

SYRIAN ARAB REPUBLIC

DAMASCUS UNIVERSITY

Faculty of Architecture



الجمهورية العربية السورية
جامعة دمشق
كلية الهندسة المعمارية

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COURSE DESCRIPTIONS & SYLLABUS

First Year

1st Semester:

Hours Per Week:

1- ARABIC LANGUAGE (1)	2
2- NATIONAL CULTURE	4
3- FOREIGN LANGUAGE (English) (1)	4
4- BASIC DESIGN	10
5- FREE-HAND DRAWING & MODEL MAKING (1)	4
6- MATHEMATICS , MECHANICS & STATICS	4
7- DESCRIPTIVE GEOMETRY	4
Total: 32 hrs.	

2nd semester:

1- HISTORY OF ARCHITECTURE (1)	4
2- BUILDING CONSTRUCTION	4
3- BASIC DESIGN STODIO	10
4- FREE-HAND DRAWING & MODEL MAKING (2)	4
5- MATHEMATICS , MECHANICS & STATICS	4
6- SHADE & PERSPECTIVE (1)	4
7- FOREIGN LANGUAGE (English) (1)	4
Total: 34 hrs	

SECOND YEAR:

1st Semester:

Hours Per Week:

1- FOREIGN LANGUAGE (English) (3)	4
2- ARCHITECTURAL DESIGN STUDIO (1)	10
3- FREE-HAND DRAWING & MODEL MAKING (3)	4
4- SHADE & PERSPECTIVE (2)	4
5- BUILDING CONSTRUCTION (2)	4
6- CONSTRUCTION MATERIALS	4
7- HISTORY OF ARCHITECTURE (2)	4

Total: 36hrs

2nd semester:

1- ARCHITECTURAL DESIGN STUDIO (1)	10
2- FREE-HAND DRAWING & MODEL MAKING (3)	4
3- THEORY OF ARCHITECTURE (1)	4
4- SURVEYING	4
5- STRENGTH OF MATERIALS	4

Total: 26 h

THIRD YEAR:

1st Semester:

Hours Per Week:

1- FOREIGN LANGUAGE (4)	4
2- ARCHITECTURAL DESIGN STUDIO (2)	10
3- EXECUTIVE DESIGN DRAWINGS (1)	4
4- STRUCTURAL ANALYSIS (1)	4
5- THEORY OF ARCHITECTURE (2)	4
6- CONSTRUCTION THEORIES & METHODS	4
7- PLUMBING PRINCIPLES & MUNICIPAL WORK	4

Total: 34 hrs

2nd semester:

1- HISTORY OF ARCHITECTURE (3)	4
2- ARCHITECTURAL DESIGN STUDIO (2)	10
3- EXECUTIVE DESIGN DRAWINGS (2)	4
4- STRUCTURAL ANALYSIS (2)	4
5- ELECTRICAL INSTALLATION LIGHTING & ACCOUSTICS	4
6- HEATING & AIRCONDITIONING	4

Total: 30 hrs

Fourth Year:

1st Semester:

Hours Per Week:

1- FOREIGN LANGUAGE (4)	4
2- ARCHITECTURAL DESIGN STUDIO (3)	10
3- EXECUTIVE DESIGN DRAWINGS (3)	4
4- REINFORCED CONCRETE (1)	4
5- COMPUTER AIDED DESIGN &PROGRAMMING	4
6- URBAN PLANNING STUDIO (1)	4
7- THEORIES OF URBAN PLANNING	4

Total: 34 hrs

2nd semester:

1- URBAN SOCIOLOGY	4
2- ARCHITECTURAL DESIGN STUDIO (3)	10
3- EXECUTIVE DESIGN DRAWINGS (4)	4
4- REINFORCED CONCRETE (2)	4
5- INTERIOR DESIGN	4
6- URBAN PLANNING STUDIO (2)	4

Total: 30 hrs

Fifth Year:

1st Semester:

Hours Per Week:

1- FOREIGN LANGUAGE (5)	4
2- ARCHITECTURAL DESIGN STUDIO (4)	12
3- URBAN PLANNING STUDIO (3)	6
4- ENVIRONMENTAL ARCHITECTURE	2
5- REAL ESTATE LEGISLATION	2
6- PROJECT MANAGEMENT & SPECIFICATION	4

Total: 30 hrs

2nd semester:

1- DIPLOMA PROJECT (GRADUATION PROJECT)	12
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Total: 12 hrs



