoders, Encoders.
6	1- Functions of Combinational Logic. Multiplexers (Data Selectors), Demultiplexer.
7	2- Latches, Flip-Flops, and Timers. Latches
8	2- Latches, Flip-Flops, and Timers. Edge-Triggered Flip-Flops.
9	2- Latches, Flip-Flops, and Timers. Flip-Flop operating (R-S, T, J-K,D)
10	3- Counters Synchronous Counters.
11	3- Counters Asynchronous Counters.
12	3- Counters Design of Counters.
13	4- Shift Registers Basic Operations, Serial In/Serial out Shift Registers, Serial In/Parallel out Shift Registers.
14	4- Shift Registers Parallel In/Serial Out Shift Registers, Parallel In/parallel Out Shift Registers, Bidirectional Shift Registers.
15	Final Exam.

No.	PRACTICAL PART
1	Lab 1: Half Binary Adder
2	Lab 2: Full Binary Adder
3	Lab 3: Half Binary Subtractor
4	Lab 4: Full Binary Subtractor
5	Lab 5: 2's Complement Adder-Subtractor
6	Lab 6: Binary Comparator
7	Lab 7: Digital Multiplexer
8	Lab 8: Demultiplexer.
9	Lab 9: Decoders
10	Lab 10: Encoders
11	Lab 11: D Flip-Flop
12	Lab 12: JK- Flip-Flop
13	Lab 13: T- Flip-Flop
14	Lab 14: Review

WORKLOAD & ECTS CREDITS OF THE COURSE UNIT: AIK121 DIGITAL CIRCUITS			
WORKLOAD FOR LEARNING & TEACHING ACTIVITIES			
TYPE OF THE LEARNING ACTIVITIES	LEARNING ACTIVITIES (# OF WEEK)	DURATION (HOURS, H)	WORKLOAD (H)
Lecture & In-Class Activities	15	2	30
Preliminary & Further Study	NA	NA	NA
Land Surveying	NA	NA	NA
Group Work	NA	NA	NA
Laboratory	14	2	28
Reading	6	1	6
Assignment (Homework)	3	2	6
Project Work	3	4	12
Seminar	1	1	1
Internship	NA	NA	NA
Technical Visit	NA	NA	NA
Web Based Learning	NA	NA	NA
Implementation/Application/Practice	NA	NA	NA
Practice at a workplace	NA	NA	NA
Occupational Activity	NA	NA	NA
Social Activity	NA	NA	NA
Thesis Work	NA	NA	NA
Field Study	NA	NA	NA
Report Writing	6	2	12
Final Exam	1	3	3
Preparation for the Final Exam	1	12	12
Mid-Term Exam	1	2	2
Preparation for the Mid-Term Exam	1	8	8
Short Exam (Quizzes)	3	2	2
Preparation for the Short Exam	3	2	6
TOTAL WORKLOAD OF THE COURSE UNIT	56	43	125
Workload (h) / 25			125÷25
ECTS Credits allocated for the Course Unit			5

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CODE	NAME OF THE COURSE UNIT	SEMESTER	IN-CLASS HOURS (T+P)	CREDIT	ECTS CREDIT
AIK121	Digital Circuits Design	2	2+2	3	5

GENERAL INFORMATION

Language of Instruction:	English
Level of the Course Unit:	Bachelor's Degree
Type of the Course:	Compulsory
Mode of Delivery of the Course Unit	Face to Face
Coordinator of the Course Unit	Ahmed Safaa Salman
Instructor(s) of the Course Unit	Ahmed Safaa Salman

OBJECTIVES AND CONTENTS

Objectives of the Course Unit:	- To learn the basic techniques and methodologies for designing and analyzing digital circuits such as Adder – subtractor circuits. - To learn the Decoder and Encoder circuits. - To learn the Comparator, Multiplexer and Demultiplexer circuits. - To learn and analysis sequential circuits such as flip-flop circuits and Registers. - To learn the types of counters.
Contents of the Course Unit:	1 – Functions of Combinational Logic. 2 – Latches, Flip-Flops, and Timers. 3 – Counters 4 – Shift Registers

Week	KEY LEARNING OUTCOMES OF THE COURSE UNIT On successful completion of this course unit, students/learners will or will be able to dealing with:
1	1- Functions of Combinational Logic. Basic Adders; Half and Full Adders.
2	1- Functions of Combinational Logic. Basic Subtractors; Half and Full Subtractors.
3	1- Functions of Combinational Logic. Parallel Binary Adders and Subtractors. 1's, 2's Complement Subtractor, 2's Complement Adder-Subtractor, BCD Adder, etc.
4	1- Functions of Combinational Logic. Comparators, Code converters.
5	1- Functions of Combinational Logic. Decoders, Encoders.
6	1- Functions of Combinational Logic. Multiplexers (Data Selectors), Demultiplexer.
7	2- Latches, Flip-Flops, and Timers. Latches
8	2- Latches, Flip-Flops, and Timers. Edge-Triggered Flip-Flops.
9	2- Latches, Flip-Flops, and Timers. Flip-Flop operating (R-S, T, J-K,D)
10	3- Counters Synchronous Counters.
11	3- Counters Asynchronous Counters.
12	3- Counters Design of Counters.
13	4- Shift Registers Basic Operations, Serial In/Serial out Shift Registers, Serial In/Parallel out Shift Registers.
14	4- Shift Registers Parallel In/Serial Out Shift Registers, Parallel In/parallel Out Shift Registers, Bidirectional Shift Registers.
15	Final Exam.

No.	PRACTICAL PART
1	Lab 1: Half Binary Adder
2	Lab 2: Full Binary Adder
3	Lab 3: Half Binary Subtractor
4	Lab 4: Full Binary Subtractor
5	Lab 5: 2's Complement Adder-Subtractor
6	Lab 6: Binary Comparator
7	Lab 7: Digital Multiplexer
8	Lab 8: Demultiplexer.
9	Lab 9: Decoders
10	Lab 10: Encoders
11	Lab 11: D Flip-Flop
12	Lab 12: JK- Flip-Flop
13	Lab 13: T- Flip-Flop
14	Lab 14: Review

WORKLOAD & ECTS CREDITS OF THE COURSE UNIT: AIK121 DIGITAL CIRCUITS			
WORKLOAD FOR LEARNING & TEACHING ACTIVITIES			
TYPE OF THE LEARNING ACTIVITIES	LEARNING ACTIVITIES (# OF WEEK)	DURATION (HOURS, H)	WORKLOAD (H)
Lecture & In-Class Activities	15	2	30
Preliminary & Further Study	NA	NA	NA
Land Surveying	NA	NA	NA
Group Work	NA	NA	NA
Laboratory	14	2	28
Reading	6	1	6
Assignment (Homework)	3	2	6
Project Work	3	4	12
Seminar	1	1	1
Internship	NA	NA	NA
Technical Visit	NA	NA	NA
Web Based Learning	NA	NA	NA
Implementation/Application/Practice	NA	NA	NA
Practice at a workplace	NA	NA	NA
Occupational Activity	NA	NA	NA
Social Activity	NA	NA	NA
Thesis Work	NA	NA	NA
Field Study	NA	NA	NA
Report Writing	6	2	12
Final Exam	1	3	3
Preparation for the Final Exam	1	12	12
Mid-Term Exam	1	2	2
Preparation for the Mid-Term Exam	1	8	8
Short Exam (Quizzes)	3	2	2
Preparation for the Short Exam	3	2	6
TOTAL WORKLOAD OF THE COURSE UNIT	56	43	125
Workload (h) / 25			125÷25
ECTS Credits allocated for the Course Unit			5

