

EBLA PRIVATE UNIVERSITY

Collage of Engineering

Department of Architectural Engineering

Courses Description

University Requirements:

ENG100	English (1)	3 Cr. Hrs	Pre: ✕
This course provides training on English conversational and compositional skills, and adopts the communicative conversational approach in instruction. Throughout this course, a review of grammar and vocabulary basics is done, with special focus on those that Arabic speakers find particularly hard to learn.			

ITC100	Computer Skills	3 Cr. Hrs	Pre: ✕
This course is an introduction to computer basics, hardware and software, MS-DOS and Windows Operating Systems, Word processing, Excel Spreadsheet, PowerPoint, Internet, and the role of Information Technology (IT) in institutions as well as its use in administrations.			

ARB100	Arabic	3 Cr. Hrs	Pre: ✕
This course deals with how to improve student's expressive aptitude, strengthening his/her command of Standard Arabic so that it becomes the medium of expression for him/her in writing and conversation. The focus is on a variety of skills: writing, grammar, comprehension, composition, and aesthetic appreciation skills. This is attained through the study of various literary texts, and the analysis of their grammatical and linguistic structures, shedding light on aesthetic aspects in terms of form and content.			

ACI100	Arab Civilization	3 Cr. Hrs	Pre: ✕
This course provides the student with a historical synopsis of Arab society, its political , economic, and cultural systems and their development. It also deals with the change and the development within Arab society.			

ENV100	Society and environment	3 Cr. Hrs	Pre: ✕
This course focuses on the concept, the elements, and the importance of the ecosystem. It deals with environmental equilibrium, and man's interaction with the environment around him. It talks about the various types of pollution (the atmosphere, water and food, radioactive, and noise pollution). It also deals with the connection between developmental issues, population growth, and the role of international governmental and environmental organizations, in reducing environmental pollution.			

PSY100	Introduction to Psychology	3 Cr. Hrs	Pre: ✕
The course deals with psychology and its relation to social science and humanities. It concentrates on development, learning, intelligence, cognition, character, behavior, motives, and impulses.			

ECN100	Principles of Economy	3 Cr. Hrs	Pre: ✕
The course deals with the economic problem from the perspective of both needs and resources, suggesting solutions using marginal theory, relative advantage, and scarcity. It also studies			

concepts in economics such as production, income, consumption, and the role of money in economics.

ENG105	English (2)	3 Cr. Hrs	Pre: ENG100
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This course is considered a continuation of ENG100, and provides training to students in terms of conversational skills, including discussions about everyday topics, exchanging views about various issues, providing information, making short presentations, taking notes, listening comprehensions, and commenting on news items and reports(written and spoken).

ITC105	Computer Skills (2)	3 Cr. Hrs	Pre: ITC100
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This course aims at introducing management and accounting concepts for projects in computer skills learned in ITC100. The focus is on programs' applications like using functions. The student is also introduced to other business management software such as SPSS and MS Project.

ENG110	English (3)	3 Cr. Hrs	Pre: ENG105
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This course aims at raising the students' level in their mastery of English which is built on previous courses the students have already studied. It adopts well-proven and world-famous integrated curricula (for example: Cutting Edge, and Headway ... etc.). The focus is on the four language skills: listening, speaking, reading, and writing. This course utilizes some of the most recent and effective methods of language instruction, it covers topics of general and comprehensive scope related to various aspects of students' practical and academic lives.

ENG115	English (4)	3 Cr. Hrs	Pre: ENG110
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This course comes as the final step in the series of English courses offered to non-specialists, and is meant to raise the students' level in their mastery of English to a point where they can communicate effectively using English in their field of specialization in the years to follow.

SOI200	Sociopolitical Science	3 Cr. Hrs	Pre: ✕
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This course deals with issues and concepts related to social politics (sociopolitics), the relation between state and society, authority, sovereignty, social classes, elitism, and the role played by social organizations in political decision making. It also covers public opinion and the factors that influence it. Furthermore, it studies social movements, political parties, pressure groups, special interests groups, and the political culture in a society. It explains bureaucracy, technocracy, educational system, and political authority.

BUS120	Communication skills	3 Cr. Hrs	Pre: ✕
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This course aims at upgrading students' communication skills so that they can communicate successfully with themselves and others, helping them to acquire skills of getting along well with others, aside from accumulating information about communication, and its various aspects. The goal is to help students to succeed in their personal lives as well as in their practical lives.

