



Bachelor's Program

Course Description of Restoration of Historic Buildings

Remarks:

According to the Academic Instruction of the University, in the academic system, each theoretical credit is presented in 16 or 17 hours, each practical credit in 32 or 34 hours, and each of the workshop credit in 48 or 51 hours.

There are some different types of the courses passed by a bachelor student at this university, as listed below:

1. Basic
2. Major
3. Specialized
4. Elective
5. General
6. Workshop
7. Project

Each one of these types contain some courses to be passed, according to the educational regulations passed by the Ministry of Science, Research and Technology of Iran. The grading system in this university is from 0 to 20. The minimum passing grade for a course leading to a Bachelor's Degree is 10.

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Course	Credits	Description
Mathematics and Statistics	2	<p>(Duration: 34 hours Theoretical) (Type of Course: Basic) Getting to know the concepts of general mathematics, creating the ability to understand complex topics and concepts through creating mathematical understanding, strengthening the power of analysis and teaching how to think logically and use mathematical logic in dealing with scientific problems.</p> <p>Syllabus: The teaching of basic mathematics includes: sets, Cartesian coordinates, polar coordinates, complex numbers, addition, multiplication, and roots, and geometric representation of complex numbers, polar representation of complex numbers, function, algebra of functions, limit and related theorems, infinite limit and limits in Infinity, left and right limit, continuity and derivative, derivation commands of inverse function and its derivative, derivative of trigonometric functions and their inverse functions, exponential and logarithmic functions and their derivative, roll theorem, mean theorem, differential definition, differential algebra, differentials successively, applications of the derivative (maximum and minimum functions for calculating approximate roots of algebraic equations with the help of derivative), definition of indefinite integral, some properties of indefinite integral, different methods of integration, change and variable method, component method except integral, rational fractions, definite integral, basic theorems of definite integral, approximate calculation of integral. Definition of the science of statistics, familiarity with some statistical concepts (such as limited population and unlimited sample). Variable variation, concept and application of sigma symbol, frequency, frequency distribution, statistical graphs, joint frequency distribution, central determinants, normal distribution, standard normal distribution.</p>



<p>Technical Drawing</p>	<p>3</p>	<p>(Duration: 102 hours Practical) (Type of Course: Basic) Ability to understand and visualize volumes through drawing pictures. Syllabus: Practicing and ability to visualize space, understanding volume and space, interfering and dealing with the visualized space from different angles. Familiarity and mastery of drawing tools and how to use them. Knowledge and ability to draw lines, surfaces and volumes. Ability to visualize and draw intersecting lines, surfaces and volumes. The ability to draw the image of volumes on the horizontal and vertical plane. The ability to cut volumes with different angles and rotations, leveling, interference and promotion. The ability to repeat and expand the volumes and spatial understanding of the resulting volumes and visualize and draw them. The ability to understand and create volumes by their images. Practice and ability to understand and understand architectural plans and draw them correctly and accurately. Ability to draw parallel lines, tangent lines, dividing lines, perpendicular curves, bisectors. Ability to draw similar shapes in different sizes and scales. Ability to draw shapes in transition, cycle and repeat modes. Ability to draw oblique views of volumes and shapes. The ability to find the unknown. Ability to understand horizontal and vertical views and sections on simple and complex filled and empty volumes. Ability to map objects and volumes and corners of architecture and draw them. Ability to find, complete and draw new sections from shape views. Ability to draw construction plans. Ability to draw oblique views and 3D sections of the building.</p>
<p>Architectural Representation</p>	<p>2</p>	<p>(Duration: 34 hours Practical & 17 hours Theoretical) (Type of Course: Basic) This course provides an introduction to the concepts and techniques of architectural representation including architectural drawing conventions, two-dimensional drawing, digital image capture and manipulation, and three-dimensional modelling.</p>



Introduction to World Architecture	2	<p>(Duration: 34 hours Theoretical) (Type of Course: Basic) Familiarity with the process of change and evolution of form, structure and space in architectural works from the beginning to the threshold of the contemporary period. Knowing the architectural factors and stylistic features of different historical and geographical periods while implicitly analyzing the intellectual roots and social, cultural and religious components influencing the variety of works. Introducing the prominent examples of world architecture history.</p> <p>Syllabus: Prehistoric architecture and art. Architecture and art of early civilizations in Mesopotamia. Architecture and art of early civilizations in Iran. Ancient Egyptian architecture and art. Ancient Indian architecture and art. Architecture and art of China and Japan. Architecture and art of Central and South America. Architecture and art of Aegean civilization. Ancient Greek architecture and art. Architecture and art of ancient Rome. Architecture and art of early Christianity and Byzantium. Carolingian and Romanesque architecture and art. Gothic architecture and art. Renaissance architecture and art. Baroque and Rococo architecture and art.</p>
Human, Nature and Architecture	2	<p>(Duration: 34 hours Practical & 17 hours Theoretical) (Type of Course: Basic) Defining human beings and recognizing the instinctive and innate characteristics of human beings and examining human motivations in artistic creation and explaining the concept of drawing and representation (contradiction). Determining natural features (organic system) and recognizing the structure of natural form (harmony and contrast - diversity, etc.) and using the objective elements of nature in creating innovative works.</p>
Study of Building Materials	2	<p>(Duration: 34 hours Theoretical) (Type of Course: Major) The use of building materials requires identifying and learning their applications, which is part of the field of architecture education, and it should be noted that the architectural design without considering the knowledge of building materials, their strength and beauty will not provide the desired environment. In this course, we have tried to provide basic information in this regard.</p>



