University of Al-Furat Al-Awsat (ATU)
Technical College/ Al-Mussaib (TCM)
جامعة الفرات الاوسط التقنية
الكلية التقنية / المسيب

First Cycle – Bachelor's Degree (B.Sc.) – Machines and Equipment's Engineering Techniques

بكالوريوس - هندسة تقنيات المكائن والمعدات

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1. Overview

This catalogue is about the courses (modules) given by the program of Machines and Equipment's Engineering Techniques to gain the Bachelor of Science degree. The program delivers (28) Modules with (3000) total student workload hours and 120 total ECTS. The module delivery is based on the Bologna Process.

نظره عامه

يتناول هذا الدليل المواد الدراسية التي يقدمها برنامج تقنيات هندسة المكائن والمعدات للحصول على درجة بكالوريوس العلوم. يقدم البرنامج (28) مادة دراسية، على سبيل المثال، مع (3000) إجمالي ساعات حمل الطالب 120 إجمالي وحدات أوروبية. يعتمد تقديم المواد الدراسية على نظام مسار بولونيا.

2. Undergraduate Courses 2024-2025

Module 1

Code	Course/Module Title	ECTS	Semester
ATU21011	Workshops (I)	4	1
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
	6	93	10
Description			
An Engineering Workshop has become important field in the industrial atmosphere to produce products for the service of mankind. The knowledge of converting a raw material into a use full product is highly essential for all engineers for familiarizing with concepts. The basic need of Engineering Workshop is to provide theoretical and practical knowledge of manufacturing environment to all the engineering students. Therefore, an attempt has been made through this laboratory subject to learn both the theoretical and practical knowledge of shaping a product. Considering the general needs of engineering students in the country and the fact that they hardly get any exposure to hand tools, equipment's, machines and manufacturing setups, a basic course in Engineering Workshop remains a core subject for all the branches of engineering. This Engineering Workshop laboratory classes covers most of the basic skill that an engineering students needs to familiarize themselves.			

Module 2

Code	Course/Module Title	ECTS	Semester

ATU21012	Engineering materials	6	1
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
4	2	93	57
Description			
This module provides a fundamental exploration of engineering materials, connecting atomic structure to macroscopic properties and applications. Students will begin by examining crystal structures, defects, and the solidification processes of metals and alloys. Key analytical tools, such as phase diagrams and the lever rule, will be introduced to predict material behavior under thermal equilibrium. The course emphasizes practical mechanical assessment, covering stress-strain analysis, hardness testing, and impact testing, alongside non-destructive inspection techniques. Students will study specific material groups in depth, including ferrous metals (steel, cast iron) and non-ferrous alloys (copper, aluminum), as well as modern applications of nanomaterials, plastics, ceramics, and composites. By the end of this module, learners will be able to classify materials, interpret testing data, and select appropriate materials for engineering challenges based on their structural and mechanical characteristics.			

Module 3

Code	Course/Module Title	ECTS	Semester
AUT21013	Mathematics 1	6	1
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
4	1	78	74
Description			
This course provides a comprehensive understanding of fundamental mathematical concepts. Topics include slope, Cartesian coordinates, equations, and distances. Students will learn graphing techniques, limits, and intervals. The concept of continuity, domain, and range will be explored. Matrices, vectors, determinants, and their properties will be covered. System of equations will be solved using Gramer's rule method. Introduction to complex numbers and their mathematical operations will be taught. Trigonometric functions, inverse trigonometric functions, logarithmic and exponential functions, as well as hyperbolic functions, will be studied. Properties, rules, and graphing of these functions will be emphasized. By the end of the course, students will have a solid foundation in these mathematical concepts, preparing them for further studies in various fields.			

Module 4

Code	Course/Module Title	ECTS	Semester
ATU21014	Engineering Mechanics (I)	8	1

Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
4	3	93	107

Description
This module introduces the fundamental principles of Engineering Mechanics: Statics, focusing on the analysis of rigid bodies in equilibrium. Students will master vector mechanics to calculate forces, moments, and couples, utilizing free body diagrams as a primary analytical tool. The curriculum covers the structural analysis of trusses, frames, and machines, alongside the study of friction, centroids, and moments of inertia. Additionally, learners will examine internal forces to determine shear and bending moments in beams and frames. Theoretical concepts are reinforced through dedicated laboratory and tutorial sessions, equipping students with the practical skills to solve complex engineering problems involving static mechanical systems.

