

Yangon Technological University

Department of Architecture

Syllabus for Bachelor of Architecture (New 6- Year Direct Intake System)

M	11001	MYANMAR I (2-0-0) EXAMINATION.
M	12001	MYANMAR II (2-0-0) EXAMINATION.
E	11001	ENGLISH I (2-1-0) EXAMINATION.
E	12001	ENGLISH II (2-1-0) EXAMINATION.
EM	11001	APPLIED MATHEMATICS I(4-1-0) EXAMINATION.
EM	12001	APPLIED MATHEMATICS II (4-1-0) EXAMINATION.
ECH	11001	ENGINEERING CHEMISTRY I (4-1-2) EXAMINATION.
ECH	12001	ENGINEERING CHEMISTRY II (4-1-2) EXAMINATION.
EPH	11001	ENGINEERING PHYSICS I (5-1-2) EXAMINATION.
EPH	12001	ENGINEERING PHYSICS II (5-1-2) EXAMINATION.
ARCH	11011	BASIC ARCHITECTURAL DRAWING I (1-0-3)

Fundamentals of graphical presentation studies through the of medium of drawing (simple forms and lines and tone), with emphasis on sound observation and accurate presentation.

PROJECTS.

ARCH 12011 BASIC ARCHITECTURAL DRAWING II (1-0-3)

Freehand sketching of natural and human forms and buildings. Development of different media to express different composition. Rendering techniques. In addition to class work, homework assignments will be given and evaluated.

PROJECTS.

E 21001 ENGLISH III (2-1-0)

EXAMINATION.

E 22001 ENGLISH IV (2-1-0)

EXAMINATION.

EM 21003 APPLIED MATHEMATICSIII (5-1-0)

EXAMINATION.

EM 22004 APPLIED MATHEMATICSIV (5-1-0)

EXAMINATION.

CE 21003 MECHANICS OF MATERIALS I (3-1-1)

EXAMINATION.

CE 22003 MECHANICS OF MATERIALS II (3-1-1)

EXAMINATION.

ME 21015 ENGINEERING MECHANICSI (3-1-0)

EXAMINATION.

ME 22012 WORKSHOPS II (3-1-0)

EXAMINATION.

EP 21012 APPLIED ELECTRICAL ENGINEERING (LIGHTING & ILLUMINATION) (2-1-0)

EXAMINATION.

ARCH 21014 INTRODUCTION TO VISUAL DESIGN I (1-0-3)

Basic principle of Art in Architecture and Design elements.

PROJECTS.

ARCH 22014 INTRODUCTIONS TO VISUAL DESIGN II (1-0-3)

Exercises in three dimensions emphasizing visual sensitivity in the organization of form and space. In addition to class work, homework assignments will be given and evaluated.

PROJECTS.

- ARCH 21021 DESCRIPTIVE GEOMETRY I (1-0-3)**
Geometrical drawings: elementary forms, lines, planes, curve, solids, plans, elevations, sectional. Interpenetration of solids and planes.
PROJECTS.
- ARCH 22021 DESCRIPTIVE GEOMETRY II (1-0-3)**
Analysis of complex and axonometric projections and the study of skiagraphy. Perspective drawings. In addition to class work, homework assignments will be given and evaluated.
PROJECTS.
- ARCH 22018 COMPUTER APPLICATIONS IN ARCHITECTURAL DESIGN (1-0-2)**
Projects on Computer-Aided Drafting with Auto-CAD. Two Dimensional Architectural Drawings & Graphic Presentation, Key Graphic Principles for CAD.
PROJECTS.
- ARCH 21022 ARCHITECTURAL DRAWINGS AND PRACTICES I (1-0-3)**
The course aims at developing the requisite level of proficiency in drawing which is seen as a primary communication tool in the practice of architecture just like language. Students shall be familiarized with a range of techniques of expression beginning with manual drawing. The drawings and sketches, plans and elevations, sections and details, drawing specifications and techniques are included in the architectural drawing and practice I.
In the drawings and sketches, preliminary sketches, display drawings and working drawings have to practice. Plot plans, floor plans and elevations also study for plans and elevations of architectural drawing. Sections, standard details, details and dimensioning have to practice for the working drawing. The Specifications, symbols, electrical wiring, titles, technique and lettering have to learn for the drawing specifications and techniques.
PROJECTS.
- ARCH 22022 ARCHITECTURAL DRAWINGS AND PRACTICES II (1-0-3)**
The course includes theory of perspective and nomenclature, perspective variables, types of perspective and shade and shadows.
PROJECTS.
- CE 31001 SURVEYING I (2-1-1)**
EXAMINATION.
- CE 32001 SURVEYING II (2-1-1)**
EXAMINATION.
- CE 31013 THEORY OF STRUCTURES I (2-1-1)**
EXAMINATION
- CE 32013 THEORY OF STRUCTURES II (2-1-1)**
EXAMINATION.