OBJECTED ORIENTED PROGRAMMING Programme Course Description

CODE	NAME OF THE COURSE UNIT	SEMESTER	IN-CLASS HOURS (T+P)	CREDIT	ECTS CREDIT
AIK122	Object Oriented Programming	2	2+2	3	5

GENERAL INFORMATION	
Language of Instruction:	English
Level of the Course Unit:	Bachelor's Degree
Type of the Course:	Compulsory
Mode of Delivery of the Course Unit	Face to Face
Coordinator of the Course Unit	Dr. Mohammed Naief Qasim
Instructor(s) of the Course Unit	

OBJECTIVES AND CONTENTS	
Objectives of the Course Unit:	Introduce the students with computer programming techniques using C++ language, and how it can be used to solve problems related to their specialization.
Contents of the Course Unit:	To learn the 1- Looping & Arrays 2- Statements & Making Decisions 3- Pointers & Functions. 4- Introduction to OOP concepts: Classes.

Week	KEY LEARNING OUTCOMES OF THE COURSE UNIT On successful completion of this course unit, students/learners will or will be able to dealing with:
1	Arrays (two Dimensional arrays, Arrays as parameters)
2	Arrays (two Dimensional arrays, Arrays as parameters) ... part2
3	Character Sequences and String handling.
4	Statements (switch, break, go to)
5	Structure
6	Pointers (Reference operator, dereference operator, Declaring variables of pointer types,)
7	Pointers and arrays, Pointers to pointers, void pointers and Pointers to functions
8	Functions – Basic Concepts
9	Functions (Local and global variables, Arguments passed by value and by reference, Default values in parameters)
10	Functions examples
11	Overloaded functions and Recursive functions.
12	Header and name space
13	Introduction to Classes
14	Introduction to OOP concepts: Classes, Objects, Encapsulation.
15	Revision

No.	PRACTICAL PART
1	Lab 1: two Dimensional arrays ... Problem-solving... part1
2	Lab 2: two Dimensional arrays ... Problem-solving... part2
3	Lab 3: Character and String programs
4	Lab 4: Statements (switch, break, go to) ...part1
5	Lab 5: Statements (switch, break, go to) ...part2
6	Lab 6: how implement a Structure... part2
7	Lab 7: Pointers and arrays... part1
8	Lab 8: Pointers and arrays... part2
9	Lab 9: Functions...part1
10	Lab 10: Functions...part2
11	Lab 11: Functions...part3
12	Lab 12: Header and name space programs
13	Lab 13: Introduction to Classes programs
14	Lab 14: Review

WORKLOAD & ECTS CREDITS OF THE COURSE UNIT : AIK122 OBJECTED ORIENTED PROGRAMMING			
WORKLOAD FOR LEARNING & TEACHING ACTIVITIES			
TYPE OF THE LEARNING ACTIVITES	LEARNING ACTIVITIES (# OF WEEK)	DURATION (HOURS, H)	WORKLOAD (H)
Lecture & In-Class Activities	15	2	30
Preliminary & Further Study	NA	NA	NA
Land Surveying	NA	NA	NA
Group Work	NA	NA	NA
Laboratory	14	2	28
Reading	NA	NA	NA
Assignment (Homework)	2	2	4
Project Work	NA	NA	NA
Seminar	1	3	3
Internship	NA	NA	NA
Technical Visit	NA	NA	NA
Web Based Learning	NA	NA	NA
Implementation/Application/Practice	NA	NA	NA
Practice at a workplace	NA	NA	NA
Occupational Activity	NA	NA	NA
Social Activity	NA	NA	NA
Thesis Work	NA	NA	NA
Field Study	NA	NA	NA
Report Writing	6	3	18
Final Exam	1	3	3
Preparation for the Final Exam	1	14	14
Mid-Term Exam	1	2	2
Preparation for the Mid-Term Exam	1	9	9
Short Exam (Quizzes)	4		
Preparation for the Short Exam	4	3	12
TOTAL WORKLOAD OF THE COURSE UNIT	51	43	125
Workload (h) / 25			125÷25
ECTS Credits allocated for the Course Unit			5

ENGINEERING MATHEMATICS Course Description

CODE	NAME OF THE COURSE UNIT	SEMESTER	IN-CLASS HOURS (T)	CREDIT	ECTS CREDIT
AIK123	Engineering Mathematics	2	3	3	5

GENERAL INFORMATION	
Language of Instruction:	English
Level of the Course Unit:	Bachelor's Degree
Type of the Course:	Compulsory
Mode of Delivery of the Course Unit	Face to Face
Coordinator of the Course Unit	Dr. Essam Rafiq Faiq
Instructor(s) of the Course Unit	Dr. Essam Rafiq Faiq

OBJECTIVES AND CONTENTS	introduce students to mathematics through the laws and issues necessary for the purpose of assisting them in their studies in their field of specialization.
Objectives of the Course Unit:	To learn the
Contents of the Course Unit:	1- Complex numbers 2- Multivariable functions and partial derivatives 3- Vector and analytic geometry in space 4- Vector valued functions 5- Multiple Integrals

Week	KEY LEARNING OUTCOMES OF THE COURSE UNIT On successful completion of this course unit, students/learners will or will be able to dealing with:
1	Complex numbers in Cartesian coordinates and polar form.
2	linear algebra for complex number in polar and Cartesian Euler's formula.
3	DeMoivre's theorem to find powers and the nth roots of given complex numbers
4	Functions of several variables.
5	Partial differentiation and the chain rule.
6	Functions of a complex variable, Cauchy-Riemann equations.
7	Cartesian coordinates and vectors in space, Dot product and Cross product.
8	Lines and planes in space, Tangent and normal in the plane.
9	The two-dimensional Coordinate system, The three dimensional Coordinate.
10	Directional derivatives, Gradient vectors.
11	Divergence, curl and the Laplacian.
12	Double Integral in rectangular and polar form, Areas and volumes.
13	Triple integrals in rectangular coordinates.
14	Applications (Surface Area, Green's theorem and Stokes' theorem).
15	Final Exam

WORKLOAD & ECTS CREDITS OF THE COURSE UNIT : AIK123 ENGINEERING MATHEMATICS			
WORKLOAD FOR LEARNING & TEACHING ACTIVITIES			
TYPE OF THE LEARNING ACTIVATES	LEARNING ACTIVITIES (# OF WEEK)	DURATION (HOURS, H)	WORKLOAD (H)
Lecture & In-Class Activities	15	3	45
Preliminary & Further Study	NA	NA	NA
Land Surveying	NA	NA	NA
Group Work	NA	NA	NA
Laboratory	NA	NA	NA
Reading	NA	NA	NA
Assignment (Homework)	13	1	13
Project Work	NA	NA	NA
Seminar	NA	NA	NA
Internship	NA	NA	NA
Technical Visit	NA	NA	NA
Web Based Learning	5	2	10
Implementation/Application/Practice	NA	NA	NA
Practice at a workplace	NA	NA	NA
Occupational Activity	NA	NA	NA
Social Activity	NA	NA	NA
Thesis Work	NA	NA	NA
Field Study	NA	NA	NA
Report Writing	NA	NA	NA
Final Exam	1	3	3
Preparation for the Final Exam	1	20	20
Mid-Term Exam	1	2	2
Preparation for the Mid-Term Exam	1	16	16
Short Exam (Quizzes)	8	0.5	4
Preparation for the Short Exam	8	1.5	12
TOTAL WORKLOAD OF THE COURSE UNIT	73	54	125
Workload (h) / 25			125÷25
ECTS Credits allocated for the Course Unit			5

