UNIVERSITY OF PUNE

SYLLABUS

FOR

Five years Degree Course
of
BACHELOR OF ARCHITECTURE
And
BACHELOR OF ARCHITECTURE
(INTERIOR DESIGN)

And

Three Years Degree Course
of
BACHELOR OF BUILDING SCIENCES
(Stage I of B.Arch.)

(to be implemented from 2008-09)

FACULTY OF ENGINEERING

BOARD OF STUDIES IN ARCHITECTURE

BOARD OF STUDIES IN ARCHITECTURE

FOURTH YEAR B.ARCH.

Sr. No.	Subject Code	Name of Subject	Head	Teaching Scheme			Examination Scheme		
				Lecture Periods	Studio Periods	Total Periods	Term I Marks	Term II Marks	Total Marks
1	413421	Architectural Design IV	SV	2	10	12	300	300	600
2	413422	Adv. Bldg. Tech. & Services	Theory	2	5	7	150	150	300
3	413423	Design & Tech. Elective	SS	1	1	2	50	50	100
4	413424	Quantity Surveying and Est.	SS	1	3	4	50	50	100
5	413425	Quantity Surveying and Est.	Theory				--	100	100
6	413426	Specification Writing	SS	2	--	2	50	50	100
7	413427	Specification Writing	Theory				--	100	100
8	413428	Town Planning	SS	1	3	4	50	50	100
9	413429	Town Planning	Theory				--	100	100
10	413430	Professional Practice	SS	2	--	2	50	50	100
11	413431	Professional Practice	Theory				--	100	100
12	413432	Dissertation & Architectural ProjectPart I	SS	1	2	3	100	100	200
		TOTAL		12	24	36	800	1200	2000

4. Building Construction illustrated by CHING FRANCIS D. K.
5. Elementary Building Construction by MITCHELL
6. Structure and Fabric by EVERET

To study building materials

1. National Building Code and I.S.I. Specifications
2. Materials and Finishes by EVERET
3. A to Z Building Materials in Architecture by HORNBOSTLE

Subject Code : **413423 DESIGN & TECHNOLOGY ELECTIVE** (Sessional)			
Teaching Scheme		**Examination Scheme**	
Lecture Periods per week	1	Term I and Term II Sessional (Internal) Sessional (External) Viva	 25 marks (for each term) 25 marks (for each term) nil
Studio Periods per week	1	Total sessional marks for both terms	100 marks
Total Contact Periods per week	2	Paper	nil
		Total Marks	100 marks

AIMS AND OBJECTIVE

The subject of Electives has been introduced in the syllabus with the specific intention of in depth study of a particular subject of a student's liking in greater detail but in the larger context of overall scope of Architecture syllabus at undergraduate level. This will give students an opportunity to develop their skills in a subject they may opt, to make their career in future. Architectural practice is a team effort in which persons of different skills in varied fields are required such as concept developers, technical / working drawing experts, specification writers, quantity surveyors, project managers, contract managers, interior designers, architectural photographers, architectural Journalists, signage and graphic designers, energy consultants, building services consultants, marketing managers etc. In depth study in Electives will prepare the technical base of the students. Since the Architectural Projects in future are going to be very complex, the need of support staff in Architectural Practice will be fulfilled and the student's skills and talent will be effectively used.

The Colleges will have the opportunity to focus upon a particular group of Design and Technology electives depending upon the overall philosophy and mission statement of the College. Individual colleges may offer topics depending upon the availability of experts and resource material.

COURSE OUTLINE TERM I: The probable Design Elective topics are as follows :

1. Interior Design
2. Industrial and Product Design
3. Urban Design
4. Advanced Landscape Design
5. Housing
6. Set Design
7. Special Facilities Planning
8. Sustainable Development and Architecture
9. Barrier free Environment and Design

10. Urban and Rural Planning
11. Infrastructure Planning
12. Advanced Computing in Architecture
13. Climate responsive Architecture
14. Mathematics and Science in Design
15. Theory of Architecture.

DETAILED SYLLABUS

Sustainable Development and Architecture

- Philosophy of Sustainability, management and design aspects
- Management in terms of resource and conservation management, anti-pollution measures, Water / waste management etc.
- Design aspect in terms of designing the structures, such as solar passive, passive, energy efficient, cost-effective, eco friendly designing
- Studying other forms of energy and their applications like Tidal / hydal / wind / biotic.
- Studying environmentally sustainable technologies, construction techniques, and use of materials.
- Studying environment related broader topics and issues like river-beds, environmental pollution etc.

Barrier free environment and design

- Types of disabilities and its implications in Architecture, barrier free environment, access- provisions to facilities and amenities.
- Special design considerations in residential buildings, congregational buildings like auditoriums, theatres, stadias, transport terminals etc, Institutional buildings, outdoor appurtenances, garden – parks etc.
- Study of norms set by Central Government.

Natural Disaster resistant architecture

- Types of disasters like earthquake, fire, floods, cyclones, Tsunami and its effects on Architecture.
- Study of geological structure and its deformation, study of behavior of the structure in such disasters, Measure to counteract destabilizing forces, design aspects and considerations for various types of buildings especially the residential, congregational and institutional buildings.

