

0900096	Computer Literacy	3 CH	3	0	Prereq:	None
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The course covers basic parts of the latest version of the Windows operating system. It also introduces the basic and latest components of Word, Excel, Access and PowerPoint. Hands on experiences are stressed. The course is practical and implemented in the lab.

0900097	Remedial Arabic Communication Skills	3 CH	3	0	Prereq:	None
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This course introduces basic skills in Arabic reading comprehension, writing, listening, and speaking through examining selected literary and cultural texts, to prepare them to study Arabic Communication Skills (1). The texts are carefully selected from among a broad collection representing Arabic and American cultures.

0900099	Remedial English Communication Skills	3 CH	3	0	Prereq:	None
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This course is designed to help students enhance the four basic skills in English – reading, writing, speaking, and listening – through first-hand experience. The course provides basic and essential information about grammar used in real communicative situations that are relevant to students. Passages are selected to improve students’ reading comprehension and to widen their horizons. Exercises are used to improve writing skills.

0900100	Swimming	0 CH	0	2	Prereq:	None
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Swimming is a graduation requirement. All AUM students are required to prove their capability of swimming before they graduate. Those who have previous swimming experience and can practically prove it will be exempted from taking the course. But those who can’t swim will have to take the course and pass it before they graduate. Special sessions of swimming will be reserved for female students and others for male students, and there will be coaches of both genders. The objective of this course is to get students acquainted with the basic skills of dealing with water. The course starts with adapting students to the water environment, followed by teaching them the basic swimming skills – floating, treading water, freestyle, and back-stroke– in addition to the technical aspects and the international laws of this sport.

0900101	Sports (1)	1 CH	1	3	Prereq:	None
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The course is compulsory. Its purpose is to raise the level of the general physical fitness of students by enabling them to practice one of the following sports: soccer, basketball, volleyball, handball, racquetball, taekwondo, boxing, fencing, and physical fitness. The course concentrates on the basic skills of the chosen sports, the international laws governing them, developing

students' physical fitness, and enhancing their knowledge in health and sports culture – doping, weight controlling, and age-related illnesses.

0900110	Cultural Development (1)	1 CH	Prereq:	None
		1	2	

This course is compulsory. Students are assigned to advisers, preferably not from the student's department/faculty and are asked to gather information about a cultural topic of great local, regional, or global import. Either the adviser or student chooses the topic. Throughout the semester, the student meets with the advisor to report on the progress being made on the project. At the end of the semester the student presents the project to a general audience of faculty and fellow students.

0900111	Military Science	3 CH	Prereq:	None
		3	0	

This course provides knowledge about the military, the role of the Jordan armed forces in defending the country, and the military's role in development and community service. The course is taught with lectures and field trips.

0900112	Civic Education	3 CH	Prereq:	None
		3	0	

This course raises the socio-political level of national awareness and promotes democracy through the presentation of Jordan's modern history since World War I. It also deals with the analysis of Jordan's Constitution, the mechanisms of interaction among the legislative, justice and executive authorities, and an emphasis on the role of press and media in the democratic activity.

0900113	Interpersonal & Intercultural Communication	3 CH	Prereq:	None
		3	0	

This course focuses on developing students' interpersonal (soft) skills, particularly in the fields of communication and leadership in large and small group environments. It examines the process of sending and receiving messages between people whose cultural background could lead them to interpret verbal and nonverbal signs differently. Emphasis is given to the development of basic public speaking skills (i.e., overcoming nervousness, audience analysis, speech preparation, organization, writing and delivery). Students are given opportunities to write and organize informative and persuasive speeches and to be competent in meeting impromptu speaking situations with the use of visual aids to help deliver the information. Students give and receive constructive feedback from their peers. In addition, the course provides opportunities to practice essential meeting or group leadership skills, such as parliamentary procedures, panel discussions and debates. The course helps students recognize and surmount cultural differences, thus leading to business opportunities throughout the world and helping to maximize the contributions of all

the employees in a diverse workforce. Further practical features of this course are writing CV's and handling job interviews.