College Requirements:

BUS500	Management of Engineering Projects	2	Pre: ✕
<ul style="list-style-type: none"> - Documentation management and programming. - Man power and vehicles management and organization. - Financial management-payment system-materials and storage control system. - Project- steps management and programming. 			

BUS510	Ethics of Practice	2 Cr. Hrs	Pre: ✕
<ul style="list-style-type: none"> - Introduction about the importance of ethics- identifying the professional culture. - Types of human behavior-human role for conscience diffusion - Cooperation and working in team groups-professional decency through different civilizations - Role of organizations in profession rationalization - Introduction into profession decency and its exercising methods-laws and decrees which organized engineering 			

ARC115	Engineering Chemistry	3 Cr. Hrs	Pre: ✕
<ul style="list-style-type: none"> - Chemical laboratory operations - Chemical emancipated-quantitative and qualitative chemical emancipation - Water rawness-cement testing-suppleness testing-stones testing - Cladding-cladding with zinc, nickel, cupper - Metallic coloring 			

MTH105	Mathematics (1)	3 Cr. Hrs	Pre: ✕
<ul style="list-style-type: none"> - Inverse Trigonometric functions and derivatives, Limits and Opital rule, Partial derivatives. - Concept and properties of integration, methods of integration. - Numerical and functional series. - Analytical chemistry, Differential equations, Linear equations. 			

MTH110	Mathematics (2)	3 Cr hrs	Pre:MTH105
<ul style="list-style-type: none"> - Solving set of linear equations, Matreces, Four series. - Lablas transformation. - Boolian algebra, Logic circuits. - Numerical sets. - Linear programming 			

MTH115	Mathematics (3)	3 Cr hrs	Pre:MTH110
<ul style="list-style-type: none"> - Probability (distributions). - Operation research. - Simulation. - Project programming using CPM and PERT. 			

PHS105	Physics (1)	3 Cr hrs	Pre:✕
<ul style="list-style-type: none"> - Kinetic theory of gases, Heat transfer. - Geometric light. - Movement, Newton law, work and energy. - Sound, Magnetism. - Static electricity, DC current. - Electromagnetism. 			

PHS110	Physics (2)	3 Cr hrs	Pre:PHS105
- Physical light - Quantum theory - Electrical materials - Semiconductors.			

ARC205	Computer Aided Drawing	2 Cr hrs	Pre:ITC100
This course aims at teaching the student the principal concepts of design using computer (CAD)in architectural engineering and thus by:			
<ul style="list-style-type: none"> - Training students on the use of applications of two dimensional drawings in order that students obtain the principals skills and understanding about ground floor plan ,two dimensional drawing and printing two dimensional structural drawing - Teaching students the concepts and theories of computer aided drawings in order to design architectural plans in the future using the computer 			

ARC317	Engineering Software	2 Cr hrs	Pre:ARC205
<ul style="list-style-type: none"> - This subject is a continuation to the previous subject. It is to educate the students an advanced principal in two dimensional design and the basic principal of three dimensional drawings and its application in architecture - Advanced knowledge and principals about two and three dimensional plans - Deepening student's understanding in three dimensional design. - Training students on the use of the most used soft wares. - Training students on simple constructional software. 			

ITC110	Principles of Computer	3 Cr hrs	Pre:✕
- Principal components of computer sciences – Software - Interaction and communication - Systems.			

REE410	SUSTAINABLE ARCHITECTURE	2 Cr	Pre: ARC312
<ul style="list-style-type: none"> - Theory of architecture – Natural and environmental issues - Environmental factors influencing the architecture - Environmental design- sustainable architecture - Effects of implementing renewable energy resources on architecture - Natural lighting-concepts and architectural applications - Energy resources and thermal evaluation 			

MCH114	Static	3 Cr hrs	Pre: MTH105
<ul style="list-style-type: none"> - An Introduction to mechanics of rigid bodies. - Forces and displacement vectors. - Equivalent forces. - Statical equilibrium. - Friction. - Geometric properties of sections (area, centroids, statical moments, and moment of inertia). 			

STA400	Statistics	2 Cr hrs	Pre:✕
<ul style="list-style-type: none"> - Organization of statistical data. - Basic principles of probability. - Random variables and probability distributions. - Correlation types. - Divergence. - Choosing the statistical hypothesis. 			