Module 5

Code	Course/Module Title	ECTS	Semester
ATU21015	Engineering Drawing	4	1
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
	4	63	37

Description
This topic introduces engineering drawing principles, techniques, and standards. Students learn various types of drawings, like orthographic projections and section views, developing foundational skills in creating and interpreting technical drawings. Geometric construction techniques using basic tools are taught, along with dimensioning for precise measurements and annotations. Students gain proficiency in projection principles, creating orthographic views and visualizing objects accurately. Sectional and auxiliary views are covered for conveying complex geometries. Introduction to computer-aided design (CAD) software includes creating, modifying, and annotating digital technical drawings. This enhances productivity, accuracy, and collaboration in engineering design. Overall, students acquire a solid foundation in engineering drawing, covering geometric construction, orthographic projection, sectional and auxiliary views, assembly drawings, and CAD applications.

Module 6

Code	Course/Module Title	ECTS	Semester
ATUU113	English Language 1	2	1

Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
1		36	14
Description			
Teaching the student, the basic principle of English Language. This description of the academic program provides a necessary summary of the most important characteristics of the program and the learning outcomes expected of the student to be achieved, demonstrating whether he has made the most of the available opportunities. It is accompanied by a description of each course within the program. The academic program aims to prepare specialized, scientifically and professionally qualified cadres in the field of English language and translation who are able to compete in the local and global labor market by developing their linguistic, intellectual and research skills and enhancing their sense of confidence.			

Module 7

Code	Course/Module Title	ECTS	Semester
ATU21021	Workshops (II)	4	2
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
	6	90	10
Description			
An Engineering Workshop has become important field in the industrial atmosphere to produce products for the service of mankind. The knowledge of converting a raw material into a use full product is highly essential for all engineers for familiarizing with concepts. The basic need of Engineering Workshop is to provide theoretical and practical knowledge of manufacturing environment to all the engineering students. Therefore, an attempt has been made through this laboratory subject to learn both the theoretical and practical knowledge of shaping a product. Considering the general needs of engineering students in the country and the fact that they hardly get any exposure to hand tools, equipment's, machines and manufacturing setups, a basic course in Engineering Workshop remains a core subject for all the branches of engineering. This Engineering Workshop laboratory classes covers most of the basic skill that an engineering students needs to familiarize themselves.			

Module 8

Code	Course/Module Title	ECTS	Semester
ATU21022	Computer Aided Drafting (CAD)	6	2

Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
1	4	78	72

Description
The Computer-Aided Drafting (AutoCAD) course is designed to equip students with the fundamental skills and knowledge required to effectively use AutoCAD software for creating precise and detailed technical drawings. AutoCAD is a widely used computer-aided design (CAD) software application employed by professionals in various fields such as architecture, engineering, and manufacturing. Throughout this course, students will be introduced to the key features and functionalities of AutoCAD, enabling them to produce accurate 2D and 3D drawings efficiently. They will learn to navigate the AutoCAD interface, create and modify geometric shapes, manage layers, and apply annotation and dimensioning techniques. The course will also cover advanced topics such as creating blocks, managing external references, and utilizing advanced editing tools. The curriculum will emphasize hands-on learning, allowing students to practice their skills through a series of practical exercises and real-world design projects. They will gain a solid understanding of drafting principles, industry-standard conventions, and best practices for creating professional CAD drawings.

