

CURRICULUM

(Beginning July 2001, the faculty of the College undertook a thorough review of the existing curriculum, which has been in operation for the last three years. During this review certain anomalies were located and it was found that with a little restructuring and regrouping of courses and a few modification these can be corrected without a major overhaul of the whole. The faculty, through extended deliberation evolved a theme, "Context Sensitive Architecture", for the College to focus its academic activities by. This also informed the restructuring of the curriculum).

A curriculum for a school of architecture represents the pedagogical philosophy of the school, its understanding of the state of architectural profession within the cultural and ideological context in which it locates itself and the direction in which it wants to grow in the near future. It thus states not only the assumed relationship between Man and the places of his habitation but also the relationship between various components of the curriculum as they are informed by the former. This is implied in its structure, which shows the inter-linkages between courses, stating emphasis and points of view.

The Contexts

- **In the context of current discourse in architecture.** In the search for meaning and inspiration (as distinguished from the production of space as an economic commodity), many of the dictates of Modernism are in disrepute. How do we assert the legitimacy of a design action in the face of rejecting both universalistic and relativistic approaches? We maintain that architecture, as lived experience of specific places, is validated by its full and responsive engagement with its concrete situation.
- **In the context of practice.** Our view of practice is that each design situation is replete with positions, contentions and contingent prejudices. A design explores these situations and seeks to realize their full potential. From each situation, the architect learns how better to approach, and open up the next one. Thus practice is seen not as "applied theory", as absolute constructs applied to each situation, but as continuously evolving action contingent upon reflection on the possibilities inherent in that situation.

- **In global context.** The conditions in which architecture is produced are changing in important ways the world over and India cannot remain isolated for long. We live in an era that increasingly demands we get the most from the time, energy, and money invested in every project. Even as more is demanded of architects, we are encountering innovations that may open up new possibilities for design and building. There are new materials, energy systems and construction techniques. Computing and information sciences offer new possibilities not only for representing and analyzing buildings and places as well as new forms of architecture but also a new and unpredicted way of looking at the world around us. New management theories provide critical insights into the conditions within which projects are conceived, organized and executed. We seek to understand the role and value of these innovations in making architecture; at the same time, testing these innovations within architecture will inevitably change them.
- **In Indian context.** India has never been part of the mainstream of the Modern Movement. Only after independence that Indian architects started looking for an architectural identity for modern India, with the explicit dilemma of trying to modernize in light of the traditional values which are still held valid and at the same time reinterpreting tradition in light of the aspirations to be modern. This dilemma is even more acute as the old brahminical order is increasingly being challenged and the conventional norms of appropriateness as well as references do not hold. The pedagogy must open up possibilities of exploration at the same time to guard against "anything goes".
- **In the context of Goa.** Goa is a wonderful cultural and religious amalgamation of Indian (Hindu and Muslim) and European (Portuguese Catholic) traditions. Since liberation from the colonial rule Goa has maintained a distinct cultural identity. While on one hand this has helped preserve important traditions, it has also, on the other hand, made a lot of Goans "Goa-centric" with at best limited exposure to trends and debates taking place in rest of the country and globally. The College will have to broaden the horizon of students while at the same time retain the strong anchor provided by Goa.

General Issues The above listing of several contexts led us to the following General issues underlying Architectural education towards which we have oriented our curricular restructuring.

- **“Design as an intervention in an existing situation”**. The Existing Situation will mean not just the physical site alone but will include the cultural, intellectual, social and technological milieu within which architecture happens.
- **Architecture is a cultural construct**. Study of Humanities is important to understand cultural plurality and each culture’s response to place-making.
- Appropriateness of **technology as one of the design determinants**. The inherent qualities of materials and their design potential will be the focus of material studies. Technology must emphasize respect for the Laws of Nature.

It is these broad issues that have formed the basic thrust of architectural education and the direction at the Goa College of Architecture

We call it ***Context Sensitive Architecture***

Goals The curriculum thus aims to address the timeless qualities of Architecture on one hand and the need, on the other hand, to reinterpret these in the context of Goa at the beginning of the 21st. century. Specifically it aims to

- To arrive at a critical balance between Aesthetics, Technology and Humanities for a well-rounded and ethical professional training.
- To develop a concern for environment, both natural and cultural, and the impact buildings have on them.
- To develop necessary confidence among students, firmly grounded in technical skills and an understanding of the social forces around us, to deal with rapidly changing demands of the profession.

Structure “Learning by Doing” remains the primary method of architectural training. Design studio sequence thus forms the main “spine” of the curriculum. This is being supported by four sets of “Body of Knowledge” courses in addition to a series of electives. These are;

1. Making of Architecture, consisting of
 - Materials + Construction
 - Forces + Structure
 - Building Services and
 - Environmental Sciences
2. Representing Architecture consisting of
 - Visual Communication
 - Computing and
 - Technical Drawings
3. History and Theory of Architecture consisting of
 - Humanities
 - History of Architecture and
 - Theories and trends in Architecture
4. Practice of Architecture consisting of
 - Professional Practice and Ethics
 - Cost estimation
 - Specification and Quality Controls and
 - Project Management
5. Electives
These are various courses to broaden the horizon of the students.

