

Associate Degree Program

Specialization	الاسلحة الموجهة/طيران
Course Number	020300111
Course Title	الدارات الكهربائية Electrical Circuits
Credit Hours	3
Theoretical Hours	3
Practical Hours	0

Short Description:

This is an **electrical circuits** course which aims to enable the student to practice Voltage, Current, Resistance, Ohm's Law, Energy and Power, Series- Parallel Circuits, introduction to alternating Current and Voltage, Capacitors, Inductors, RLC Circuits, Resonance and Electrical Measurements.

Course Objectives:

1. Introduce the aspect of "ATOM" (its construction and its charge).
2. Understand the meaning of "OHMS LAW" and its applications.
3. Learn the circuit's connections (series, parallel and combinations).
4. Introduce the "AC" Concepts and waves characteristics.
5. Understand the AC active component.
6. Learn about the Transformer (construction and operation).

Detailed Description:

No.	Unit Title	Unit Content	Hours
1	Voltage and current and Resistance	<ul style="list-style-type: none">• Atoms• Electrical Charge• Voltage• Current• Resistance• The electrical Circuit• Basic circuit Measurement	4
2	Ohms Law	<ul style="list-style-type: none">• Definition of Ohms Law• Calculating Current• Calculating Resistance• The Relation of Current, Voltage and Resistance	4
3	Power and Energy	<ul style="list-style-type: none">• Power and Energy• Power in Electrical Circuit• Resistor Power Rating• Energy Loss and Voltage Drop in A resistance• Power Supplies	2
4	Series Resistive Circuit	<ul style="list-style-type: none">• Resistors in Series• Current in A Series Resistance• Total Series Resistance• Ohm's Law in Series Circuits• Voltage Sources in Series• KIRCHHOFS Voltage Law• Voltage Divider• Power in A Series Circuit• Circuit Ground• Troubleshooting Series Circuits	5
5	Parallel Resistive Circuit	<ul style="list-style-type: none">• Resistors in Parallel• Voltage Drop in A Parallel Circuit• KIRCHHOFFS Current Law• Ohms Law in Parallel Circuits• Current Sources in Parallel• Current Divider• Power in Parallel Circuits• Applications of Parallel Circuits• Troubleshooting Parallel Circuits	3

No.	Unit Title	Unit Content	Hours
6	Series - Parallel Circuits	<ul style="list-style-type: none"> • Identification of Series - Parallel Relation • Analysis of Series - Parallel Circuits • Voltage Divider with Resistive Loads • LADDER Networks • The Wheatstone Bridge • Troubleshooting 	4
37	Introduction to Alternating Current and Voltage	<ul style="list-style-type: none"> • The Sine Wave • Voltage and Current Values of Sine Wave • Generation of Sine Wave Voltages • Angular Relations of Sine Wave • The Sine Wave Equation • Non-sinusoidal Measurement of Waveform • Display and Measurement of Waveforms on The Oscilloscope 	3
8	Phasors and Complex Numbers	<ul style="list-style-type: none"> • Introduction to Phasor. • The Complex Number System. • Rectangular and Polar Forms of Complex Numbers. • Mathematical Operations with Complex Numbers. 	3
9	Capacitors	<ul style="list-style-type: none"> • The Basic Capacitor • Types of Capacitors • Series Capacitors • Parallel Capacitors • Parallel Capacitors • Capacitors in DC Circuits • Capacitors in AC Circuits • Capacitors Applications • Testing capacitor 	4
10	Inductors	<ul style="list-style-type: none"> • The Basic Inductor. • Types of Inductors. • Series Inductors. • Parallel Capacitors. • Inductors in DC Circuits. • Inductors in AC Circuits. • Inductors Applications. • Testing Inductors 	4
11	RC Circuit Analysis	<ul style="list-style-type: none"> • Sinusoidal Response of RC Circuits • Impedance of A series RC circuit • Analysis of Series RC Circuits 	3

No.	Unit Title	Unit Content	Hours
		<ul style="list-style-type: none"> • Impedance of A Parallel RC circuit • Analysis of Parallel RC Circuits • Series – Parallel RC Circuits • Power in RC Circuits • Basic Applications • Troubleshooting RC Circuits 	
12	RL Circuit Analysis	<ul style="list-style-type: none"> • Sinusoidal Response of RL Circuits • Impedance of A series RL circuit • Analysis of Series RL Circuits • Impedance of A Parallel RL circuit • Analysis of Parallel RL Circuits • Series – Parallel RL Circuits • Power In RL, Circuits • Basic Applications • Troubleshooting RL Circuits 	3
13	RLC Circuits and Resonance	<ul style="list-style-type: none"> • Impedance of A series RLC circuit • Analysis of Series RLC Circuits • Impedance of A Parallel RLC circuit • Analysis of Parallel and Series-Parallel RLC Circuits • Parallel Resonance • Bandwidth of Resonance Circuits • System Applications 	3
14	transformer	<ul style="list-style-type: none"> • Definition of Transformer • Basic Operation of Transformer • Hollow-Core Transformer • Transformer Winding • Schematic Symbols for Transformer • Producing Counter EMF • Coefficient of Coupling • Effect of Load • Power Relationship Between Primary and Secondary Winding • Transformer Rating • Safety Effects of Current on the body 	3

REFERENCES:

*Principles of Electrical Circuit

Thomas Floyd, **8TH EDITION,2007 PRENTICE HALL**

Associate Degree Program

Specialization	الاسلحة الموجهة/طيران
Course Number	020300112
Course Title	مختبر الدارات الكهربائية Electrical circuit lab
Credit Hours	1
Theoretical Hours	0
Practical Hours	3

Short Description:

A comprehensive set of experiments that enable the student to practice the theoretical information such as DC circuit analysis, Ac circuit analysis, Resonance, Electrical measurements, the Oscilloscope and its applications in measurements.

Course Objectives:

1. Learn about Heath kit Electrical Trainer.
2. To Gain Practice in Measuring (Current, Voltage and Resistance).
3. To Verify Ohms Law.
4. To Demonstrate the Relationship between AC Voltage and Current and how to deal with multimeter (Ohmmeter, ammeter and voltmeter), oscilloscope and another electronics device.
5. Understand the Operation of the Differentiator and Integrator Circuits.
6. To Investigate the Characteristics of Resonance Circuits and Measure the Parameters of Resonance Circuit.
7. Perform a set of Electrical Experiments.

Detailed Description:

رقم التجربة	اسم التجربه	الساعات
1	Measuring Current	1
2	Measuring Voltage	1
3	Short and Open Circuits	2
4	Using the Ohmmeter	1
5	Measuring Resistance Characteristics	2
6	Verifying Ohms Law	2
7	Bridge Circuits	2
8	Measuring AC Voltage	1
9	Combining Resistor and Capacitor	2
10	Series Resonance	1
11	Parallel Resonance	1

Reference:

AC and DC Electronics Laboratory Workbook

Heathkitt Educational System, LAB Book-EB-6101-71

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Associate Degree Program

Specialization	الاسلحة الموجهة/طيران
Course Number	020400113
Course Title	أساسيات رقمية Digital Fundamentals
Credit Hours	2
Theoretical Hours	2
Practical Hours	0

Short Description:

This is a **Digital fundamental** course which aims to enable the student to practice Numerical systems, theory of Boolean algebra and logic circuits, applications to different types of circuits and flip-flops.

