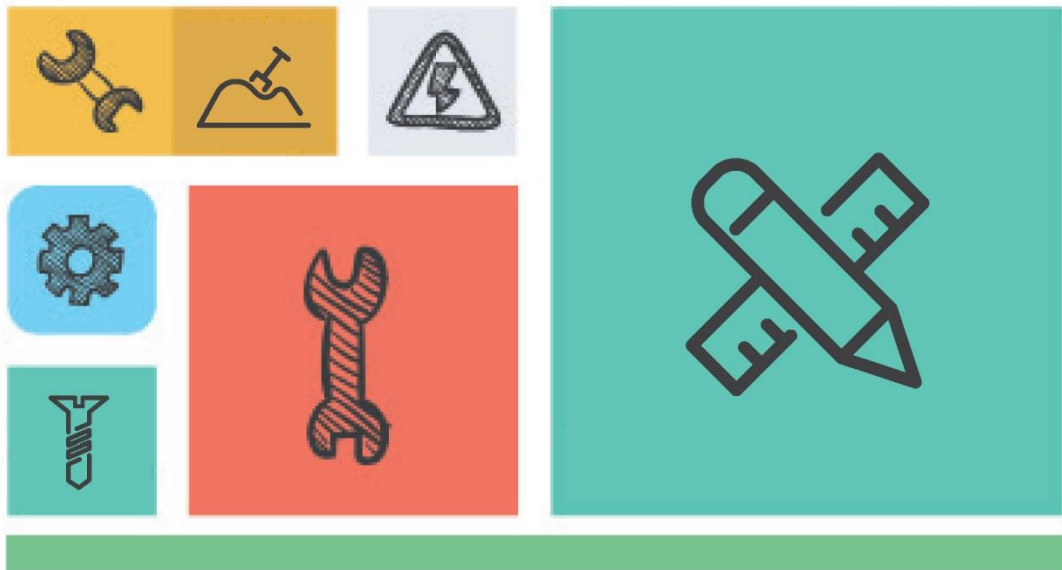


Architectural Exam

Architectural Professional Standards



Standards and Indicators Of The Fundamentals of Architecture Exam

The architectural standards are associated with the indicators shown in the following pages. The standards are coded AR-TJ, where:

- (AR) denotes "Architecture"
- (TJ) denotes "Topic Number"

Indicators are coded (AR - TJ - K), where K denotes the indicator number.

Topic T1**Architectural Design**

Standard
AR-T1

The architect should be able to develop designs that can meet both functional requirements and aesthetical values

Weight

10%

Indicators

- | | |
|----------|---|
| AR-T1-01 | Create a functional space diagram (bubble diagram) for different types of buildings |
| AR-T1-02 | Design a conceptual plan layout in response to specific requirements |
| AR-T1-03 | Create alternative conceptual designs for a facade of a given plan |
| AR-T1-04 | Distinguish the crucial issues influencing the design decisions in a design problem |
| AR-T1-05 | Infer the effects of a room orientation on its environmental performance |
| AR-T1-06 | Select a structure system that suit a concept design of a project |
| AR-T1-07 | Apply codes and regulations related to design |
| AR-T1-08 | Explain issues forced by local culture into a design |
| AR-T1-09 | Apply issues related to safety and accessibility in design |
| AR-T1-10 | Show understanding about design methods |

Topic T2**Design Skills**Standard
AR-T2

The architect should have acquired design skills that are needed to satisfy building user's requests within the limits set forth by cost factors and building rules and guidelines

Weight

7%

Indicators

AR-T2-01	Rank cost of design schemes
AR-T2-02	Calculate land development cost
AR-T2-03	Create design alternatives
AR-T2-04	Identify costly activities for given design schemes
AR-T2-05	Apply factors for efficient design of a given design problem
AR-T2-06	Describe a building design program
AR-T2-07	Name the steps and phases of value engineering
AR-T2-08	List the steps of economic feasibility study
AR-T2-09	Test a design program in terms of costs
AR-T2-10	Define design models

Topic T3**Policies and Regulations**

Standard
AR-T3

The architect should have knowledge of the establishments related to building industries and their regulations. The architect should also be aware of the procedures linked to realizing design concepts into actual buildings, and assimilating plans into whole planning