Department Requirements:

ARC100	Principles of Engineering Drawing	3 Cr. hrs	Pre:*
<ul style="list-style-type: none"> - Engineering drawing tools& methods of using. - Volumes: plans, sections and elevations. - Architectural elements: doors, windows, stairs and spaces organization. - Stairs and elevators. - Furniture. - 			

ARC105	Architectural Design (1)	6 Cr. hrs	Pre:ARC100
<ul style="list-style-type: none"> - Volumes and architectural elements. - Architectural style: an introduction to the architectural styles through history. - Multi functions, elements of design. - Materials: materials expression in buildings. - Components: buildings' main and secondary elements. - Form: elements of architectural design and its components. 			

ARC201	Architectural Design (2)	6Cr hrs	Pre: ARC105
<ul style="list-style-type: none"> - Residential function. - Appartments types and classification - Components of residence. - Elements and scales. - Complimentary elements. - Determinants of orientations and holes. - Outdoor complimentary elements. - Temporary housing: <ul style="list-style-type: none"> o Hotels. o Motels. 			

ARC215	Architectural Design (3)	6 Cr hrs	Pre:Arc201
<ul style="list-style-type: none"> - Classification of educational Organizations: kinder gardens, elementary schools, secondary schools, high schools, institutes and universities. - Plan and design required of each type. - Functional requirements of each type. 			

ARC305	Architectural Design (4)	6 Cr. hrs	Pre:ARC215
<ul style="list-style-type: none"> - Museums and galleries: <ul style="list-style-type: none"> o Sort, volume and localization. o Organizing the surrounding area o Circulation, lightening, movement elements and safety conditions. - Theaters: <ul style="list-style-type: none"> o Styles and volumes, graphical design conditions, organizational conditions. o Circulation and movement conditions. o Sound, lightening and seeing conditions. - Cultural centers. - Clubs. - Libraries. - Cinemas. 			

ARC310	Architectural Design (5)	6 Cr.	Pre: ARC305
<ul style="list-style-type: none"> - Types and functions of health buildings. - Health care unit. - General hospital. - Specialized hospital. - Pharmacy. - Special care houses. 			

ARC405	Architectural Design (6)	6Cr. hrs	Pre: ARC310
<ul style="list-style-type: none"> - Types, circulation and design. - Stadiums. - Swimming pools and water games. - Sports halls. - Race places in all types. 			

ARC412	Architectural Design (7)	6 Cr. hrs	Pre:ARC405
<ul style="list-style-type: none"> - Commercial and administrative centers. - Functional and graphical requirements. - Outdoors elements. 			

ARC110	History of Architecture (1)	3 Cr.hrs	Pre: ✕
<ul style="list-style-type: none"> - Egyptian and Mesopotamian architecture. - Hellenic, Greek, Roman and Palmyra architecture. - Syrian old Christian architecture. 			

ARC203	History of Architecture (2)	3 Cr. hrs	Pre :ARC110
<ul style="list-style-type: none"> - Islamic Arabic architecture and its graphical design. - Roman, Gothic and renaissance architecture in Europe. - 19th Century architecture. 			

ARC214	Theories of Architecture	3 Cr. hrs	Pre : ✕
<ul style="list-style-type: none"> - Preliminary and theoretical notions in architecture (scale) and measurement unit- human scale- golden proportion- module-beauty- visual aspects for color and material. - Architectural theories of famous architects. - Local and international architecture and its recent theories. 			

ARC208	Building Construction	3 Cr. hrs	Pre : ✕
<ul style="list-style-type: none"> - Preparation of the site: excavation, foundation and roots, soil, canalization. - Building's constructions, foundations, roofs and ceilings, floor tiling. - Garden works: outside lighting, outside furniture, farming and planting. - Cladding: plasters, painting, wood and metal works, glass works, indoor decoration (roofs, marbles...etc) 			

ARC213	Shadow and Perspective	2 Cr.	pre: ✕
<ul style="list-style-type: none"> - Perspective and shadow of: point, line and volume. - Types of shadows. - The different forms of perspectives' types and its specifications. 			