Credits

The course is of 5 years – 10 semester- duration. Each semester is of approx. 16 weeks and carries a load of 24 credits, where one credit is equivalent to 1 lecture hour/week in theory subjects and 1.5 contact hours for studio, workshops and laboratory base courses. Each semester consists of a maximum of 8 courses including Design studio. The accompanying chart shows the distribution of courses and credits for each. In all each student has to earn a total of 240 credit and take part in a minimum of three Study Tours to be eligible for the award of the degree of B.Arch.

The total ten semesters are organized in two parts. The first part consists of the first six semesters and the remaining four semester constitute the second part. During the first part a student may accumulate a backlog of no more than 5 credits in electives and non-core subjects, i.e. if a student clears the core courses (Studio and Construction) but has not cleared some of the other course, s/he can still go to the next semester provided the credit deficit is no more than 5. However, all such backlog will have to be cleared prior to the

end of 7th. semester. In principle, thus, while a student has to earn on an average, 24 credits per semester, this allows him/her flexibility to pace the study.

Assessment

Students' performance is continuously evaluated through programs, projects, tests, quizzes and periodic assessments of sessional work. In the final semester end assessment, this continuous assessment is given 50% weight and 50% weight is assigned to end of semester examinations, Juries, crits, viva-voce, assignments or papers.

In order to successfully clear, and earn credits for, a course a student must obtain at least 50% performance level for that course.

The work of students will be awarded grades on the basis of "Grade-point average". Each grade represents a level of performance as indicated below.

A	80% and above
B	70% to 80%
C	60% to 70%
D	50% to 60%

Within each of the above four grades there may be three sub-grades (i.e. A₊, A and A₋) to distinguish between subtle variations in the work. No further gradation or "marks" will be given to the work presented by the students. All the above grades are entitled to receive Credits.

E	Incomplete*
F	49% or less (to repeat)

Incomplete - During the continuous assessment throughout the semester, if a student has acquired an average of any one of the four grades (A,B,C, or D) but, due to his/her inability to satisfactorily complete the work at the final stage, is likely to be in the next lower grade. Such students are given reasonable extra time to complete the work. However, in such cases, their final marks will not be higher than the lowest in that grade.

Due to reasons outside the control of a student (sickness etc.), s/he is unable to complete the work, reasonable extra time may be given at the discretion of the teacher, to complete the work and the above will not apply.

During the continuous assessments during the progress of the work, the grade “E” will not be applicable.

Scheme of Assessments

1. The Credit System replaces the current marking system as the method of assessment for all ten semesters.
2. All subjects are categorized as either Lecture based or Project based (a few use both formats). All Project based courses are assessed continuously throughout the semester at various stages of the projects. Each assessment will be based on a series of criteria, such as 1) conceptual clarity, 2) ability to express ideas through required medium, 3) use of information gained in other courses, 4) resolution, etc). These will be jointly arrived at by the team of the faculty in consultation with the Principal (these criteria may be different for each stage of the project depending upon the focus and emphasis of that particular stage). The final, end of semester, assessment will take all these periodic assessments into consideration to assess the progress of the student.
3. The Lecture based courses will be assessed through at least two tests or quizzes in addition to the final examination or assignment paper (approx. 1500 to 2000 words). In case of an assignment paper, the topic/s of the papers will be declared six weeks before due date and students will be encouraged to undertake research through library, internet etc. The teacher in charge will help and guide the students in articulating their ideas. The final assessment will be based on a series of criteria as above.
4. The Goa College of Architecture will constitute an internal 3 members Examination Committee from among the full-time faculty. This committee will be responsible for 1) scheduling of all examination, 2) co-ordination with Goa University for semester 9 and 10 examination and 3) final tabulation and verification and preparation of grade sheets of all examination. The Committee will be chaired by a senior faculty not below the rank of Asst. Prof. The Committee may co-opt other faculty for any specific examination related work if needed.

Only for semesters Six and ten, Goa University will appoint the panel of examiners, including the external examiners, from among the names suggested by the Board of Studies.

5. In the case of College Examinations, the assessment sheet is transcribed, signed by the Principal, and displayed on the College Notice Board.
6. Goa University will constitute panel/s of assessors to conduct viva-voce evaluation for semester 6 & 10 only. The number of panels will be determined by the number of students. In general each panel will assess @ 15-20 students (not more than 10 per day).
7. Each panel will have at least two internal and one external members. Internal members will be from the teaching faculty (Full-time or Visiting) of the Goa College of architecture and one of the Internal, full-time, members will be the Chairperson of the panel. In general the relevant Ordinances of the Goa University will apply for the selection of members of both internal and external panels.
8. For **Semester 6** the panel/s will assess, within the studio project, the integration of all theory courses of the semester into the project work consisting of all 24 credits. The related theory courses will be assessed internally only.
9. If more than one panel is constituted, there will be a 'harmonization' session after all panels have arrived at their conclusions. The Principal will chair this session. During this process of awarding the 'external' grades, the panel/s will not be informed about the 'internal' grades. Only after the 'external' grades have been finalized and recorded with signatures of the experts, that the following will commence.
10. The Examination Committee of GCA will prepare the final grade sheet consolidating all internal as well external grades (see the sample grade sheet). This will be signed by the chairperson/s of the panel and the Principal. This grade sheet will be forwarded to the Goa University who will certify and prepare the 'Result Sheet' in their standard format and return it to the College for display.
11. For **semester 10**, where the students are doing independent work each, the constitution of panel/s by Goa University and the process of assessment will be as follow;
 - There will be one common panel for all **design projects**. It will consist of two architects of eminence not connected with the Goa College of Architecture (preferably from outside Goa), Principal of GCA, two senior members of the teaching