AC CIRCUITS ANALYSIS Programme Course Description

CODE	NAME OF THE COURSE UNIT	SEMESTER	IN-CLASS HOURS (T+P)	CREDIT	ECTS CREDIT
AIK124	AC Circuit Analysis	2	2+2	3	5

GENERAL INFORMATION

Language of Instruction:	English
Level of the Course Unit:	Bachelor's Degree
Type of the Course:	Compulsory
Mode of Delivery of the Course Unit	Face to Face
Coordinator of the Course Unit	Dr. Zaid Ahmed Hamid
Instructor(s) of the Course Unit	Dr. Zaid Ahmed Hamid

OBJECTIVES AND CONTENTS

Objectives of the Course Unit:	- To teach the fundamental concept of AC single & 3-phase electrical circuits. - To teach fundamentals of Electric Circuits, their components and the mathematical Tools used to represent and analyze AC electrical circuits including resistors, capacitors, and inductors, dependent and independent sources.
Contents of the Course Unit:	1 – Inductance & Capacitance in Electric circuits. 2 – Alternating Quantities. 3 – Single-phase AC Circuits. 4 – Power in AC Circuits. 5 – Three-Phase Circuit Analysis.

Week	KEY LEARNING OUTCOMES OF THE COURSE UNIT On successful completion of this course unit, students/learners will or will be able to dealing with:
1	1- Inductance & Capacitance in Electric circuits. 1-General concept of capacitance (charge and voltage, capacitors in series and parallel) 2- General concept of inductance (inductive and non-inductive circuits, capacitors in series and parallel)
2	2- Alternating Quantities. Ac systems, waveforms, terms and definitions.
3	2- Alternating Quantities. Average and R.M.S values of current and voltage.
4	2- Alternating Quantities. Phasor diagram
5	3- Single - phase of AC Circuits. AC in resistive circuits, current and voltage in inductive circuits, current and voltage in capacitive circuits.
6	3- Single - phase of AC Circuits. Concept of complex impedance and admittance, AC series and parallel circuits.
7	3- Single - phase of AC Circuits. RL, RC and RLC circuit analysis and phasor representation.
8	4- Power in AC circuits. Power in resistive circuits, power in inductive and capacitive circuits, power in circuit with resistance and reactance.
9	4- Power in AC circuits. Power factor, its practical importance, improvement of power factor, measurement of power in a single – phase AC circuits.
10	5- Three - phase circuit analysis. Basic concept and advantages of three – phase circuit.
11	5- Three - phase circuit analysis. Phasor representation of star and delta connection.
12	5- Three - phase circuit analysis. Phase and line quantities.
13	5- Three - phase circuit analysis. Voltage and current computation in 3-phase balance and unbalance circuits.
14	5- Three - phase circuit analysis. Real and Reactive power computation, measurement of power and power factor in 3-phase system.
15	Final Exam.

No.	PRACTICAL PART
1	Lab 1: Measurement amplitude, frequency and time with oscilloscope using hardware and digital simulation.
	Lab 2: Examine phase relation in RL & RC circuit using hardware and digital simulation.
2	Lab 3: Calculate & verify average and RMS value,
3	Lab 4: Impedance of series RL and RC circuit using digital simulation.
4	Lab 5: Impedance of series RLC circuit using digital simulation.
5	Lab 6: Determination of average value, RMS value, form factor, peak factor of sinusoidal wave using digital simulation.
6	Lab 7: Measure currents and voltages in three-phase balanced AC circuits
7	Lab 8: Prove Y- Δ transformation,
	Lab 9: Exercise on phasor diagrams for three-phase circuits.
8	Lab 10: Measurement of voltage, current & power in a three-phase circuit.
9	Lab 11: Ohm's LAW, KVL AND KCL in AC circuits using digital simulation.
10	Lab 12: Determination of mesh currents in AC circuits using digital simulation.
11	Lab 13: Measurement of nodal voltages in AC circuits using digital simulation.
14	Lab 14: Review

WORKLOAD & ECTS CREDITS OF THE COURSE UNIT : AIK125 AC CIRCUIT ANALYSIS			
WORKLOAD FOR LEARNING & TEACHING ACTIVITIES			
TYPE OF THE LEARNING ACTIVATES	LEARNING ACTIVITIES (# OF WEEK)	DURATION (HOURS, H)	WORKLOAD (H)
Lecture & In-Class Activities	15	2	30
Preliminary & Further Study	2	2	4
Land Surveying	NA	NA	NA
Group Work	NA	NA	NA
Laboratory	14	2	28
Reading	NA	NA	NA
Assignment (Homework)	2	1	2
Project Work	NA	NA	NA
Seminar	2	1	2
Internship	NA	NA	NA
Technical Visit	NA	NA	NA
Web Based Learning	2	2	4
Implementation/Application/Practice	NA	NA	NA
Practice at a workplace	NA	NA	NA
Occupational Activity	NA	NA	NA
Social Activity	NA	NA	NA
Thesis Work	NA	NA	NA
Field Study	NA	NA	NA
Report Writing	6	2	12
Final Exam	1	3	3
Preparation for the Final Exam	1	20	20
Mid-Term Exam	1	2	2
Preparation for the Mid-Term Exam	1	12	12
Short Exam (Quizzes)	3	0.5	1.5
Preparation for the Short Exam	3	1.5	4.5
TOTAL WORKLOAD OF THE COURSE UNIT	53	51	125
Workload (h) / 25			125÷25
ECTS Credits allocated for the Course Unit			5

ENGINEERING DRAWING Programme Course Description

CODE	NAME OF THE COURSE UNIT	SEMESTER	IN-CLASS HOURS (T+P)	CREDIT	ECTS CREDIT
AIK125	Engineering Drawing	1	3	2	3

GENERAL INFORMATION	
Language of Instruction:	English
Level of the Course Unit:	Bachelor's Degree
Type of the Course:	Compulsory
Mode of Delivery of the Course Unit	Face to Face
Coordinator of the Course Unit	Nawal Kamal
Instructor(s) of the Course Unit	Nawal Kamal

OBJECTIVES AND CONTENTS	
Objectives of the Course Unit:	1. Define engineering drawing material, its uses and Engineering drawing tools 2. Introduction to Engineering drawing through AutoCAD software 3. Developing the student's mental and abilities in drawing simple and complex shapes Decomposes 3D shapes into binary projections
Contents of the Course Unit:	1- Introduction to AutoCAD software 2- Draw menu 3- modify menu 4- Layers and properties 5- projection 6- stereoscopic shapes