Pre-University English Language I	1	<p>(Duration: 17 hours Theoretical) (Type of Course: Pre-university) Developing the four language skills (listening, speaking, reading, and writing), improving pronunciation, increasing vocabulary in the upper-intermediate level.</p>
Family Planning and Population	1	<p>(Duration: 17 hours Theoretical) (Type of Course: General) Familiarity of students with the basics of family knowledge and how to form, consolidate, and excel it and demographic characteristics and their role in improving the quality of life</p>
Islamic Thought I (Origins and Insurrection)	2	<p>(Duration: 32 hours Theoretical) (Type of Course: General) Explain the necessity of Muslim students to pay attention to religion and religious categories, deepen and expand information and strengthen students' theism and faith in the field of theology and resurrection.</p>
Perspective Geometry	2	<p>(Duration: 34 hours Practical & 17 hours Theoretical) (Type of Course: Basic) Acquainting students with the correct and scientific understanding of a three-dimensional space in perspective and visualizing their spatial ideas. In this lesson, students will be introduced to the background of geometry topics, the principles and rules of image and drawing three-dimensional space in a way that is seen in the network of the observer's eye in all its variations, and the image and drawing of shadows. Syllabus: Perspective: the principles and basics of perspective image, point of view and angle of view (observer), image page, object, how they are placed in relation to each other and the changes in perspective resulting from their change in relation to each other. Parallel perspective. Perspective of angled planes. Perspective drawing methods (the method of cutting vanishing points, measuring points, auxiliary methods, etc.). Perspective of curved lines and planes. Diagonal plane perspective. Shadows: shadow of natural light, shadow of artificial light, shadow of an object on the screen and on another object, shadow of surfaces and curved lines on the screen and each other.</p>



<p>Preliminaries of Architectural Design I</p>	<p>4</p>	<p>(Duration: 102 hours Practical & 17 hours Theoretical) (Type of Course: Basic) Getting to know different fields and effective factors in architectural design and strengthening the student's ability to imagine, visualize and think. Syllabus: Familiarity with various building elements and components such as roof, floor, wall, half-open windows, closed spaces, stairs, etc. Familiarity with the factors involved in the design of architectural spaces such as the arrangement of components within the space, the role and effect of materials and colors in Therefore, the effect of illumination and light in architecture, the effect of different climatic conditions in architecture. Objective and practical visit to the existing cases and examples, posing a problem and creating a question and experiencing finding the correct answer through discussion and exchange of opinions in the workshop, environmental perception and analysis and criticism in the class with the guidance of the teacher. Practicing design in specific subjects in such a way that other factors are ignored or seen in a low light in order to strengthen the student's creativity and ability to respond to various architectural issues.</p>
<p>Introduction to Archaeology</p>	<p>2</p>	<p>(Duration: 34 hours Theoretical) (Type of Course: Basic) Familiarizing students with the concepts of archeology and its basics. Syllabus: Getting to know the definition, concepts and basics of archaeology. Getting to know archeology in the world and in Iran. Acquaintance with historical sites and hills and introduction of their prominent examples. Getting to know the techniques and methods of exploration in sites, hills and historical buildings. Familiarity with the exploration of clay, stone, brick, wooden works, small findings, fragile findings, wet findings, plant findings, and the exploration of graves. Familiarity with stratification in exploration, analysis and periodization of movable and immovable finds. Familiarity with dating methods in archaeological findings. Familiarity with important civilizations, especially in Iran and Mesopotamia.</p>



Statics I	2	<p>(Duration: 34 hours Theoretical) (Type of Course: Major) Familiarity with vectors, basic equations, equilibrium of rigid objects in plane and space, analysis of structures, properties of surfaces.</p> <p>Syllabus: The subject of static science and the place of static among sciences. Numerical parameters and vector parameters. Types of vectors. Recognition of forces (vector algebra). Types of forces. Result of a set of forces. Transmission of forces. Types of structures in terms of static science. Definition of the degree of uncertainty of a structure. Reaction forces. Free drawing of a body. Definition of a beam. In certain structures. Solving certain beams. Types of beams in terms of the type of supports. Solving certain trusses and types of trusses. Researching the stability and definiteness of the truss. Solving certain frames. Types of frames in terms of geometry. Geometric properties of surfaces.</p>
Construction Elements and Details	2	<p>(Duration: 34 hours Theoretical) (Type of Course: Major) The study of the materials, methods and techniques used in building construction projects. The course will cover the construction process from idea conception to project closeout, including building and material codes, materials and methods, material quantity surveys, and construction procedures. Primary emphasis will be on structural steel, reinforced concrete, masonry, wood, and combined structural systems. Also included will be building exterior and interior finishing systems. Relying on the available materials, this course recognizes the elements and the role of each function according to its formation in the building and carefully studies and evaluates the formed details. Students will also be introduced to new building technologies and modern building technologies.</p>