Course Objectives:

1. Learn about number systems and its conversion.
2. Understand logic functions, gates, and Boolean algebra.
3. Understand combinational circuits.
4. Understand sequential logic circuits.
5. Learn about different types of memory.

Detailed Description:

No.	Unit Title	Unit Content	Hours
1	NUMBERS SYSTEM AND CODES	<ul style="list-style-type: none">• Introduction• Decimal, binary, octal and hexadecimal numbers system• Number system conversion• Binary arithmetic• 1's and 2's complement of binary number• binary coded decimal (BCD)• digital coded (Gray, Excess-3 and ASC II codes)	5
2	LOGIC GATES	<ul style="list-style-type: none">• The inverter• The AND gate• The OR gate• The NAND gate• The NOR gate• The Exclusive-OR and Exclusive-AND gates• Application of logic gates in industry	4
3	BOOLEAN ALGEBRA AND LOGIC SIMPLIFICATION	<ul style="list-style-type: none">• Boolean operation and expressions• Laws and rule of Boolean algebra• De Morgan's theorem• Simplifications using Boolean algebra• Standard forms of Boolean expression• The Karnaugh map• Karnaugh map minimization	5
4	COMBINATIONAL LOGIC	<ul style="list-style-type: none">• Implementing combinational logic• The universal property of NAND and NOR gates• Implementation using NAND and NOR gates• Operation with pulse waveforms• Troubleshooting and application	5
5	FUNCTIONS OF COMBINATIONAL LOGIC	<ul style="list-style-type: none">• Half adders, full adders, parallel adders• Comparators• Encoders and decoders• Multiplexing• Application	5
6	FLIP-FLOPS	<ul style="list-style-type: none">• Sequential logic circuits• Edge-triggered Flip-Flops (S-R, J-K, D)• Master-slave Flip-Flops• Flip-Flop operation characteristic	3

		<ul style="list-style-type: none"> • Flip-Flops application 	
7	COUNTERS	<ul style="list-style-type: none"> • Asynchronous counters • synchronous counters • Up/ Down synchronous counters • A procedure for the design of sequential circuit • Cascade counters 	5

REFERENCES

*Principles of Electrical Circuit, Thomas Floyd, 9TH EDITION
PRENTICE HALL

Associate Degree Program

Specialization	الاسلحة الموجهة/طيران
Course Number	020400114
Course Title	مختبر الأساسيات الرقمية Digital Fundamentals Lab
Credit Hours	1
Theoretical Hours	0
Practical Hours	3

Short Description:

A comprehensive set of experiments that enable the student to practice the theoretical information such as testing and troubleshooting instruments, Logic circuits, adders, comparators, encoders, decoders and flip-flops.

Course Objectives:

This course provides an introduction to the characteristics of digital logic and the design, construction, testing and debugging of simple digital circuits.

Detailed Description:

رقم التجربة	إسم التجربة	الساعات
1	Testing and troubleshooting instrument	2
2	Logic gates	2
3	Boolean algebra and Demorgan theorems	1
4	Karnaugh maps	1
5	Half-adders, Full-adders, and parallel adders.	2
6	Comparator	2
7	Encoders	1
8	Decoders and seven segment display	1
9	Multiplexer and de-multiplexer	2
10	Flip-flop	2

Reference:

1. Practical Digital Electronics, JURIS BLUKIS and MARK BAKER, Hewlett – Packard
SANTA CLARA, CALIFORNIA 95050,
Second Edition, January, 1998.
2. Experiments in Modern Analog and Digital Telecommunication For NI ELVES II. Burry Duncan.
Published by Emona Instruments ptd, 78 Parramatta Road Camperdown NSW
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Associate Degree Program

Specialization	الاسلحة الموجهة/طيران
Course Number	020601111
Course Title	الاجهزه والدارات الإلكترونية 1 Electronic Devices and Circuits 1
Credit Hours	2
Theoretical Hours	2
Practical Hours	0

Short Description:

This is an **electronic devices and circuits (1)** course which aims to enable the student to practice Semiconductor material and PN junction, diodes and its applications, Bipolar junction transistor (BJT) and field effect transistor (FET).

Course Objectives:

1. Study the atom structure and the conduction in semiconductor crystals and how to form PN junction.
2. Understand the basic operation of both diode and transistor.
3. To Analyze BJT circuits as amplifier and switch.
4. Study FET circuits.

Detailed Description:

No.	Unit Title	Unit Content	Hours
1	Semiconductor materials And PN junctions	<ul style="list-style-type: none">• Atoms• Atomic bonding• Conduction in semiconductor crystals.• N-type and P-type semiconductor.• PN junctions• Biasing the PN junction• System application	5
2	Diodes and applications	<ul style="list-style-type: none">• rectifier diodes• half wave rectifier• full wave rectifier• rectifier filters• trouble shooting rectifier circuits• diode limiting and clamping circuits• voltage multipliers• system applications	6
3	Special diodes	<ul style="list-style-type: none">• Zener diodes• Zener applications• varactor diodes• other types of diodes• system applications	5
4	Bipolar junction transistors	<ul style="list-style-type: none">• transistor construction• basic transistor operation• transistor parameters and ratings• Bipolar transistor as voltage amplifier.• bipolar transistor as switch• transistor testing• system applications	5
5	Bipolar transistor biasing	<ul style="list-style-type: none">• purpose of biasing• dc operating points• base bias• emitter bias• voltage divider bias• collector feedback bias• trouble shooting bias circuits• System applications.	5
6	Field –effect transistor and biasing	<ul style="list-style-type: none">• the junction field effect transistor (JFET)• JFET characteristics and parameters	6

No.	Unit Title	Unit Content	Hours
		<ul style="list-style-type: none">• JFET biasing• Metal oxide semiconductor FET (MOSFET).• MOSFET biasing• system applications	

REFERENCES:

*Principles of Electrical Circuit, Thomas Floyd, 7TH EDITION, 2005
PRENTICE HALL

Associate Degree Program

Specialization	الاسلحة الموجهة/طيران
Course Number	020601112
Course Title	مختبر الاجهزه والدارات الإلكترونية 1 Electronic Devices and Circuits (1) Lab.
Credit Hours	2
Theoretical Hours	0
Practical Hours	6

Short Description:

A comprehensive set of experiments that enable the student to practice the theoretical information such as Diodes and its applications, special diodes, transistors and power electronic devices.

Course Objectives:

1. Analyze circuits with nonlinear elements using semiconductor characteristics.
2. Measure quantities and parameters in electronic circuits using oscilloscopes, multimeters, function generators, and power supplies.
3. Describe an experimental procedure involving circuits with semiconductor devices.

Detailed Description:

رقم التجربة	إسم التجربة	الساعات
1	Diode testing & characteristic curve	6
2	Half-wave Rectifier	5
3	Full-wave Rectifier (center tapped & bridge)	6
4	Zener Diode	5
5	Testing Bi-polar Transistor (nnp & pnp)	10

Reference:

*Semiconductors Devices Laboratory Workbook Heath kit Educational System, LAB BOOK-EB-6103-41 Copyright, 2002

* Experiments in Modern Analog and Digital Telecommunication for NI ELVES II. Burry Duncan. Published by Emona Instruments ptd, 78 Parramatta Road Camperdown NSW 2050 AUSTRALIA, Copy Right 2007 – 2011 Emona Instruments ptd Ltd and its related entities.