Week	KEY LEARNING OUTCOMES OF THE COURSE UNIT On successful completion of this course unit, students/learners will or will be able to dealing with:
1	-Get a quick introduction to AutoCAD -Drawing Setup in AutoCAD -Use precision drawing tools such as Grid, Object Snap, and Limits to create accurate measurements in drawings.
2	Coordinate method (Direct distance method, Absolute coordinate, Relative coordinate, Polar coordinate).
3	Draw menu (line, poly line, polygon, rectangle).
4	Drawing objects of pentagonal, hexagonal and octagonal shapes
5	Draw menu (arc, circle, ellipse, point and text).
6	Draw several shapes containing circles and texts.
7	Modify menu (erase, copy, mirror, move offset,).
8	Modify menu (rotate, trim, extend, explode).
9	Properties and Layers in AutoCAD and dimension.
10	Orthographic projection.
11	Draw the three projections (front, side and top) of some shapes.
12	Basics of drawing stereoscopic shapes.
13	Draw stereoscopic shape.
14	Printing the graphic.
15	Final Exam

No.	PRACTICAL PART
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1	Lab 1: Definition of AutoCAD interface.
2	Lab 2: Applications of Coordinate method.
3	Lab 3: Draw figures of lines, polygons and rectangle.
4	Lab 4: Drawing objects of pentagonal, hexagonal and octagonal shapes.
5	Lab 5: Drawing figures of circles and ellipse.
6	Lab 6: Draw several shapes containing circles and texts
7	Lab 7: Applications of some order in modify menu.
8	Lab 8: Applications of other order in modify menu.
9	Lab 9: Practicing of using layers.
10	Lab 10: Practicing of projection of simple figure.
11	Lab 11: Draw three projections of figure.
12	Lab 12: Practicing of drawing stereoscopic shapes.
13	Lab 13: Draw stereoscopic shape.
14	Lab 14: Practicing of Printing the graphic.

WORKLOAD & ECTS CREDITS OF THE COURSE UNIT : AIK125 ENGINEERING DRAWING			
WORKLOAD FOR LEARNING & TEACHING ACTIVITIES			
TYPE OF THE LEARNING ACTIVITIES	LEARNING ACTIVITIES (# OF WEEK)	DURATION (HOURS, H)	WORKLOAD (H)
Lecture & In-Class Activities	14	1	14
Preliminary & Further Study	NA	NA	NA
Land Surveying	NA	NA	NA
Group Work	NA	NA	NA
Laboratory	14	2	28
Reading	NA	NA	NA
Assignment (Homework)	5	1	5
Project Work	1	1	1
Seminar	NA	NA	NA
Internship	NA	NA	NA
Technical Visit	NA	NA	NA
Web Based Learning	NA	NA	NA
Implementation/Application/Practice	NA	NA	NA
Practice at a workplace	NA	NA	NA
Occupational Activity	NA	NA	NA
Social Activity	NA	NA	NA
Thesis Work	NA	NA	NA
Field Study	NA	NA	NA
Report Writing	NA	NA	NA
Final Exam	1	3	3
Preparation for the Final Exam	1	10	10
Mid-Term Exam	1	2	2
Preparation for the Mid-Term Exam	1	5	5
Short Exam (Quizzes)	4	1	4
Preparation for the Short Exam	3	1	3
TOTAL WORKLOAD OF THE COURSE UNIT	45	27	75
Workload (h) / 25			75÷25
ECTS Credits allocated for the Course Unit			3

PHYSICS Programme Course Description

CODE	NAME OF THE COURSE UNIT	SEMESTER	IN-CLASS HOURS (T+P)	CREDIT	ECTS CREDIT
CAIK100	Physics	2	2	2	2

GENERAL INFORMATION	
Language of Instruction:	English
Level of the Course Unit:	Bachelor's Degree
Type of the Course:	Compulsory
Mode of Delivery of the Course Unit	Face to Face
Coordinator of the Course Unit	Swash Sami Mohammed
Instructor(s) of the Course Unit	Swash Sami Mohammed

OBJECTIVES AND CONTENTS	
Objectives of the Course Unit:	The objectives of the subject of physics in university and college include the following: 1- It aims to provide students with a solid foundation in the basic principles and concepts of electrical and electronic physics. 2- Develop students' analytical and problem-solving skills. By studying electrical and electronic physics, students learn to apply mathematical techniques and tools to analyze and solve engineering problems.
Contents of the Course Unit:	Indicative content includes the following. <u>Part A –</u> * Introduction to materials science and engineering, Energy levels, atomic structure and Polymer [12 hrs.] * Electrical source voltage and current, Types of impedances, their characteristics and methods of connection [12hrs] * Semiconductors Fundamentals, Extrinsic Semiconductors [8 hrs.] <u>Part B-</u> * The P-N Junction, The P-N Junction diode, diode application [10 hrs.] * Type of diode (Zener diode, Light Emitting Diodes, Tunnel Diode) [10 hrs.] * Transistor, Bipolar transistor biasing, field effect transistor FET [10 hrs.]

Week	KEY LEARNING OUTCOMES OF THE COURSE UNIT On successful completion of this course unit, students/learners will or will be able to dealing with:
Week 1-2	Introduction to materials science and engineering, Energy levels, atomic structure and Polymer
Week 3-4	Internal structure of cell, Resistance of Material and resistivity.
Week 5-6	Electrical source voltage, current Types of impedances, their characteristics and methods of connection.
Week 7-8	Semiconductors Fundamentals, Extrinsic Semiconductors.
Week 9-10	The P-N Junction, The P-N Junction diode, diode application.
Week 11-12	Type of diode (Zener diode, Light Emitting Diodes, Tunnel Diode).
Week 13	Transistor, Bipolar, transistor biasing, field effect transistor FET.
Week 14	Review
15	Final Exam

WORKLOAD & ECTS CREDITS OF THE COURSE UNIT :		NTU101 ENGLISH LANGUAGE	
WORKLOAD FOR LEARNING & TEACHING ACTIVITIES			
TYPE OF THE LEARNING ACTIVITIES	LEARNING ACTIVITIES (# OF WEEK)	DURATION (HOURS, H)	WORKLOAD (H)
Lecture & In-Class Activities	14	2	28
Preliminary & Further Study	NA	NA	NA
Land Surveying	NA	NA	NA
Group Work	2	1	2
Laboratory	NA	NA	NA
Reading	NA	NA	NA
Assignment (Homework)	3	1	3
Project Work	NA	NA	NA
Seminar	2	1	2
Internship	NA	NA	NA
Technical Visit	NA	NA	NA
Web Based Learning	NA	NA	NA
Implementation/Application/Practice	NA	NA	NA
Practice at a workplace	NA	NA	NA
Occupational Activity	NA	NA	NA
Social Activity	NA	NA	NA
Thesis Work	NA	NA	NA
Field Study	NA	NA	NA
Report Writing	2	1	2
Final Exam	1	3	3
Preparation for the Final Exam	1	3	3
Mid-Term Exam	1	2	2
Preparation for the Mid-Term Exam	1	2	2
Short Exam (Quizzes)	2	0.5	1
Preparation for the Short Exam	2	1	2
TOTAL WORKLOAD OF THE COURSE UNIT	31	18.5	50
Workload (h) / 25			50÷25
ECTS Credits allocated for the Course Unit			2

DIGITAL LOGIC Programme Course Description

CODE	NAME OF THE COURSE UNIT	SEMESTER	IN-CLASS HOURS (T+P)	CREDIT	ECTS CREDIT
AIK111	Digital Logic	1	4	3	5

GENERAL INFORMATION

Language of Instruction:	English
Level of the Course Unit:	Bachelor's Degree
Type of the Course:	Compulsory
Mode of Delivery of the Course Unit	Face to Face
Coordinator of the Course Unit	Ahmed Safaa Salman
Instructor(s) of the Course Unit	Ahmed Safaa Salman