<p>Historic Buildings Survey</p>	<p>3</p>	<p>(Duration: 68 hours Practical & 17 hours Theoretical) (Type of Course: Major) 1. Direct encounter with the works and examples of Islamic architecture in Iran and as a result of direct perception and touch of this architecture and the qualities of its spaces. 2. Practice accurate precision and complete presentation of a complex architectural work. Syllabus: In this exercise, a historical monument is completely and accurately taken and presented by the students. This collection should be done with all the details and presented in different ways and in the most complete way possible. This exercise includes the following sections. Drawing: preparation of detailed maps of the building, including the preparation of plates, sections, three-dimensional images (perspective) and manual mapping method (roleve). Photographing from the whole to the parts of the building in such a way that the collection of photos can present the building in its entirety. Preparation of freehand plans of important points of the building if necessary. Research on the history of the building and its evolution and changes. Preparation of a brief descriptive text about the architecture of the building. Presentation: Drawings should be presented in full detail and at large scale. Some prepared pictures and maps, especially views, can be presented in color and with shadows. Prepare a three-dimensional model (mock-up) with an appropriate scale of the facade of the building or a part of it.</p>
<p>Building Materials Laboratory</p>	<p>2</p>	<p>(Duration: 68 hours Practical) (Type of Course: Major) Familiarity with the scientific and laboratory approach to identify the physical and mechanical properties of building materials. Syllabus: Getting to know the laboratory and its equipment. Teaching the scientific process of conducting experiments and preparing laboratory reports. Conducting physical and mechanical tests including: determination of compressive, shear, tensile strength, determination of water absorption percentage, porosity. Determining the limits of Atterberg, resistance to melting and freezing", determining the setting time of mortars, soil gradation, sand gradation, resistance to wear, determination of compressive, shear and tensile strength of building materials.</p>
<p>Islamic Thought II (Prophecy and Imamate)</p>	<p>2</p>	<p>(Duration: 32 hours Theoretical) (Type of Course: General) Becoming familiar with instructions in Islam, continuing "Islamic Thought I" discussions. Expanding students' knowledge about religion, prophethood, Islam, Imamate and leadership, which is divided into three sections.</p>



Photography	2	<p>(Duration: 51 hours Practical & 17 hours Theoretical) (Type of Course: Basic) Familiarity with the principles of work and photography techniques, appearance and photo printing. Syllabus: A brief history of photography. Description of the camera and familiarity with its components. Familiarity with the quality specifications of photography films. Application of photographic films. Light reading methods. Description of photo ossification. Familiarity with artificial lights. Familiarity with auxiliary devices (correction filters). Filters in black and white photography. Print photography film. Final photo selection methods. Photo printing.</p>
Statics II	2	<p>(Duration: 34 hours Theoretical) (Type of Course: Major) To understand the procedure for analysis of static objects; concepts of force, moment, and mechanical equilibrium. To analyze forces and moments in two and three dimensions due to concentrated and distributed forces in various systems such as beams, frames and trusses.</p>
Traditional Materials Workshop	2	<p>(Duration: 102 hours Practical) (Type of Course: Major) Getting to know how to prepare and use traditional materials and materials in the building Syllabus: Practical familiarity with the preparation of traditional materials and materials, including soil, brick, stone, clay, tile, wood, plaster, lime, mortars. Ability to identify different types of materials from each other. The ability to distinguish high-quality from low-quality materials. Preparing all kinds of traditional mortars such as mud, plaster, plaster and soil mortars, straw, lime sand, lime mud, etc. making clay Familiarization with different methods of wall covering with clay and brick in the form of solid work and facade work. Getting to know how to connect the stiffener and facade. Getting to know how to cover surfaces with plaster and plaster soil, lime sand, straw. Getting to know the types of wooden connections in wooden ceilings, carrier beams, trusses, doors and their implementation examples.</p>