Associate Degree Program

Specialization	الاسلحة الموجهة/طيران
Course Number	020601211
Course Title	الاجهزه والدارات الإلكترونية 2 Electronic Devices and Circuits 2
Credit Hours	2
Theoretical Hours	2
Practical Hours	0

Short Description:

This is an **electronic circuits and devices (2)** course which aims to enable the student to practice Small signal BJT amplifiers, amplifier frequency response, operational amplifiers, oscillators and filters.

Course Objectives:

1. To study electronic devices applications including small signal and frequency response of amplifiers.
2. To understand the differential amplifier and the construction of the operational amplifier.
3. To Analyze active filter circuits.
4. To study oscillator circuits.

Detailed Description:

No.	Unit Title	Unit Content	Hours
1	Small-signal BJT amplifier	<ul style="list-style-type: none">• Small-signal amplifier• Transistor ac equivalent circuits• Common - Emitter amplifier• Common - Collector amplifier.• Common - Base amplifier	8
2	Amplifier frequency response	<ul style="list-style-type: none">• General concepts• Miller's theorem and response• Low-Frequency amplifier response• High-Frequency amplifier response• Total amplifier response	6
3	Operational amplifiers	<ul style="list-style-type: none">• Introduction to operational amplifiers• The differential amplifier• Op-Amp. Data sheet parameters• Negative feedback• Op-Amp. With negative feedback• Effect of negative feedback• Bias current & offset voltage compensation	6
4	Basic OP-AMP Applications	<ul style="list-style-type: none">• Comparators• Summing amplifier• Instrumentation amplifier• More Op-Amp applications	4
5	Oscillators	<ul style="list-style-type: none">• Definition of the oscillator• Oscillator principles	3
6	Active filters	<ul style="list-style-type: none">• Basic filter response curves• Filter response characteristics• Active Low-Pass filters• Active High-Pass filters• Active Band-Pass filters• Active Band-Stop filters	5

REFERENCES:

*Principles of Electrical Circuit, Thomas Floyd, 7TH EDITION, 2004
PRENTICE HALL

Associate Degree Program

Specialization	الاسلحة الموجهة/طيران
Course Number	020601212
Course Title	مختبر الاجهزه والدارات الإلكترونية 2 Electronic Devices and Circuits 2 Lab.
Credit Hours	2
Theoretical Hours	0
Practical Hours	6

Short Description:

A comprehensive set of experiments that enable the student to practice the theoretical information such as Amplifiers configurations and characteristics, Classes of Amplifiers, Differential Amplifier, Operational amplifiers, Filters and Oscillators.

Course Objectives:

1. Learn about transistor models.
2. To analyze and design single and multistage amplifiers using hand analysis techniques and computer simulation.
3. Perform a set of experiments related to comparator, oscillators and filters.

Detailed Description:

رقم التجربة	إسم التجربة	الساعات
1	Common-Emitter amplifier Characteristics	2
2	Common-Base amplifier Characteristics	2
3	Common-Collector amplifier Characteristics	3
4	Operational amplifiers	6
5	Differential Amplifier	3
6	The OP-AMP Comparator	4
7	Oscillators	6
8	Filters	6

References:

*Semiconductors Devices Laboratory Workbook Heath kit Educational System, LAB BOOK-EB-6103-41 Copyright, 2002

* Experiments in Modern Analog and Digital Telecommunication for NI ELVES II. Burry Duncan. Published by Emona Instruments ptd, 78 Parramatta Road Camperdown NSW 2050 AUSTRALIA, Copy Right 2007 – 2011 Emona Instruments ptd Ltd and its related entities.

Associate Degree Program

Specialization	الاسلحة الموجهة/طيران
Course Number	020602131
Course Title	مشغل اللحام Practical (soldering) workshop
Credit Hours	2
Theoretical Hours	0
Practical Hours	6

Short Description:

This is a **soldering workshop** course which aims to enable the student to practice General **workshop safety**, hand tools, measuring devices, wires and cables, Printed Circuit Board repair, soldering and de-soldering techniques.

Course Objectives:

1. Learn about the precautions concerning safety in the workplace.
2. Identify hand tools used by electronic technicians.
3. Understand the procedures used for dealing with hand and power tools.
4. Explain the principles of soldering and de-soldering.
5. Basic Printed Board repair.

Detailed Description:

No.	Unit Title	Unit Content	Hours
1	Safety	<ul style="list-style-type: none">• Workshop cleanliness• Fire• General shop safety• Electric shock.• Safety precaution	6
2	Tools	<ul style="list-style-type: none">• introduction• Hand tools• Measuring devices• Marking out tools• Screw cutting	7
3	Wires & cables	<ul style="list-style-type: none">• Introduction• wires• Cables• Wiring, stripping.• Cable connection• Taper pins• Terminating cables.• Cabling	6
4	Soldering	<ul style="list-style-type: none">• Introduction• Types of soldering irons• Hard soldering, soft soldering, fluxes• Heat sink, care and maintenance of iron• Preparing the iron for use• De-soldering tools• Soldering joints• Common Soldering faults• Modern soldering developments, Precautions	6
5	Printed circuits	<ul style="list-style-type: none">• Introduction, construction of printed circuit• Multi-layer board• Preparation of printed circuit board for work• Component removal• Component preparation & mounting• Bending tools• Treatment after repair	7

References:

Singmin.Andrew." Modern Electronics Soldering Techniques" Thomason Learning.2000.

Jose Antonio Ares." Metal: Forming. Forging. and Soldering Techniques". Barron's Educational Series .2006

Associate Degree Program

Specialization	الاسلحة الموجهة / طيران
Course Number	020601261
Course Title	الطائرات المسييرة Unmanned aircraft vehicle
Credit Hours	2
Theoretical Hours	2
Practical Hours	0

Short Description:

This is **unmanned aircraft** course which aims to enable the student to practice unmanned aircraft (UAV) classes and missions, mission planning, control station, payload types and data link functions.

Course Objectives:

1. To know some applications of UAV roles.
2. To be able to differentiate between classes missions of UAV.
3. To overview about mission planning and control station.
4. To understand non-dispensable and dispensable payload types.
5. To understand data link functions in UAV's.

Detailed Description:

No.	Unit Title	Unit Content	Hours
1	Overview of UAV systems	<ul style="list-style-type: none">• Overview• some applications of UAS• What are UAS?• Why unmanned aircraft?• the systemic basis of UAS• system composition	6
2	Classes and missions of UAVs	<ul style="list-style-type: none">• Overview• Examples of UAV systems• Expendable UAVs• Classes of UAVs systems• Classification by range and endurance• Missions	6
3	Mission planning and control station	<ul style="list-style-type: none">• Overview• MPCS architecture• Planning and navigation• MPCS interfaces• Autopilots	8
4	Payload Types	<ul style="list-style-type: none">• Overview• non dispensable• dispensable payloads	6
5	Data-link functions and attributes	<ul style="list-style-type: none">• Overview• Background• Data link functions• Desirable data- link attributes• System interface issues	6

REFERENCES:

1. Paul Gerin Fahlstrom, Thomas James Gleason Introduction to UAV systems –Fourth Edition (2012)
2. Multiple-Heterogeneous-Unmanned-Aerial-Vehicles-Springer-Tracts-in-Advanced-Robotics.
3. Unmanned-Aerial-Vehicles-Robotics-Air-Warefare-1917-2007 (2).
4. U-S-Navy-UAVs-in-Action (1).
5. Unmanned-Air-Systems-UAV-Design-Development and Deployment.