OBJECTIVES AND CONTENTS

Objectives of the Course Unit:	1. To learn the basic techniques and methodologies for designing and analyzing digital systems and how to apply these techniques to build specific circuits. 2. Define the problem (Inputs and Outputs), write its functions 3. Implement functions using Combinational digital circuit. 4. Minimize functions using any type of minimizing algorithms (Boolean algebra, Karnaugh-Map or Tabulation Method). 5. Have knowledge in analyzing and designing procedures of Combinational digital circuits.
Contents of the Course Unit:	1- Numbers Systems, Operations, and Codes. 2- 2- Logic Gates 3- Boolean Algebra and Logic Simplification 4- Combinational Logic Analysis

Week	KEY LEARNING OUTCOMES OF THE COURSE UNIT On successful completion of this course unit, students/learners will or will be able to dealing with:
1	Numbers Systems, Operations, and Codes: Decimal Numbers, Binary numbers.
2	Numbers Systems, Operations, and Codes: Hexadecimal Numbers, Octal numbers.
3	Numbers Systems, Operations, and Codes: Data representation (integer and fraction) using different number systems. Conversion Between Different Numbers Systems.
4	Numbers Systems, Operations, and Codes: Arithmetic operations using 9's and 10's Complements of Decimal Numbers. Arithmetic operations using 1's and 2's Complements of Binary Numbers.
5	Numbers Systems, Operations, and Codes: Signed Numbers, Arithmetic Operations with Signed Numbers.
6	Numbers Systems, Operations, and Codes: Digital Codes (BCD, Excess-3, Parity, Gray etc.).
7	Logic Gates: The Inverter (NOT Gate), The AND Gate, The OR Gate.
8	Logic Gates: The NAND Gate, The NOR Gate, The Exclusive-OR Gate and Exclusive-NOR Gate.
9	Boolean Algebra and Logic Simplification: Boolean Operations and Expressions.
10	Boolean Algebra and Logic Simplification: Laws and Rules of Boolean Algebra.
11	Boolean Algebra and Logic Simplification Simplification Using Boolean Algebra. DeMorgan's theorems.
12	Boolean Algebra and Logic Simplification: The Karnaugh Map (1, 2, 3 and 4 variables), SOP and POS Minimization.
13	Combinational Logic Analysis:

	Basic Combinational Logic Circuits. Implementing Combinational Logic.
14	Combinational Logic Analysis: Combinational Logic Using NAND and NOR Gates. Logic Circuit Operation with Pulse Waveform Inputs.
15	Combinational Logic Analysis: Logic Circuit Operation with Pulse Waveform Inputs.

No.	PRACTICAL PART
1	Lab 1: Introduction to digital laboratory kit operation
2	Lab 2: Logic Gates (AND, OR, NOT, NAND, NOR).
3	Lab 3: Logic Gates (XOR, XNOR).
4	Lab 4: Design of (AND, OR, NOT) gates Using NAND gates.
5	Lab 5: Design of (AND, OR, NOT) gates Using NOR gates.
6	Lab 6: Implementation of logic circuits using NAND-gate only.
7	Lab 7: Implementation of logic circuits using NOR-gate only.
8	Lab 8: Implementation of DeMorgan theory, 1st Law
9	Lab 9: Implementation of DeMorgan theory, 2nd Law
10	Lab 10: Design of a combinational logic circuits . Part 1
11	Lab 11: Design of a combinational logic circuits. Part 2
12	Lab 12: Realization of Boolean equation. Part 1
13	Lab 13: Realization of Boolean equation. Part 2
14	Lab 14: Review

WORKLOAD & ECTS CREDITS OF THE COURSE UNIT : AIK111 DIGITAL LOGIC			
WORKLOAD FOR LEARNING & TEACHING ACTIVITIES			
TYPE OF THE LEARNING ACTIVITIES	LEARNING ACTIVITIES (# OF WEEK)	DURATION (HOURS, H)	WORKLOAD (H)
Lecture & In-Class Activities	15	2	30
Preliminary & Further Study	4	2	8
Land Surveying	NA	NA	NA
Group Work	NA	NA	NA
Laboratory	14	2	28
Reading	NA	NA	NA
Assignment (Homework)	5	1	5
Project Work	NA	NA	NA
Seminar	1	1	1
Internship	NA	NA	NA
Technical Visit	1	5	5
Web Based Learning	5	2	10
Implementation/Application/Practice	NA	NA	NA
Practice at a workplace	NA	NA	NA
Occupational Activity	NA	NA	NA
Social Activity	NA	NA	NA
Thesis Work	NA	NA	NA
Field Study	NA	NA	NA
Report Writing	10	1	10
Final Exam	1	3	3
Preparation for the Final Exam	1	15	15
Mid-Term Exam	1	2	2
Preparation for the Mid-Term Exam	1	10	10
Short Exam (Quizzes)	4	0.25	1
Preparation for the Short Exam	2	1	2
TOTAL WORKLOAD OF THE COURSE UNIT	78	47	125
Workload (h) / 25			125÷25

ECTS Credits allocated for the Course Unit	5
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MATHEMATICS Course Description

CODE	NAME OF THE COURSE UNIT	SEMESTER	IN-CLASS HOURS (T+P)	CREDIT	ECTS CREDIT
AIK112	Mathematics	1	3	3	5

GENERAL INFORMATION	
Language of Instruction:	English
Level of the Course Unit:	Bachelor's Degree
Type of the Course:	Compulsory
Mode of Delivery of the Course Unit	Face to Face
Coordinator of the Course Unit	Dr. Essam Rafiq Faiq
Instructor(s) of the Course Unit	Dr. Essam Rafiq Faiq

OBJECTIVES AND CONTENTS	Help the student to understand the laws and issues necessary for the purpose of solving simple and complex electrical circuits.
Objectives of the Course Unit:	To learn the
Contents of the Course Unit:	1- Matrix and Determinants 2- Review of Functions 3- Derivatives 4- Integration

Week	KEY LEARNING OUTCOMES OF THE COURSE UNIT On successful completion of this course unit, students/learners will or will be able to dealing with:
1	Matrix, properties, and operations
2	Determinants and properties of determinants Inverse of square matrix by determinants
3	Solving linear System equations using the inverse of the coefficient matrix and Cramer's rule
4	Algebraic functions
5	Review of natural logarithm, the exponential function, trigonometric functions
6	inverse trigonometric functions and hyperbolic functions
7	Derivatives formula and chain rule.
8	Derivatives of natural logarithm, the exponential function, trigonometric functions
9	inverse trigonometric functions and hyperbolic functions.
10	Applications of differentiation.
11	Review of Integration, Indefinite and Definite Integral
12	Integration method
13	Integration method
14	Applications of integration, approximation(trapezoidal rule, Simpson's rule) Area between curves
15	Revision