faculty (one may be visiting faculty) and the guide of the project under review. The Principal will chair the panel.

- A similar panel will be constituted for the **Dissertations**. However, the profiles of the external expert will depend upon the topics of dissertation on hand at any given semester and will be suggested by GCA Board of Studies from time to time.
- The assessment will be at three levels. 1) Internal (guide's grades). This will be given to the Examination Committee in sealed envelope and will carry 50% weightage. 2) Pre-presentation grade, The panel will review the work on display for its clarity and completeness and grade it before presentation by the student. This will carry 20% weightage. And 3) Presentation and discussion grade. This will carry the remaining 30% weightage. During this process of awarding the 'external' grades, the panel/s will not be informed about the 'internal' grades. Only after the 'external' grades have been finalized and recorded with signatures of the experts, that the compilation of final grade sheet will be carried out by the Examination Committee of GCA.
- One copy each of the dissertation documents will be sent to the experts at least a month before the assessment session for them to thoroughly read and make their pre-presentation comments / grades.

GCA will prepare the grade sheet (as indicated by the sample attached). This grade sheet will be forwarded to the Goa University who will certify and prepare the 'Result Sheet' in their standard format and return it to the College for display".

SEMESTER ONE

COURSE NO.	COURSE NAME	CREDITS
<u>MAKING OF ARCHITECTURE</u>		
111	Materials and Construction	2
112	Building Construction	2
113	Fundamentals of Structure	3
<u>REPRESENTING ARCHITECTURE</u>		
211	Drawing, Painting, Sketching	3
212	Solid Geometry + Tech. Dwgs.	4
213	Design in Space	2
<u>SYNTHESIZING ARCHITECTURE</u>		
511	Studio I (Making of Space)	6
<u>HISTORY/THEORY OF ARCHITECTURE</u>		
311	Culture and Built Form	2

Total credits=24

Duration 15 + 1 weeks

MAKING OF ARCHITECTURE**COURSE NO. 111 Materials and Construction**Non-Core course. Lecture based.

CREDIT 2

Emphasis Understanding of various materials, basic principles of construction and simple elements of buildings and their behavior.

Content

- Basic materials of construction such as masonry units, wood, conc. Etc.
- Their properties and peculiarities.
- Primary elements of load bearing construction.
- Foundation, walls, roofs etc. and principles of their construction.

Method Class discussions with case studies, visual presentation and on site studies.

COURSE NO. 112 Building Construction ICore course. Lecture based.

CREDIT 2

Emphasis Understanding of materials and building systems in a broad overview.

Content

- Basis systems of construction through case studies.
- Behavior of different elements of construction systems in Relation to properties of materials.

Method Class discussions with case studies, visual presentation and on site studies.

COURSE NO. 113 Fundamentals of Structures INon- Core course. Lecture based.

CREDIT 3

Emphasis Basic structural systems in response to the forces of nature acting upon buildings.

Content

- Structural understanding of natural forms and their relationship with Man-made forms.
- Functions of structures. Primary and secondary forces acting on structures. Gravitational force, Live load, wind and temperature variations. Types of supports and their characteristics.
- Analysis and design.
- Factor of safety.
- Strength, stiffness and stability
- Study of structures through models and testing them for given load.

Method Class presentation/discussions with complemented with models and on site studies.

Focus Developing an intuitive understanding of structures.

REPRESENTING ARCHITECTURE**COURSE NO. 211 Representation I (Drawing, Painting, Sketching)**Non-ore course, Project base

CREDIT 3

Emphasis To develop basic design and expressional skills and understanding of nature of space.

Content

- Visual and perceptual skills.
- Observation and expression
- Expression through drawings and models

Method Two dimensional and three dimensional exercises. Sketch, object and model making. Working with various material (paper, plaster, sand etc.)

Design of simple artefact of day-to-day use and abstraction.

Projects

COURSE NO. 212 Solid Geometry and Technical Drawings

Non-core course. Project based

CREDIT 4

Emphasis Importance of technical drawings as medium of communication as basic vocabulary in architecture. Learning skills and techniques to think and represent elements of design through 2D and 3D geometry. To develop understanding of three dimensional objects and their surfaces during intersections.

