

## Curriculum for Associated Degree Program in Aeronautical Meteorology Engineering Specialization

The curriculum of associate degree program in “ Aeronautical Meteorology Engineering” specialization consists of (72 credit hours) as follows:

Serial No.	Requirements	Credit Hours
First	University Requirements	12
Second	Program Requirements	17
Third	Specialty Requirements	43
Total		72



**The curriculum of associated degree in  
Aeronautical Meteorology Engineering  
Specialization**

**First:** University requirements (12 credit hours) as follows:

Course No.	Course Title	Credit Hours	Weekly Contact Hours		Prerequisite
			Theoretical	Practical	
22001101	Arabic Language	3	3	-	
22002101	English Language	3	3	-	
21901100	Islamic Culture	3	3	-	
21702101	Computer Skills	3	1	4	
	<b>Total</b>	<b>12</b>	<b>10</b>	<b>4</b>	

**Second:** Engineering Program requirements (17 credit hours) as follow:

Course No.	Course Title	Credit Hours	Weekly Contact Hours		Prerequisite
			Theoretical	Practical	
20201111	Engineering Workshop	1	-	3	
20204111	Auto CAD	2	-	6	
20506111	Occupational Safety	2	2	-	
21301111	General Mathematics	3	2	2	
21302111	General Physics	3	2	2	
21302112	General Physics Lab	1	-	3	21302111*
21702111	Communication Skills & Technical Writing	3	2	2	22002101
20201121	Engineering Materials	2	2	-	
	<b>Total</b>	<b>17</b>	<b>10</b>	<b>18</b>	

\* Co-requisite

**Third: Specialization Requirements (43 credit hours) as follows:**

Course No.	Course Title	Credit Hours	Weekly Contact Hours		Prerequisite
			Theoretical	Practical	
20108131	General Meteorology	3	3	0	-
20108132	Method of Weather Observations	1	0	3	-
20108211	Cloud Physics	2	2	0	-
20108113	Atmospheric Thermodynamics	3	3	0	-
20108111	Atmospheric Dynamics	3	3	0	-
20108135	Synoptic Meteorology	3	3	0	-
20108134	Meteorological International Code	1	0	3	-
20108121	Meteorological Instruments	2	2	0	-
20108213	Earth Sciences	2	2	0	-
20108221	An Introduction to Oceanography	2	2	0	-
20108235	Aviation Meteorology	2	2	0	-
20108237	Agro meteorology	2	2	0	-
20108242	Applied Statistics in Climatology	1	0	3	--
20108238	Plotting Weather Charts	2	0	6	-
20108239	Meteorological Telecommunication Systems	1	1	0	-
20108240	Analyzing Weather Charts	2	0	6	-
20108241	Climate System	2	2	0	-
20108243	Air Pollution	2	2	0	-
20108124	Aeronautical Meteorology Workshop	1	0	3	-
20108291	Training*	3	-	-	
20108292	Project	3	-	-	
<b>Total</b>		<b>43</b>	<b>29</b>		

\* Equivalent to 280 training hours

## Guide Plan

First Year					
First Semester			Second Semester		
Course No.	Course Title	Credit Hours	Course No.	Course Title	Credit Hours
22002101	English language	3	20204111	AutoCAD	2
21301111	General Mathematics	3	20108111	Atmospheric Dynamics	3
20201121	Engineering Materials	2	20108134	Meteorological International Code	1
20108131	General Meteorology	3	20108113	Atmospheric Thermodynamics	3
20108132	Method of Weather Observations	1	20108135	Synoptic Meteorology	3
20201111	Engineering Workshop	1	20108121	Meteorological Instruments	2
21702101	Computer skills	3			
20506111	Occupational Safety	2	21302111	General Physics	3
			21302112	General Physics Lab	1
<b>Total</b>		<b>18</b>	<b>Total</b>		<b>18</b>

Second Year					
Third Semester			Fourth Semester		
Course No.	Course Title	Credit Hours	Course No.	Course Title	Credit Hours
20108213	Earth Sciences	2	20108239	Meteorological Telecommunication Systems	1
21702111	Communication skill and technical writing	3	20108221	An Introduction to Oceanography	2
20108211	Cloud Physics	2	20108240	Analyzing Weather Charts	2
20108235	Aviation Meteorology	2	20108243	Air pollution	2
20108237	Agro meteorology	2	20108292	Project	3
20108238	Plotting Weather Charts	2	20108291	Training	3
20108242	Applied Statistics in Climatology	1	21901100	Islamic Culture	3
20108124	Aeronautical Meteorology Workshop	1	20108241	Climate System	2
22001101	Arabic Language	3			
<b>Total</b>		<b>18</b>	<b>Total</b>		<b>18</b>