0900114	Civilization & Thought	3 CH	Prereq:	None
		3	0	

This course takes a historical journey to visit different great civilizations. The course considers each civilization's roots, the thought prevailing in the particular civilization, and the extent to which the civilization advanced and the reasons for its demise.

0900115	Social Ethics	3 CH	Prereq:	None
		3	0	

The sources and assumptions for our own ethics are discussed. A variety of ethical approaches are used to evaluate social and political issues in our current society. The course encourages appreciation of students' moral traditions. The course uses constructive critical thinking to help students reinforce their own values and to recognize the ways in which differing values affect our lives.

0900116	Bio-Ethics	3 CH	Prereq:	None
		3	0	

Bioethics studies the reasonableness of human choices and actions that typically occur in medical practice. This course focuses on issues involving medical care and biotechnology. The course subjects will extend to other areas where human life and death are involved such as euthanasia, abortion, genes, genomes, and health care. These issues cluster roughly around five concepts: reproduction and birth, death, genetics, healthcare, and the role of the physician. The course examines these issues from many sides, weighing the reasons people have a certain mindset with considerations towards forming a well-supported position and creating a world in which all can live. The course seeks to develop moral wisdom and moral virtue.

0900120	Arabic Communication Skills (1)	3 CH	Prereq:	0900097 or passing the placement test
		3	0	

This course enhances basic skills in Arabic reading, writing, listening, and speaking, through studying selected literary texts. Emphasis is placed on the structure of the Arabic sentence, its most common derivatives, and its most common artistic forms.

3 CH	Prereq:	0900099 or passing the placement test
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0900130	English Communication Skills (1)	3	0
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This course is designed to help students enhance the four basic skills in English – reading, writing, speaking, and listening – through student-centered classes. The emphasis is on learning English through actual experience. The course provides essential information about grammar and structures used in real communications that are relevant to the students’ life, thus building their fluency. Stimulating and informative passages are selected to improve students’ reading comprehension and to widen their horizons. Exercises and semi-guided paragraphs and essays are used to improve their writing skills.

3 CH	Prereq:	0900130
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0900131	English Communication Skills (2)	3	0
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This course is a continuation of English Communication Skills (1). It further enhances students’ basic language skills: reading, writing, listening, and speaking.

3 CH	Prereq:	
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0900140	Appreciation of Art	3	0
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This course is a simple approach to the understanding of the plastic arts (drawing, architecture, sculpture, painting, graphics, minor art, and industrial arts) on a conceptual basis. Visual aspects of visual art will also be emphasized.

3 CH	Prereq:	
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0900141	Appreciation of Music	3	0
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This course is a survey and comparison of the styles, characteristics, composers, and performers of music throughout history with an emphasis on Middle Eastern music.

3 CH	Prereq:	None
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0900150	Introduction to Economics	3	0
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This course provides an overview of microeconomic and macroeconomic principles and an understanding of the economic choices that individuals, firms, and governments face. It also introduces the concept of scarcity and the working process of a market economic system. Furthermore, this course examines the different market structures, the role of the firm and the impact of government intervention on markets. Finally, this course discusses the meaning and computation of national income, inflation, unemployment, economic growth, international trade, and the impact of fiscal and monetary policies on the economy.

3 CH	Prereq:	None
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0900160	Entrepreneurship & Enterprises	3	0
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This course introduces students to the concept of entrepreneurship and the pursuit of value-creating opportunities. The course examines the entrepreneur’s approach to life and the knowledge and skills necessary for that approach to create value. Students learn to recognize and

evaluate entrepreneurial opportunities. At the end of the course, students develop a business model for one of those opportunities.