Content

- Getting acquainted with necessary instruments of drawing. Learning to draw straight and curve lines with different qualities.
- Descriptive Geometry, study of reference planes.
- Meaning of terms “Plan” and “Elevation” and using them for drawing simple objects through orthographic projections of lines, planes and solids.
- Methods of drawing views of simple 3D shapes and their projections.
- Sections of simple geometric solids and their combinations
- Complex 3D shapes and their projections
- Expression through drawings and models
- Representation through technical drawings

Method Two dimensional and three dimensional exercises. Sketch, object and model making. Orthogonal projection through drawings. Working with various material (paper, card-boards etc.)

SYNTHESIZING ARCHITECTURE**DESIGN STUDIO****COURSE NO. 511 Studio 1 (Making of Space)****CREDIT 6****COURSE NO. 213 Design in Space****CREDIT 2**

(These two courses may be combined)

Core course. Project based

Projects

- Simple intervention in wooded landscape
- Places with activities familiar to students.
- Simple connection between existing buildings.
- Intervention in a public (urban) park surrounded by buildings.
- Intervention in a large indoor space such as a studio.
- Etc.

Focus What can we propose / support technically, ethically, morally? In what way the existing place has become better after our intervention?

HISTORY AND THEORY OF ARCHITECTURE**COURSE NO. 311 Culture and Built form**Non-core course. Lecture based.**CREDIT 2**

Emphasis Architecture is a cultural construct and an expression of a culture's underlying value systems.

Content

- Society, culture and its co-relation to built forms
- Levels of social organizations and evolution of various social groups over time.
- Urban sociology, Social anthropology
- Art as an expression of culture
- Aspects of literature, performing arts – theatre, dance, music- and plastic arts –painting, sculpture, film- in terms of basic characteristics and development of each field and first hand experience of some work.

- Conveyed meaning and communication through symbols in vernacular and classical cultures in India and other parts of the world..

Method Class presentations, project work, group studies.
Comparative analysis of different cultures and their expressions.

SEMESTER TWO

COURSE NO.	COURSE NAME	CREDITS
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MAKING OF ARCHITECTURE

121	Building Construction II	2
122	Construction Details	2
123	Fundamentals of Structure II	3

REPRESENTING ARCHITECTURE

221	Drawing, Painting, Sketching II	3
222	Tech. Dwgs. + Computing	4
223	Design in Space II	2

SYNTHESIZING ARCHITECTURE

521	Studio II (Structuring of Space)	6
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HISTORY/THEORY OF ARCHITECTURE

321	Design through Ages	2
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Total credits=24

Duration 15 + 1 weeks

MAKING OF ARCHITECTURE**COURSE NO. 121 Building Construction II**Core course. Lecture based.

CREDIT 2

Emphasis Understanding of elements of construction and constructional systems in Load Bearing Constructions.

Content

- Walls, floors, roofs using simple materials and simple construction systems. Openings in walls and floors. Materials such as Brick, stone, Conc. Blocks and Mud blocks. Framing of openings using natural materials. Simple finishes for walls and floors.
- Construction of simple staircases.
- Concern for appropriateness of materials to context.
- Case studies illustrating above principles.

Method Class discussions with case studies, visual presentation and on site studies.

COURSE NO. 122 Construction DetailsCore course. Project based.

CREDIT 2

Emphasis Understanding of elements of construction and constructional systems in Load Bearing Constructions.

Content

- Walls, floors, roofs using simple materials and simple construction systems. Openings in walls and floors. Materials such as Brick, stone, Conc. Blocks and Mud blocks. Framing of openings using natural materials. Simple finishes for walls and floors.
- Construction of simple staircases.
- Concern for appropriateness of materials to context.
- Case studies illustrating above principles.

Method Simple assignments requiring drawings and detailing of situations illustrating principles studied in Course 121.

COURSE NO. 123 Fundamentals of Structures IINon-Core course. Lecture based.

CREDIT 3

Emphasis Basic structural systems in buildings and behaviour of materials

Content

- Introduction to basic structural systems such as post-beam, bearing wall systems, trusses, rigid frames etc. and their structural behaviour. Distribution of load through elements of the systems.
- Simple geometric forms and their structural behaviour. Cuboidal and prismatic forms with symmetrical and asymmetrical layouts.
- Working out structural systems and their layout for small buildings.

Method Class presentation/discussions complemented with models and on site studies.

Focus Developing an understanding of structural integrity in buildings.

REPRESENTING ARCHITECTURE**COURSE NO. 221 Representation II (Drawing, Painting, Sketching)**Non-Core course. Project based.

CREDIT 3

Emphasis Development of skills of design and design expression.

Content

- Complex skills of Observation, design and expression.
- 3D projects – developed through models, sketches, drawings, rendering, abstract compositions. Abstractions used as basis for development of ideas.
- Human figure studies in line, shade and sculptural mass.
- Abstractions of vernacular built forms of various cultures to understand the underlying basic design ideas.

Method Two dimensional exercises exploring various complex objects.

COURSE NO. 222 Technical Dwgs + ComputingNon-Core course. Project based.

CREDIT 4

This course will be in two parts.

Emphasis representing objects through 2D and 3D geometry.