❖ تطبيق هذه الخطة الدراسية اعتباراً من بداية العام الجامعي 2009/2008

**Brief Course Description****University requirements**

Course Title	Course No	Credit Hours (Theoretical /Practical)
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<b>Arabic Language</b>	<b>22001101</b>	<b>3 (3-0)</b>
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تتضمن هذه المادة مجموعة من المهارات اللغوية بمستوياتها وأنظمتها المختلفة: الصوتية، والصرفية، والنحوية، والبلاغية، والمعجمية، والتعبيرية، وتشتمل نماذج من النصوص المشرقة: قرآنية، وشعرية، وقصصية، من بينها نماذج من الأدب الأردني؛ يتوخى من قراءتها وتدوقها وتحليلها تحليلاً أدبياً؛ تنمية الذوق الجمالي لدى الطلاب الدارسين.

<b>English Language</b>	<b>22002101</b>	<b>3 (3-0)</b>
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English 1 is a general course. It covers the syllabuses of listening, speaking, reading, writing, pronunciation and grammar, which are provided in a communicative context. The course is designed for foreign learners of the English language, who have had more than one year of English language study. The extension part would be dealt with in the class situation following the individual differences.

<b>Islamic Culture</b>	<b>21901100</b>	<b>3 (3-0)</b>
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1. تعريف الثقافة الإسلامية وبيان معانيها وموضوعاتها والنظم المتعلقة بها - وظائفها وأهدافها.
2. مصادر ومقومات الثقافة الإسلامية والأركان والأسس التي تقوم عليها.
3. خصائص الثقافة الإسلامية.
4. الإسلام والعلم، والعلاقة بين العلم والإيمان
5. التحديات التي تواجه الثقافة الإسلامية.
6. رد الشبهات التي تثار حول الإسلام.
7. الأخلاق الإسلامية والآداب الشرعية في إطار الثقافة الإسلامية.
8. النظم الإسلامية.

<b>Computer Skills</b>	<b>21702101</b>	<b>3 (0-6)</b>
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An introduction to computing and the broad field of information technology is given. Topics covered include the basic structure of digital computer system, microcomputer, operating systems, application software, data communication and networks, and the internet. Hands-on learning emphasizes Windows xp, MS-office2000, and the internet.

**Engineering Program requirements**

<b>Engineering Workshops</b>	<b>20201111</b>	<b>1 (0-3)</b>
Development of basic manual skills in Mechanical and Electrical works. Use of manual tools and measuring devices. Hand filing, welding, metal cutting and forming. Electrical wiring.		
<b>AutoCAD</b>	<b>20204111</b>	<b>2 (0-6)</b>
Introduction to AutoCAD, application of AutoCAD, commands, geometric entities. Geometric construction. Dimensioning, free –hand sketching, object representation, orthographic drawing and projections.		
<b>Occupational safety</b>	<b>20506111</b>	<b>2 (2-0)</b>
Role of technicians in economic development First aid accident prevention. Protective devices and equipment. Industrial safety standards. Nature of fire hazards. Sand fire regulations. Physiological effects of electrical shock on human body. First aid and treatment for the effects of electric shock. Rules of spare and chemicals storage and handing.		
<b>Communication Skills and Technical Writing</b>	<b>21702111</b>	<b>3 (2-2)</b>
The main goal of this course is to equip the students with the necessary communication skills in everyday life & work situations and improve their abilities in technical writing to meet market needs. For this course, the English language is the language of teaching & the means of communication for all classroom situations.		
<b>Engineering Materials</b>	<b>20201121</b>	<b>2 (2-0)</b>
Definition of engineering materials. Classification of materials and their properties. Metallic and non-metallic materials. Metals, alloys and composite materials. Conductors, insulators and semiconductors. Mechanical and electrical characteristics of materials. Industrial applications of different types of materials.		
<b>General Mathematics</b>	<b>21301111</b>	<b>3 (2-2)</b>
Real numbers coordinate planes, lines, distance and circles. Functions: (operations and graphs on functions), limits, continuity, limits and continuity of trigonometric functions. Exponential and logarithmic functions. Differentiation (techniques of differentiation, chain rule, implicit differentiation). Application of differentiation (increase, decrease, concavity). Graphs of polynomials. Applications: Rolls Theorem and Mean-Value Theorem, Integration (by substitution, definite integral, fundamental theorem of Calculus). Application of definite integral (area between two curves, volumes)		
<b>General Physics</b>	<b>21302111</b>	<b>3 (2-2)</b>
Physics and measurement, motion in one dimension, vectors, laws of motion, circular motion, energy and energy transfer, potential energy, linear momentum and collisions, electric fields, Gauss's law, electric potential, capacitance and dielectrics, current and resistance, direct current circuits, magnetic fields, sources of the magnetic field, and Faraday's law of electromagnetic induction.		
<b>General Physics lab</b>	<b>21302112</b>	<b>1 (0-3)</b>
In this course, the student performs thirteen experiments in mechanics and in electricity.		