Associate Degree Program

Specialization	الاسلحة الموجهة/طيران
Course Number	020600114
Course Title	مشغل امان الطائرات وخطوط الطيران Maintenance Regulations Workshop & Safety procedures
Credit Hours	2
Theoretical Hours	0
Practical Hours	6

Short Description:

A comprehensive set of experiments that enable the student to practice the levels of maintenance, identify the types of inspections and the time for each one, identify the responsibilities of controls sections and identify how to use (781) aircraft forms.

Course Objectives:

- Identify how to use 781 aircraft forms.
- Know how to deal with aircraft in flight line.
- Know how to deal with power tools.
- Know how to deal with different types of hazards.

Detailed Description:

No.	Unit Title	Unit Content	Hours
1	AFTO Forms 781 series	-maintenance documentation -AFTO forms 781 series -symbols and their uses -maintenance data collection system -AFTO form 349 and 350 identification tags	18
2	Flight line safety	-aircraft and flight line safety -aircraft armament safety -ground handling and servicing	14

REFERENCE:

Airframe text book
AMMM manual

Associate Degree Program

Specialization	الأسلحة الموجهة/طيران
Course Number	020608223
Course Title	نخائر الطائرات Aircrafts Munitions
Credit Hours	2
Theoretical Hours	2
Practical Hours	0

Short Description:

as ,Bipolar	This is a munitions and explosives course which aims to enable the student to practice the main components of a basic bomb, fuses, American bombs and how to handle the bomb in a safety way.
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Course Objectives:

- Aircraft bombs.
- Bomb Components.
- Bomb fuses.
- American bombs.
- Bomb handling & safety precaution.
- Introduction to LGB.

Detailed Description:

No.	Unit Title	Unit Content	Hours
1	Aircraft bombs.	<ul style="list-style-type: none">• Introduction• Classification of bombs.• Bomb General Types• Bomb Body Marking	4
2	Components of a basic bomb	<ul style="list-style-type: none">• Bomb body• Adapter boosters• Bomb fuses• Fin assemblies	6
3	Bomb Fuses	<ul style="list-style-type: none">• Introduction.• Classification of bomb fuses• Types of bomb fuses	4
4	American bombs	<ul style="list-style-type: none">• New series GP bombs• Streamlined GP bombs• Low drag GP bombs• Laser guided bomb GBU- 12.• Cluster bomb units:<ul style="list-style-type: none">a) SUU dispenser.b) Cluster bomb MK 20 Rockeye.• Practice bombs:<ul style="list-style-type: none">a) BDU33 D/B.B) MK 106• Flare bombs.	10
5	Bomb handling & Safety precaution	<ul style="list-style-type: none">• General• Safety Precautions	2
6	Introduction to LGB	<ul style="list-style-type: none">• Introduction.• Main sections and components<ul style="list-style-type: none">a) Computer control group.b) Warhead.c) Airfoil group• System operation	6

REFERENCES:

Royal Jordanian air force technical manuals

Associate Degree Program

Specialization	الأسلحة الموجهة / طيران
Course Number	020608231
Course Title	F16 أسلحة F-16 Armament Aircraft
Credit Hours	2
Theoretical Hours	2
Practical Hours	0

Short Description:

This is an F-16 aircraft course which aims to enable the student to practice F-16 Aircraft, Missile safety; F-16 Air launched missiles, operation and F-16 ejection seat system.

Course Objectives:

- Identify the F-16 Aircraft and its main parts.
- Identify the F-16 loading stations and Armament systems.
- Understand the hazards when dealing with Armament systems.
- Identify the F-16 missiles and bombs.
- Identify the F-16 ejection seat.

Detailed Description:

No.	Unit Title	Unit Content	Hours
1	Introduction to F-16 A/C	<ul style="list-style-type: none"> • The F-16 A/C. • F-16 A/C structure. • A/C Parts. 	6
2	General Safety	<ul style="list-style-type: none"> • Safety organization and functions. • Air craft and flight line safety. • Aircraft armament safety 	4
3	Loading Stations	<ul style="list-style-type: none"> • The F-16 Pylons. • TER. • Types of Bombs. • New-series General Purpose Bomb • Mark 82 • Mark 84 • Types of Guns and Capacity. 	6
4	F-16 missiles & operation	<ul style="list-style-type: none"> • Structural characteristics of air launched missile. • The F-16 aircraft weapons control system. • Air intercepts missile function. • Aim-7 missile system. • Aim-9 missile system. • AGM-65 Maverick. • Aim- 120 (AMRAAM). 	6
5	F-16 ejection seat And Canopy	<ul style="list-style-type: none"> • Canopy • Canopy Actuate • Canopy Manual Control Hand crank • Canopy jettison • Emergency Entrance and Crew Rescue Procedures • Jammed Canopy Emergency Egress Procedures • Survival Equipment 	8
6	Flare and Chaff	<ul style="list-style-type: none"> • Flare • Chaff 	2

REFERENCES

Royal Jordanian air force technical manuals

Associate Degree Program

Specialization	الاسلحة الموجهة/طيران
Course Number	020608232
Course Title	مشغل اسلحة ف 16 F-16 Armament Aircraft Workshop
Credit Hours	1
Theoretical Hours	0
Practical Hours	3

Short Description:

A comprehensive set of exercises that enable the student to practice loading the F-16 A/C with missiles and bombs, install and remove pylons and launchers and practice on ejection seat system.

Course Objectives:

- F-16 aircraft and its main parts.
- F-16 loading stations and armament systems.
- The hazards when dealing with armament systems.
- The F-16 missiles and bombs systems.
- The F-16 ejection seat.

Detailed Description:

No.	Unit Title	Unit Content	Hours
1.	F-16 aircraft and its main parts.	<ul style="list-style-type: none">• Use of the G.V manual• Maintenance integrated data access system• Safety summary• General vehicle description• Electrical power system• Landing gear system• Fuel system• Power plant system• Weapon system• Crew escape and safety (egress) system	4
2.	F-16 loading stations and armament systems.	<ul style="list-style-type: none">• Nonstandard abbreviations• Operation• Gun load and Verification of Stores	2
3.	The F-16 missiles and bombs systems.	<ul style="list-style-type: none">• Air-to-Air Missiles.• (2.75) inch rockets.2.75-Inch• General purpose bombs• Training weapons• BDU-338/8 and BDU-330/B Practice bomb	3
4.	The F-16 ejection seat	<ul style="list-style-type: none">• Ejection Seat parts• Ejection Seat operation• Survival Equipment	3

5.	CHAFF & FLARE	<ol style="list-style-type: none"> 1. Flare <ul style="list-style-type: none"> • Flare characteristics • Effects of flares • Load flares in magazines 2. CHAFF <ul style="list-style-type: none"> • Chaff characteristics • Chaff ejection. • effects of chaff • Load chaff in magazine. 	4

References:

Royal Jordanian Air Force Technical Manuals

Associate Degree Program

Specialization	الأسلحة الموجهة/طيران
Course Number	020608211
Course Title	الصواريخ الموجهة Aircraft Rockets and Guided Missiles
Credit Hours	2
Theoretical Hours	2
Practical Hours	0

Short Description:

This is a guided missiles course which aims to enable the student to practice the electronic guided missiles, such as the radar missile (S530), IR missile (R 550), AIM9 and the 68 Rocket.