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Architecture College

ARCHITECTURAL DESIGN STUDIO

10	Hours per week	subject BASIC DESIGN (year 1)
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Objective : Introduction to architectural representation. Understanding size ,space and basic architectural elements. Drafting : use of drawing tools, perfection of drawing, methods of expression, comprehension of plans, sections, and elevations. Elements of architecture: relationship between man and surroundings (furniture, equipments, openings. Stairs, ect) functional concept of space by understanding practical scale and space. Framework: drawing of various geometric forms. Drawing of classical architectural elements in plan and section on scale. Distribution of furniture and equipments within various usable spaces.gn and drawing of openings, gates, vertical and horizontal elements. Design of simple structures (guard house, Kiosk, bus station, cabin)

Complimentary course subjects: Building construction. Shade and perspective. Free-hand drawing and model making.

10	Hours per week	subject ARCHITECTURAL DESIGN STUDIO (year 2)
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Objective : Comprehension of design basic concepts .

Teaching guidelines: Understanding construction and use of construction materials. Basic functional relationships. Elevations and scale.

Framework: design of detached buildings and structures with simple functions (single housing, educational establishment, restaurant, service station, post office, fire station, Small Park or simple industrial plant.)

Complimentary course subjects: building construction. Construction materials. Theory of architecture. Shade and Perspective. Free-hand drawing & model making.

10	Hours per week	subject ARCHITECTURAL DESIGN STUDIO (year 3)
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Objective : complete design within simple urban context.

Teaching guidelines: Composition in a simple urban context. Integrated functional relationship. Emphasis on structural concepts. Location, equipments an topography of the site. Framework: Houses and residential building (law- rise bldgs. Attached housing, high-rise bldgs) Service buildings supporting housing complexes (schools, markets, service centers, playgrounds, parks)

Complimentary course subjects: Working Drawings. Construction theories & Methods. Construction materials. Theory of architecture. Surveying. Plumbing principles and municipal works. Heating & Air conditioning.

10	Hours per week	subject ARCHITECTURAL DESIGN STUDIO (year 4)
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Objective: Design within a definite urban context. Teaching guidelines: Designing with consideration to urban functional relationships (interaction with definite location). Taking into consideration various architectural concepts and trends. Integration of form, function and structure. Framework: cultural and educational institutions, hospitals & health services. Tourism: entertainment and sport complexes. Administrative and commercial buildings. Transportation and communication buildings. Complimentary course subjects: Theories of Urban Planning. Urban sociology. Working drawings. Interior design.

12	Hours per week	subject ARCHITECTURAL DESIGN STUDIO (year 5)
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Objective: Integrating architectural and urban projects. Teaching guidelines: Integrating architectural work with an urban context (joint projects of architectural design and urban planning). Enhancement of teamwork (students form groups to work together the whole project or semester).

Framework: Residential neighborhoods. Urban expansion. Renewal of central areas in the city. Ancient city quarters.

Complimentary course subjects: urban Planning Studio (Joint project in preliminary phase). Climatic architecture.

4	Hours per week	SHADE AND PERSPECTIVE 1,2
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drawing principles, volume perspective. drawing. Drawing with one vanishing point. Sloping surfaces and stairs . Curved forms: circular and revolving surfaces. Various cases and methods in geometric perspective drawing. Shades in perspective. Reflection. Perspective with three vanishing points. Panoramic perspective. Shade: shade drawing principles. Shades on horizontal and vertical surfaces, shades on sloping surfaces. Shades of pyramidal forms, curved forms.

4	Hours per week	subject FREE-HAND DRAWHNG AND MODEL MAKING (1)
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Sketches of city old quarters and Modern building. Man in various positions. Environment surrounding architecture and man. Shades on surfaces. Drawing of geometrical surfaces and shapes, famous architectural works. Natural elements and a whole human body.

4	Hours per week	subject FREE-HAND DRAWHNG AND MODEL MAKING (2)
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In composition : simple forms, complex geometric forms . In design; modular geometric units of various uses. Memorials square. Public and private parking lots and pools. Use off various working materials besides clay

4	Hours per week	subject FREE-HAND DRAWHNG AND MODEL MAKING (3)
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Theory of color: painting in tranquil nature color values . Drawing by pencil: Chinese ink; plain or mixed with watercolors. Raw materials. composition ; balance , internal movement , focus , composition by line ,,area , volume , color , and raw materials . Graphic studies: drawing of marine environment and trees by pencil. Free subject drawing arabesque.