Module 9

Code	Course/Module Title	ECTS	Semester
ATU21023	Mathematics (II)	6	2

Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
4	2	93	57

Description
This course explores the concepts of derivatives and integrals. Students will learn the rules of derivatives, including the chain rule and implicit derivatives. The derivatives of logarithmic, exponential, trigonometric, and hyperbolic functions will be studied. Applications of derivatives, such as L'Hôpital's rule, velocity, acceleration, and points of inflection, will be covered. Indefinite integrals, integration formulas, and the integration of logarithmic, exponential, trigonometric, and hyperbolic functions will be taught. Various methods of integration, including integration by parts and trigonometric substitutions, will be explored. The integration of partial fractions and rational functions will also be covered. Applications of integration, such as finding areas and volumes, will be discussed. By the end of the course, students will have a strong understanding of derivatives and integrals and their applications in mathematics and other fields.

Module 10

Code	Course/Module Title	ECTS	Semester
ATU21024	Engineering Mechanics (II)	6	2
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
4	2	87	63
Description			
Building on the principles of statics, this module delves into the analysis of bodies in motion. It begins with the fundamental concepts of kinematics, examining the displacement, velocity, and acceleration of particles in both rectilinear and curvilinear paths. Students will then transition to kinetics, applying Newton's Second Law to solve problems related to force, mass, and acceleration, while exploring conservation principles involving linear momentum and impulse. The course also covers energy methods, including work, kinetic and potential energy, and power efficiency in mechanical systems. As the module progresses, learners will analyze the kinematics and kinetics of rigid bodies in translation and rotation, utilizing concepts like the mass moment of inertia. Finally, the module introduces mechanical vibrations, covering free and forced oscillations and resonance, supported by practical laboratory work and tutorials to reinforce theoretical understanding.			

Module 11

Code	Course/Module Title	ECTS	Semester
ATU2222	Computer Programming	3	2
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
1	3	63	37
Description			
This module establishes a strong foundation in digital literacy, beginning with the core concepts of computer architecture, including hardware components, memory systems, and the distinction between data and information. Students will acquire practical proficiency in Operating Systems and Graphical User Interfaces (GUI), learning to navigate environments and manage files and directories efficiently. The course emphasizes office productivity, guiding learners through word processing for professional document formatting and spreadsheet management for data analysis using formulas, pivot tables, and visualization charts. Additionally, students will master presentation software to create engaging visual content with advanced animation features. The module concludes with essential internet skills, covering web browsing, email communication, and an introduction to cloud computing services like Google Workspace for collaborative work.			

Module 12

Code	Course/Module Title	ECTS	Semester
ATUU111	Human Rights and Democracy	2	2
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
1	1	33	17
Description			
This module explores the historical evolution of freedom and democracy within pluralistic societies, analyzing the dynamics of political transitions and system adaptations. It centers on the defense of human dignity, aiming to translate theoretical knowledge into positive behavioral change and active civic engagement. Students will examine the symbiotic relationship between the individual, the community, and state institutions to strengthen concepts of citizenship and solidarity. The curriculum covers the fundamental principles, sources, and classifications of human rights, alongside the legal mechanisms used to protect them. Additionally, the course emphasizes practical skills, such as monitoring human rights violations and understanding advocacy strategies. Through interactive learning, learners are empowered to participate effectively in public affairs, fostering a culture that respects, upholds, and defends human rights in daily life.			

Module 13

Code	Course/Module Title	ECTS	Semester
ATU13	Arabic Language	2	2
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
1	1	31	19
Description			
تتمثل في ان يطبق الطلاب المعرفة العلمية التي تلقوها في مجال لغة القران الكريم وفروعها بما يضمن تحقيق التواصل المعرفي بينهم والاستفادة من مستجدات وتطورات العصر وسرعة تناقل المعلومات، وتزويدهم بالمعرفة العلمية المتكاملة في اللغة العربية وآدابها، وأن يتقنوا إعداد البحوث العلمية وفق منهجية علمية متكاملة.			

