



CTESCOA

CHEMBUR TROMBAY EDUCATION SOCIETY'S

CTES

COLLEGE OF ARCHITECTURE

ESTD : 2014

MH - 77

UNAIDED

APPROVED BY COUNCIL OF ARCHITECTURE

AFFILIATED TO UNIVERSITY OF MUMBAI

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UNIVERSITY OF MUMBAI

Syllabus for the Bachelor of Architecture

Program: B.Arch.

Fifth Year

Bachelor of Architecture

(Semester-X)

(As per Credit Based Semester and
Grading System with
effect from the academic year 2016–2017)

AC 4-3-2014
Item No. – 4.47

UNIVERSITY OF MUMBAI



Syllabus for the Bachelor of Architecture

Programme : B.Arch.

**Bachelor of Architecture
(Semester IX & X)**

(As per Credit Based Semester and Grading System with
effect from the academic year 2016-17)

Scheme of Teaching and Examinations Bachelor of Architecture (B. Arch.)

Semester IX

Semester IX Exam conducted by college		Teaching Scheme		Credits		
Course code	Courses	Lecture	Studio	Theory	Studio	Total
BARC 901	Architectural Design Studio 8		8		8	8
BARC 902	Allied Design Studio 8	2	3	2	3	5
BARC 903	Architectural Building Construction 8	2	2 classes of technology studio	2	1	3
BARC 904	Theory and Design of Structures 8	1		1	1	2
BARC 908	Architectural Building Services 6	1	2 classes of technology studio	1	1	2
BARC 906	Environmental studies 4	2		2	1	3
BARC 910	Professional practice 2	3		3		3
BARD 911	Design Dissertation 1	1	3	1	3	4
BARE 921	Elective 8		3		3	3
BARE 922	Elective 9		3		3	3
	Total	14	22	14	22	36

Semester IX Exam conducted by college		Examination Scheme			
Course code	courses	Theory (paper)	Internal	External viva	Total
BARC 901	Architectural Design Studio 8		100	100	200
BARC 902	Allied Design Studio 8	50	50		100
BARC 903	Architectural Building Construction 8		100		100
BARC 904	Theory and Design of Structures 8		50		50
BARC 908	Architectural Building Services 6		50		50
BARC 906	Environmental studies 4		100		100
BARC 910	Professional practice 3	50	50		100
BARD 911	Design Dissertation 1		50	50	100
BARE 921	Elective 8		100		100
BARE 922	Elective 9		100		100
	Total	100	650	150	1000

Syllabus (Course Content) for final year B. Arch. programme Semester IX

901 Achitectural Design Studio 8

Credits-8

Teaching Hours

Lectures- -----

Studio- 144 periods of 50 minutes duration -120 hours

Scheme of examination

Theory: -----

Sessional marks-

Internal- 100

External ---100

Course Objectives

Collection and analysis of data related to Design topic.

Application of technical knowledge to design detailing

Understanding impact of socio economic factors on user requirements

Study of climatic conditions, Site analysis, site planning

Understanding traffic patterns and transportation.

Expected Course out come

Architecture for urban commercial, transportation, recreation, entertainment activities for masses with respect to following

- Development of appropriate architectural forms, their grouping and composition,
- Architectural detailing.
- Provision of required infrastructure and services
- Design of complex/ multifunctional buildings and surrounding spaces

902 Allied Design Studio 8

Credits-5

Teaching Hours

Lectures- 36 classes of 50 minutes duration – 30hours

Studio- 54 periods of 50 minutes duration -45 hours

Scheme of examination

Theory: one paper of two hours duration Max. marks- 50 Min marks for passing- 20

Sessional marks-

Internal- 50 marks

External ----

The course content will be developed by the individual colleges as per their choice of Allied Design scheme.

Suggested Themes: Town planning, Urban Design, Housing, Environmental design

903 Architectural Building construction 8**Credits-3**

Lectures-36 periods of 50 minutes duration- 30 hours

Studio- 18 periods of 50 minutes duration- 15 hours

(to be conducted as a part of technology studio of 36 periods of 50 minutes duration – 30 hours)

Scheme of examination

Theory: -----

Sessional marks-

Internal- 100 marks

External ----

Long span structures, Long span beams, Long span Trusses & Roof structures.