Weight

7%

Indicators

AR-T3-01	Describe the role of the local design agencies in the planning process
AR-T3-02	Identify the local facility agencies which directly linked to building industry
AR-T3-03	Name the role of the private design office in the planning process
AR-T3-04	Arrange the design approval steps
AR-T3-05	Describe the role of building contractors in the planning process
AR-T3-06	Describe the components of building contracts
AR-T3-07	Identify the role of the architect in the implementation process of buildings
AR-T3-08	Apply feedback of planning audiences on planning process
AR-T3-09	Describe planning regulations
AR-T3-10	Describe the city master plan

Topic T4**Architectural Programming**Standard
AR-T4

The architect should have an adequate knowledge of architectural programming, and possess the skills required to develop a project brief

Weight

4%

Indicators

AR-T4-01

Explain the methods of investigating the client's wants and needs

AR-T4-02

Illustrate a scenario for specific project activities

AR-T4-03

Apply a methodical site selection process

AR-T4-04

Evaluate the site characteristics

AR-T4-05

Analyze precedents and case studies

AR-T4-06

Assess the functional efficiency of a building

AR-T4-07

Estimate the total built area of a project

AR-T4-08

Prepare a building space program

AR-T4-09

Choose the appropriate materials, furniture and equipment for a project

AR-T4-10

Prepare a comprehensive space data sheet

Topic T5**History and Theories**

Standard AR-T5	The architect should have knowledge about history and theories of architecture
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Weight	4%
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Indicators

AR-T5-01	Classify historical buildings
AR-T5-02	Relate historical architectural styles to their origins
AR-T5-03	Explain the natural, social and technological factors influencing a historical architecture
AR-T5-04	Infer the architectural characteristics of a historical building
AR-T5-05	Identify the structural qualities of a historical building
AR-T5-06	Describe the esthetical qualities of a historical building
AR-T5-07	Relate the principals of contemporary schools of thought employed in an architecture design concept
AR-T5-08	Associate buildings with the school of thought influencing their designs

Topic T6**Structures and Construction**

Standard
AR-T6

The architect should have adequate knowledge of construction methods and techniques as well as engineering systems related to buildings

Weight

4%

Indicators

AR-T6-01	Describe a contemporary construction method
AR-T6-02	Identify the characteristics of different building materials
AR-T6-03	Explain an architectural construction details
AR-T6-04	Choose the appropriate construction method(s) for a project
AR-T6-05	Compare among different structural systems
AR-T6-06	Estimate the dimensions for a structure
AR-T6-07	Select the structural system(s) for a building
AR-T6-08	Recognize the electrical and mechanical drawings
AR-T6-09	Apply basic surveying techniques
AR-T6-10	Prepare the Bills of Quantities (BOQs) for a project

Topic T7**Urban Design and Planning**Standard
AR-T7

The architect should have adequate knowledge in the fields of urban design and planning, and gain suitable knowledge of the skills associated with the planning process

Weight

4%

Indicators

AR-T7-01	Calculate the floor area ratio (FAR) of a building site
AR-T7-02	Name the components of a street cross-section
AR-T7-03	Relate the design principles to building design
AR-T7-04	Connect land-use map colors key to urban activities
AR-T7-05	List the design components of a master plan
AR-T7-06	identify different types of Street Grid types
AR-T7-07	Calculate population density
AR-T7-08	Rank hierarchically master plan/ general/ city plan
AR-T7-09	Classify types of urban spaces: public, semi-public, semi-private, and private spaces
AR-T7-10	Calculate slope percentage of topography

Topic T8**Professional Practice**

Standard AR-T8	The architect is required to demonstrate an understanding of the profession of architecture, its related ethics, legal responsibilities, and impact on the society
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Weight	4%
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Indicators

AR-T8-01	Describe the different options for the legal forms of architectural firms
AR-T8-02	Propose a project scope, goals and values
AR-T8-03	Compare among the different architectural professional services
AR-T8-04	Apply the standards of a specific architectural space
AR-T8-05	Recognize the impact of the architectural profession on society
AR-T8-06	Define the role of the architect in the society
AR-T8-07	Express the ethical and legal responsibilities of the architect
AR-T8-08	Utilize life-safety codes in building design and construction
AR-T8-09	Describe the benefits and limitations of the collaborative design process
AR-T8-10	Classify the factors that affect the real-estate marketplace