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URBAN PLANNING STUDIO

4	Hours per week	subject URBAN PLANNING STUDIO (1)
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Project.1. Study of housing complexes from analytical and construction point of view. The course aims samples of urban plans to enable the student to study, analyze and revise the residential complexes and to know their components and urban structure, at a scale of 1; 500 and through the study of following points :

- Analysis of location and its present situation as well as its future, in accordance with established urban plans and proposed land uses in order to meet the objectives of the master plan.
- The study of the scale of residential and service buildings types in the selected rural or urban areas.
- The study of the outdoor spaces, highways, parking, pedestrian networks as well as the green areas and parks. Students are required to submit a model for their solution for the residential complex, showing the interrelations of space, scale, and other elements in order to reach an optimal urban design solution.

4	Hours per week	subject URBAN PLANNING STUDIO (2)
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Project.2. Study and solutions for the problems of the ancient city and the buildings within the old urban fabric. The work is concentrated on the ancient part of Damascus city. Students work in teams to prepare diagrams and models for the existing situation as well as their proposals at scales up to 1:200. The subjects to deal with are within the following.

Framework:

- Modernization and renewal of the ancient city structure, with consideration to the historical development of urban and social structures.
- Proposals and recommendation for the traffic problems in old Damascus, with emphasis on pedestrianization.
- Preservation of historic and distinctive building through protection and recycling

Highlighting the problems of the old city, such as utilities and service integration, overcrowding, pollution and noise, in relation to the residents requirements.

6	Hours per week	subject URBAN PLANNING STUDIO (3)
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Project.3. Study parts of the central areas of big cities, residential neighborhoods, new suburbs or villages. The students, through teamwork, prepare drawings and models at scales up to 1; 2000, for selected sites. The sites are studied to distinguish the natural characteristics and the relations with the existing surrounding urban areas, whether they are integral parts of the city, expanded new areas, or urban areas, whether they are integral parts of the city, expanded new areas, or new urban centers in order to meet the cultural, social and administrative needs of the residents. Optimal solutions are sought by taking into consideration the interior/ exterior architectural linkage, the growth of population, the expansion of neighborhoods, and the need healthy and better residential environments.

4	Hours per week	subject THEORIES OF URBAN PLANNING
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Urban planning: definition, design and construction of cities, urban planning as a new scientific field, the factors shaping of the city, economic change, population growth. The city: definition, the modern city, the administrative role, the regional city, evolution of European cities in relation to transportation development. The garden city, Camillo Sitte, Ebenezer Howard, example of garden cities in Europe, Le Corbusier's ideas on the contemporary city and La Ville Radieuse, Athens chart, CIAM , housing, recreation, work, circulation. Shapes of cities: central, radial, linear, network cities, parks, climatic conditions. Basic functions of the city, residential areas, service areas, green areas, industrial areas, roads and circulation, rules and specifications. Preview on future demographic growth and urban development in Syria. The Master Plan: phases and components, urban planning guidelines and regulations in Syria, land use plan, elements of special composition, elements of urban design.

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SCIENCES OF THE BUILDING AND CONSTRUCTION

4	Hours per week	subject EXECUTIVE DRAWINGS (1)
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Preparation of drawing for an existing traditional building, in order to reveal their architectural and structural characteristics , and define the methods and construction materials used.

4	Hours per week	subject EXECUTIVE DRAWINGS (2)
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Project manual preparation (working drawing for plans, sections and elevations) and detail drawing for a contemporary residential building using modern construction materials, notably reinforced concrete, in order to get acquainted with its structural capabilities and characteristics.

Project manual preparation (working drawing for plans, sections and elevations, details) for building with long span structures, using modern construction materials (steel, wood, reinforced concrete >> ect) in order to get acquainted with the structural characteristics of these materials.

4	Hours per week	subject EXECUTIVE DRAWINGS (3)
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Project manual preparation (working drawing for plans, sections and elevations, details) for multi-storey buildings, with emphasis on vertical and horizontal circulation elements as well as plumbing network and ducts.

4	Hours per week	subject METAL STRUCTURES
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Introduction. Materials used. Ready-made section forms. Applied loads. Connections in metal joints. Welding. Bolts. Metal roofs. Solid beams. Space frames. Metal columns.

Stages of structural design .