0900161	Creativity and Innovation (1)	3 CH	Prereq:	None
		3	0	

Want to make a difference? This two-semester course teaches the essential skills for becoming a change-maker and social innovator in Jordan and throughout the world. Social innovation is the generation of creative, bold, and scalable solutions to the world's most pressing social, political, and economic challenges. Through engaging, interactive activities, students start by learning about what motivates us, how the brain works, and how to grow their intelligence. Students then learn how to think creatively and come up with original ideas that have value. They also learn how to iterate and improve on those ideas, what role failure plays in creativity, and why doing what you love is the key to being creative.

0900162	Creativity and Innovation (2)	3 CH	Prereq:	None
		3	0	

Want to make a difference? In the second semester of this two-part course, students learn the essential components of critical thinking and create their own social innovation. Students learn how to gather, organize, and analyze information. They learn the keys to effective planning, strategy, and decision-making. They also learn how to ask the best questions, anticipate problems, and think critically about how to bring a creative idea into reality. Students finish the course by working on their own unique social innovation, which they design, create, and implement.

0900170	Energy & the Environment	3 CH	Prereq:	None
		3	0	

This course focuses on population growth, energy demand, renewable energy resources (solar energy, wind energy, photovoltaic energy, hydraulic energy, bioenergy), non-renewable energy resources (oil, coal, natural gas), nuclear energy, environmental impacts (global warming, ozone depletion, acidification, hazardous air pollution, indoor air pollution), life cycle assessment (LCA), green buildings, and LEED certified buildings.

0900171	Science & Society	3 CH	Prereq:	None
		3	0	

This course focuses on scientific and technological advances and their impact on society and social behavior. It highlights where science and technology and society meet. It explores the advances of science and technology and their impact on society and social behavior. It discusses approaches to analyzing social aspects of recent advances in areas such as genetics, environment, and the internet. The course explores how the practice and results of science – knowledge and technology – affect and are shaped by our social, cultural, economic, and political lives. Students address the effects of science on society by conducting group projects that address the needs of local communities and the capacity to utilize scientific knowledge to promote the health and

well-being of the individual, community and society. The course emphasizes group discussions with high expectations of student involvement.

			3 CH	Prereq:	0900096 or passing the placement test
0900180	Computer Skills	2	2		

Basic computer components, flowcharts, simple computer algorithms, basic concepts of visual programming, visual components, variables, control structures, GUIs, arrays, loops, procedures and functions. The course is practical and implemented in the lab.

			3 CH	Prereq:	0900096 or passing the placement test
0900181	Computer Skills (Art and Design)	2	2		

This course is an overview of the main components of the Adobe Creative Suite. It is a hands-on, fast-paced course where students gain the technical skills to create sophisticated graphics for a range of art and design projects using ACS.

			1 CH	Prereq:	0900101
0900201	Sports (2)	1	3		

This course is a continuation of Sports (1). If the student chooses the same sport practiced in Sports (1) and then the course focuses on the advanced practical application of skills and strategies, international law, and health issues (nutrition, sport injuries, age-related illnesses) to improve the physical fitness of the student. If, on the other hand, the student chooses a sport not taken in Sports (1), the new sport will be studied according to the description of Sports (1).

			1 CH	Prereq:	0900201
0900202	Sports (3)	1	3		

This course is a continuation of Sports (2). The student has to choose a sport different from the sport selected in Sports (1) and Sports (2).

			1 CH	Prereq:	0900110
0900210	Cultural Development (2)	1	2		

This course is a continuation of Cultural Development (1). The same course description of Cultural Development (1) applies to this course, but a different topic has to be selected.

0900211	Cultural Development (3)	1 CH	Prereq:	0900210
		1	2	

This course is a continuation of Cultural Development (2). The same course description of Cultural Development (1) applies to this course, but a topic different than those from previous courses has to be selected.