Module 14

Code	Course/Module Title	ECTS	Semester
ATU21031	Strength of materials - Fundamentals	5	3
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
2	2	59	66
Description			
This module provides a foundational analysis of how materials respond to internal forces and external loads, essential for structural engineering. Students will be introduced to key concepts of simple stress and strain, including shearing, bearing, and tearing stresses. The curriculum covers the fundamental relationship between stress and strain via Hook's Law and the stress-strain diagram, extending to the calculation of axial deformation. A core component involves analyzing beams through shear force and bending moment diagrams to understand load distribution. Advanced analysis techniques, such as Mohr's circle, are taught to determine principal stresses and transformations. The theoretical content is complemented by a comprehensive experimental program, where students perform tensile, torsion, bending, hardness, and thick cylinder tests to observe mechanical behavior in real-world scenarios.			

Module 15

Code	Course/Module Title	ECTS	Semester
ATU21032	Thermodynamics - Fundamentals	5	3
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
2	2	59	66
Description			
Thermodynamics is a branch of physics that deals with heat, work, temperature, energy, entropy, and the properties of matter and radiation. It encompasses the four laws of thermodynamics, which explain the behavior of these quantities at a macroscopic level. Thermodynamics is applicable to various scientific and engineering fields, including physical chemistry, biochemistry, chemical engineering, mechanical engineering, and meteorology. The first law states that energy can be transferred between systems as heat, work, or matter. The second law introduces entropy, which describes the direction of system evolution and quantifies order and the potential for useful work. Thermodynamics studies interactions among large ensembles of objects and distinguishes between a system and its surroundings. The system's properties are defined by the average motions of its particles and are related through equations of state. Internal energy and thermodynamic potentials help determine			

conditions for equilibrium and spontaneous processes.

Module 16

Code	Course/Module Title	ECTS	Semester
ATU21033	Fluid Mechanics - Static	5	3
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
2	2	59	66
Description			
This module introduces the fundamental principles of fluid mechanics, focusing primarily on fluid statics and the basics of fluid kinematics. Students will begin by defining fluid properties such as viscosity, surface tension, and pressure distribution, mastering unit conversions between SI and English systems. The course emphasizes the calculation of hydrostatic forces on plane and curved submerged surfaces, as well as the analysis of buoyancy and stability for floating bodies. Learners will also examine fluids subjected to linear and rotational acceleration. The module then transitions to fluid kinematics, distinguishing between steady/unsteady and laminar/turbulent flow, and applying the Equation of Continuity to one-dimensional flow problems. Theoretical concepts are reinforced through extensive laboratory sessions and tutorials, providing practical experience in measuring pressure and analyzing flow behavior.			

Module 17

Code	Course/Module Title	ECTS	Semester
ATU21034	Mathematics -Third Level	4	3
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
4	0	59	41
Description			
This course focuses on ordinary linear differential equations, sequences and series, partial differentiation, vector operations, and applications of double and triple integrals. Students will learn about various types of first-order and second-order differential equations, including separable, homogeneous, exact linear, and Bernoulli equations. The concept of sequences and series, along with tests for convergence, will be covered. Fourier series and partial differentiation of functions of multiple variables will be explored. Topics such as directional derivatives, maxima, minima, and saddle points will be discussed. Vector operations, including parallel vectors and triple products, will be studied.			

Applications of double and triple integrals, as well as the Jacobian transformation, will be explored. Special functions, polar coordinates, and the rotation of axes will also be covered. By the end of the course, students will have a solid understanding of these mathematical concepts and their applications in various fields.

Module 18

Code	Course/Module Title	ECTS	Semester
ATU21035	Mechanical Engineering Drawing	3	3
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
0	3	45	30
Description			
This course covers various topics related to mechanical engineering components and drawing techniques. Students will learn about the classifications of screws, keys, pins, rivets, and springs, understanding their types and applications. The concept of tolerances will be explored, including basic size, limits of size, and deviation, as well as fits and clearances, transition, interference, and calculations of fits and tolerances. Surface finishing symbols and their application will be discussed. Students will gain proficiency in creating assembly drawings, including sectional front views and side views for general assembly. The course will also cover welding types such as gas welding, arc welding, and resistance welding, along with their basic symbols. Gears, including spur gears, bevel gears, and worm and worm wheel, will be studied with a focus on their classification, applications, and detailed drawings.			