<p>Elements and Details of Historic Buildings</p>	<p>2</p>	<p>(Duration: 34 hours Theoretical) (Type of Course: Major) Understanding the role and function of elements and the details and logic of their formation by relying on the identification of materials and materials in Iranian architecture and preparing executive plans. Syllabus: Foundations: the logic and performance of foundations and types of foundations according to the materials used in historical buildings, wells and piles at the base of old bridges. Beams and load-bearing walls. Knowing the types of columns. Roof coverings. Flat coverage in different areas and familiarity with its components. Slope cover: in the form of trusses and sheds using traditional wooden trusses. Curved cover in three types. Familiarity with cornering methods and its common types in Iran. Details of domes. Executive details in roofing. Details of windbreaks, skylights, canopies, sunshades. Details of gutters, sprinklers, ponds and fountains, water wells and sewers. Connecting wooden materials and wooden details in the building. Details of metal materials used in traditional buildings. Details of the types of glass used in wooden elements.</p>
<p>History and Theoretical Principles of Restoration</p>	<p>2</p>	<p>(Duration: 34 hours Theoretical) (Type of Course: Major) Acquaintance with the history of restoration science and theories in the field of protection and restoration of historical monuments in Iran and the world, international principles and charters of restoration, concepts and terms of restoration. Syllabus: Familiarity with the concepts of protection, restoration and other terms in this field. Getting to know the theories and theoreticians and their role in the development of the theoretical foundations of restoration. History and evolution of the theoretical foundations of restoration in Iran. Familiarity with international and national treaties, recommendations, charters and resolutions.</p>
<p>Introduction of Architectural Decoration</p>	<p>2</p>	<p>(Duration: 34 hours Theoretical) (Type of Course: Major) Getting to know the types of decorations related to architecture, how to make them and knowing the characteristics of each of them. Syllabus: Acquaintance with architecture-related decorations such as brickwork, tilework, masonry inscriptions and inscriptions, plastering, written inscriptions and inscriptions, painting, sculpture, mirrorwork, carving, carving, carving, porcelain layer. Getting to know the materials, implementation methods of each of the arts and decorations related to architecture. Getting to know the relevant designs, developments and stylistic features in different historical periods.</p>



Architecture Design I	4	<p>(Duration: 102 hours Practical & 17 hours Theoretical) (Type of Course: Specialized) Architectural design (1) as the first comprehensive project that a student will face with. In fact, he should compile the points and findings of the two architectural design preparatory workshops (1) and (2) together in the form of an exercise. In this project, practicing and learning the method of achieving the general idea and developing it to reach the architectural design, that is, the process from the question (plan) to the answer (plan) is emphasized. This course, or in other words, the design process, is experienced in the form of a comprehensive project by using the effective components in the formation of architecture, which have been practiced in the design preparations (1) and (2) in a simple and separate way.</p>
Persian Language	3	<p>(Duration: 51 hours Theoretical) (Type of Course: General) Familiarity with Persian language and reading literary texts, poetry and prose in Iranian Persian literature.</p>
Quran Thematic Exegesis	2	<p>(Duration: 32 hours Theoretical) (Type of Course: General) Familiarity with some life-giving concepts of the Holy Quran in the form of thematic attitude.</p>



<p>Surveying</p>	<p>2</p>	<p>(Duration: 51 hours Practical & 17 hours Theoretical) (Type of Course: Basic) This course provides an introduction to mapping theory and geographic information systems tools. Through the use of opensource GIS software (GPS) and open data (OpenStreetMap) students will learn how to critically use mapping tools and geographic data for spatial analysis and representation. In this course, students will work through a series of web tutorials and hands-on in-class exercises to gain a better understanding of how these tools and data can be leveraged to analyze, represent and study past or present urban phenomena. In addition to using existing data, students will also be able to create or bring their own sets of data and questions from other courses and will be able to work with these in our class.</p> <p>Syllabus: Generalities, the definition of mapping and its different branches and its application in the relevant trend, the root of errors, their types and the accuracy of measurements, the installation of index points (benchmark or rare). A summary of the principles of cartography and knowledge of the types and standards of maps and familiarity with image systems, direct measurement of length with and without obstacles, mapping tools and equipment, extension with simple alignment methods, familiarity with levelers and alignment tools, alignment between several points, measuring the length and slope of the canal, river, pipe route, road, etc., preparation of various longitudinal and transverse profiles, preparation of topographic maps, angle measurement and length determination, acquaintance with angle finder and angle finding devices, string and the azimuth of an extension, deviation from the geographic north, determination of the path perpendicular to the axis of the river, pipe, channel, road, etc., indirect methods of length measurement, surveying and triangulation, determination of coordinates and a summary of elevation and intersection, tacheometry and Extract details. A brief introduction to the principles of photogrammetry and the use of aerial photos. General familiarity with ecosander and hydrography and its application according to the relevant trend.</p>
<p>Application of Computer in Architecture</p>	<p>2</p>	<p>(Duration: 34 hours Practical & 17 hours Theoretical) (Type of Course: Basic) Intensive introduction to computer-aided design systems for developing construction documentation (working drawings). Lectures and exercises focus on learning the methodology for using CAD to efficiently prepare working drawings, as well as discussions regarding industry recognized standards and current technology used in the preparation of documentation.</p>



