

**Brief Description for Courses of the Study Plan of a diploma degree in
Maintenance and Programming Smart Devices**

Course Title	Course No	Credit Hours (Theoretical / Practical)
لغة عربية	22001101	3 (3-0)
<p>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 وتذوقها وتحليلها تحليلاً أدبياً؛ تنمية الذوق الجمالي لدى الطلاب الدارسين.</p>		
لغة إنجليزية	22002101	3 (3-0)
<p>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.</p>		
ثقافة إسلامية	21901100	3 (3-0)
<ol style="list-style-type: none"> 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 والأداب الشرعية في إطار الثقافة الإسلامية. 8. النظم الإسلامية. 		
مهارات حاسوب	21702101	3 (1-4)
<p>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.</p>		

Engineering Workshops	20201111	1 (0-4)
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		
AutoCAD	20204111	2 (0-4)
Introduction to AutoCAD, application of AutoCAD, commands, geometric entities. Geometric construction. Dimensioning, free-hand sketching, object representation, orthographic drawing and projections.		
Occupational safety	20506111	2 (2-0)
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 and treatment for the effects of electrical shock on human body. First aid treatment for the effects of electrical shock. Rules of spare and chemicals storage and handling.		
Communication Skills and Technical Writing	21702111	3 (3-0)
The main goal of this course is to equip the students with the necessary communication skills in everyday life and work situations and improve their abilities in the technical writing to meet the market needs. For this course, the English language is the language of teaching and the means of communication for all classroom situations.		
Engineering Materials	20201121	2 (2-0)
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, Magnetic, Thermal and electrical characteristics of materials. Industrial applications of different types of materials.		
General Mathematics	21301111	3 (3-0)
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: Rolle's Theorem and Mean-Value Theorem, Integration (by substitution, definite integral, fundamental theorem of Calculus). Application of definite integral (area between two curves, volumes)		

General Physics	21302111	3 (3-0)
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.		
General Physics lab.	21302112	1 (0-2)
In this course, the student performs thirteen experiments in mechanics, and in electricity.		
Electrical Circuits	20301113	3 (3-0)
Voltage, Current, and Resistance, Ohm's Law, Energy and Power, Series-Parallel Circuits, Introduction to Alternating Current and Voltage, Capacitors, Inductors, RLC Circuits and Resonance. Electrical Measurements.		
Electrical Circuits Lab.	20301114	1 (0-2)
DC and AC circuits. Resonance. Measuring devices.		
Electronics	20403111	3 (3-0)
Semiconductor devices. Diodes: Classification, characteristics and applications. Transistors: classification, characteristics and applications. Amplifiers. Oscillators. Logic gates and Integrated circuits: Basic functions, symbols and applications. Introduction to electronic measurements: Oscilloscope applications.		
Electronics Lab.	20403112	1 (0-2)
Use of oscilloscope in measurements. Investigation of characteristics of semiconductor devices. Construction and study of electronic circuits. Experiments in electronics have to cover the main electronic devices (diode, zener diode, diode applications, BJT, FET, op – amp, oscillator, SCR).		
Digital Fundamentals	20404121	2 (2-0)
Numerical systems, operations, and codes, logic gates, Boolean algebra and logic simplification, combinational logic and function of combinational logic, flip – flops, counters, shift registers. Fixed – function Integrated Circuits, and Programmable Logic Devices (PLDs).		
Digital Fundamentals Lab.	20404122	1 (0-2)
Experiments in digital fundamentals have to cover logic gates, combinational logic, flip – flops, counters, shift registers.		

Principles of Telecommunications	20405111	3 (3-0)
Telecommunications link configuration, Frequency spectrum, measuring units and signal parameters, Modulation principles and types (AM, FM, PCM, Delta Modulation), and digital modulation, Transmitters and receivers.		
Principles of Telecommunications Lab.	20405112	1 (0-2)
Amplifiers and Attenuators, Tuned circuits, filters, AM and FM modulation demodulation, demodulation, sampling, PCM, delta modulation.		
Programming Using JAVA Language	20412131	3 (2-3)
This course introduces elementary Java GUI programming. It includes interfaces, exception handling, drawing shapes, event-driven programming, creating graphical user interfaces, writing applets and servlets, connect to DB.		
Smart Devices Programming Using JAVA Language	20412132	3 (2-3)
Android Mobile Device Programming: Android application programming including use of a standard integrated development environment, debugging, user interface creation, and multithreading and network applications. Students will be able to code, run, and debug a variety of applications using software emulators.		
Smart Devices and Wireless Networks	20412241	3 (3-0)
This course describes the basic concepts of mobile design and wireless communication systems: A Brief History of mobile, elements of mobile design, mobile communication, including the 2G and 3G communication systems, mobile IP, and mobile TCP, methods of data caching, dissemination and synchronization, Bluetooth, mobile ad hoc, wireless sensor networks and wireless standards covering both mobile network and LANs.		
Smart Devices Operating Systems	20412252	3 (3-0)
This course introduce modern operating systems, It starts with an introduction to operating systems that includes general operating systems structure, 32 bits vs 64 bits operating systems, processes and threads, memory management, CPU scheduling. Also the course will review the different operating systems structure like UNIX, Linux, and Windows family. The course also covers in details mobile operating systems that includes (Palm OS, I-Phone OS (apple), Android OS, Windows CE designed for Micro-Computers and Windows Mobile.		

Smart Devices Architecture	20412251	3 (3-0)
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In the past computers needed to be disconnected from their internal network if they needed to be taken or moved anywhere. Smart Device architecture allows maintaining this connection whilst during transit. Each day the number of mobile devices is increasing, mobile architecture is the pieces of technology needed to create a rich, connected user experience. Currently there is a lack of uniform interoperability plans and implementation.

Smart Devices Application Development	20412253	3 (3-0)
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Mobile Device Programming: Comprehensive introduction to building Microsoft phone applications. Includes extensive programming in Java. Technical topics include user interface design, navigation, debugging, and web services.

Smart Devices Application Development Lab.	20412254	1 (0-2)
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This application course will be targeted to provide a comprehensive implementation to the material given in the Smart Devices Application Development course. The expected output of the student is to provide a complete mobile application that helps the student to manage their future projects practically.

Smart Devices Maintenance Lab.	20412255	1 (0-6)
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This is the most important course in the maintenance of the smart device track. The expected outcome of this course is to provide a proper knowledge for the student of how they can maintain wide variety of smart device hardware.

Project	20412292	3 (0-0)
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Development of significant web or mobile software system, employing knowledge gained from courses throughout the program. Includes development of: requirements, design, implementation, and quality assurance. Students may follow any suitable process model, must pay attention to quality issues, and must manage the project themselves, following all appropriate project management techniques.

Training	20412291	3 (0-0)
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Equivalent to 280 hours of field training targeted to emphasize the ability of students to apply the theories in design, install, configure, and troubleshoot Smart Devices.