**Specialization Requirement**

<b>General Meteorology</b>	20108131	3 (3-0)
The atmosphere. Air temperature. Atmospheric pressure. Winds. Humidity. Water processes in the atmosphere. Radiation in the atmosphere. Global energy balance. Severe weather conditions.		
Method of Weather Observations	20108132	1 (0-3)
Observation network. Observation reports. Measurements of meteorological elements. Preparing meteorological reports: SYONP, METAR.		
<b>Atmospheric Thermodynamics</b>	20108113	3 (3-0)
Gases laws. Equation of state for dry air and equation of state for moist air. Thermodynamics laws. Air stability. The skew T-log P diagram. The tephigram. Aerological diagrams and vertical stability.		
<b>Synoptic Meteorology</b>	20108135	3 (3-0)
Meteorological observation network. Air masses and fronts. Specific synoptic-scale systems. Synoptic systems. Forecasting offices.		
<b>Meteorological Instruments</b>	20108121	2 (2-0)
Meteorological instruments of measurements of air temperature, pressure, wind, humidity, precipitation, evaporation, dew, sunshine and radiation.		
<b>Aeronautical Meteorology Workshop</b>	20108124	1 (0-3)
Meteorological instruments and test equipments. Measurements of air temperature, pressure, wind speed, thermometers, humidity, precipitation, evaporation, dew, sunshine and radiation, rain measuring instrument.		
<b>Atmospheric Dynamics</b>	20108111	3(3.0)
Forces affecting wind. Hydrostatic equation. Barometric equations. Adiabatic process. Equation of motion. Thickness and contours. Jet streams. Divergence and convergence. Equation of continuity. General circulation.		
<b>Meteorological International Code</b>	20108134	1(0.3)
SYNOP. SHIP. PILOT. TEMP. METAR. SPECI. CLIMAT. CLIMAT TEMP.		
<b>Earth Sciences</b>	20108213	2(2.0)
The solar system. Planet earth. Source and distribution of thermal energy on earth's system. Earth's motion.		
<b>Climate System</b>	20108241	2(2.0)
Introduction to climatology. Limits and climate processes. The globally averaged atmospheric energy balance. The changing climate. World climate.		
<b>Cloud Physics</b>	20108211	2(2.0)
Condensation. Clouds. Theories of growth of cloud droplets. Rain enhancements.		

<b>Aviation Meteorology</b>	20108235	2(2.0)
Weather and aviation. Visibility. Hazardous weather affecting aviation. Aviation weather reports. Aviation weather forecast. Aeronautical operations.		
<b>Agrometeorology</b>	20108237	2(2.0)
Agrometeorological observations. Impact of weather on agriculture. Soil moisture. Soil temperature . Evaporation . Potential evaporation. Evapotranspiration and potential evapotranspiration. Water balance at the surface.		
<b>Plotting Weather Charts</b>	20108238	2(0.6)
Earths coordinates, Earth magnetism, the atmosphere, Air temperature, Atmospheric pressure, winds, Air moisture, clouds, Aviation hazardous weather, Maria system. Weather charts. Decoding & plotting surface and upper-air data.		
<b>Statistics in Climatologyp</b>	20108242	1(0.3)
principles of statistics. Linear regression and correlation. Probability.		
<b>Analyzing Weather Charts</b>	20108240	2(0.6)
analysis of surface and upper-air charts .Interpretion of NWP Product.		
<b>Meteorological Telecommunication Systems</b>	20108239	1(1.0)
Organization of the Global Telecommunication System (GTS). Operational procedure for the GTS.		
<b>An Introduction to Oceanography</b>	20108221	2(2.0)
The ocean. Ocean – atmosphere interactions		
<b>Air pollution</b>	20108243	2(2.0)
The lower atmosphere. Turbulence. Pollutants in the air. Meteorological factors affecting air pollution. Modeling of air pollution. Global environmental issues.		
<b>Training</b>	20108291	3 (280 training hours)
Equivalent to 280 hours of field training targeted to emphasize the ability of students to apply the theories in Aeronautical meteorology stations and systems of the National Forecasting Center		
<b>project</b>	20108292	3
An integrated assembly/design project (practical work) related to the major fields of study.		