<p>Restoration Site Organization and Rules</p>	<p>2</p>	<p>(Duration: 34 hours Theoretical) (Type of Course: Major) Familiarity with institutions, organizations and international and national restoration laws. Syllabus: Acquaintance with related national and international educational organizations, institutions and organizations. Acquaintance, review and review of international executive regulations and how their provisions match with the practical world of restoration. Acquaintance, review and review of national laws and regulations. Familiarity with the classification of national and international historical works (cultural heritage) of historical and cultural buildings and sites. Familiarity with legal aspects and personal ownership, endowment and inheritance of registered and unregistered historical works.</p>
<p>Recognition of Iranian Historic Buildings (Pre-Islamic)</p>	<p>3</p>	<p>(Duration: 34 hours Practical & 34 hours Theoretical) (Type of Course: Major) Familiarity with different methods and stages of knowing and studying historical monuments before Islam. Syllabus: Acquaintance with the architectural methods of Iran before the Achaemenid period. Acquaintance with the architectural styles of Iran in the Achaemenid, Parthian and Sasanian periods.</p>
<p>Arch and Curve in Iranian Architecture</p>	<p>2</p>	<p>(Duration: 51 hours Practical & 17 hours Theoretical) (Type of Course: Major) Getting to know the shape and method of drawing and getting to know how to make different types of arches and getting to know Iranian domes. Syllabus: Definitions, application and function of each element of arch and dome and its relationship with arches. Geometric basics of arches and its relationship with arches and domes. Sweating the use and function of arches. Types of arches and their components and proportions. Arches and their types in terms of shape and application and...</p>



Regulating the Environmental Conditions	2	<p>(Duration: 34 hours Theoretical) (Type of Course: Major) Familiarity with the methods of benefiting from climatic factors and renewable energies in building design and active and passive solar systems and thermal behavior of building walls to improve their technical insight. In this course, students will learn how to calculate heat transfer from transparent and opaque walls of a building by presenting a simple residential project. Syllabus: source of energy Types of renewable energies. Climatic factors. The geometry of the sun. Thermal comfort. Basics of heat transfer calculations in buildings. Passive heating systems. Passive cooling systems. Thermal insulation. Solar collectors. Photovoltaic systems. Examining examples.</p>
Recognition of Traditional Structures	2	<p>(Duration: 34 hours Theoretical) (Type of Course: Specialized) Familiarity with traditional structures and their structural behavior Syllabus: Familiarity with the behavior of foundations of traditional buildings, including single strip foundations, wide foundations, piles and their simple calculations. Familiarity with the structural behavior of walls, joists and columns of traditional buildings and their simple calculations. Familiarity with the structural behavior of wooden beamed roofs, sloping roofs with wooden trusses and their simple calculations. Familiarity with the structural behavior of all types of arches and domes and simple calculations. Getting to know the difference between internal forces and how to load in domes and arches. Familiarity with water structures such as bridges. Familiarity with the operation and behavior of historical industrial units such as hydro-wind mills.</p>
Islamic Ethics (Basic and Concepts)	2	<p>(Duration: 34 hours Theoretical) (Type of Course: General) Familiarity of students with the principles and concepts of Islamic ethics in the field of moral virtues and vices, in order to acquire virtues and avoid moral vices.</p>
Physical Education I	1	<p>(Duration: 34 hours Practical) (Type of Course: General) Physical education course is a general unit that aims to improve students 'physical fitness and the specialized field is not taught in this unit and the factors that should be strengthened to improve students' physical fitness are: speed, strength, endurance: musculoskeletal, agility and flexibility.</p>



<p>Recognition of Iranian Historic Buildings (Islamic Period)</p>	<p>4</p>	<p>(Duration: 34 hours Practical & 51 hours Theoretical) (Type of Course: Major) Acquaintance with different ways and stages of knowing and studying the buildings of the Islamic era of Iran Syllabus: Getting to know the prominent buildings of the Islamic era from the beginning of Islam to the end of the Qajar period, such as: mosques, schools, tombs, residential buildings, markets, caravanserais, castles, reservoirs, glaciers, gardens, palaces, bridges, etc.</p>
<p>Strap Work in Iranian Architecture</p>	<p>2</p>	<p>(Duration: 51 hours Practical & 17 hours Theoretical) (Type of Course: Major) Knowing and understanding the geometric system of motifs and geometric patterns that make up the architectural decorations and other Iranian arts, which are used in different ways in the bodies, shells and ossification of architectural works. Syllabus: Knot: Getting to know the concepts of roles and knots and their applications. Getting to know the techniques of using knots in various fields of tiling, masonry, sculpting, carpentry. Getting to know the geometric basics for a correct understanding of nodes and their characteristics. Getting to know the types of nodes according to the type of work and their fields. Getting to know how to draw knots and doing practical exercises. Familiarity with crushing knots and turning them. Karbandi: Getting to know the types of Karbandi and their names and terms. Creating the necessary background for a comprehensive understanding of simple and elaborate geometric patterns and expressing definitions of knots and their names and terms. Getting to know drawing techniques and how to set up Karbandi. Knowing and understanding the relationship between applications and their stylistic features. Familiarity with the role and task of the context of each Karbandi and the importance of the Karbandis that are drawn in known contexts. Familiarity with drawing simple examples of each type of Karbandi.</p>