Topic T9**Project Management**

Standard AR-T9	The architect should have knowledge about design and construction management
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Weight	4%
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Indicators

AR-T9-01	Describe the architect responsibilities as a consultant
AR-T9-02	Compare architecture tender drawings with bills of quantities
AR-T9-03	Arrange work plan and cash flow program for different project phases
AR-T9-04	Define financial issues (budgeting, cost estimate, cost monitoring, and variances)
AR-T9-05	Examine cost brake down of an item
AR-T9-06	Discover conflicts between architectural tender drawings with other disciplines drawings
AR-T9-07	Arrange a resource management plan
AR-T9-08	Differentiate contracting methods, such as; the itemized bill, the cost plus, the lump sum and the Built-Operate-Transfer (BOT) method

Topic T10		Humanities	
Standard AR-T10	The architect should understand how buildings relate to their surrounding environment and to the people using them, and how to consider the human scale and needs		
Weight	3%		
Indicators			
AR-T10-01	Describe the behavioral factors that affect the mutual relationship between people and buildings: e.g. privacy, personal space, crowding, territoriality		
AR-T10-02	Apply the basic aspects of human comfort inside buildings.		
AR-T10-03	Examine the safety requirements inside buildings and in their surroundings		
AR-T10-04	Analyze spaces according to the hierarchy of: private, semi-private, semi-public, and public spaces in the design of buildings and their surroundings		
AR-T10-05	Apply the built-area-ratio enacted by the regulations/ordinances, or recommended by the brief		
AR-T10-06	Relate buildings to the green areas around them		
AR-T10-07	Apply environmental principles that improve the social activities in outdoor spaces between buildings		
AR-T10-08	Examine accessibility requirements for various types of users, including handicapped people, pedestrian or vehicular		
AR-T10-09	Assess the surveillance needs of users to increase the level of security in the areas that surround their buildings		
AR-T10-10	Identify the functional requirements of special groups in buildings and in their surroundings		
AR-T10-11	Identify the psychological requirements of special groups inside buildings and in their surroundings		
AR-T10-12	Identify the physical requirements of special groups in buildings and in their surroundings		

Topic T11**Sustainability**Standard
AR-T11

The architect should have gained satisfactory knowledge of the ways of realizing architectural designs that are ecologically sustainable, and responding to conservation and rehabilitation constraints

Weight

4%

Indicators

AR-T11-01	list passive solar design methods
AR-T11-02	Identify heat transfer process (heat loss / heat gain)
AR-T11-03	Describe water conservation concepts
AR-T11-04	Apply energy conservation concepts on a design problem
AR-T11-05	Identify a building design method to minimize the fossil fuel use in building design
AR-T11-06	Define the systems proposed by urban designers and planners to maximize the use of renewable energy methods in buildings
AR-T11-07	Name the systems of building design which enable the use of renewable materials in buildings
AR-T11-08	List dangerous and hazardous materials banned by planners due to their bad effect on human health
AR-T11-09	Define the systems proposed by planners and urban designers to minimize excessive water usage in landscaping and urban projects

Topic T12**Social Responsibility**Standard
AR-T12

Architects must be aware of the responsibilities regarding urban, architectural, and environmental values, along with their cultural, social, and human accountabilities, in addition to, architectural heritage values

Weight

3%

Indicators

AR-T12-01

Demonstrate adequate understanding of urban values: e.g. revitalization of local urban neighborhoods, attractiveness, respect of human scale, and safety

AR-T12-02

Integrate architectural values (e.g. attractiveness, harmony, functionality, serviceability, and sustainability) in building design

AR-T12-03

Show adequate attention to environmental values: e.g. conservation, waste management, cleanliness, respect for the earth, and harmony with the environment

AR-T12-04

Show adequate attention to cultural values: e.g. integrity, freedom, unity, sharing, self-reliance, and cooperation

AR-T12-05

Show adequate attention to social values: e.g. respect, responsibility, solidarity, and equality

AR-T12-06

Show adequate attention to human values: e.g. justice, peace, caring, well-being, and trust

AR-T12-07

Show adequate attention to heritage issues in the built environment: e.g. conservation, renovation, rehabilitation