Course Objectives:

- Understand the different types of electronic guided missiles such as air to air missile, radar missile and IR missile.
- Understand the main parts of each missile.
- Learn about the maintenance for each missile.

Detailed Description:

No.	Unit Title	Unit Content	Hours
1	Rockets & Missile	<ul style="list-style-type: none">• Historical back ground• Major Components.• Rocket motor• Rocket warhead.• Fuse• Guidance & Control Section.	4
2	2.75 Inch Rocket.	<ul style="list-style-type: none">• Introduction• Main Components• Rocket Motor.• Rocket Fuse.• Rocket Preparation and Assembly.• Aircraft RKT handling and testing.• Rocket Safety Precautions.	6
3	68 MM Rockets	<ul style="list-style-type: none">• Introduction.• Main Components.• Rocket Motor• Rocket Warhead• Rocket Fuse.	4
4	AIM-9 Sidewinder Missile	<ul style="list-style-type: none">• Introduction• Main Components• Guidance & Control• Warhead• Contact Fuse.• Influence Fuse / Target.• Rocket Motor.• Wing Assembly• Safety Devices.• Protective Devices.• Power Supply.• AIM-9 Misfire Treatment.• Drop Criteria.• Special Handling.• Special Storage.• LAU-100/101 Missile Launcher.	5

No.	Unit Title	Unit Content	Hours
5	TOW Missile BGM	<ul style="list-style-type: none"> • Introduction. • Major Components & Description. • TOW Missile Launcher. • Misfire, Hang fire. • TOW Missile Handling and Storage. • TOW Missile Safety precautions. 	4
6	S530 Missile	<ul style="list-style-type: none"> • Introduction. • Leading Particulars. • Mechanical Construction. • Functional Construction. • Guidance & Flight Control sys. • Propulsion System. • Warhead System. • Electrical Power Supply System. • Electrical Inter Connection Assembly. • Structure and Wing Assembly. • S530 Missile Training Version. • Missile Launcher Type 38. • Missile Storage, Handling and Maintenance. 	5
7	R550 Missile	<ul style="list-style-type: none"> • Introduction. • Leading Particulars. • Construction. • Electrical Section. • Pyrotechnical Section. • Missile Operation. • Guidance System. • Propulsion System. • Warhead System. • Rear Assembly. • Maintenance and Servicing. 	4

REFERENCES:

Royal Jordanian air force technical manuals

Associate Degree Program

Specialization	الاسلحة الموجهة/طيران
Course Number	020608212
Course Title	مشغل الصواريخ الموجهة Aircraft Rockets and Guided Missiles Workshop
Credit Hours	1
Theoretical Hours	0
Practical Hours	3

Short Description:

A comprehensive set of exercises that enable the student to practice the theoretical information such as types of electronic guided missiles, their methods of operation and parts.

Course Objectives:

1. The different types of electronic guided missile such as air to air missile, radar missile and IR missile.
2. 2.75 Inch Rocket
3. The main parts of each missile.
4. The maintenance for each missile.

Detailed Description:

No.	Unit Title	Unit Content	Hours
1.	Types of electronic guided missile	<ul style="list-style-type: none">• Air to air missile characteristics• radar missile• IR missile• Major Components.• Rocket motor• Rocket warhead.• Guidance & Control Section.	5
2.	2.75 Inch Rocket.	<ul style="list-style-type: none">• Main Components• Rocket Motor.• Rocket Fuse.• Rocket Preparation and Assembly.• Aircraft RKT handling.• Rocket Safety Precautions	4
3.	The main parts of each missile.	<ul style="list-style-type: none">• Guidance & Control• Warhead• Contact Fuse.• Influence Fuse / Target.• Rocket Motor.• Wing Assembly• Safety Devices.• Protective Devices	4
4.	The maintenance for each missile	<ul style="list-style-type: none">• Missile Storage• Handling and Maintenance.	3

References:

Royal Jordanian Air Force Technical Manuals

Associate Degree Program

Specialization	الأسلحة الموجهة/طيران
Course Number	020608111
Course Title	انظمة المتفجرات والمعدات الأرضية Explosive Regulations
Credit Hours	2
Theoretical Hours	2
Practical Hours	0

Short Description:

This explosives regulations course which aims to enable the student to practice explosive types, hazards and the storage method in their warehouses.

Course Objectives:

- The explosive terminology.
- The explosive types.
- The safety distance in the explosive area.
- The different warehouses.
- How to protect the danger building from outside.

Detailed Description:

No.	Unit Title	Unit Content	Hours
1	Explosives	<ul style="list-style-type: none">• Historical back ground.• Introduction.• Definition of terms.• Explosive characteristics; low explosives,• propellants and high explosives, example Of high explosives.• Explosive train.• Identification of color codes.• Explosive safety; general and specific• safety precautions	6
2	Explosive Regulations	<ul style="list-style-type: none">• Introduction.• Explosive area.• Explosive area safety.• Accident reporting.• Sitting.• Safety guarding of explosives.• Traverses.• Danger buildings.• Quantity distance.• Waiver, Deviation and Exemption.• Lighting protection.• Boding.• Temperature and humidity Control.• Vegetation and livestock.	6
3	Principles of	<ul style="list-style-type: none">• Introduction.	6

No.	Unit Title	Unit Content	Hours
	warehousing	<ul style="list-style-type: none"> • Principles of storage. • Shape of stacks. • Height of stacks. • Palletized munitions. • Lot segregation 	
4	The UN system for the storage of explosives	<ul style="list-style-type: none"> • Introduction. • Definition of hazard divisions. • Compatibility group codes. • Firefighting procedures. • Munitions posters and labels. 	5
5	Inspection system	<ul style="list-style-type: none"> • Introduction. • Definitions. • Types of inspection. • Condition codes. • Defect classification 	5
6	Munitions disposal	<ul style="list-style-type: none"> • Introduction. • Methods of disposal 	4

REFERENCES:

Royal Jordanian air force technical manuals

Associate Degree Program

Specialization	الاسلحة الموجهة/طيران
Course Number	020608112
Course Title	مشغل انظمة المتفجرات والمعدات الارضية وذخائر الطائرات Explosive Regulations and Aircrafts Munitions Workshop
Credit Hours	1
Theoretical Hours	0
Practical Hours	3

Short Description:

A comprehensive set of exercises that enable the student to practice the theoretical information such as explosives types, hazards and the storage methods in their warehouses.

Course Objectives:

- Aircraft bombs.
- Bomb Components.
- Bomb handling & safety precaution.
- LGB.
- The explosive terminology and types
- The safety distance in the explosive area.
- The different warehouses.
- How to protect the danger building from outside and munitions disposal.