Photogrammetric	2	<p>(Duration: 34 hours Practical & 17 hours Theoretical) (Type of Course: Major) The purpose of this course is to familiarize students with the principles and concepts of aerial mapping and photogrammetry. Syllabus: A review history of photogrammetry applications and its classification. Principles of photography and photo geometry. Photographic camera: construction, specifications and types. Coordinate systems in photos, measurement methods on photos. Vertical photo geometry: scale, height displacement, image elongation, determining the plane coordinates of points in the vertical photo. Oblique photo: angular elements (ω, ϕ, and κ system, a, t, and s system), scale in oblique photo, displacement of image due to inclination. Photo, displacement of the image due to inclination and height of the point, calculation of plane coordinates of points in non-vertical photographs, a brief reference to restoration. Highlighting the nose and the geometry of the photo pair. Prominent natural nose. Prominent artificial nose, characteristics of different methods of prominent nose, floating point, parallax and measurement and its equations for vertical photos, determining height with parallax, preparing map with stereoscope and parallax detector, checking accuracy, checking height deformation of the model and how to correct it. General justification. General about conversion and repair devices. Getting to know the flight plan and aerial photography: choice of scale, choice of camera, choice of longitudinal and transverse coverage, effective conditions in the project, cost evaluation.</p>
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<p>Pathology and Technology of Historical Buildings</p>	<p>3</p>	<p>(Duration: 51 hours Theoretical) (Type of Course: Specialized) Getting to know the techniques used in the construction of stone, wooden, brick, brick and hand-made architectural works or their combination in historical buildings and getting to know the causes and factors of their erosion, damage and destruction. Syllabus: Familiarity with the way of designing and building different parts of historical buildings. Classification of erosive and destructive factors including physical, chemical, mechanical, biological and human factors. Getting to know the intensity of the effect of each of the above factors in historical buildings according to the climatic conditions. Getting to know the methods of studying changes in appearance, damages and how to study and discover the factors that cause them. General knowledge of how water flows in the soil. General familiarity with the concept of effective stress in soil. General familiarity with the concepts of instantaneous settlement and consolidation in soil and foundations. Lateral soil pressure and its effect on retaining walls and excavated bodies. Familiarity with the types of movements and settlements in buildings and damage to foundations. Getting to know the causes of fatigue and fatigue factors of buildings. Damages caused by floods and river flow on bridges, embankments and embankments. Familiarity with earthquake damage. Getting to know the methods of preventing damage and destruction.</p>
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<p>Sketch and Render of Buildings and Sites</p>	<p>3</p>	<p>(Duration: 102 hours Practical) (Type of Course: Specialized) Freehand design of historical buildings and structures and the ability to analyze the spaces and structures of buildings graphically and gain a penetrating and analytical view of historical buildings. Syllabus: Attending historical buildings and structures, thinking and reflecting on the architectural issues and structural system of buildings, freehand design of plans, views, sections, perspective and section-perspective of historical buildings. Analysis and graphic expression of spatial communication of different parts of the building, passages and accesses within the context and graphic expression of ventilation and air flow systems, heat exchange and lighting in the building. Graphical analysis of the structure and display of external and internal loads and forces of the building and how to transfer them to the ground. Graphical analysis of the mutual effects of neighboring buildings on each other's stability. Graphical analysis of spaces and texture elements, their spatial relationship with each other and how they affect the formation and expansion. Choosing the subject of the project individually with the opinion of the relevant professor and freehand preparation of architectural drawings and graphic analyzes that have been practiced during the semester.</p>
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<p>Preliminaries of Architectural Design II</p>	<p>3</p>	<p>(Duration: 68 hours Practical & 17 hours Theoretical) (Type of Course: Elective) Familiarity with different fields and effective factors in architectural design and the conceptual and spiritual fields of architecture and increase the ability to analyze the building by directly dealing with the building or by studying the maps and pictures of the building. Syllabus: Getting to know the relationship between building form and function. Getting to know the effect of light and lighting in architecture. Familiarity with the concepts and artistic values of materials, light shadow, texture of components in architecture. Familiarity with movement and stillness in architectural space. Getting to know the concepts of unity and separation in architecture. The ability to give a concept. Familiarity with expressive and semantic dimensions of scale, dimensions and sizes. Getting to know the living relationship between open and closed space. Ability to understand and analyze all architectural aspects of a work through direct encounter or study of drawings and images. Objective and practical visit to the existing cases and examples and pose the problem and create questions and experience in finding the correct answer through discussion and exchange of opinions in the workshop, environmental perception and analysis and criticism in the workshop with the guidance of the teacher. Design practice in specific topics is designed in such a way that other factors are ignored or seen in a low light in order to strengthen the student's creativity and ability to respond to various architectural issues.</p>
<p>General English language I</p>	<p>1</p>	<p>(Duration: 17 hours Theoretical) (Type of Course: General) Students undertaking this course will develop their skills in reading, writing, and speaking English in an intensive study situation. They will read selected English literary texts (or extracts from them), learn skills for understanding these texts, and develop written and spoken responses to them. The selected texts will be appropriate for both students whose first language is not English and for native speakers of English. Students will develop transferable skills in critical thinking, research, the evaluation of secondary sources, and the planning and drafting of academic essays</p>
<p>Physical Education II</p>	<p>1</p>	<p>(Duration: 34 hours Practical) (Type of Course: General) In this course, students choose their favorite special sports such as Ping Pong, Football, Basketball, Volleyball, etc., and they will professionally be educated at one of these sports</p>