- Proportions and designing of the surrounding areas of buildings and the additional element of space.			
ARC409	Urban Planning (1)	3 cr. hrs	Pre. :ARC322
<ul style="list-style-type: none"> - Classification of cities. - Development review of cities” economic, social and personal aspects” - The influential factors of site, inhabitant and climate. - Different types of organization fundamentals. 			
ARC416	Urban Planning (2)	3 Cr hrs	pre :ARC409
<ul style="list-style-type: none"> - Modern techniques in preparing the architectural planning projects. - Integrated project planning (1): industrial areas: industrial area planning with its basics. - Integrated project planning (2): recreational and tourist areas: planning of a tourist city with its services. 			
ARC322	Theories of Urban Planning	2 Cr. hrs	Pre: ✕
<ul style="list-style-type: none"> - Historical approach of cities - Urban planning theories in the actual era. - New cities created in the actual era. - Town planning and the environmental factors. - The relation between town planning and regional planning. - Arabian cities development. - Problems of new cities. - Urban planning studies in Syria. 			
ARC403	Executive Design (1)	3 Cr. hrs	Pre: ✕
<ul style="list-style-type: none"> - Documents and executive plans needed to prepare the project file. - Exercises and applied projects for some executive studies. 			
ARC414	Executive Design (2)	3Cr.hrs	Pre:ARC403
<ul style="list-style-type: none"> - Architectural details needed to project implementation. - Executive plan for worksite. 			
ARC112	Free Hand Drawings and Models	3Cr.hrs	Pre: ✕
<ul style="list-style-type: none"> - Transforming volumetric forms into square drawings. - Free hand drawing using: pencil, coal pen, ink pen, colors. - Drawing of elevations and perspectives. - Axonometric drawing. - Basic of forming models for architectural projects. 			
ARC407	Interior Design (1)	3Cr.hrs	Pre: ✕
<ul style="list-style-type: none"> - Theories of interior space of building. - Used materials in ID. - Properties- volumes and colors. - Furniture in ID 			

C207IV	Strength of Materials	3Cr hrs	Pre: ✕
<ul style="list-style-type: none"> - Concept of stress and strain. - Stress and displacement of axially loaded members. - Stress due to bending moments, shear forces and torsion. - Combined stress - Introduction to: <ul style="list-style-type: none"> - Gyrostatically determinate structures. - Loads and reactions. - Bending moments and shearing force diagrams in gyrostatically determinate structures. 			

CIV313	Building Construction	2Cr hrs	Pre: ✕
<ul style="list-style-type: none"> - Types of buildings. - Structural elements of buildings. - Transfer of loads in structural elements. - Types of walls. - Floor and flooring. - Retaining walls. - Proofing (temp and water) - Steel Construction 			

CIV313	Theories of Constructions	2Cr hrs	Pre: ✕
<ul style="list-style-type: none"> - Loads. - Statically determinate and indeterminate structures. - Steel reinforced concrete and pre- stressed beams. - Columns and its types. - Foundations and its types. - Space structure and shells. - Suspended structures. - Pre- fabricated structures. 			

CIV212	Structural Analysis	3Cr hrs	Pre: CIV207
<ul style="list-style-type: none"> - Deflection and rotation in statically determinate structures. - Virtual work method, moment area, conjugates beam method. - Elastic line equation. - Statically indeterminate structures: <ul style="list-style-type: none"> o Casiligiano method. o Method of consistent Displacement. o Three moments equation method. o Slope-deflection method. 			

CIV316	Steel Constructions	2Cr hrs	Pre: CIV212
<ul style="list-style-type: none"> - Types and kinds of metallic constructions. - Types and properties of steel used in metallic constructions. - Structural design of metallic elements. - Joints, bolts, welding. - Steel roof, steel halls, steel facades. - Water and thermal isolation, protection from oxidation in metallic constructions. 			

CIV301	Reinforced Concrete	3Cr hrs	Pre:CIV212
<ul style="list-style-type: none"> - Physical and mechanical properties of reinforced concrete. - Mechanical properties of reinforced steels. - Modules of elasticity of concrete. - Creep and shrinkage. - The anchorage of bars. - Loads; (dead, dynamic, waved, seismic). - Bending moment in rectangle shapes and T sections. - Shear and torsion of R.C members. - Eccentrically compression in columns and walls. - Designing the concrete elements. 			

ACR312	Technical Equipments	3Cr hrs	Pre:ACR208
<ul style="list-style-type: none"> - Topographical and geological conditions of disposal areas. - Fresh water distribution networks. - Used water and its treatment. - Lighting- electrical networks. - Phonic and thermal isolation. 			