Detailed Description:

No.	Unit Title	Unit Content	Hours
1.	Aircraft bombs and Components of a basic bomb	<ul style="list-style-type: none">• Classification of bombs.• Adapter boosters• Bomb fuses• Fin assemblies	3
2.	Bomb handling & Safety precaution	Safety Precautions	2
3.	LGB	<ul style="list-style-type: none">• Main sections and components• Computer control group.• Warhead.• Airfoil group	3
4.	Explosive Regulations and safety distance in the explosive area	<ul style="list-style-type: none">• Explosive area.• Explosive area safety.• Accident reporting.• Danger buildings.• Quantity distance.• Waiver, Deviation and Exemption.• Lighting protection.• Vegetation and livestock• Temperature and humidity Control.	3
5.	Principles of warehousing	<ul style="list-style-type: none">• Principles of storage.• Shape of stacks.	3

		<ul style="list-style-type: none"> • Height of stacks. • Palletized munitions. Lot segregation	
6.	Munitions disposal	Methods of disposal	2

References:

Royal Jordanian Air Force Technical Manuals

Associate Degree Program

Specialization	الأسلحة الموجهة/طيران
Course Number	020608221
Course Title	تذخير الطائرات العامودية المقاتلة Load Fighter helicopter Aircraft
Credit Hours	2
Theoretical Hours	2
Practical Hours	0

Short Description:

This is a helicopter aircraft loading course which aims to enable the student to practice armament that used in our helicopter that used in Royal Jordanian Air Force.

Course Objectives:

- The safety precautions for helicopter in different places
- AH – IF Helicopter Armament Systems.
- M134D MINIGUN.
- MAG 58 M.
- 7.62mm.

Detailed Description:

No.	Unit Title	Unit Content	Hours
1	Safety	<ul style="list-style-type: none"> • Types of safety • Armed helicopter safety • Shop and hanger safety • Hand tools safety • FOD • Principles of storage 	4
2	AH – IF Helicopter Armament Systems	<ul style="list-style-type: none"> • M136 helmet sight sys • M76head up display sys • M97A4 universal turret sys • M65 Tow missile sys • Rocket management sys • Light weight rocket launchers • Ejector racks 	8
3	M 1 3 4 D M I N I G U N	<ul style="list-style-type: none"> • M134d mini gun • M134d gating gun • M134 statistics and operating information • Discusses the guns operation • Feeding cycle • Firing cycle • Clearing cycle • Parts / remove and installation of m134d mini gun • Service life/replacement limits • Preventive maintenance for stored mini guns • Md530 mount installation • Md530 weapon system test instructions • Installation of the Dillon aero feeder/pelinker on M134 mini gun 	10
4	MAG 58 M	<ul style="list-style-type: none"> • Description • Technical data • General operation 	5

No.	Unit Title	Unit Content	Hours
		<ul style="list-style-type: none"> • Prove/ clear the weapon • Load the weapon • Fire the weapon • Un load the weapon • Remove and replace the barrel assembly • Sights • Adjusting the gas regulator • Trouble shooting • Stoppages 	
5	7.62mm	<ul style="list-style-type: none"> • Description • Cartridge 7.62mm high pressure test m60 • Cartridge 7.62mm armor piercing ' m61 • Cartridge 7.62mm ' tracer m62 • Over heat fire application ' m63 • 7.62 mm training 	5

REFERENCES:

Royal Jordanian air force technical manuals

Associate Degree Program

Specialization	الاسلحة الموجهة/طيران
Course Number	020608222
Course Title	مشغل تدخير الطائرات العمودية المقاتلة Load Fighter helicopter Aircraft Workshop
Credit Hours	1
Theoretical Hours	0
Practical Hours	3

Short Description:

A comprehensive set of exercises that enable the student to practice loading this kind of A/C and testing it. The hazard of loading, working on it and the hazardous area.

Course Objectives:

- Types of safety
- Helicopter Armament System
- M134d mini gun
- MAG 58 M
- 7.62 MM

Detailed Description:

No.	Unit Title	Unit Content	Hours
1.	Types of safety	<ul style="list-style-type: none">• Personnel safety• Equipment safety• Shop safety• Explosive safety• A/C danger areas	3
2.	Helicopter Armament System	<ul style="list-style-type: none">• Helmet sight system• Head up display system• Universal turret system• M65 Tow missile system• Rocket management system	4
3.	M134d mini gun	<ul style="list-style-type: none">• Description• Operation• Installation• Removal• Maintenance	3
4.	MAG 58 M	<ul style="list-style-type: none">• Description• Operation• Installation• Removal• Maintenance	4
5.	7.62 MM	<ul style="list-style-type: none">• Description• Types	2

References:

Royal Jordanian Air Force Technical Manuals

Associate Degree Program

Specialization	الأسلحة الموجهة/طيران
Course Number	020608261
Course Title	طرق تخزين الذخائر وأنواع المخازن Storage Regulations and Safety Distances
Credit Hours	2
Theoretical Hours	2
Practical Hours	0

Short Description:

This is a munitions storage course which aims to enable the student to practice the Air Force Weapons Safety program to provide the maximum possible protection to personnel and property, both inside and outside the installation, from the damaging effects of potential accidents involving Ammunition and Explosives (AE).

Course Objectives:

- Understand the Deviations, Waivers, and Exemptions.
- How to deal with explosive, handling and storage.
- Safety precaution for ammunition.
- How to measure the quantity distance for facility.

Detailed Description:

No.	Unit Title	Unit Content	Hours
1	<p align="center">Explosives Safety General Instructions</p>	<ul style="list-style-type: none"> • Explosives Safety General Instructions • Purpose • Scope • Day-to-day Operations Contingencies, Combat Operations, Military Operations Other than War (MOOTW), and Associated Training • Deviations • Operational Waivers • Waivers • Exemptions • EXPLOSIVES OPERATIONS AND STORAGE. • General Requirements for Operations Involving • Requirements for Designated Smoking Locations: • Handling of Explosives • Static Grounding • Static Grounding for Handling Unpackaged EEDs • Static Grounding for Aircraft during Explosives Loading and Unloading • Methods to Reduce the Hazards of Static Electricity • Explosives • Testing, Procedures Verification, Disassembling and Modifying Explosives Items Requirements for Test, Disassembly, and Modification of Explosives Items • Electrical Testing of Explosives Items • Fireworks Displays and Air show Events • Exercises and Training Involving Simulators and Smoke Producing Munitions • Operations in Explosives Storage Spaces • Procedures in the Event of Electrical Storms • Selection of Explosives Storage Method • Explosives Stocks Maintenance. • Marking of Explosives Stocks • Munitions in Austere Areas. 	8