Topic T13		Building Systems	
Standard AR-T13	The architect must be knowledgeable about the technologies that help overcome the physical problems that affect users' comfort with building interiors and protect buildings against climatic conditions		
Weight	4%		
Indicators			
AR-T13-01	Identify the essential design climatic solutions in desert hot-arid and coastal regions		
AR-T13-02	Apply the basic principles of climatic comfort inside buildings: space temperature (cooling/heating), control of humidity levels (drying, humidifying), air flow (circulation, distribution), and air quality (filtration)		
AR-T13-03	Analyze the climatic conditions that relate to the buildings to be designed		
AR-T13-04	Design according to the requirements of mechanically-controlled environments		
AR-T13-05	Design green areas to increase the users' comfort and improve the quality of indoor and outdoor spaces		
AR-T13-06	Describe the different types of air-conditioning systems and their properties		
AR-T13-07	Select the most appropriate system among the different types of air-conditioning systems for specific types of buildings		
AR-T13-08	Describe the basic traditional cooling methods		
AR-T13-09	Compare the different shading devices		
AR-T13-10	Integrate traditional methods of climatic protection with modern systems		

Topic T14		Fine Arts	
Standard AR-T14	The architect should have knowledge about fine arts and the theory of colors		
Weight	4%		

Indicators

AR-T14-01	Name schools of fine art
AR-T14-02	Relate buildings to the schools of fine art that influence their designs
AR-T14-03	Describe the psychological effect of a color in a specific architectural functional space
AR-T14-04	Explain the color circle theory
AR-T14-05	Distinguish the visual effect of color types (hot/cold) in architectural functional space
AR-T14-06	Select a color scheme for a specific architectural function
AR-T14-07	Identify the esthetic values in buildings facades

Topic T15**Advanced Building Technologies**Standard
AR-T15

The architect is expected to be aware of the recent, innovative, and advanced building technologies related to the building design, construction, operation and maintenance

Weight

4%

Indicators

AR-T15-01	Describe the applications of Building Information Modeling (BIM) in building construction
AR-T15-02	Explain the concept of smart buildings
AR-T15-03	Recognize the applications of smart materials
AR-T15-04	Explain the benefits of Computer Aided Manufacturing (CAM) in building construction
AR-T15-05	Compare among the types of light structures
AR-T15-06	Classify the contemporary construction equipment and machinery
AR-T15-07	Categorize the considerations of constructing temporary buildings
AR-T15-08	Explain a water recycling system used in buildings
AR-T15-09	Describe a recent lighting system
AR-T15-10	Mention recent technologies used for energy saving in building

Topic T16		Self and Continuous Learning	
Standard AR-T16	The architect is expected to have acquired the basic knowledge and training in research methods and techniques in order to maintain their capabilities in architectural learning		
Weight	3%		
Indicators			
AR-T16-01	Demonstrate the ability to decide when to conduct a research and for what purposes		
AR-T16-02	Formulate research questions		
AR-T16-03	Identify research objectives		
AR-T16-04	Plan a research framework and select the most appropriate methodology within the time-frame and available resources		
AR-T16-05	Design a questionnaire that satisfies the data collection requirements within the research framework		
AR-T16-06	Demonstrate the ability to conduct interviews (structured and open) without biases or influencing respondents		
AR-T16-07	Describe people and their patterns of using space systematically		
AR-T16-08	Analyze data according to the applied research methodology		
AR-T16-09	Apply basic statistical analyses, using packages such as SPSS or Excel		
AR-T16-10	Conclude logical findings after data collection and analysis		

Examination Guidelines

Introduction

This architects' examination evaluates the examinees knowledge and skills required to begin their career in practicing architecture in the Kingdom of Saudi Arabia. The examination will be conducted and evaluated by the National Center for Assessment (QYIAS). Passing the exam will be a requirement to be registered as an associate architect in the Saudi Council of Engineering for both Saudi graduates of architecture and the incoming international architects.

Objective

The objective of these guidelines is to show how the examinations would be conducted. The guidelines describe the exam structure, timing, percentage of question coverage and distribution among various topic areas.

Exam Description

The exam may be conducted initially in a paper-based format and in one session, and it could be transformed into a computer-based format in a later stage. The duration of the exam is (3) hours and it consists of (110) multiple choice questions (MCQ) where each question has four choices for the answer, and there is no negative marking for wrong answers.