Part one

Content

- Sciagraphy and methods of representing it in 2D projections.
- Applying sciagraphy in 3D geometrical projections especially isometric projections
- Perspective and relatively realistic representations. Introduction to concepts such as station point, picture plane, eye level, center of vision, cone of vision, vanishing point etc.
- One point and two point perspectives.

Part two COMPUTER AIDED DRAWING: 2D COMPOSITION:

- Fundamentals of Computer Systems, Hardware, Peripheral Devices, OS, Application Software, Fundamental Basis of Computation, Overview of Tessellation in 2D and 3D.
- Shape representation, Construction of Grids, uniform / non-uniform, ortho / free transformations
- Diagrammatic Construction with representation of distance, scale, proportion, symmetry, order, composition:
- 2D DRAWING
 - Coordinate Space and metric, Geometric Primitives and Symbols, Object Properties, Basic Transformations absolute and referential, Editing, Segmentation by Color, layering and grouping, Printing / Plotting.

Method Two dimensional and three dimensional exercises. Sketch, object and model making. Working with various material (paper, plaster, sand etc.) Computer simulation.

Projects Three dimensional products involving the above principles.

COURSE NO. 223 Design in SpaceNon-Core course. Project based.

CREDIT 2

Emphasis Intervention in existing space.

Content

- Gaining understanding of a place by physical occupation and extensive sketching.
- Bridging the distinction between man-made and natural space.
- Identifying basic space making elements- natural as well as man-made, such as ground plane, walls, columns, tree trunks, foliage, etc.

Method Working in real full scale space, such as out door yards, wooded sites, large halls (indoors) with simple planer and columnar elements to articulate habitable space space.

Computer simulation to experience “being” inside a space.

Projects Three dimensional products involving the above principles.

SYNTHESIZING ARCHITECTURE**DESIGN STUDIO****COURSE NO. 521 Studio 2 (structuring of space)**Core course, Project based

Credits 6

Emphasis Organizing and Structuring of space in a building.

Content

- Meaning of the term “structure” as organizing principle in a form.
- Structure as order.
- Light, Movement and Gravity as determinants of structure.
- Ability to see abstraction in a corporeal form of a building.
- Program interpretation
- Relationship between materials and structural systems.

Method Simple projects involving combinations of various spaces. Spatial organizations of simple to medium level complexities.

Mandatory
Inputs Program, Site analysis, Area diagram, Principles of abstraction. Site-Location-form-landscape correlation.

Skills
Developed Analysis, Overlays, Spatial structural systems, Alternative models of form, use of different 3D media, Representational techniques.

Projects Design of small institutions with spaces of various sizes.

HISTORY / THEORY OF ARCHITECTURE

COURSE NO. 321 Design through Ages

Non-Core course. Lecture based.

CREDIT 2

Emphasis Design as a cultural phenomena prevalent in all societies.

Content

- An overview of the history of design of the built environments in pre-rational and oral societies from the beginning of the recorded history and leading upto contemporary times.
- Various notions of spatial and temporal habitation, Man-Nature relations will be explored to highlight the idea that architecture is a cultural construct.
- Evolution of built forms as result of society, culture, climate, land and technology manifested in attitudes to spatial and formal abstraction, landscape, structural construction and material order, symbols and meanings.
- Comparison with Western, Chinese, Japanese and African thoughts.

Method Lectures (illustrated with slides) supplemented with student's assignments and presentations.

SEMESTER THREE

COURSE NO.	COURSE NAME	CREDITS
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MAKING OF ARCHITECTURE

131	Building Construction Iii	2
132	Construction Details ii	2
133	Structure I	2
134	Ecology & Env. Science	2

REPRESENTING ARCHITECTURE

231	Tech. Dwgs. + Computing	4
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SYNTHESIZING ARCHITECTURE

531	Studio III (Determinants of Space)	6
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HISTORY/THEORY OF ARCHITECTURE

331	History of Architecture	2
332	Theories of Architecture	2

ELECTIVES

Choice of following areas		2
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100	Env. Science
200	Drawing, Painting, Graphics, Photography etc.
300	Social Science, Humanities

Total credits=24

Duration 15 + 1 weeks

MAKING OF ARCHITECTURE**COURSE NO. 131 Building Construction III****Core course. Lecture based.****CREDIT 2**

Emphasis Understanding of elements and principles of construction and constructional systems with industrial materials in framed constructions.

Content

- Footings, walls floors, roofs in materials like concrete, steel and composite materials like R.C.C.
- Framing of openings in manufactured materials such as steel, aluminium etc.
- Elements of vertical and inclined movements.
- Finishes of walls, floors roofs with simple manufactured materials.

Method Class discussions with case studies, visual presentation and on site studies.

COURSE NO. 132 Construction Details II**Core course. Project based.****CREDIT 2**

Emphasis Understanding of elements and principles of construction and constructional systems with industrial materials in framed constructions.

Content

- Footings, walls floors, roofs in materials like concrete, steel and composite materials like R.C.C.
- Framing of openings in manufactured materials such as steel, aluminium etc.
- Elements of vertical and inclined movements.