Long span Arches,

Cable structures,

Folded Plate structures, and Space frames,

Shell structures.

904 theory and Design of Structures 8**Credits-2**

Lectures-18 periods of 50 minutes duration- 15 hours

Studio- 18 periods of 50 minutes duration- 15 hours

(to be conducted as a part of integrated studio of 36 periods of 50 minutes duration – 30 hours)

Scheme of examination

Theory: -----

Sessional marks-

Internal- 100 marks

External ----

1. Long span structures

Long span beams, Long span Trusses & Roof structures.

Long span Arches,

2. Cable supported structures

3. Folded Plate structures, Shell structures.
4. Space frames
5. Portal frames
6. Pre-stressed Concrete, Pre-stressing and its applications to buildings, Principles of Pre-tensioning & Post-tensioning

Sessional work based upon above.

906 Environmental Studies 4

Credits-3

Lectures-36 periods of 50 minutes duration- 30 hours

Studio- 18 periods of 50 minutes duration- 15 hours

(to be conducted as a part of technology studio of 36 periods of 50 minutes duration – 30 hours)

Scheme of examination

Theory: -----

Sessional marks-

Internal- 100 marks

External ----

Objective: To study and understand sustainable building design processes

1. Concepts of Sustainable Building

Social, Economic and Environmental aspects

Different types of Indian and International Rating Systems (GRIHA, LEED, IGBC, Eco Housing, BREEAM, CASBEE, etc)

2. Studying the Nation Building Code (NBC 2005) code with respect to the Chapter 11 on Sustainability

3. Energy Efficiency

Energy Efficient Design (Achieving Efficiency through design)

Energy Conservation Building Codes (ECBC) Codes 2007

Learning Different Energy Simulation Techniques (Energy / Lighting)

Advanced Energy Efficient Standards and Systems

HVAC

Lighting

Appliances and Equipments

Building Envelope

Understanding and calculation of energy consumption of a House, office building

4. Water Efficiency

Water and Waste Water Management (Study of Water Balancing)

Rain Water Harvesting

Efficient waste water treatment techniques (DEWATS, MBR, MBBR etc)

Efficient Water Fixtures

5. Material Efficiency

Understanding various parameters for Sustainable Building Materials and evaluate using LCA (ISO 14000)

6. Solid Waste Management

Sessional work based upon above in form of case studies, report, presentations.

908 Architectural Building services 6

Credits-2

Teaching Hours

Lectures-18 periods of 50 minutes duration- 15 hours

Studio- 18 periods of 50 minutes duration- 15 hours

(to be conducted as a part of technology studio of 36 periods of 50 minutes duration – 30 hours)

Scheme of examination

Theory: -----

Sessional marks-

Internal- 50

External ---

Theme:

Integrated services

Specialized Services required for specific functions/ building types (for example hospitals, hotels, auditorium)

Specialized services as per climatic conditions

Building management systems

Infrastructure and amenities for public spaces

Sessional work: Reports and Case studies related to Thesis topic.

910 Professional Practice 2

Credits-3

Teaching Hours

Lectures- 54 classes of 50 minutes duration – 45 hours

Studio- -----

Scheme of examination

Theory: one paper of two hours duration Max. marks- 50 Min marks for passing- 20

Sessional marks-

Internal- 50 marks

External ----

Instructions in the following should be such as to understand the purpose and implication of its application, instructions to the students should be general without going too much in detail in legal aspects.

Acquisition

General principles of land acquisition with reference to norms of compensation.

Purpose of acquisition

Valuation

Elements of valuation- market value methods of valuation specially income capitalization technique and physical method of valuation

Elementary examples including one for ownership flats and premises, Building up or determining rate of capitalization based on gilt-edged theory and general investment market theory.

Valuer and his/her function including registration

Meaning of immovable property- ownership and possession.