ARCH 31016**ENVIRONMENTAL SCIENCE & BUILDING TECHNOLOGIES I (2-1-0)**

(Water Supply, Sanitation, Sewage, Acoustics & Air-conditioning

system)

Hygiene, diseases of insanitation and agents in the dissemination of diseases, and waste disposal systems.

Septic tanks, sanitary fittings, drainage and sewers, sewage ejectors and purification plants. Water supply, analysis of testing, methods of connection, fire hydrants, services pipes and fittings, pumps, hot water supply systems, plumbers' materials, joints and pipe layouts.

Concept of maintenance. Design spectrum and objectives in relation to simple and complex system of sanitation, water supply & drainage and their respective components, affecting efficient functioning of each and every part as well as of the system as a whole, Maintenance problems and methods at site. Observation of existing bye-laws.

EXAMINATION.

ARCH 32016**ENVIRONMENTAL SCIENCE & BUILDING TECHNOLOGIES II (2-1-0)**

(Tropical & Sustainable Architecture)

(a) CLIMATIC CONTROL

Climate and Architecture: Macroclimate and micro-climate; problems of ventilation and air flow in buildings, the elements of comfort, thermal Energy and transmission of heat. Selection of appropriate materials, solar radiations. Humidity and condensation, wind effects around buildings, Sun position, Global issues. Integrated environmental design. Adaptation of buildings to various climates.

(b) ARCHITECTURAL ACOUSTICS

Sound, its nature and source, propagation, reception and measurements, loudness, echo, reverberation, resonance, interference and absorption. Principles of architectural analysis, shape, size, volume and density of auditoriums, materials for sound proofing. Design of good acoustics for cinema, theatre, music halls, broadcasting studio, lecture halls.

(c) AIR-CONDITIONING SYSTEMS

Factors affecting air condition, criteria for thermal comfort, Heat transmission and air infiltration in buildings, Estimation of Air-conditioning loads. Design of buildings to minimize air-conditioning loads. Modern air-conditioning systems; gravity flow, central and unit systems. Noise in Air-conditioning systems. Use of heat pumps in air-conditioning. Performance of an air-condition building, maintenance and running costs.

EXAMINATION.

ARCH 31024 FUNDAMENTAL OF ARCHITECTURAL DESIGN I (2-1-0)

The interrelationship between units, form, space and functions as well as the principles of design as applied to architectural design and also to understand the vocabulary of architectural design; Aesthetics, Expression, Scale Orientation and related Design Principles and their implications in the design solutions.

EXAMINATION.

ARCH 32024 FUNDAMENTAL OF ARCHITECTURAL DESIGN II (2-1-0)

EXAMINATION.