- Finishes of walls, floors roofs with simple manufactured materials.

Method Simple assignments requiring drawings and detailing of situations illustrating principles studied in Course 131

COURSE NO. 133**Structures I**Non-Core course. Lecture based.

CREDIT 2

Emphasis To develop an understanding of basic requirement of stability, strength of material and behavior of basic structural elements and their importance in structural system.

Content

- Conditions of equilibrium of concurrent coplanar forces, methods of projections. Funicular polygon, Graphical method of determining the resultant of a given system of forces. Method of moments.
- Center of gravity, determining the centroid of simple figures. Moment of inertia, its application to sections subjected to bending, determining M.I. of simple and compound sections.
- Types of trusses, their uses, suitability and limitations, method of analyses a truss (graphical & analytical).
- Assumption in strength of materials, basic terminology, brief history of strength of materials.
- Bars subjected to change in temperature, bars of non-uniform cross-section.
- Concept of the shear force and the bending moment, S F and B M diagram for cantilever and simply supported beams with various types of loadings. S F & B M diagrams for beams with overheads solution of simple problems. Importance of S F & B M diagrams in the selection of a structure system - Discussion on case studies.
- Pure Bending stress & its importance, derivation of basic equation, solution of simple problems.
- Combined direct and bending stresses, Kern and its importance, solution of a few practical problems.

- Brief discussion on stability, buckling of columns, short and long columns, Euler's and buckling load effects of end conditions on the buckling load. Solutions of a few simple problems, ways of increasing the capacity of a long column.
 - Deflection and its importance, code provisions, study of the deflected shape of simple structures. Solutions of problems.
 - Concept of shear stress, average and maximum shear stress. Horizontal shear stress and its variation across the cross section of the beam.
 - Sections made up of more than one material (composite sections), their uses and their advantages, assumptions made in the theory of composite sections, derivation of basic equations. Solution of simple problems.
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COURSE NO. 134 Ecology & Env. Sciences

Non-Core course. Lecture based.

CREDIT 2

Emphasis Building and Environmental Climatology.

Content

- Built environment, conditions, impact and issues of climatic balance in traditional and contemporary built environments.
- Examples from different regions in India and other parts of the world, issues of ecological balance.
- Implications of climatic forces in nature of spaces and forms, patterns of organization, and elements of built form at individual building and collective form. Study of Passive Environmental Control Mechanisms in Traditional or Modern Built Environment.
- Building climatology - Building climatological site analysts, application of comfort diagrams, introduction to basic thermal units, theory of heat flow, heat transmission, thermal properties of materials, human heat balance. Physiological comfort, outdoors and indoors, heat *flow* within buildings, steady state conditions and periodic *flow*, thermal performance of building elements, sun protection of buildings. Heat control, solar orientation, shading devices, radiation, outdoor-indoor ventilation, solar energy and its technical applications. Studies through built environment, case analysis, theory and its application, models and testing.

HISTORY / THEORY OF ARCHITECTURE

COURSE NO. 331 History of Architecture I

Non-Core course. Lecture based.

CREDIT 2

Emphasis Architecture as part of material culture in small-scale early agro-urban settlements. Evolution of architectural language.

Content

- Indus valley culture, Buddhist architecture and development upto Gupta period. City building, large scale organizations, urban form, dwelling, social institutions.
- Pre-colonial history of Goa and Konkan region explored through its architecture and settlements.
- Comparison with Mesopotamia, Egypt, Greece, Rome, China and central American civilizations to understand causative forces. Underlying values re. relationships between Man, Nature and Society.
- Cities and early religious architecture in India. Rock-cut architecture and early temple forms.
- A comparison to the urbanism and architecture of Greece and Rome.
- Selected case studies to illustrate the above.

Method Class presentations, project work, group studies.
Comparative analysis of different cultures and their expressions.

COURSE NO. 332 Theory of Architecture INon-Core course. Lecture based.

CREDIT 2

Emphasis An overview of various theoretical postulates in architecture.

Content

- Various attempts to lay down general principles of architecture throughout history will be analyzed to understand their connection with prevailing ideas and philosophies.
- Vitruvius and Leon Batista Alberti
- Comparison of above with Vastu-Shashtra.
- 18th. and 19 cent. Theories
- 20th. cent. Theories

- Universalistic Modernism Vs. Regionalism

REPRESENTING ARCHITECTURE

COURSE NO. 231 Technical Drawing + Computing

Non-core course. Project based.

CREDIT 4

Emphasis Technical drawings and computer generated representation as designing tools. Computer modeling and visualization as a way of evaluating design alternatives.

Content

- 3D Form / Space, Structure, Planes and Solids, Grids,
- Spatial and Formal Units.
- Definition of - Space, Articulation, Circulation, Movement, 3D Viewing, Orthographic and Perspective, projection, Camera control, Viewpoint, Coordinate Systems orientation and Transformations.
- 3D construction from profiles, extrusion, revolution, interpolation, Surface Modeling, Elements, Planar and curved surfaces, Model segmentation by grouping.
- Solid Modeling, Addition, Subtraction and Intersection of solids
- Construction of architectural models as a spatial database of formal elements and structure.