Eligibility for the Exam

Holders of a bachelor degree in architecture with at least 4 years of study are eligible to take the exam. It is intended for both graduates from a Saudi architectural college, or holders of a bachelor degree in architecture from a foreign university.

Exam Rules

- Books, lecture notes, or any types of learning materials are not allowed in the exam. Necessary references, tables or/and relevant data from codes will be provided by the examiner when applicable.
- Calculators approved by Exam authorities are allowed.

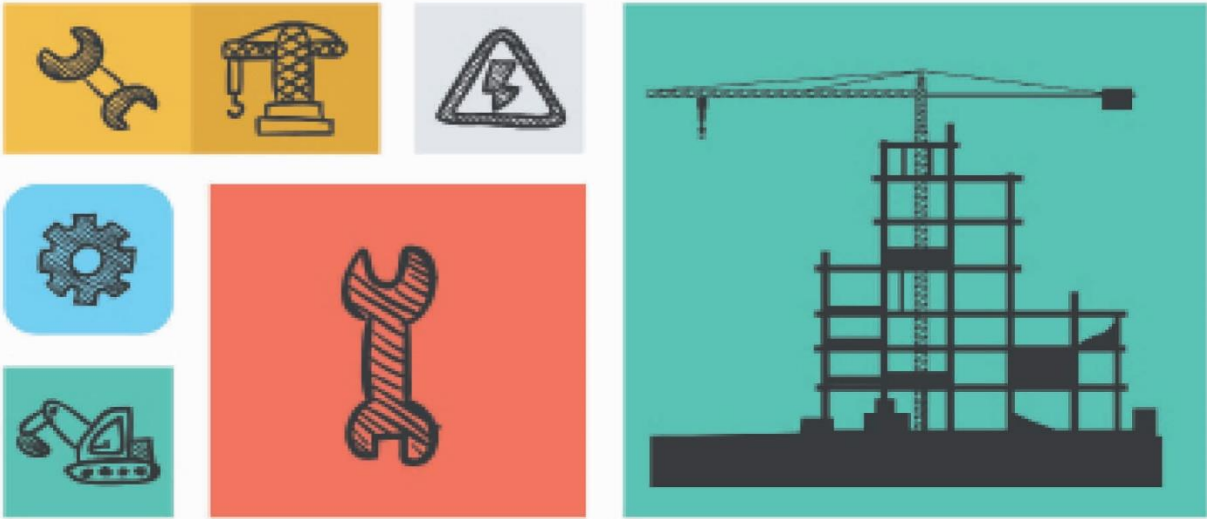
- Admission in the examination center will be only through an authorized admission card
- Examinees are subject to all the rules and procedures applied by National Center for Assessment (Qiyas).

The Examination Specifications

To facilitate the transformation of the architectural professional standards and indicators into balanced and coherent examinations, the Table of Specifications for the Fundamentals of Architecture Exam is developed and is shown in the following table.

Table of Specifications for The Fundamentals of Architecture Exam

Topic Code	Topic Area	(% of Exam	Number of Questions	Architectural Standard	Assigned Allocations of Questions among Learning Levels		
					Remembering and Understanding	Applying and Analyzing	Evaluating and Creating
T1	Architectural Design	10%	11	AR-T1	2	5	4
T2	Design Skills	7%	8	AR-T2	4	2	2
T3	Policies and Regulations	7%	8	AR-T3	5	3	0
T4	Architectural Programming	4%	5	AR-T4	1	3	1
T5	History and Theory	4%	5	AR-T5	2	3	0
T6	Structures and Construction	4%	5	AR-T6	2	2	1
T7	Urban Design and Planning	4%	5	AR-T7	2	3	0
T8	Professional Practice	4%	4	AR-T8	2	1	1
T9	Project Management	4%	4	AR-T9	2	2	0
T10	Humanities	3%	3	AR-T10	2	1	0
T11	Sustainability	4%	4	AR-T11	2	2	0
T12	Social Responsibility	3%	3	AR-T12	0	2	1
T13	Building Systems	4%	4	AR-T13	1	2	1
T14	Fine Arts	4%	4	AR-T14	2	2	0
T15	Advanced Building Technologies	4%	4	AR-T15	2	2	0
T16	Self and Continuous Learning	3%	3	AR-T16	1	1	1
T17	General Skills	27%	30	AR-T17	20	10	0
Total		100%	110		52	46	12



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