WORKLOAD & ECTS CREDITS OF THE COURSE UNIT : AIK112 MATHEMATICS			
WORKLOAD FOR LEARNING & TEACHING ACTIVITIES			
TYPE OF THE LEARNING ACTIVITIES	LEARNING ACTIVITIES (# OF WEEK)	DURATION (HOURS, H)	WORKLOAD (H)
Lecture & In-Class Activities	15	3	45
Preliminary & Further Study	NA	NA	NA
Land Surveying	NA	NA	NA
Group Work	NA	NA	NA
Laboratory	NA	NA	NA
Reading	NA	NA	NA
Assignment (Homework)	13	1	13
Project Work	NA	NA	NA
Seminar	NA	NA	NA
Internship	NA	NA	NA
Technical Visit	NA	NA	NA
Web Based Learning	5	2	10
Implementation/Application/Practice	NA	NA	NA
Practice at a workplace	NA	NA	NA
Occupational Activity	NA	NA	NA
Social Activity	NA	NA	NA
Thesis Work	NA	NA	NA
Field Study	NA	NA	NA
Report Writing	NA	NA	NA
Final Exam	1	3	3
Preparation for the Final Exam	1	20	20
Mid-Term Exam	1	2	2
Preparation for the Mid-Term Exam	1	16	16
Short Exam (Quizzes)	8	0.5	4
Preparation for the Short Exam	8	1.5	12
TOTAL WORKLOAD OF THE COURSE UNIT	53	49	125
Workload (h) / 25			125÷25
ECTS Credits allocated for the Course Unit			5

ARTIFICIAL INTELLIGENCE Programme Course Description

CODE	NAME OF THE COURSE UNIT	SEMESTER	IN-CLASS HOURS (T+P)	CREDIT	ECTS CREDIT
AIK113	Artificial Intelligence	1	2	2	5

GENERAL INFORMATION	
Language of Instruction:	English
Level of the Course Unit:	Bachelor's Degree
Type of the Course:	Compulsory
Mode of Delivery of the Course Unit	Face to Face
Coordinator of the Course Unit	Dr. Amal Saeed Taama
Instructor(s) of the Course Unit	Dr. Amal Saeed Taama

OBJECTIVES AND CONTENTS	
Objectives of the Course Unit:	Introduce the student to general artificial intelligence fundamentals.
Contents of the Course Unit:	Artificial intelligence, machine learning, principles and applications

Week	KEY LEARNING OUTCOMES OF THE COURSE UNIT On successful completion of this course unit, students/learners will or will be able to dealing with:
1	Introduction to artificial intelligence
2	Artificial intelligence types
3	Artificial intelligence applications
4	Introduction to machine learning
5	Machine learning types
6	Machine learning applications
7	Principles of neural networks
8	Advanced neural networks
9	Principles of fuzzy logic
10	Introduction to optimizations
11	Optimizations types
12	Optimizations applications
13	Artificial intelligence ethics
14	Artificial intelligence future
15	Final Exam

WORKLOAD & ECTS CREDITS OF THE COURSE UNIT:		AIK113 ARTIFICIAL INTELLIGENCE	
WORKLOAD FOR LEARNING & TEACHING ACTIVITIES			
TYPE OF THE LEARNING ACTIVITIES	LEARNING ACTIVITIES (# OF WEEK)	DURATION (HOURS, H)	WORKLOAD (H)
Lecture & In-Class Activities	15	2	30
Preliminary & Further Study	15	2	30
Land Surveying	NA	NA	NA
Group Work	NA	NA	NA
Laboratory	NA	NA	NA
Reading	NA	NA	NA
Assignment (Homework)	4	10	40
Project Work	NA	NA	NA
Seminar	NA	NA	NA
Internship	NA	NA	NA
Technical Visit	NA	NA	NA
Web Based Learning	NA	NA	NA
Implementation/Application/Practice	NA	NA	NA
Practice at a workplace	NA	NA	NA
Occupational Activity	NA	NA	NA
Social Activity	NA	NA	NA
Thesis Work	NA	NA	NA
Field Study	NA	NA	NA

Report Writing	NA	NA	NA
Final Exam	1	3	3
Preparation for the Final Exam	1	6	6
Mid-Term Exam	1	2	2
Preparation for the Mid-Term Exam	1	4	4
Short Exam (Quizzes)	1	10	10
Preparation for the Short Exam	NA	NA	NA
TOTAL WORKLOAD OF THE COURSE UNIT	39	39	125
Workload (h) / 25			125÷25
ECTS Credits allocated for the Course Unit			5

FUNDAMENTAL OF PROGRAMMING

Programme Course Description

CODE	NAME OF THE COURSE UNIT	SEMESTER	IN-CLASS HOURS (T+P)	CREDIT	ECTS CREDIT
AIK114	Fundamental of Programming	1	4	3	6

GENERAL INFORMATION	
Language of Instruction:	English
Level of the Course Unit:	Bachelor's Degree
Type of the Course:	Compulsory
Mode of Delivery of the Course Unit	Face to Face
Coordinator of the Course Unit	Mr. Muhammad Nayef
Instructor(s) of the Course Unit	Mr. Muhammad Nayef

OBJECTIVES AND CONTENTS	
Objectives of the Course Unit:	Introduce the students with computer programming techniques using C++ language, and how it can be used to solve problems related to their specialization.
Contents of the Course Unit:	To learn the 1- Introduction to C++. 2- Operators & Making Decisions 3- Looping & Arrays 4- Pointers & Functions.

Week	KEY LEARNING OUTCOMES OF THE COURSE UNIT On successful completion of this course unit, students/learners will or will be able to dealing with:
1	Introduction to C++ (Structure of a program)
2	Variables, Data Types, Declaration of variables, Scope of variables, Initialization of variables, Expressions and Basic Input/Output.
3	Operators (Assignment, Arithmetic operators, Compound assignment, Increase and decrease, Relational and equality operators, Conditional operator)
4	Making Decisions (if...else and switch).
5	Looping (while loop and for loop).
6	Bitwise Operators and Explicit type casting operator
7	Arrays (Single Dimensional arrays, Arrays as parameters)
8	Arrays (two Dimensional arrays, Arrays as parameters)
9	Character Sequences and String handling.
10	Structure
11	Pointers (Reference operator, dereference operator, Declaring variables of pointer types,)
12	Pointers and arrays, Pointers to pointers, void pointers and Pointers to functions
13	Functions (Local and global variables, Arguments passed by value and by reference, Default values in parameters)
14	Overloaded functions and Recursive functions.
15	Revision

No.	PRACTICAL PART
1	Lab 1: Introduction to C++ program using visual studio .
2	Lab 2: my first program and how solve a problem.
3	Lab 3: if...else and switch programs
4	Lab 4: while loop and for loop programs
5	Lab 5: Bitwise Operators programs
6	Lab 6: Single Dimensional arrays
7	Lab 7: two Dimensional arrays ..part1
8	Lab 8: two Dimensional arrays..part2
9	Lab 9: Character and String programs
10	Lab 10: how implement a Structure
11	Lab 11: Pointers and arrays
12	Lab 12: Functions.part1
13	Lab 13: Functions.part2
14	Lab 14: Review