Module 19

Code	Course/Module Title	ECTS	Semester
ATU21036	Manufacturing Processes	3	3
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
1	2	45	30
Description			
During studying Manufacturing process students will learn about the principle of manufacturing process and the Role of manufacturing process in Community requirements. The outcome of this topic is for students to understand the fundamentals of Manufacturing process and their significance in the industry.in this topic ,students will study the major components of Manufacturing process , Example			

:Forming process ,including Extrusion ,Rolling ,drawing, Grinding ,Drilling ….etc .Operations processes ,including Turning, Milling, drilling, Grinding ,EDM …etc. The outcome is for students to gain a comprehensive understanding of the various components Manufacturing process. also explore methods for optimizing Manufacturing process performance and reducing Economic costs and environmental impact. The outcome is for students to be able to analyze and improve the efficiency and performance of Manufacturing processes.

Module 20

Code	Course/Module Title	ECTS	Semester
ATU21037	Fundamental of Electricity	3	3
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
2	1	45	30
Description			
This module provides a comprehensive grounding in electrical engineering fundamentals, beginning with the essential components of electrical systems and the physics of current flow. Students will examine the properties of voltage and current sources, resistivity, and the thermal effects on resistance, establishing a strong grasp of Ohm's Law. The course advances to the detailed analysis of DC circuits, utilizing Kirchhoff's Laws to evaluate series and parallel configurations. A major focus is placed on sophisticated network theorems and analytical methods. Learners will master Mesh and Nodal analysis, star-delta transformations, and critical theorems including Superposition, Thevenin's, Norton's, and Maximum Power Transfer. This training equips students with the analytical tools necessary to solve complex electrical network problems and calculate power and energy distributions efficiently.			

Module 21

Code	Course/Module Title	ECTS	Semester
ATUU211	Baath Crimes	3	3
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
1	2	45	30
Description			
This module provides a critical historical examination of the Ba'ath regime, focusing on the			

documentation and analysis of its crimes and systemic human rights violations. The course is designed to equip undergraduate students with the cognitive tools necessary to deconstruct the political narratives and media propaganda fabricated by the former regime.

Students will investigate the mechanisms of state-controlled media and ideological indoctrination used to obscure historical truths and enforce social subjugation.

By analyzing primary sources and historical accounts, learners will expose the "culture of servitude" and the falsification of facts that characterized the era. The ultimate goal is to foster intellectual independence, enabling students to distinguish historical reality from revisionist narratives and to understand the profound psychological and social impacts of authoritarian rule on the Iraqi conscience.

Module 22

Code	Course/Module Title	ECTS	Semester
ATU21041	Strength of Materials - Application	5	4
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
2	2	59	66
Description			

This module advances the study of material mechanics, focusing on the structural integrity of beams and columns. Students will analyze stresses in beams and calculate deflections for various configurations, including simply supported and cantilever systems. A key component of the course is the study of column stability, where learners will examine critical loads and buckling phenomena to prevent structural failure.

The curriculum also covers combined stress analysis and the practical application of Mohr's circle for visualizing complex stress states. Theoretical knowledge is reinforced through comprehensive laboratory testing—including tensile, torsion, bending, fatigue, and impact tests—providing students with practical insights into material durability and failure mechanisms under different loading conditions.

Module 23

Code	Course/Module Title	ECTS	Semester
ATU21042	Thermodynamics - Applications	5	4
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)

2	2	59	66

Description
Thermodynamics is a vital discipline in science and engineering, with applications in physical chemistry, biochemistry, chemical engineering, mechanical engineering, meteorology, and more. The first law states that energy can be transferred as heat, work, or matter between systems. The second law introduces entropy, which determines the direction of system evolution and quantifies order and extractable work. Thermodynamics focuses on interactions among large ensembles of objects, categorizing them based on the concepts of systems and surroundings. System properties are defined by the average motions of particles and related through equations of state. Internal energy and thermodynamic potentials aid in determining conditions for equilibrium and spontaneous processes. By understanding how systems respond to environmental changes, thermodynamics finds applications in engines, phase transitions, chemical reactions, transport phenomena, and diverse fields like physics, chemistry, engineering, biology, materials science, and economics. Its results have far-reaching implications across multiple disciplines.