4	Hours per week	subject COMPUTER AIDED DESIGN & PROGRAMMING
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: Introduction. Algorithms. Algorithmic diagrams. High level programming languages; Fortran & basic. Described and non described input & output. Direct transition. Repetition compositions. Computer aided design & drawing. Basics of transforming geometric figures. Changing scale. Rotation. Examples & exercises. Computer parts & operating systems. Monitors. Arithmetic expression. Application of simple programs. Exercises using the "Go to" expression & control compositions. Lisp programming for geometric shapes input. Development of the previous simple programs. Practice.

4	Hours per week	subject PROJECT MANAGEMENT AND SPECIFICATIONS:
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Estimation. Architecture and civil engineering. Project parties. Execution methods. Contracts. Price table. Bill of quantities. Temporary inspection. Quantity table. Measurements. Units. Methods. Calculation accuracy. Measurement rules and steps. Survey registers. Division principles. Measurement rules in the engineering profession. Soil works. Site clearance. Digging. Filling. Reinforced concrete works. Measurements methods and bills of quantities. Finishing works. Wood works. Stone. White wash. Tile. Metal works. Painting. Specifications. Aims and type. Project specification. Guideline specification. Standard specification. Diagram relation to specification. Specifications sources and preparation. Problems in bills of quantities. Project management. Introduction. Planning & programming. Construction conditions & objectives. Work plan. Budget & time factors. Time schedule. Network diagrams. Planning matrix. Critical path method. Schedule control system. Program evaluation and review technique.

4	Hours per week	subject REAL ESTATE LEGISLATION
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Introduction. Decrees for establishing empowered organization laws. Laws and regulations relevant to the execution of working drawing. Laws and regulations forbidding trading in land building. Laws regarding housing. Miscellaneous laws and regulations. Building regulations.

4	Hours per week	subject CONSTRUCTION MATERIALS
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Basic characteristics. Natural rock. Ceramic materials. Metals. Concrete. Light concrete. Reinforced concrete products and manufacturing elements. Wood. Insulation materials. Organic materials (Bitumen , Tar and emulsion). Bitumen alloys. Plastic. Cement and asbestos .

4	Hours per week	subject HEATING & AIR CONDITIONIGN
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Study of central heating , its equipments and feasibility. Comfort conditions and air conditioning, equipment and air refinement. Networks and air holes.

4	Hours per week	subject CONSTRUCTION THEORIES AND METHODS
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Introduction. Works in the field. Structural systems. Linear structural systems. Surface structures. Space structures. Suspended structures. Materials and methods of construction.

4	Hours per week	subject PLUMBING PRINCIPLES & MUNICIPAL WORKS
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Introduction. Water supply. Design of water supply networks. Construction materials for networks. Intakes of surface and ground water. Tests. Purification of water supply. Domestic installation of drinking water, hot water and fire hydrants. Sewage. Sources. Disposal, Main structures of sewerage projects. Computation of sewerage networks. Purification. Domestic installation. Installation of swimming pools.

4	Hours per week	subject DESCRIPTIVE GEOMETRY
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DESCRIPTIVE GEOMETRY (1): Introduction and objectives, methods of projection, form elements; point, coordinates, earth line. Representation of a point, a line, and a plan. Special conditions: planes: intersected, parallel and perpendicular. Principal methods of solving problems change of a plane. Revolution applications: metric questions, distances and angles. Polyhedrons in general. Convex polyhedron regular polyhedrons of plane sections, polyhedron intersection (pyramids and prisms) scattering. Shades introduction to mapping projection

DESCRIPTIVE GEOMETRY (2): Mapping position; mapping projections, definitions and general information. Slope: regulated slant, point line , plane representation. Intersection of lines and planes : revolution , application .normal position : left curvature , properties, tangents , planes : tangent , adjacent , perpendicular circle and ellipse projection . Projection of a circular spiral, cones and cylinders. Shades: revolution of cone and cylinder, visible circumferences and areas , surfaces intersection the sphere .

4	Hours per week	subject SURVEYING
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Survey and geodesy definition. Precision of survey measurement. Elements of survey instruments. Distance measuring. Coordinates of horizontal points. Determinations of points and elevation.

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FACULTY OF ARCHITECTURE

HISTORY AND THEORIES OF ARCHITECTURE

4	Hours per week	subject HISTORY OF ARCHITECTURE (1)
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Introduction. Architecture of the Nile Valley. Architecture of Mesopotamia, Persia and Syria. Hellenistic and Greek architecture and art. Roman art and architecture.

4	Hours per week	subject HISTORY OF ARCHITECTURE (2)
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Introduction to Christian and Islamic architecture. Catacombs. Dawn of Christian architecture. Influences. Character. Byzantine architecture. Introduction. Influences. Character. Islamic architecture. Introduction. Influences. Character. Comparative analysis .