<p>Islamic Art and Civilization</p>	<p>2</p>	<p>(Duration: 34 hours Theoretical) (Type of Course: Major) Familiarizing students with the concepts and features of Islamic architecture and art schools in the Islamic world and their similarities and differences. Syllabus: Investigating the influence of Sassanid art and Byzantine art on Islamic art. Acquaintance with the schools of Islamic art with an emphasis on architecture by expressing the sequence of Islamic dynasties. Getting to know the Egyptian school. Acquaintance with Western art school, including Tunisia, Algeria, Morocco, Spain. Acquaintance with Indian, Ottoman and Iranian art schools.</p>
<p>Introduction to Historical Sites</p>	<p>2</p>	<p>(Duration: 34 hours Theoretical) (Type of Course: Major) Familiarizing students with the historical contexts of Iran in the Islamic period and recognizing their characteristics Syllabus: General familiarity with the historical sites and hills of Iran. Acquaintance with the historical textures of cities, identification of key urban elements in the past, characteristics and relationships between them. How tissues are formed and their evolution, investigating the effective factors in the evolution of tissues. Getting to know the damages of historical tissues and the causes of its occurrence.</p>
<p>Architectural Projects Site Organizing and Management</p>	<p>2</p>	<p>(Duration: 34 hours Theoretical) (Type of Course: Major) General knowledge of the basics of project management, duties and responsibilities of the main actors involved in the project (including employer, consulting engineer, contractor, project manager, workshop manager, supervising engineer, etc.), general familiarity with the life cycle of the project phases from feasibility studies to project implementation and temporary and final delivery – Students master the two topics of time and cost management, including a variety of scheduling methods, budgeting and updating them -Familiarity with the order and relationship of organizations involved in the development of building plans. - Ability to review the necessary resources for construction work and methods of regulating construction work.</p>



<p>Restoration Design of Historic Buildings I</p>	<p>4</p>	<p>(Duration: 102 hours Practical & 17 hours Theoretical) (Type of Course: Specialized) The ability to prepare a restoration plan for a historical monument and familiarity with the logical sequence of the restoration plan. Syllabus: Getting to know the principles and basics of small building restoration methods. Acquaintance with examples of restored buildings and review their restoration methods. Choosing a small or medium-sized building and doing the following steps: direct study, indirect study, preparation of restoration plan and relevant details.</p>
<p>Historical Sites and Historic Buildings Restoration-Training Course</p>	<p>4</p>	<p>(Duration: 204 hours Practical) (Type of Course: Specialized) Acquaintance and dealing closely with technical, practical issues and executive problems of restoration operations in historical buildings and sites. Syllabus: Getting to know and deal with the executive details of the restoration plan and the scientific and practical methods used in the workshop. Investigating the working manpower in the workshop and their efficiency. Investigating the amount of materials used in terms of quality and quantity, and investigating the costs of the workshop. Student participation in the implementation of restoration operations. Familiarity with safety and protection standards in the workshop. Technical review of the restoration plan. Criticism and small workshops active in the place. Criticism and review of executive details in the plan and what is actually implemented in the workshop. Providing suggestions to fix the shortcomings of executive details. Preparation of the schedule for the workshop, CPM and Pert from each stage that the student entered the workshop for the rest of the CPM and Pert schedule. The estimate of the restoration project based on the restoration plan and the actual estimate of the project that is being implemented and their comparison. Checking the quality of consumable materials, calculating the amount of required materials and providing suggestions and methods for checking and testing the quality of materials.</p>
<p>Architectural Design II</p>	<p>3</p>	<p>(Duration: 68 hours Practical & 17 hours Theoretical) (Type of Course: Elective) Familiarity with the concept of housing and definitions of spaces and effective factors in housing design and the ways of reflecting spiritual and material needs and the fit between them in housing design and familiarity with the relationship between the whole and the parts.</p>