WORKLOAD & ECTS CREDITS OF THE COURSE UNIT : AIK114 COMPUTER PROGRAMMING			
WORKLOAD FOR LEARNING & TEACHING ACTIVITIES			
TYPE OF THE LEARNING ACTIVITES	LEARNING ACTIVITIES (# OF WEEK)	DURATION (HOURS, H)	WORKLOAD (H)
Lecture & In-Class Activities	15	2	30
Preliminary & Further Study	NA	NA	NA
Land Surveying	NA	NA	NA
Group Work	NA	NA	NA
Laboratory	14	2	28
Reading	NA	NA	NA
Assignment (Homework)	2	2	4
Project Work	NA	NA	NA
Seminar	1	3	3
Internship	NA	NA	NA
Technical Visit	NA	NA	NA
Web Based Learning	NA	NA	NA
Implementation/Application/Practice	NA	NA	NA
Practice at a workplace	NA	NA	NA
Occupational Activity	NA	NA	NA
Social Activity	NA	NA	NA
Thesis Work	NA	NA	NA
Field Study	NA	NA	NA
Report Writing	6	3	18
Final Exam	1	3	3
Preparation for the Final Exam	1	14	14
Mid-Term Exam	1	2	2
Preparation for the Mid-Term Exam	1	9	9
Short Exam (Quizzes)	4	1	4
Preparation for the Short Exam	4	3	12
TOTAL WORKLOAD OF THE COURSE UNIT	51	43	150
Workload (h) / 25			150÷25
ECTS Credits allocated for the Course Unit			6

CODE	NAME OF THE COURSE UNIT	SEMESTER	IN-CLASS HOURS (T+P)	CREDIT	ECTS CREDIT
AIK115	DC Circuit Analysis	1	4	3	5

GENERAL INFORMATION	
Language of Instruction:	English
Level of the Course Unit:	Bachelor's Degree
Type of the Course:	Compulsory
Mode of Delivery of the Course Unit	Face to Face
Coordinator of the Course Unit	Dr. Zaid Ahmed Hamid
Instructor(s) of the Course Unit	Dr. Zaid Ahmed Hamid

OBJECTIVES AND CONTENTS	
Objectives of the Course Unit:	To provide the fundamental concept of DC electrical circuits.
Contents of the Course Unit:	1-General Electric System. 2- DC circuits. 3- Network Theorems

Week	KEY LEARNING OUTCOMES OF THE COURSE UNIT On successful completion of this course unit, students/learners will or will be able to dealing with:
1	1- General Electric System: Constituent parts of an electrical system (source, load, communication & control), Current flow in a circuit, Electromotive force and potential difference, Electrical units.
2	1- General Electric System: Ohm's law, Resistors, Resistivity, Temperature rise & Temperature coefficient of resistance, Voltage & Current sources
3	2- DC circuits: Series circuits, Parallel circuits.
4	2- DC circuits: Kirchhoff's laws.
5	2- DC circuits: Power and energy.
6	3- Network Theorems: Star-delta & delta-star transformation
7	3- Network Theorems: Sources transformations
8	3- Network Theorems: Mesh analysis.
9	3- Network Theorems: Nodal analysis.
10	3- Network Theorems: Superposition theorem.
11	3- Network Theorems: Thevenin's theorem
12	3- Network Theorems: Norton's theorem
13	3- Network Theorems: Maximum power transfer theorem.
14	3- Network Theorems: Reciprocity theorem
15	Final Exam

No.	PRACTICAL PART
1	Lab 1: Connection of resistances in series and parallel.
2	Lab 2: Verification of Ohm's law using hardware.
3	Lab 3: Verification of Ohm's law using digital simulation.
4	Lab 4: Verification of Kirchhoff's current law and Voltage law using hardware.
5	Lab 5: Verification of Kirchhoff's current law and Voltage law using digital simulation.
6	Lab 6: Determination of mesh currents using hardware.
7	Lab 7: Determination of mesh currents using digital simulation.
8	Lab 8: Measurement of nodal voltages using hardware and digital simulation.
9	Lab 9: Verification of superposition theorem using hardware.
10	Lab 10: Verification of superposition theorem using digital simulation.
11	Lab 11: Verification of Thevenin's theorem using hardware.
12	Lab 12: Verification of Thevenin's theorem using hardware.
13	Lab 13: Verification of Norton's using hardware.
14	Lab 14: Verification of Norton's using digital simulation.

WORKLOAD & ECTS CREDITS OF THE COURSE UNIT :		AIK115	DC CIRCUITS ANALYSIS
WORKLOAD FOR LEARNING & TEACHING ACTIVITIES			
TYPE OF THE LEARNING ACTIVITIES	LEARNING ACTIVITIES (# OF WEEK)	DURATION (HOURS, H)	WORKLOAD (H)
Lecture & In-Class Activities	15	2	30
Preliminary & Further Study	2	2	4
Land Surveying	NA	NA	NA
Group Work	NA	NA	NA
Laboratory	14	2	28
Reading	NA	NA	NA
Assignment (Homework)	2	1	2
Project Work	NA	NA	NA
Seminar	2	1	2
Internship	NA	NA	NA
Technical Visit	NA	NA	NA
Web Based Learning	2	2	4
Implementation/Application/Practice	NA	NA	NA
Practice at a workplace	NA	NA	NA
Occupational Activity	NA	NA	NA
Social Activity	NA	NA	NA
Thesis Work	NA	NA	NA
Field Study	NA	NA	NA
Report Writing	6	2	12
Final Exam	1	3	3
Preparation for the Final Exam	1	20	20
Mid-Term Exam	1	2	2
Preparation for the Mid-Term Exam	1	12	12
Short Exam (Quizzes)	3	0.5	1.5
Preparation for the Short Exam	3	1.5	4.5
TOTAL WORKLOAD OF THE COURSE UNIT	53	51	125
Workload (h) / 25			125÷25
ECTS Credits allocated for the Course Unit			5

DEMOCRACY AND HUMAN RIGHTS Programme Course Description

CODE	NAME OF THE COURSE UNIT	SEMESTER	IN-CLASS HOURS (T+P)	CREDIT	ECTS CREDIT
NTU100	Democracy and Human Rights	1	2	2	2

GENERAL INFORMATION	
Language of Instruction:	Arabic
Level of the Course Unit:	Bachelor's Degree
Type of the Course:	Compulsory
Mode of Delivery of the Course Unit	Face to Face
Coordinator of the Course Unit	Samia Daoud Suleiman + Muhannad Kamal
Instructor(s) of the Course Unit	

OBJECTIVES AND CONTENTS	
Objectives of the Course Unit:	أهداف مادة حقوق الانسان والديمقراطية: تعريف الطالب بحقوق الانسان والديمقراطية ومضامينها وتصنيف الحريات العامة
Contents of the Course Unit:	المحتويات: تعريف الطالب على مفهوم الحقوق والديمقراطية على الصعيد الوطني والاقليمي والعالمي