ARCH 31025 ARCHITECTURAL MATERIALS & CONSTRUCTION I (2-1-0)

The properties of Building Materials: Stones, bricks, tiles, slates, lime, cements, mortar, plaster, concrete, timber, damp proofing materials, single storey, level site, simple roof, masonry and timber, framed walls, footings, external doors, windows, damp proofing course, linings, gutters, rain water disposal. Construction drawing assignments.

EXAMINATION.

ARCH 32025 ARCHITECTURAL MATERIALS & CONSTRUCTION II (2-1-0)

Basic of maintenance concept. Common causes effecting the decaying process of building elements. Appropriate choices of building materials and adoption of constructional technologies either in designing a new building in a given situation or renovation & maintenance of old ones.

EXAMINATION.

ARCH 31044 HISTORY OF ARCHITECTURE (WESTERN) (2-0-1)

Architectural development of early Egypt, high-light of West Asiatic and Saracenic, Greek, Roman, Byzantine gothic, Renaissance styles in Europe and influences.

Appreciation of proportion and human scales in relation to architectural space in the respective periods of the regions.

Civic Design concept and development of Regional-wise town planning theories ranging from classical periods to 20th century.

TERM PAPER.

ARCH 32044 HISTORY OF ARCHITECTURE (EASTERN) (2-0-1)

The outstanding characteristics of Indian, Myanmar, Cambodian (Khmer), Laotian, Thailand, Malaysian, Vietnamese and Indonesia Architecture. The out-line of the architectural development of secular and religious buildings in China, Korea, Mongolia, Japan, and Tibet.

Concept of maintenance of Historical Architectural elements, conventional methods of preservation, scientific methods of maintenance of Architectural structures of cultural and Historical values, Restoration problems and methods.

Appreciation of proportion & human scale in relation to the architectural space in the respective periods of the selected regions. Civic design concepts and development of regional-wise town planning theories.

TERM PAPER.

ARCH 31019 DESIGN STUDIO I (1-0-0)

Design subjects on simple design based on efficient utilization of timber and brick supported with constructional and working drawings integrated with the disciplines of technical infrastructure.

PROJECTS.

ARCH 32019 DESIGN STUDIO II (1-0-6)

Sketch design: Short-term design subjects to stimulate the imagination and techniques of expression.

Architectural training: Measured drawings, architectural study tour.

PROJECTS.

HSS 41011 HUMANITIES AND SOCIAL SCIENCES I (3-0-0)

EXAMINATION.

HSS 42011 HUMANITIES AND SOCIAL SCIENCES II (3-0-0)

EXAMINATION.

ARCH 41012 ENVIRONMENTAL ANALYSIS & LANDSCAPE ARCHITECTURE I (2-0-1)

HISTORY

Analytical studies on the development of environmental & ecological landscape design considered as contribution to culture in various historical periods in the East (China, Japan, Korea, etc.) and in the West (France, Italy, Spain, etc.). Modern trends of environmental landscape architecture and problems dealing with domestic and public projects.

LANDSCAPE ELEMENTS

Botanical species affecting landscape design, identification of plants. (Trees, Shrubs, etc.) and effect of their uses under various conditions of composition integrating to architecture. Water, stone, rocks, falls, etc. and other man-made elements.

TERM PAPER.

ARCH 42012 ENVIRONMENTAL ANALYSIS & LANDSCAPE ARCHITECTURE II (2-0-1)

SITE PROBLEMS AND DESIGN

Site planning problems of various land spaces and their aesthetics aspects in relation to socio-economic needs, and ecological control.

PROJECTS.

ARCH 41013 STRUCTURE IN ARCHITECTURE I (2-1-0)

Introduction to Structural engineering, Load on structures, Structural Materials, Structural Requirements

20% Assignment + 80% Exam

ARCH 42013

STRUCTURE IN ARCHITECTURE II (2-1-0)

Masonry & Timber Structure, Design of masonry and timber structure, Stability of masonry and timber structure

20% Assignment + 80% Exam

ARCH 41022

INTERIOR DESIGN I (2-0-1)

Making practical Analysis on Spatial and Volumetric Effects, PROJECTS.