				3 CH	Prereq:	Concurrent 0902107
0902101	General Chemistry (1)	3	0			

This course discusses basic chemical concepts including: matter, measurements, significant figures, stoichiometry equations, molar masses, moles, chemical calculations, reactions in solution, gases, structure of the atom, periodic properties of the elements, chemical bonding, and molecular geometry.

				1 CH	Prereq:	Concurrent 0902101
0902107	General Chemistry lab (1)	0	3			

This lab course discusses safety laboratory rules and laboratory equipment. Experiments include determination of density, empirical and molecular formula, limiting reactants, molar mass of volatile liquid, periodic table and periodic law, synthesis of alum and aspirin, volumetric analysis and vinegar analysis, bleach analysis, and chemicals tests for anions and cations.

				3 CH	Prereq:	0902101
0902111	Organic Chemistry for Health Sciences	3	0			

This course covers the principles of carbon chemistry. It introduces the molecular orbital theory of organic compounds, the IUPAC nomenclature, and the structure and characteristics of various organic compounds.

				1 CH	Prereq:	Concurrent 0902111
0902117	Organic Chemistry Lab for Health Sciences	0	3			

This lab course is complementary to the theoretical lectures provided by the co-requisite course. The laboratory is divided into two parts: the first part covers safety precautions and lab rules that students should strictly follow so that safety can be observed in the lab. Experiments are designed to familiarize students with techniques commonly used in the organic laboratory for identification, purification and separation of organic compounds. The second part includes chemical tests for identification of the main classes of organic compounds.

				3 CH	Prereq:	None
0903101	Calculus (1)	3	0			

Functions, algebraic and transcendental, graphs and the effects of translations and scaling, limits (with intuitive approach) and continuity, the derivative various meanings, main rules and applications, approximation and graph sketching, definite and indefinite integration, the substitution rule and the fundamental theorem of calculus.

				3 CH	Prereq:	0903101
0903102	Calculus (2)	3	0			

Some applications of the definite integral, volumes and surface area of certain solids, arc-length of some curves, methods of integration, integration by parts, integration of rational functions, partial fractions, trigonometric substitution, improper integrals, infinite sequences and series,

convergence tests, power series and Taylor series and their applications, parametric equations, polar coordinates, graphing and areas and arc-length in polar coordinates.

0903103	Mathematics for Business	3 CH	Prereq: None
		3	0

This course introduces students to a selected variety of mathematical concepts that can be used in the context of business and commercial enterprises to record and manage enterprise data and operations. The course covers the topics of linear equations, quadratic equations, matrices and their wider applications in business, as well as differentiation. The course is delivered throughout lectures, classroom exercises, several home works, and a project.

0903104	Calculus for Architects	3 CH	Prereq: -
		3	0

This is an introductory course covering the fundamental concepts, problem solving skills, and various mathematical applications and principles used by architects. It employs computer-based programs in investigating and exploring the geometric and numerical-related principles in the morphological patterns in architecture. It examines theories on sacred art and architecture associated with geometry and numerical analysis. It examines quantifying spatial qualities of settlements and buildings in order to analyze, quantify and tabulate the spatio-functional properties of architectural and urban spaces.

0903182	Statistics for Business	3 CH	Prereq: 0903103
		3	0

The course introduces students to the fundamentals of descriptive statistics and its wider application in business and the decision-making process. Methods of collecting, summarizing, and describing data and related measures of central tendency and dispersion are also introduced. Students describe and analyze data using measures of central tendency and descriptive statistical tools, including graphs and comparative techniques. Topics include data types, probability, sampling, distributions, and estimation.

0903201	Applied Math for Engineering (1)	3 CH	Prereq: 0903102
		3	0

Matrix and linear algebra; solution of systems of linear equations; eigenvalues and eigenvectors; solution to first order, second order and set of first order ordinary differential equations.