Joint tenancies and tenancy in common- types of tenure with special reference to freehold and leasehold tenure.

Different types of tenures of land- as commonly found- leasehold and freehold and lease and other rents.

Rent- different types of rent- standard rent, example on working out of standard rent.

Ratable value and its relation to rent- nature and purpose of ratable value. Rent control act

Definition of property- ownership and possession- Joint tenancies and tenancy in common- types of tenure with special reference to freehold and leasehold tenure.

Principle types of landed properties- their outgoings calculation of rented value and not income market value.

Principles governing the rate of interest required for different types and class of properties- gilt edged securities.

Valuation

Ownership basis flats
Use in practice(Construction is not contemplated)
Gross annual value ratable value and their application

Dilapidation
Procedure for preparing report and schedule of dilapidations
Settlement of claims
Law related to structural and general repairs

Fire Insurance
Insurance policy and cover note
Fire loss assessment claim and report
Insurable value of the property.

Easement of Light, Ventilation and Access.

Sessional work based on above

911 Design Dissertation 1

Credits-4

Teaching Hours

Lectures- 18 classes of 50 minutes duration – 15hours
Studio- 54 classes of 50 minutes duration – 45 hours

Scheme of examination

Theory: -----

Sessional marks-

Internal- 50 marks External viva – 50 marks (in the beginning of semester 10)

Students are required to choose a topic and conduct research under the guidance of internal teachers. They are required to submit a report to in the given format.

The report should include

Title and description of the topic

Justification for Architectural intervention in context.

Back ground study

Review of related literature

Analysis of terms

Methodology of study (Survey, Case studies, project reviews)

Findings and analysis based on the methodology

Design objectives based upon the findings, and development of design brief

Site selection criteria

Description of the site
Site analysis to include local Architectural context, and socio economic conditions.
Climatic and environmental conditions, and prevalent bylaws.

921 Elective 8

Credits- 3

Teaching Hours

Studio- 54 periods of 50 minutes duration – 45 hours

Sessional marks-

Internal- 100

External -----

The electives are to be offered by individual colleges based upon current issues in Architecture and Urbanity

922 Elective 9

Credits- 3

Teaching Hours

Studio- 54 periods of 50 minutes duration – 45 hours

Sessional marks-

Internal- 100

External -----

The elective can be chosen by individual students based upon the topic related to Design Dissertation, under the guidance of internal teacher / guide.

DETAILS OF SCHEME OF EXAMINATION SEMESTER IX

**BACHELOR OF ARCHITECTURE: SEMESTER IX EXAMINATION
TO BE CONDUCTED BY COLLEGES.**

SUB. NO.	Semester IX EXAMINATION Exam conducted by individual colleges	THEORY				SESSIONAL MARKS				Max Marks for the Course
		No of Papers	Duration	Max Marks	Min Marks for Passing	INTERNAL		EXTERNAL		
	COURSES					Max Marks	Min Marks for Passing	Max Marks	Min Marks for Passing	
BARC 901	Architectural Design 8	---	----	---	---	100	50	100	50	200
BARC 902	Allied Design 8	1	2HOURS	50	20	50	25	----	----	100
BARC 903	Architectural Building Construction 8	----	---	---	---	100	50			100
BARC 904	Theory and Design of Structures 8	----	---	---	---	50	25	---	----	50
BARC 906	Environmental studies 4	---	----	---	---	100	50	----	----	100
BARC 908	Architectural Building Services 6	---	----	---	---	50	25			50
BARC 910	Professional Practice 2	1	2HOURS	50	20	50	25	----	----	100
BARD 912	Design Dissertation 1	----	---	---	---	50	25	50	25	100
BARE 921	Elective 8	---	---	---	---	100	50	---	---	100
BARE 921	Elective 9	---	---	---	---	100	50	---	---	100
	Total marks for the examination									1000

Notes: Theory, Internal sessional work, and External viva are considered as separate heads of passing

Total marks for the examination = 1000

Minimum marks for passing the examination= 500