General English Language II	1	<p>(Duration: 17 hours Theoretical) (Type of Course: General) English II is both a thematic study of world literature ranging from ancient history to the contemporary period. This course includes poetry, drama, fiction, and nonfiction, as well as opportunities for a variety of compositions with an emphasis on argument. This course is skills-driven and focuses writing, grammar, reading, and vocabulary.</p>
History of Islamic Culture and Civilization	2	<p>(Duration: 34 hours Theoretical) (Type of Course: General) Familiarity of students with different stages of Islamic culture and civilization</p>
Quantity Surveying and Estimating	2	<p>(Duration: 34 hours Practical & 17 hours Theoretical) (Type of Course: Major) To enhance the ability of students to learn the various principles of computations related to quantity surveying. To enhance skill of students in preparing detail estimates and bill of quantities for various civil engineering projects. To familiarize students with tender and contract documents. Syllabus: The importance of the meter and its estimation and practical applications in different phases of the project. The project and its different phases. General review of contract documents including: general technical specifications, maps, private technical specifications, circulars, standards, general and private conditions of the contract and general schedule. meter and estimation and pricing and their types. Getting to know the specific details of maps. The principles of preparation of micrometers, summary of meters and meter book of work quantities. Principles of estimating the amount of the project. Introduction of basic price lists and special lists. Full technical and legal description of the contents of the building price list, basic prices, new prices and starred items. General description of overhead coefficients, contract, height, floors and materials of the work base and lump sum for equipping and dismantling the workshop. Statement of statuses (temporary, definite and definitive) and adjustment. Overview of agendas and minutes.</p>
Restoration Design of Historic Buildings II	4	<p>(Duration: 102 hours Practical & 17 hours Theoretical) (Type of Course: Specialized) Familiarity with the different stages of preparation of the protection plan for the restoration of small historical buildings and collections. Syllabus: Getting to know the principles and basics of methods of protection, restoration of historical buildings and collections. Acquaintance with preserved and restored examples of historical collections and review of their restoration methods. Choosing a small historical collection and doing the following steps: direct study, indirect study, preparation of protection plan, restoration and related details.</p>



<p>Restoration of Historic Buildings Workshop</p>	<p>3</p>	<p>(Duration: 102 hours Practical & 17 hours Theoretical) (Type of Course: Specialized) Acquaintance with the scientific and practical issues and principles governing the restoration operations of historical buildings and how to implement them. Syllabus: Teaching and practicing how to build, implement and restore a hypothetical small silent unit of traditional architecture or carrying out restoration operations according to the scientific principles of restoration under the supervision of a teacher and master traditional craftsmen in an active historical monument workshop with the participation of the relevant organization.</p>
<p>Conservation and Restoration of Architectural Decoration Workshop</p>	<p>3</p>	<p>(Duration: 68 hours Practical & 17 hours Theoretical) (Type of Course: Specialized) Theoretical and practical familiarization with the scientific methods of restoration of architectural decorations, identifying the type and process of damage in architectural decorations and suggesting the best way to restore and recognize the methods used in damaged architectural decorations. Syllabus: Familiarity with the causes of erosion and damage of decorations related to architecture. Acquaintance with the experiences of restoration of decorations inside and outside the country. Familiarity with the technical and laboratory interventions in the reinforcement of decorations. Acquaintance with different and acceptable solutions for restoration of decorations and the reasons for choosing each restoration method in the experiences. Familiarity with the restoration of various types of tiles on curved surfaces along with discussing technology and pathology. Acquaintance with the restoration of stucco decorations. Familiarization with restoration of Karbandi, Rasmibandi, Yazdibandi, Ghatarbandi. Familiarization with the restoration of suspended applications such as bowls and suspended Moqarans. Familiarity with mirror repair and plastering on mirrors, cupping and narrowing. Familiarity with the restoration of painting on plaster, painting on mirror and porcelain layer. Familiarity with the repair of wooden networks. Familiarity with the restoration of carved and engraved stones and all kinds of visual arts in historical monuments such as vases, screws, broken or worn columns.</p>



English Language for Specific Purpose	2	<p>(Duration: 34 hours Theoretical) (Type of Course: Specialized)</p> <p>This subject aims at raising students' specific language ability in reading and writing academic texts of their own major disciplines. The subject will use reading texts from chapters of books or journal articles recommended by teachers of different majors for reading comprehension. These texts will also be used for analysis to enable students to develop an awareness of the genre in that particular discipline.</p>
Analytical History of the Early Islam	2	<p>(Duration: 34 hours Theoretical) (Type of Course: General)</p> <p>Familiarity of students with how Islam emerged and spread and the way of transition from ignorant society to Islamic society.</p>
Final Project	4	<p>(Duration: 136 hours Practical) (Type of Course: Specialized)</p> <p>Application of theoretical and practical learning in the form of a project with emphasis on the implementation of practical work and the restoration of historical buildings.</p> <p>Syllabus:</p> <p>Choosing a building or a part of it with the coordination of the professor and the organization in charge of building preservation, especially in the student's residence or academic area. Conducting historical, artistic, architectural and technical studies of the building. Preparing maps of the existing condition and pathology of the building and presenting the restoration plan. Conducting relevant tests according to the chosen subject. Carrying out restoration of all or part of the subject of the project by the student after the approval of the restoration plan by the professor and the organization in charge of building preservation. Preparing maps, photos and slides of the parts restored by the student and comparing them with before restoration.</p>
General English Language III	1	<p>(Duration: 17 hours Theoretical) (Type of Course: General)</p> <p>This course emphasizes the development of fluency and intelligibility in spoken English. Through individual and group activities, students work on improving pronunciation, practicing conversation strategies and delivering oral presentations.</p>
Islamic Revolution of Iran	2	<p>(Duration: 34 hours Theoretical) (Type of Course: General)</p> <p>Theoretical acquaintance with the causes and factors of the Islamic Revolution and analytical study of cultural, social and political developments of the Islamic Revolution and subsequent issues.</p>