4	Hours per week	subject HISTORY OF ARCHITECTURE (3)
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Architectural movements of the last 50 years, 1920-70. Idealistic style. Reflective style. Dolce vita or the Oversensitive. Intuitive style. Spontaneous style. Mies van der Rohe. Walter Gropius. Frank I. Wright. Charles Janneret (Le Corbusier). Alvar Aalto and the architectural means of communication. Current American architecture. Current British architecture. Current Japanese architecture .

4	Hours per week	subject THEORY OF ARCHITECTURE (1)
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Architecture as a response to human needs; elements of architecture, historical review of architectural. Development of architectural concepts ; architectural composition, character, surface .

4	Hours per week	subject THEORY OF ARCHITECTURE (2)
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Development of architectural concepts (cont). Form. Space. Expression. Heritage .

4	Hours per week	subject THEORY OF ARCHITECTURE (3)
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Romanticism. Idealism, functionalism. Organic architecture. Chicago school. Modern art. Mechanism and purism. Neo Plasticism. Fauvism. Expressionism. Constructivism. Bauhaus .

4	Hours per week	subject URBAN SOCIOLOGY
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Concept of urban sociology. Concept of space and inhabitancy. Basic components of simple societies. Dialogue between man and nature.

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ANOTHER SUBJECTS

4	Hours per week	subject MECHANICS AND STATICS(1)
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MATHEMATICS (1): Theories of real function; limits and continuity . Derivation and differentiation . Trigonometric inverse functions. Expansion of functions. Hyperbolic functions. Integration indefinite integration. Methods of integration. Differential equations. Numerical methods for calculating integration.

MECHANICS AND STATICS (1): Introduction to vector and triangular relations. General principles of statics . Equilibrium of systems of forces intercepted at a point, united in a plane. Friction

4	Hours per week	subject MECHANICS AND STATICS(2)
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MECHAMATICS (2) : Application of definite integral ; calculating areas. revolving surface and volume calculations. Calculating various types of arches. Calculating the coordinates of an inertia center of a wire, and a plain plate. Inertia calculation of wires and plates. Second degree surfaces; sphere, cone, cylinder, solid ellipse, hyperbole, parabola.

MECHANICS AND EQUILIBRIUM (2): Equilibrium of parallel systems of forces united in a plane. Distributed forces. Geometry of forms and center of gravity.

4	Hours per week	subject MECHANICS AND STATICS (3)
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MATHEMATICS (3): Statistics: Geometric distribution of measures. Measures of central tendency. Measures of dispertion. Chechef theory. Probability: primaries of probability. Laws of probability. Discontinuous random variables. Continuous random variables. Famous probability distribution: Binomial distribution. Poisson distribution. Normal distribution center limit theorem. Approximation of binomial distribution to normal distribution. Kay distribution. Student distribution. Simple linear regression: Probability smile linear sample. Minor quartile method. Coefficients of correlation.

MECHANICS AND STATICS(3): General state of an equilibrium of systems of forces united in a plane. Network beams. Statically determinate frames. Introduction to diagrammatic statics. Equilibrium by diagrammatic methods. Maxwell diagrams .

4	Hours per week	subject STRENGTH OF MATERIALS
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Basic information. Tensile and compression in straight elements. Plane position of stresses. Space position of stresses.. Geometric characteristics of plane sections. Sheer. Simple bending. General position of stresses. Deflection. Torsion.

4	Hours per week	subject STRUCTURAL ANALYSIS (1)
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Kinetic analysis of structures. Determinate frames and arches. Determinate trusses. Methods of computation of elastic in deformities in determinate structures. Casteliano theory. Imaginary work theory. Elastic bending in beams.

4	Hours per week	subject STRUCTURAL ANALYSIS (2)
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Method of forces in solving determinate structures ; Imaginary work method, Elastic center method, Three moments method. Deformities methods in solving indeterminate structures; general method, distribution of moments.

4	Hours per week	subject REINFORCED CONCRETE (1)
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Introduction. Materials used in concrete mixtures. Mechanical and physical properties of concrete and reinforced steel. Execution of reinforced concrete structures. Structural design and computation of concrete structures. Computation of vertical forces in cross section.

4	Hours per week	subject REINFORCED CONCRETE (2)
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Introduction. Design of sections under bending moment. Rectangular sections. Non center stress. Slabs. Sheer. Foundations.