0903202	Calculus (3)	3 CH	Prereq: 0903102
		3	0

Three dimensional space, spheres, cylinders and quadric surfaces. Vectors, and vector operations, lines and planes in space. Vector-valued functions, calculus of vector-valued functions, unit tangent and normal vectors, the curvature. Functions of several variables, partial differentiation and the chain rules. The gradient, directional derivatives, tangent planes and normal lines, constrained and unconstrained optimization, Lagrange multipliers. Double integrals in rectangular and polar coordinates, triple integrals in rectangular, cylindrical and spherical coordinates. Change of variables in multiple integrals, the Jacobian.

0903231	Statistics for Health Sciences	2 CH	2	0	Prereq: None
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The course provides the basic concepts in biostatistics, statistical studies, graphical presentation of data, measures of central tendency, spread (dispersion), probability concepts, discrete distributions, hypotheses testing, and sampling methods.

0903281	Probability and Statistics	3 CH	3	0	Prereq: None
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The course provides an introduction to descriptive statistics. Elements of probability are presented. Sampling distribution, theory of estimation hypothesis testing, inference about a single population and about two populations are also covered.

0903301	Applied Math for Engineering (2)	3 CH	3	0	Prereq: 0903201
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A review of vectors and vector operations, curves in space, functions of 2 or 3 variables, partial differentiation and the gradient. Vector fields, the curl and the divergence. Line integral, a review of double integrals and Green's theorem. Surface integrals, Stoke's and the divergence theorems. Fourier series. The classical partial differential equations and the separation of variables.

0903381	Numerical Analysis	3 CH	3	0	Prereq: 0903102
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This is an overview course of various numerical methods using both manual and Excel means to determine approximating method errors, finding roots for nonlinear equations, interpolation and approximation of functions, numerical differentiation, numerical integration, and an introduction to optimization methods.

0904101	General Physics (1)	3 CH	3	0	Prereq: None
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An introductory calculus-based physics course, primarily serving students majoring in engineering or the physical sciences, covers vectors, motion in one dimension, motion in two dimensions, Newton's laws, work and energy, conservation of angular momentum, collisions, rotational motion and equilibrium.

0904102	General Physics (2)	3 CH	3	0	Prereq: 0904101
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A continuation of General Physics (1) (0904101) including electricity, electric charge, force, field, potential, Gauss's law, electromotive force, capacitors, direct current circuits, and magnetism, magnetic fields, Ampere's law and Faraday's law, inductance and AC circuits.

0904103	Physics for Health Sciences	3 CH	3	0	Prereq: None
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This non-calculus based course covers topics such as measurements, laws of motion and acceleration, work and energy, heat and laws of gases, thermodynamics, fluids, electric forces, fields and potentials, direct currents, nerve conduction, sound, lenses, light, structure of matter, x-rays, and nuclear physics.

		3 CH	Prereq:	-
0904104	Physics for Architects	3	0	

This is a basic course for a number of programs related to structural, electrical, and mechanical engineering systems. It covers mechanics and dynamics, electrostatics and electricity, light, geometric optics, and sound; heat transfer; climatology; gases and vapors. The course is based on soft-numerical teaching methods where emphasis is given to morphology and behavior rather than on detailed calculations.

		1 CH	Prereq:	Prerequisite/ Requisite: 0904101
0904107	General Physics Lab. (1)	0	3	

It includes experiments on topics covered by General Physics (1). It includes experiments to enhance materials in Mechanics; vector addition, velocity and acceleration, gravity and free falling, Newton's second Law, frictional forces, collisions and rotational motion. Besides, it introduces and applies the concept of experimental error and its calculations.

		1 CH	Prereq:	Prerequisite / Requisite 0904012
0904108	General Physics Lab. (2)	0	3	

It includes experiments on topics covered by General Physics (2). It includes several experiments to enhance understanding materials in electricity and magnetism; Charging methods and charge distribution, electric field lines mapping, simple circuits, RC circuits, Kirchhoff's Rules, Earth's magnetic field, induction and Faraday's Law, and the application of induction in transformers.