SYNTHESIZING ARCHITECTURE

COURSE NO. 531 Studio 3

Core course. Project based

Credits 6

Emphasis Structure as one of the major determinant of space and form.

Content

- Structure and Construction as disciplines that evolve making of space, structural systems as choices based on program, space, and form character.
- Study and Analysis of Natural and Man made structural systems, correlation between function, structure and form.

Different structural models in Building systems. Site, building, space, structure, form, character correlations.

- Light, view and sensory qualities.
- Models as analytical tools of decision making, abstract sketches to represent basic nature of thought, collage techniques, 3D perceptual quality in sketches.
- Space Structure correlation

Projects Exercises in basic spatial and structural systems (short project) using a limited set of materials, which in turn determine the structural systems

Design of a small institution to explore design parameters identified (Main Project).

ELECTIVES

CREDITS 2

Non-core course. Lecture/Project based

COURSE NO. 130 Env. Science

COURSE NO. 230 Drawing, Painting, Graphics, Photography etc.

COURSE NO. 330 Social Science, Humanities

SEMESTER FOUR

COURSE NO.	COURSE NAME	CREDITS
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MAKING OF ARCHITECTURE

141	Building Construction IV	2
142	Construction Details III	2
143	Structure II	2
144	Ecology & Env. Science II	2

REPRESENTING ARCHITECTURE

241	Tech. Dwgs. + Computing	4
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SYNTHESIZING ARCHITECTURE

541	Studio IV (Dwelling)	6
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HISTORY/THEORY OF ARCHITECTURE

341	History of Architecture II	2
342	Theories of Architecture II	2

ELECTIVES

	Choice of following areas	2
	140 Env. Science	
240	Drawing, Painting, Graphics, Photography etc.	
340	Social Science, Humanities	

Total credits=24

Duration 15 + 1 weeks

MAKING OF ARCHITECTURE**COURSE NO. 141****Building Construction IV**Core course. Lecture based.

CREDIT 2

Emphasis Special conditions and specific responses to building construction.

Content

- Foundations on expansive soils, construction principles in special conditions such as earthquake zones.
- Decorative and protective finishes for walls, floors, roofs, etc. Using of industrial products in building construction.
- Provision for vertical movements using composite materials in various structures.
- Case study illustrating above for load bearing and framed structure.
- case studies, design oriented exercises and hard-line

COURSE NO. 142**Construction Details III**Core course. Project based.

CREDIT 2

Emphasis Understanding principles of composite system of construction in different building materials.

Content

- Construction' and behavior of composite system of construction using materials already learnt in previous component.
- Construction methods and elements in composite systems with reinforced concrete as major construction semesters.
- Footings, walls, roofs, floors, openings, stairs, etc. in composite systems of construction, exposure through case studies.
- Design oriented exercises and hard-line drawings.
- Basic principles of services - water supply and drainage.
- Decorative and protective finishes for different building elements.
- Application of principles of services and decorative and protective finishes for service areas like toilets.
- Application of composite system of construction of special conditions.

COURSE NO. 143**Structures II**Non-Core course. Lecture based.

CREDIT 2

Emphasis

1. Understanding of behavior of advanced elements in structure.
2. The study of **steel as structural** material and the role of properties of material and behavior of elements in evolution of structural system.

Content

- Determinate and indeterminate structures, finding indeterminacy of structures. Advantages and disadvantages of indeterminate structures.
 - Analysis of indeterminate structures. Introduction to stiffness and distribution factors, introduction to moment distribution factors, introduction to moment distribution method.
 - Indeterminacy of a frame, comparison of post and lintel system and portal frames. Importance of portal frames in resisting horizontal forces.
 - Arch as a curved element. Arch in history, efficiency of an arch. Three hinged arch. Simple problems to illustrate the importance of the shape of an arch, rise end conditions and loading.
 - Steel as a structural material, structural systems in steel with case studies.
 - Analysis and design of steel girders & columns using IS-800 & handbook of steel sections.
 - Designing & detailing the bolted connections, design of simple welded connections,
-

COURSE NO. 144**Ecology & Env. Sciences**Non-Core course. Lecture based.

CREDIT 2

Emphasis Light and sound, theory and application to building design.

Content

- Lighting in buildings, light and its sources, lighting criteria, the visual field, day lighting, prediction methods.

- Artificial lighting, lighting levels for various activities, calculations for lighting levels.
- Building Acoustics - Properties of sound, process of hearing, behavior. of sound,, room acoustics, noise control outdoor and indoor; sound insulation, noise criteria of building materials, prediction methods and calculations.
- Noise control, materials for sound insulation, testing room acoustics, reverberation time in auditory.
- Testing under laboratory conditions, application of computer techniques.
- Case study and demonstration in building design with suitable conditions.

REPRESENTING ARCHITECTURE

COURSE NO. 241 Technical Drawing + Computing

Non-Core course. Project based.