Mch318	HVAC	2Cr hrs	Pre:CIV303
<ul style="list-style-type: none"> - Central heating methods. - Heat loss in buildings. - Air conditioning principles. - Ventilation methods. - Psychological principles of comforts. 			

ARC111	Descriptive Geometry	3CR hrs	Pre: ✕
<ul style="list-style-type: none"> - Ways of plan. - Plans on two levels. - Plan of point, straight line, square. - Straight lines and square paralleling. - Straight lines and square orthogonal shapes. - Rounding. - Orthogonal plans. - Application. - Circle plan. 			

ARC216	Construction Materials (1)	3Cr hrs	Pre: ✕
<ul style="list-style-type: none"> - Grain materials (soil, dust, stone). - Natural and fabricated stones- specifications. - Cement specifications, mortar physical and mechanical specifications. - Wood types, specification and usage. - Iron specification. 			

ARC311	Construction Materials (2)	3Cr hrs	Pre:ARC216
<ul style="list-style-type: none"> - Finishing exterior materials- fabricated stone. - Metallic materials- aluminum- metallic mixes. - Interior finishing materials- painting, glazing, fusing. - Marbles, flooring, plastering. 			

- Isolation materials- waterproofing-phonics, heat isolation.

CIV211	Survey and Documentation	3Cr hrs	Pre: ∞
<ul style="list-style-type: none"> - Principles of measuring instruments-theory of error and square root method. - Surface measurements, height measurements, alignment and slopes. - Topographic maps drawings. - Methods of building documentation-photogrammetric surveying-aerial photographing space detection and images treatment. 			

ARC505-510	Graduation Project(A-B)	11Cr hrs	Pre: ARC412
<ul style="list-style-type: none"> - Students chose their projects and they are requested to present a preliminary report about the program, the site, environmental effects, ideas and preliminary project plans. - If the first stage is accepted, the student will follow up to the final stage which includes all required plans and details with the final report. 			

ARC501	B.O.Q and Specification	3Cr hrs	Pre:ARC311
<ul style="list-style-type: none"> - Determination of the specification of all the field indicated in projects - Measurement methods-payment systems. - Determination of the bill of quantities and its measurement scales. - Prices and analyzing of jobs- gains and loosed materials. - Preparation of the book of specification and prices. 			

ARC503	Urban Laws	2Cr hrs	Pre: ∞
<ul style="list-style-type: none"> - Preliminary concepts of laws. - Parceling law- contracting law. - Urban code of construction in the city and its zones. - Construction permission. - Engineering audit. 			

ARC406	Rehabilitation of Old Towns	3Cr hrs	Pre:ARC322
<ul style="list-style-type: none"> - Classification of historical areas and its urban regulation. - Historical areas- safe guarded zones- relation with new urban tissue. - Advanced technologies of architectural and urban site documentation- systems of documentation for the historical buildings. - Restoration, rehabilitation. - Theories of rehabilitation in old areas. - Examples of restoration and rehabilitation projects in Arabian and Islamic old towns. 			

ARC418	Development of Urban Sites	2 Cr hrs	Pre: ARC322
<ul style="list-style-type: none"> - Integrated studies of actual conditions. - Advanced technologies of documentation. - Urban problems and basis of urban planning. - Urban analyses, strength and weaknesses, opportunities and trends. - Basics of urban planning and sustainable development- urban remodeling. - Urban plans of development and urban programs. 			

ARC307	Art of Architecture	2Cr hrs	Pre: ∞
<ul style="list-style-type: none"> - Relation between art and architecture – arts complimenting architecture. - Beauty forms in architecture. 			

- Visual affects- proportions- colors- harmonies and opposites.
- New arts, new architecture and new technologies.

ARC411	Landscaping	2 Cr hrs	Pre: ∞
<ul style="list-style-type: none"> - General principles of landscaping of architectural and urban sites. - Urban elements and types, specifications. - Green areas- private and public gardens- streets elements- paving. - Organization of special sites. - Maintenance techniques and motorized requirements. 			

ARC422	Interior Design (2)	3Cr hrs	Pre:ARC407
<ul style="list-style-type: none"> - ID between tradition and development. - Principle and secondary elements. - Details of Iddesign. - Famous examples of interior projects. 			

Dean of the faculty of Engineering

Dr. Eng. M. A. NAAL

President of Ebla Private University

Prof Dr. Azzam Katkhuda