ARCH 42022

INTERIOR DESIGN II (2-0-1)

Anthropometric Applications in elements of visual design, Functional Usage, Designing new interior spaces.

PROJECTS.

ARCH 41034

ARCHITECTURAL THOUGHTS & THEORY OF DESIGN I (2-0-1)

Modern trend and thoughts of well know architects dealing with the relationships of physical, social, cultural and environmental factors in Architecture

TERM PAPER.

ARCH 42034

ARCHITECTURAL THOUGHTS & THEORY OF DESIGN II (2-0-1)

Modern trend and thoughts of well know architects dealing with the relationships of physical, social, cultural and environmental factors in Architecture

TERM PAPER.

ARCH 41035

ARCHITECTURAL MATERIALS & CONSTRUCTION III (2-1-0)

Single and higher storey, multi-cell shelters, group activities shelter, sloping sites. Load bearing wall, non-bearing wall and movable partition walls,

EXAMINATION.

ARCH 42035

ARCHITECTURAL MATERIALS & CONSTRUCTION IV (2-1-0)

Ridged roofs, build-up roofs, upper timber floors, stairs, retaining walls and membranes, semi-basements, concrete floors, (Ground floor, basements floor).

EXAMINATION.

ARCH 41029

DESIGN STUDIO III (1-0-6)

Complex public, civic and industrial buildings, and the problems arising in connection with more complex plan organization of technical, social & economical infrastructure.

PROJECTS.

ARCH 42029 DESIGN STUDIO IV (1-0-6)

Buildings of multistorey, requiring specialized space forms of multiple uses, allowed by the present socioeconomic and technological conditions of our country, anticipating futurology detail design, working drawings and short-time sketches. Training in an Architectural Office.

PROJECTS.

E 51001 ENGLISH V (2-1-0)

EXAMINATION.

E 52001 ENGLISH VI (2-1-0)

EXAMINATION.

ARCH 51017 INTRODUCTION TO URBAN PLANNING I (2-0-1)

Economic Basic relating to settlement development. Urban settlements and population analysis.

Formation of villages and towns, siting of towns in relation to physical conditions, geography, climate and land use; functional social cultural arrangement at the city scale in the light of fundamental human objectives.

PROJECTS.

ARCH 51023 QUANTITY SURVEYING & COST ESTIMATING I (2-1-0)

Preliminary specifications in general building design. Final specifications, procedure and methods of writing;

EXAMINATION.

ARCH 52023 QUANTITY SURVEYING & COST ESTIMATING II (2-1-0)

Quantity surveying, cost estimating factors affecting cost of buildings and estimates of current unit costs.

EXAMINATION.

ARCH 51033 PROFESSIONAL PRACTICES & BUILDING LAWS I (2-1-0)

Duties and responsibilities of an Architect, documentation, his relationship with clients, consultants and builders.

EXAMINATION.

ARCH 52033 PROFESSIONAL PRACTICES & BUILDING LAWS II (2-1-0)

Office administration. Architectural Ethics and Professional conduct, land and building laws.

EXAMINATION.

ARCH 51045 STRUCTURE IN ARCHITECTURE III (2-1-0)

Concrete Structure

Design of Elements: Slab, Beam, Column, Foundation, Stability of concrete structure, Introduction to Earthquake

Timber detailing; Insulation, condensation, vapour barriers, roof coverings.
Introduction to single span, R.C. Floors, simple trusses and connections, steel section floor finishes.
20% Assignment + 80% Exam

ARCH 52045 STRUCTURE IN ARCHITECTURE IV (2-1-0)

Steel Structure
Design of Elements: Composite Slab, Beam, Column, Stability of steel structure,
Introduction to Earthquake
Design of concrete mixes, graphic statics, connection details of building components;
Construction drawing assignments.
20% Assignment + 80% Exam

Arch 52013 BUILDING ECONOMICS & CONSTRUCTION MANAGEMENT II (2-0-0)

Management-functional planning, organizing, staffing, co-ordinating, construction management, technical supervision: preparation of construction schedules, (critical path method, functional adjacency chart method) check-lists, pitfalls in construction, labour-management relations, quality control.
EXAMINATION.