Urban and Rural Planning

- Introduction to hierarchy of planning – levels and their impact on architecture and architectural profession, understanding the interrelation between urban planning and architecture in terms of FSI, Ground Cover page, density and urban form.
- Comprehensive plan of action for reducing inter-regional and intra-regional disparities. Introduction to Regional plans, Master plans, Zonal plans, town planning schemes and urban design schemes. Special requirements for rural planning.

Infrastructure Planning

- Need for infrastructure planning. Introduction to types and design of infrastructure requirements for large scale architectural projects like drainage, water supply, storm transport facilities, provision of amenities, security systems, remote control systems, telecommunication system etc.

Advanced Computing in Architecture

- Software customization – developing expert system for parametric design using languages such as Visual Basic, Auto Lisp etc. Developing plug-ins for programs like 3D, Studio Max etc.
- Expert software which can either be a part of the main software or a third party software for tasks like working of quantities making atomization for typical drawings such as municipal / centerline plans etc.
- Advanced 3D modeling with the use of animated maps, Special effects plug-ins, advanced lighting, animations etc.

- Exploring the sue of Internet for architectural data exchange and development of web-based solutions for the same (eg. Web page designing).
- Virtual Reality
- Intelligent building and design
- Understanding / Exploring softwares like ideas, Catia ProE

Used for designing complicated structures like the Bibau Museum in Spain or most of the buildings of Frank Gehry.

Special Facilities Planning in Hotels and Hospitals

- Fumigation
- A/c for rooms, lobbies, lounges, OT
- Central gas / suction supply
- Electrification for various spaces and gadgets like defibrillator, CT scan, radiology, MRI etc.
- Water management with incinerator etc.
- Laundry
- Hot water, Boiler, Solar
- Emergency lighting
- Food management / movement / kitchen layouts / sotres / eating places.
- Service floor
- Channeled music

Large span structures like Multiplex, Auditorium, Railway stations, covered studio, airport terminal, hangers etc.

- Structural systems
- Light and ventilation
- Seating
- Crisis planning routes during emergency
- Surface finishes
- Rain water disposal
- Luggage movement
- Parking
- Telecommunication and security systems.

COURSE OUTLINE TERM II The probable Technology Elective topics are as follows :

1. Modular Planning and System Building Construction
2. Non-Conventional Technologies
3. Rural (Vernacular) Architecture.
4. Energy Efficient and Eco Friendly Construction
5. Earthquake Resistant Construction
6. Smart and Intelligent Buildings
7. Building Performance Analysis and Appraisal
8. Structure and Form in Architecture.

Detailed syllabus given above is indicative only. Detail syllabus for all Elective Topics can be finalized, considering the time and marks allotted to the subject, by individual College in consultation with expert faculty and can be implemented after approval by the board of studies.

SUBMISSION DETAILS :

The students are expected to study the selected topic in depth, including the basic principles, and their application in built projects by undertaking case studies, necessary site visits, and collecting all the relevant information to make it an exhaustive study and present it in a well documented format having A-3 / A-4 size papers property filed in a file with a signed certificate from concerned Teacher / Expert stating that the study was carried out under his guidance and countersigned by the Principal / Academic Co-ordinator.

Subject Code : **413424** **QUANTITY SURVEYING & ESTIMATING** (Sessional) Subject Code : **413425** **QUANTITY SURVEYING & ESTIMATING** (Paper)			
Teaching Scheme		**Examination Scheme**	
Lecture Periods per week	1	Term I and Term II Sessional (Internal) Sessional (External) Viva	 25 marks (for each term) 25 marks (for each term) nil
Studio Periods per week	3	Total sessional marks for both terms	100 marks
Total Contact Periods per week	4	Paper	100 marks
		Total Marks	200 marks

OBJECTIVES :

1. To train students in computing quantities of various building items for simple load bearing structures and acquaint them with various types of estimates including mode of measurements as adopted by I. S. 1200.
2. To train students in computing quantities of various building items of R.C.C. framed structure, steel structure, building services such as water supply, sanitation and drainage, electrical installations and acquainting them with rates of various building items.

COURSE OUTLINE

1. Introduction to the definition, aim and scope of "Quantity Computation"
2. Study of different types of estimates
3. Study of mode of measurements as stipulated in I. S. 1200
4. Methods of computing quantities for load bearing types of structure and preparing abstract and bills of quantities including units of measurements.
5. Computing quantities of various building items for r.c.c. framed structure, steel structure and building services such as plumbing and water supply. Preparing of quantities for estimation and tendering purposes.
6. Study of composition of rates of various building items, percentage distribution in the rates of materials, labour, tools and plant, contractor's profits and overheads etc.
7. Analysis of rates of main items of building work with reference to prevalent market rates of materials and labour wages.
8. Preparation of indent of various building materials for r.c.c. framed structure.
9. Measurements of completed items for payment to contractor's interim and final certificate.
10. Introduction to use of computer for computation of quantities of various building items.

SESSIONAL ASSIGNMENTS

Hand written Computation and Bills of Quantities shall be prepared of following :

1. Load bearing structure of total plinth area between 15 to 25 sq. mts.

FIFTH YEAR B.ARCH.