Module 24

Code	Course/Module Title	ECTS	Semester
ATU21043	Fluid Mechanics - Dynamics	5	4
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
2	2	59	66

Description
This module focuses on the principles of fluid dynamics, moving from ideal flow to real-world applications. Students will analyze fluid motion using Bernoulli's equation, distinguishing between frictionless flow and frictional flow. Key concepts include the calculation of velocity and acceleration, as well as the interpretation of the Hydraulic Grade Line (HGL) and Energy Line (EGL) to determine flow direction. The curriculum extends to power considerations, specifically the efficiency of pumps, and the analysis of jet trajectories. Learners will also apply the Momentum Equation to calculate forces acting on fluid control volumes and explore dimensional analysis. Comprehensive laboratory sessions and tutorials provide practical experience in measuring flow parameters and verifying theoretical equations in dynamic systems.

Module 25

Code	Course/Module Title	ECTS	Semester

ATU21044	Industrial Automation	5	4
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
2	2	59	66
Description			
This module offers a comprehensive introduction to the integration of mechanical engineering and electronics, forming the foundation of modern Mechatronics. Students will first explore core mechanical components—such as gears and linkages—alongside essential electronic elements including sensors, actuators, and circuits. The curriculum emphasizes the synergy between these fields, covering feedback control systems, microcontrollers, and interfacing techniques required to build intelligent systems. Learners will also study system integration strategies, including signal conditioning, communication protocols, and human-machine interfaces. The course highlights practical applications across diverse industries, from robotics and automotive engineering to biomedical devices. Through hands-on laboratory sessions and design projects, students will apply simulation, modeling, and troubleshooting skills to create and optimize integrated mechanical and electronic solutions.			

Module 26

Code	Course/Module Title	ECTS	Semester
ATU21045	Computer Aided Manufacturing (CAM)	5	4
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
2	2	59	66
Description			
The Computer-Aided Manufacturing (Surfcam) course teaches students the essential skills and knowledge required to utilize Surfcam software effectively. Participants will learn to create efficient machining solutions by generating toolpaths, simulating operations, and programming CNC machines. The course covers Surfcam's user interface, 2D/3D modeling, toolpath optimization, post-processing, machine simulation, and verification. Practical exercises and projects simulate real-world scenarios, ensuring graduates are equipped to enhance manufacturing processes and excel in the industry.			

Module 27

Code	Course/Module Title	ECTS	Semester

ATU221	English Language - Second Level	2	4
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
1	0	17	30
Description			
The main objective that will be adopted in this lesson is to teach the student the main principles and rules used in constructing sentences that are used in different situations, and work to encourage students to write and speak in groups in order to raise language skills and improve listening skill as well. This will be achieved through interactive educational patterns and means, and by encouraging students to write about topics of interest to students. This is important to improve the level of students at this level in English using multiple means. Also, to understand the main rules of writing, especially for writing lab reports or graduation projects. This course is concerned with introducing students to the main concepts of writing, reading, speaking and listening. It will achieve the possibility for the student to write a short article as well as the ability to read for various scientific and general topics.			

Module 28

Code	Course/Module Title	ECTS	Semester
ATU222	Computer Applications - Second Level	3	4
Class (hr/w)	Lect/Lab./Prac./Tutor	SSWL (hr/sem)	USWL (hr/w)
1	2	45	30
Description			
This module offers a comprehensive progression in IT literacy, bridging practical system maintenance with the study of emerging technologies. The course begins with the fundamentals of networking and information security, covering threat detection and the mechanisms of electronic banking and e-commerce systems. Students will also develop practical skills in diagnosing and troubleshooting common hardware and software problems. A major focus of the curriculum is Artificial Intelligence (AI). Learners will examine the history, ethics, and definition of AI, alongside its integration into modern smartphones via virtual assistants and adaptive learning. The module explores AI applications across diverse sectors—including healthcare, finance, and robotics—before concluding with a critical analysis of AI's impact on society, privacy, and the future job market			

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