ARCH 52038 URBAN PLANNING THEORY AND PRACTICES WITH COMPUTER APPLICATION (1-0-2)

Making Practical Analysis on existing Urban design and use planning, Urban transport and traffic, concept of suitable development, Designing new Urban areas.
Evolution of modern cities and relationship of architecture and engineering in the city development.
Urban and rural areas with modern amenities, town planning legislation and administration. (Generalisation) Housing and urban facilities. Traffic and transportation.
PROJECTS.

ARCH 51039 DESIGN STUDIO V (1-0-6)

Complex public, civic and industrial buildings, and the problems arising in connection with more complex plan organization of technical, social & economical infrastructure.
PROJECTS.

ARCH 52039 DESIGN STUDIO VI (1-0-6)

Buildings of multistorey, requiring specialised space forms of multiple uses, allowed by the present socioeconomic and technological conditions of our country, anticipating futurology detail design, working drawings and short-time sketches. Training in an Architectural Office.
PROJECTS.

DEPARTMENT OF ARCHITECTURE

Field Variants for Bachelor of Architecture (New 6-Year Direct intake System)

Sr. No.	Area/ Field	Field Variants	
1	Basic Architectural Drawing	Arch 11011	Basic Engineering Drawing I
		Arch 12011	Basic Engineering Drawing II
		Arch 21021	Descriptive Geometry I
		Arch 22021	Descriptive Geometry II
		Arch 21022	Architectural Drawings and Practices I
		Arch 22022	Architectural Drawings and Practices II
2	Landscape and Interior	Arch 41012	Environmental analysis & Landscape Architecture I
		Arch 42012	Environmental analysis & Landscape Architecture II
		Arch 41022	Interior Design I
		Arch 42022	Interior Design II
3	Building Management	Arch 52013	Building Economics & Construction Management
		Arch 51023	Quantity Surveying & Cost Estimating I
		Arch 52023	Quantity Surveying & Cost Estimating II
		Arch 51033	Professional Practices & Building Laws I
		Arch 52033	Professional Practices & Building Laws II
4	Design Thoughts	Arch 21014	Introduction to Visual Design I
		Arch 22014	Introduction to Visual Design II
		Arch 31024	Fundamental of Architectural Design I
		Arch 32024	Fundamental of Architectural Design II
		Arch 41034	Architectural Thoughts & Theory of Design I
		Arch 42034	Architectural Thoughts & Theory of Design II
		Arch 31044	History of Architecture (Western)
		Arch 32044	History of Architecture (Eastern)
5	Building Science	Arch 31025	Architectural Materials & Construction I
		Arch 32025	Architectural Materials & Construction II
		Arch 41035	Architectural Materials & Construction III
		Arch 42035	Architectural Materials & Construction IV
		Arch 41013	Structure in Architecture I
		Arch 42013	Structure in Architecture II
		Arch 51045	Structure in Architecture III
		Arch 52045	Structure in Architecture IV
6	Building Environment	Arch 31016	Environmental Science & Building Technologies I
		Arch 32016	Environmental Science & Building Technologies II
7	Urban Studies	Arch 51017	Introduction to Urban Planning I
8	Computer Application	Arch 22018	Computer Application in Architectural Design
		Arch 52038	Urban Planning Theory and Practices with Computer

			Application
9	Architectural Design Studio	Arch 31019	Design Studio I
		Arch 32019	Design Studio II
		Arch 41029	Design Studio III
		Arch 42029	Design Studio IV
		Arch 51039	Design Studio V
		Arch 52039	Design Studio VI