No.	Unit Title	Unit Content	Hours
		<ul style="list-style-type: none"> • Storage and Compatibility Principles 	
2	<p align="center">General Explosive Facility Design</p>	<ul style="list-style-type: none"> • Introduction • Glass panels. • Hazardous Location. • Electrical Equipment in Hazardous Locations • Interior Surfaces in Class II Hazardous Locations • Hardware in Hazardous Locations • Static Electricity in Hazardous Locations • Ventilation in Hazardous Locations • Electric Supply Systems • Static Grounding and Bonding • Static Grounding and Bonding Requirements. • Permanent Static Grounding Systems • Temporary Static Grounding or Bonding Cables. • Electrical Equipment in Hazard • Location. • Electrical Supply System. • Temporary Static Grounding or Bonding Cables • Belting • Conductive Floors. • Installed Systems and Equipment Grounds • Lightning Protection Systems • General Design Considerations for Explosives Facilities • Blowout-type Construction • Non-combustible Construction • Underground Explosives Storage Facilities. • Outdoor Explosives Storage Sites. • Stairways • Platforms, Runways, and Railings • Drains and Sumps • Tunnels • Laundries • Steam for Explosives processing or 	6

No.	Unit Title	Unit Content	Hours
		<p>Facility Heating</p> <ul style="list-style-type: none"> • Magazine Ventilation and Vermin-Resistance. • Emergency Exits for Explosives Buildings. • Building Exits • Explosive Dust Collection Systems • Water Supply and Fire Suppression Systems for Explosives Facilities • Automatic Sprinkler Systems • Deluge Systems • Monitoring of Design and Construction of Explosives Facilities. • Monitoring of Construction of Explosives Facilities • Maintenance and Repair of Explosives Facilities and Equipment. • Removal of Explosives • Requirements for Maintenance and Repair with Explosives Present • Maintenance of Explosives Facilities • Maintenance and Repair in Hazardous Locations. • Maintenance and Repair of Hazardous Location Equipment and Electrical Installations. • Maintenance and Repair of Electrical Equipment. 	
3	<p align="center">PROTECTIVE CONSTRUCTION AND SPECIFIC EXPLOSIVES FACILITY DESIGNS</p>	<ul style="list-style-type: none"> • General • Above Ground Magazines • Special Structures • High Performance Magazines and Underground Explosives Facilities • Protective Construction, Purpose of Protective Construction • Requirements for Use of Protective Construction • Existing Approved Protective Construction Designs • Modifications to Previously Approved Protective Construction Designs • New Protective Construction Designs • Earth-Covered Magazines: • Earth-Covered Magazines 	6

No.	Unit Title	Unit Content	Hours
		<ul style="list-style-type: none"> • Earth-Covered Magazine NEWQD Limits • Earth-Covered Magazine Design Load Criteria. • Earth-Covered Magazine Earth Cover Criteria • Barricaded Open Storage Modules • Barricaded Open Storage Modules NEWQD and AE Type Limits • Barricaded Open Storage Module Design Criteria • Barricade requirements • Barricades • Barricade Size and Orientation to Prevent Prompt Propagation Due to High-Velocity, Low-Angle Fragments. • Location. • Height. • Length. • Barricade Size and Orientation for Protection against Overpressure. • Barricade Construction Materials. • Barricade Designs. • Natural Barricades. • Inspection of Barricades • Earth-Filled, Steel Bin-Type. Barricades for Outside Storage. • Types of ARMCO, Inc. Revetments • Requirements for ARMCO, Inc. Revetments. • Substantial Dividing Walls. • SDW main steel is continuous into supports as follows. • Multitube or Segregated Magazines 	
4	<p style="text-align: center;">FIREFIGHTING, EMERGENCY PLANNING AND FIRE PREVENTION.</p>	<ul style="list-style-type: none"> • Scope and Applicability. • Fire Divisions. • Fire Division Symbols. • Chemical Agent and Chemical Munitions Hazard Symbols. • Obtaining Firefighting Symbol Decals. • Purpose of Posting Firefighting Symbols. • Posting Requirements for Firefighting Symbols. • Exceptions to Posting Firefighting 	6

No.	Unit Title	Unit Content	Hours
		<p>Symbols.</p> <ul style="list-style-type: none"> • Firefighting Measures. • Fire Withdrawal Distances. • Non-essential personnel. • Essential personnel. • Chemical Agents. • Underground Explosives Facilities. • Improvised Explosive Device Withdrawal Distances. • Withdrawal Distances for AE Not Involved in Fire. • Emergency Planning. • Fire Drills. • Fire Prevention, Heat-Producing Devices • Vegetation Control. • Firebreaks. • Controlled Burning. • Flammable Liquids for Cleaning. • Paint and Other Flammable Materials. • Operating Support Equipment. • Stacking Combustible Material. • Fire Extinguishers. • Storing Water for Firefighting. 	
5	<p>QUANTITY-DISTANCE CRITERIA</p>	<ul style="list-style-type: none"> • Introduction • Quantity-Distance Principles. • Inhabited Building Distance (IBD): • Public Traffic Route Distance (PTRD) • High Traffic Density. • Medium Traffic Density. • Low Traffic Density. • Intra-line Distance (ILD). • Inter magazine Distance (IMD). • Determining Net Explosive Weight for Quantity-Distance. • Determining Distances between PESs and ESs/General. • Measuring from a PES. • Measuring to an ES. • Quantity-Distance Application. • Paired Relationships. • QD Determination. • Allowable Exposures/General. • Allowable IBD Exposures. 	6

No.	Unit Title	Unit Content	Hours
		<ul style="list-style-type: none"> • Allowable PTRD Exposures. • Allowable Unbarricaded ILD Exposures. • Allowable Barricaded ILD Exposures. • Other Allowable Exposures. • HD 1.1 Hazardous Fragment Distances. • HD 1.1 IBD and PTRD. • HD 1.2.1 and 1.2.2 QD Criteria. • HD 1.2.3 QD Criteria. • HD 1.3 QD Criteria. • HD 1.4 QD Criteria. • HD 1.6 QD Criteria. • HD 6.1 Criteria. • Scope and Application. • Exclusion. • Concept. • Determination of Energetic Liquids Quantity. • Measurement of Separation Distances. • Hazard Classification of Energetic Liquids. • The ELCG designations and definitions are. • Specific hazardous locations. • General Airfield Criteria • Forward Firing Munitions. • AE Prohibited Areas • Munitions Loading Operations. • Combat Aircraft Related Activities. • Explosives Cargo Aircraft Related Activities. • Munitions or Weapons Storage Area Related Activities. • Concurrent Servicing Operations • Hot-Pit Refueling Operations • End-of-Runway and Arm/De-arm Pads and Crew Shelters • Aircraft NEWQD. • Explosives Aircraft Exempt from Sitting as a PES. • Hardened Aircraft Shelters (HAS) and Associated AE Facilities • Helicopter Landing Areas for AE Operations. • Defensive or Tactical Missile Batteries 	

No.	Unit Title	Unit Content	Hours
		<ul style="list-style-type: none"> • Tactical Missile Separations • Interchange Yards for AE Conveyances. • AE Transportation Mode Change Locations. • Suspect Vehicle Holding Areas • Secure Holding Areas • Non-Explosives Loaded Vehicle Parking Areas. • Inert Storage. • Areas for Burning AE. • Areas Used for Intentional Detonations • EOD Operational Responses. • EOD Proficiency Training Ranges • EOD Training at Off-Range Locations. • Military Working Dog (MWD) Explosives Search Training. • Demilitarization Operations for Expended 50-Caliber and Smaller Cartridge Casings. • Underground Tanks or Pipelines for Water and Other Non-Hazardous Materials. • Utilities and Services. • Aircraft Loading and Unloading Sites • Railroad Loading and Unloading Sites • Missile Alert Facility (MAF). 	