Week	KEY LEARNING OUTCOMES OF THE COURSE UNIT On successful completion of this course unit, students/learners will or will be able to dealing with:
1	حقوق الانسان ، تعريفها ، اهدافها حقوق الانسان في الحضارات القديمة وخصوصا حضارة وادي الرافدين
2	حقوق الانسان في الشرائع السماوية مع التركيز على حقوق الانسان في الاسلام
3	حقوق الانسان في التاريخ المعاصر والحديث : الاعتراف الدولي بحقوق الانسان منذ الحرب العالمية الأولى وعصبة الامم المتحدة
4	الاعتراف الاقليمي بحقوق الانسان : الاتفاقية الاوربية لحقوق الانسان ١٩٥٠ ، الاتفاقية الامريكية لحقوق الانسان ١٩٦٩ ، الميثاق الافريقي لحقوق الانسان ١٩٨١ ، الميثاق العربي لحقوق الانسان ١٩٩٤
5	حقوق الانسان الحديثة : الحقائق في التنمية ، الحق في البيئة النظيفة ، الحق في التضامن ، الحق في الدين حقوق الانسان ، المنظمات الوطنية لحقوق الانسان (
6	حقوق الانسان في الدساتير العراقية بين النظرية والواقع
7	حقوق الانسان الاقتصادية والاجتماعية والثقافية و حقوق الانسان المدنية والسياسية
8	حقوق الانسان الحديثة : الحقائق في التنمية ، الحق في البيئة النظيفة ، الحق في التضامن ، الحق في الدين
9	ضمانات احترام وحماية حقوق الانسان على الصعيد الوطني ، الضمانات في الدستور والقوانين. الضمانات في الرقابة الدستورية ، الضمانات في حرية الصحافة والرأي العام ، دور المنظمات غير الحكومية في احترام وحماية حقوق الانسان
10	ضمانات واحترام وحماية حقوق الانسان على الصعيد الدولي : - دور الأمم المتحدة ووكالاتها المتخصصة في توفير الضمانات - دور المنظمات الاقليمية (الجامعة العربية ، الاتحاد الأوربي ، الاتحاد الافريقي ، منظمة الدول الأمريكية ، منظمة آسيان) دور المنظمات الدولية الاقليمية غير الحكومية والرأي العام في احترام وحماية حقوق الانسان
11	مصطلح الديمقراطية ، نشأته ، دلالاته ، تاريخ الديمقراطية.
12	الاسلام والديمقراطية ومساوئ الحكم الاستبدادي .
13	الانتقادات الموجهة للديمقراطية، ومحاسن النظام الديمقراطي.
14	الأنظمة الديمقراطية في العالم/الديمقراطية في العالم الثالث/ المشاكل التي تواجه البلدان العربية في التحول الديمقراطي
15	مراجعة

WORKLOAD & ECTS CREDITS OF THE COURSE UNIT :			
		NTU100	DEMOCRACY AND HUMAN RIGHTS
WORKLOAD FOR LEARNING & TEACHING ACTIVITIES			
TYPE OF THE LEARNING ACTIVITIES	LEARNING ACTIVITIES (# OF WEEK)	DURATION (HOURS, H)	WORKLOAD (H)
Lecture & In-Class Activities	14	2	28
Preliminary & Further Study	NA	NA	NA
Land Surveying	NA	NA	NA
Group Work	NA	NA	NA
Laboratory	NA	NA	NA
Reading	3	1	3
Assignment (Homework)	NA	NA	NA
Project Work	NA	NA	NA
Seminar	NA	NA	NA
Internship	NA	NA	NA
Technical Visit	NA	NA	NA
Web Based Learning	NA	NA	NA
Implementation/Application/Practice	NA	NA	NA
Practice at a workplace	NA	NA	NA
Occupational Activity	NA	NA	NA
Social Activity	NA	NA	NA
Thesis Work	NA	NA	NA
Field Study	NA	NA	NA
Report Writing	NA	NA	NA
Final Exam	1	3	3
Preparation for the Final Exam	1	10	10
Mid-Term Exam	1	2	2
Preparation for the Mid-Term Exam	1	5	5
Short Exam (Quizzes)	3	0.5	1.5
Preparation for the Short Exam	3	0.5	1.5
TOTAL WORKLOAD OF THE COURSE UNIT	30	23.5	50
Workload (h) / 25			50÷25
ECTS Credits allocated for the Course Unit			2

ENGLISH LANGUAGE Programme Course Description

CODE	NAME OF THE COURSE UNIT	SEMESTER	IN-CLASS HOURS (T+P)	CREDIT	ECTS CREDIT
NTU101	English Language	2	2	2	2

GENERAL INFORMATION	
Language of Instruction:	English
Level of the Course Unit:	Bachelor's Degree
Type of the Course:	Compulsory
Mode of Delivery of the Course Unit	Face to Face
Coordinator of the Course Unit	Ms. Hanan Faisal
Instructor(s) of the Course Unit	Ms. Hanan Faisal

OBJECTIVES AND CONTENTS	
Objectives of the Course Unit:	Introduce the student to general English through reading, writing, listening, and speaking.
Contents of the Course Unit:	Grammar, Vocabulary, Reading, Speaking, Listening, and Everyday English

Week	KEY LEARNING OUTCOMES OF THE COURSE UNIT On successful completion of this course unit, students/learners will or will be able to dealing with:
1	Grammar: Tenses, Questions, Questions words Vocabulary: Using a bilingual dictionary, Parts of speech, and Words with more than one meaning. Everyday English: Social expressions.
2	Reading: the many ways we communicate Speaking: Information gap Listening: Neighbors
3	Grammar: Present tenses: Present Simple, Present Continuous, have/have got Vocabulary: Describing countries, Collocation Everyday English: Making conversation
4	Reading: three people talk about their experiences Speaking: people's lifestyles Listening: what annoys you about the people in your life?
5	Grammar: Past tenses: Past Simple, Past Continuous Vocabulary: Irregular verbs, making connections, Nouns, verbs, and adjectives, Making negatives. Everyday English: Time expressions
6	Reading: Newspaper stories Speaking: Telling stories Listening: A radio drama
7	Grammar: Quantity, Articles Vocabulary: Buying things Everyday English: Prices and shopping
8	Reading: 'The best shopping street in the world' Speaking: Town survey, attitudes to shopping Listening: Buying things
9	Grammar: Verb patterns 1, Future intentions Vocabulary: Hot verbs Everyday English: How do you feel?
10	Reading: Hollywood kids Speaking: Being a teenager Listening: You've got a friend
11	Grammar: Comparative and superlative adjectives Vocabulary: Synonyms and antonyms Everyday English: Directions
12	Reading: 'A Tale of two millionaires' Speaking: comparing cities Listening: Living in another country
13	Grammar: Present Perfect and Past Simple Vocabulary: Past participles, Adverbs, Word pairs Everyday English: Short answers
14	Reading: Celebrity interview Speaking: Roleplay Listening: An interview with the band

WORKLOAD & ECTS CREDITS OF THE COURSE UNIT : NTU101 ENGLISH LANGUAGE			
WORKLOAD FOR LEARNING & TEACHING ACTIVITIES			
TYPE OF THE LEARNING ACTIVITIES	LEARNING ACTIVITIES (# OF WEEK)	DURATION (HOURS, H)	WORKLOAD (H)
Lecture & In-Class Activities	14	2	28
Preliminary & Further Study	NA	NA	NA
Land Surveying	NA	NA	NA
Group Work	2	1	2
Laboratory	NA	NA	NA
Reading	NA	NA	NA
Assignment (Homework)	3	1	3
Project Work	NA	NA	NA
Seminar	2	1	2
Internship	NA	NA	NA
Technical Visit	NA	NA	NA
Web Based Learning	NA	NA	NA
Implementation/Application/Practice	NA	NA	NA
Practice at a workplace	NA	NA	NA
Occupational Activity	NA	NA	NA
Social Activity	NA	NA	NA
Thesis Work	NA	NA	NA
Field Study	NA	NA	NA
Report Writing	2	1	2
Final Exam	1	3	3
Preparation for the Final Exam	1	3	3
Mid-Term Exam	1	2	2
Preparation for the Mid-Term Exam	1	2	2
Short Exam (Quizzes)	2	0.5	1
Preparation for the Short Exam	2	1	2
TOTAL WORKLOAD OF THE COURSE UNIT	31	18.5	50
Workload (h) / 25			50÷25
ECTS Credits allocated for the Course Unit			2