Sr. No.	Subject Code	Name of Subject	Head	Teaching Scheme			Examination Scheme		
				Lecture Periods	Studio Periods	Total Periods	Term I Marks	Term II Marks	Total Marks
1	513421	Practical Training	SV	--	--	--	100	--	100
2	513422	Architectural Project Part II	SV	2	10	12	--	400	400
3	513423	Management Elective	SS	1	1	2	--	50	50
4	513424	Allied Elective	SS	1	1	2	--	50	50
		TOTAL		4	12	16	100	500	600

Subject Code : **513423 MANAGEMENT ELECTIVE** (Sessional)

Teaching Scheme		**Examination Scheme**	
Lecture Periods per week	1	Term II	25 marks (for Term II)
		Sessional (Internal)	
Studio Periods per week	1	Sessional (External)	25 marks (for Term II)
		Viva	nil
		Total sessional marks	50 marks
		for both terms	
Total Contact Periods per week	2	Paper	nil
		Total Marks	50 marks

AIMS AND OBJECTIVE

The subject of Electives has been introduced in syllabus with specific intention of in depth study of a particular subject of student's liking in greater detail but in the larger context of overall scope of Architecture syllabus at undergraduate level. This will give students an opportunity to develop their skills in a subject they may opt, to make their career in future. Architectural practice is a team effort in which persons of different skills in varied fields are required such as Concept Developers, Technical / Working Drawing Experts, Specification Writers, Quantity Surveyors, Project Managers, Contract Managers, Interior Designers, Architectural Photographers, Architectural Journalists, Signage and Graphic Designers, Energy Consultants, Building Services Consultants, Making Managers etc. In depth study in Electives will prepare the technical base of the students. Since the Architectural Projects in future are going to be very complex, the vital need of support staff in Architectural Practice will be fulfilled and the student's skills and talent will be effectively used.

COURSE OUTLINE

Individual College may offer topics depending upon the availability of experts and resource material. The Colleges will have the opportunity to focus on particular group of topics according to overall philosophy and mission statement of the College. The probable management elective topics are as follows :

1. Project Management.
2. Energy management.
3. Architectural legalities.
4. Architect's office management.
5. Disaster management.
6. Risk management.
7. Entrepreneurship Development and Total Quality management.
8. Information Technology in Architectural profession.
9. Financial Management and Budgeting

SUBMISSION DETAILS :

The students are expected to study the selected topic in depth, including the basic principles, and their application in built projects by undertaking case studies, necessary site visits, and collecting all the relevant information to make it an exhaustive study and present it in a well documented format having A-3 / A-4 size papers properly filed with a signed certificate from concerned Teacher / Expert stating that the study was carried out under his guidance and countersigned by the Principal / Academic Co-ordinator.

Subject Code : **513423 ALLIED ELECTIVE** (Sessional)

Teaching Scheme		**Examination Scheme**	
Lecture Periods per week	1	Term II	
		Sessional (Internal)	25 marks (for Term II)
		Sessional (External)	25 marks (for Term II)
Studio Periods per week	1	Viva	nil
		Total sessional marks for both terms	50 marks
Total Contact Periods per week	2	Paper	nil
		Total Marks	50 marks

AIMS AND OBJECTIVE

The subject of Electives has been introduced in syllabus with specific intention of in depth study of a particular subject of student's liking in greater detail but in the larger context of overall scope of Architecture syllabus at undergraduate level. This will give students an opportunity to develop their skills in a subject they may opt, to make their career in future. Architectural practice is a team effort in which persons of different skills in varied fields are required such as Concept Developers, Technical / Working Drawing Experts, Specification Writers, Quantity Surveyors, Project Managers, Contract Managers, Interior Designers, Architectural Photographers, Architectural Journalists, Signage and Graphic Designers, Energy Consultants, Building Services Consultants, Making Managers etc. In depth study in Electives will prepare the technical base of the students. Since the Architectural Projects in future are going to be very complex, the vital need of support staff in Architectural Practice will be fulfilled and the student's skills and talent will be effectively used.

COURSE OUTLINE

Following is a list of topics from which individual Colleges may offer few topics depending upon the availability of experts and resource material. The Colleges will have the opportunity to focus on particular group of Electives such as Design, Technology, Management or Allied group, according to overall philosophy and mission statement of the College. The probable Allied Elective topics are as follows :

1. Visual Communication
2. Fine Arts and Graphics
   Advanced Computer
3. Architectural Journalism
4. Graphics
5. Architectural Conservation
6. Photography
7. Applied Psychology in Arch.
   Housing Finance and Building
8. Applied Sociology in Arch.
9. Economics

SUBMISSION DETAILS :

The students are expected to study the selected topic in depth, including the basic principles, and their application in built projects by undertaking case studies, necessary site visits, and collecting all the relevant information to make it an exhaustive study and present it in a well documented format having A-3 / A-4 size papers properly filed with a signed certificate from concerned Teacher / Expert stating that the study was carried out under his guidance and countersigned by the Principal / Academic Co-ordinator.