REFERENCES:

Royal Jordanian air force technical manuals

Associate Degree Program

Specialization	الاسلحة الموجهة/طيران
Course Number	020608262
Course Title	مشغل تخزين الدخائر وانواع المخازن Storage Regulations and Safety Distances Workshop
Credit Hours	1
Theoretical Hours	0
Practical Hours	3

Short Description:

A comprehensive set of exercises that enable the student to practice the theoretical information such as the Air Force Safety program to provide the maximum possible protection to personal and property, methods of storage and the magazines types.

Course Objectives:

- Understand the Deviations, Waivers, and Exemptions.
- How to deal with explosive, handling and storage.
- Protective construction and specific explosives facility designs
- Firefighting, emergency planning and fire prevention
- Measure the quantity distance for facility.

Detailed Description:

No.	Unit Title	Unit Content	Hours
1.	How to deal with explosive, handling and storage.	<ul style="list-style-type: none">●Explosives Safety●General Day-to-day Operations<ul style="list-style-type: none">• Deviations• Waivers• Exemptions● Explosives operations and storage.● Handling of Explosives● Static Grounding● Testing, Procedures Verification,● Disassembling and Modifying● Explosives Items Requirements for● Test, Disassembly, and Modification of Explosives Items● Operations in Explosives Storage Spaces● Storage and Compatibility Principles	4
2.	PROTECTIVE CONSTRUCTION AND SPECIFIC EXPLOSIVES FACILITY DESIGNS	<ul style="list-style-type: none">● Above Ground Magazines● Protective Construction, Purpose of Protective Construction● Requirements for Use of Protective Construction● Earth-Covered Magazines● Barricaded Open Storage Modules	3

		<ul style="list-style-type: none"> • Inspection of Barricades 	
3.	<p align="center">FIREFIGHTING, EMERGENCY PLANNING AND FIRE PREVENTION</p>	<ul style="list-style-type: none"> • Fire Divisions. • Fire Division Symbols. • Chemical Agent and Chemical • Munitions Hazard Symbols. • Posting Requirements for Firefighting Symbols. • Firefighting Measures. • Fire Withdrawal Distances. • Non-essential personnel. • Essential personnel. • Chemical Agents. • Emergency Planning. • Fire Drills. • Vegetation Control. • Firebreaks. • Flammable Liquids for Cleaning. • Paint and Other Flammable Materials. • Fire Extinguishers. • Storing Water for Firefighting 	3
4.	<p align="center">QUANTITY-DISTANCE CRITERIA</p>	<ul style="list-style-type: none"> • Quantity-Distance Principles. • Inhabited Building Distance (IBD): • Public Traffic Route Distance (PTRD) • Determining Net Explosive Weight for Quantity-Distance. • Determining Distances 	6

		<p>between PESs and ESs/ General.</p> <ul style="list-style-type: none">• Measuring from a PES.• Measuring to an ES.• Quantity-Distance Application.	
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References:

Royal Jordanian Air Force Technical Manuals

Associate Degree Program

Specialization	الأسلحة الموجهة/طيران
Course Number	020608263
Course Title	مشغل علوم الطيران Flight science Workshop
Credit Hours	2
Theoretical Hours	0
Practical Hours	6

Short Description:

A comprehensive set of exercises that enable the student to practice generic ideas about the airplane, theory of flight, stability of the aircraft, basic aerodynamics and rotary-wing aircraft.

Course Objectives:

- Identify the airplane (types and parts).
- Identify the theory of flight.
- Understand the fundamentals of aerodynamics.
- Identify the rotary-wing aircraft.

Detailed Description:

No.	Unit Title	Unit Content	Hours
1	The Airplane	<ul style="list-style-type: none">• The airplane• Airplane structure• Parts of an airplane• Types of airplanes• Classes of airplanes	6
2	Introduction to The Theory Of Flight	<ul style="list-style-type: none">• Introduction• Vector quantities• Weight• Lift• Thrust• Drag• Boundary layer air flow• Aspect ratio• Induced drag• Parasite drag• Aircraft Lift/Drag ratio• Pitching moment• Ailerons• Flaps• High lift devices• Auxiliary lift devices• Aircraft stability	12
3	Basic Aerodynamics	<ul style="list-style-type: none">• Compressible flow• Effect of the atmosphere on flight• Mach number• Realms of flight• The speed regimes	7
4	Rotary-Wing Airplanes	<ul style="list-style-type: none">• The early development• Configuration• Airfoils• Airfoil sections• Rotary wing planform	7

No.	Unit Title	Unit Content	Hours
		<ul style="list-style-type: none"> • Relative wind • Angle of attack • Angle of incidence • Total Aerodynamic Force • Centrifugal force • Rotational velocities • Hovering • Ground effect • Torque • Translating tendency • Translational lift • Dissymmetry of lift • Retreating blade stall • Settling with power • Aerodynamics of autorotation • Helicopter mechanical construction 	

REFERENCES:

1. J.D. Anderson, Flight, Mc Grow-Hill (sixth edition 2008)
2. Jeppesen Sanderson Inc (2004)
3. Leslie, aviation, FAA Docket (2003-15585)

Associate Degree Program

Specialization	الاسلحة الموجهة /طيران
Course Number	020601181
Course Title	العدد اليدوية للانظمة الكهربائية في الطائرات Special tools on aircraft
Credit Hours	2
Theoretical Hours	0
Practical Hours	6

Short Description:

This is a **hand tools** course which aims to enable the student to practice safety, general purpose tools, metal cutting tools, wire and cable sizes, measuring tools, wire numbering /coding and special purpose tools.

Course Objectives:

1. To identify the types of hand tools.
2. To identify precision of the measuring tools.
3. To identify the hardware of the aircraft.

Detailed Description:

No.	Unit Title	Unit Content	Hours
1	Hand tools	<ul style="list-style-type: none">• Identifying the hand tools.• How to use hand tools.• Objective of hand tools.	12
2	Aircraft hardware	<ul style="list-style-type: none">• Identifying the aircraft hardware.• Remove and install bolts and nuts.• Use of the torque wrench.• Internal and external threads cutting.• Taking measurement by steel rule and micrometer.• Drawing lines, angles and curves.• Cutting sheets by hacksaw.• Using files to cut different shapes.• Safety wiring.• Saving a nut by cotter pin.	20

References

FAA-H-8083-309-ATB. A and P General Hand Book.

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Other identifiers: FAAH -8083-30A-ATB

<http://www.actechbook.com/products/act180/#ix275mn21Ango>.

Associate Degree Program

Specialization	الاسلحة الموجهة / طيران
Course Number	020602291
Course Title	التدريب الميداني Training
Credit Hours	3
Theoretical Hours	0
Practical Hours	On Job Training for 8 weeks

Short Description:

Equivalent to eight weeks of field training targeted to emphasize the ability of student to apply the theories in the real world of the profession. The training gives the student an opportunity to apply the theory gained within the theoretical courses through practical experimentation.

Course Objectives:

The training gives the student an opportunity to apply the theory gained within the theoretical courses of aircraft Guided Weapons.