CREDIT 4

Emphasis

1. The application of computes based simulation tools to studying light and its behavior in the design of building configuration. .
2. The course prepares the students to include response to light as a fundamental premise that integrates the concepts of space, form, geometry, materials, perception and visual comfort and further allows an exposure to the concepts of environmentally conscious design decisions.

Content

- Vision, Human Factors, perception, Light quantification, Lighting technology and architecture. Lighting Design.
- Simulations of Building morphology and systems of space and structure. Modeling simulations incorporating shape and formal grammars, Spatial interpretation, modification responsive to light.
- Formal and spatial grammars responsive to the phenomenon of light.
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SYNTHESIZING ARCHITECTURE**COURSE NO. 541 Studio 4 (Dwelling)**Core course. Project based

Credits 6

Theme Dwelling as a expression of culture and a society's sense of place.

Emphasis Dwelling and building for family living. Expressions specific to Indian and Goan culture.

Content

- Occupation and meanings of various spaces within the dwelling.
- Dwelling and its immediate external context. Street, "maholla" etc. issue of changing lifestyles.
- Individual and cluster scale design projects to form a small community.

Inputs

- Field studies, analytical study of indigenous settlements, to understand use pattern, cultural elements, climatic elements of space and form.
- Understanding of Appropriate Technologies and Methods of Construction. Dwelling and community - Unit and Cluster combinational principles.
- Field Survey, Documentation, analytical studies, Generalizations and interpretations. Building and constructional system models.

Focus Integration of Cultural, Geographical and Historical patterns on the built forms.

Projects Single dwelling and small cluster (10-20 units) scales.

HISTORY / THEORY OF ARCHITECTURE

COURSE NO. 341

History of Architecture II

Non-Core course. Lecture based.

CREDIT 2

Emphasis This course stresses architecture as a codified knowledge system representing the prevailing ideas of a society.

Content

- Architecture and urban form in settlements of medieval period.
 - Evolution of Early Christian, Byzantine, Romanesque and Gothic architecture.
 - Settlements, institutions, dwelling and community form in India in the Gupta & Medieval periods.
 - Evolution of temple form and rock cut architecture.
 - Islamic architecture in the Middle East & Central Asia.
 - Japanese Architecture as a comparison of a codified system.
 - Development in Mexico.
 - The continuous evolution of artisanal craft.
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COURSE NO. 342

Theory of Architecture II

Non-Core course. Lecture based.

CREDIT 2

Emphasis

1. Architecture as a systems of knowledge: super structural representation of ideas, codified principles applied to circumstantial variation.
2. The evolution of artisanal traditions and their codification into design as the application of evolved elements, typology.

Content

- Re cap of earliest theories as codification of artisanal traditions.
- A number of contemporary theoretical directions will be analyzed to articulate underlying ideas and ideologies.
- The notion of Modernism and the autonomous individual.
- Regionalism and the revolt against Universalistic Modernism

- Kahn and the sense of essence.
- Post-modern monumentality.

SEMESTER FIVE

COURSE NO.	COURSE NAME	CREDITS
<u>MAKING OF ARCHITECTURE</u>		
151	Building Construction V	2
152	Construction Details IV	2
153	Structure III	3
154	Env. Science/Services III	2
<u>SYNTHESIZING ARCHITECTURE</u>		
551	Studio V (Multiple Dwelling)	8
<u>HISTORY/THEORY OF ARCHITECTURE</u>		
351	History of Architecture III	3
352	Theories of Architecture III	2
<u>ELECTIVES</u>		
	Choice of following areas	2
	140 Env. Science	
240	Drawing, Painting, Graphics, Photography etc.	
340	Social Science, Humanities	
		Total credits=24

Duration 15 + 1 weeks

MAKING OF ARCHITECTURE**COURSE NO. 151 Building Construction V**Core course. Lecture based.

CREDITS 2

Emphasis Advanced Construction Technology – Pre-cast and pre-stressed systems.

Content

- Introduction to advanced, shallow and deep foundation.
- Soil investigation, soil properties and its application. Temporary structures such as shoring, strutting, formwork, scaffolding, etc.
- Retaining structures and various practices in their construction.
- Pre-cast and pre-stressed concrete building components and building systems.
- Study through cases and application to a selected project of appropriate scale.

COURSE 152 Construction Details VCore course. Project based

CREDITS 2

Emphasis Advanced Construction Technology – Pre-cast and pre-stressed systems.

Contents

Drawings of construction details covering topics studied in course no. 151.

COURSE 153 Structure IVNon-Core course. Lecture based

CREDITS 3

Emphasis Course emphasis on understanding of section design in R.C.C. and its implication on design of structures.

Content

- Theory of composite sections applied to R.C.C. structures.
- Review of properties of concrete and steel as applicable to R.C.C. Fundamental assumptions of R.C.C. structure.
- Analysis and design of singly reinforced sections, under reinforced, over reinforced and balanced sections.

- Analysis and design of one way and two way slab using coefficients and standard tables.
- Effects of continuity, detailing of reinforcement, provisions of IS 456.
- Derivation of thumb rules.
- Doubly reinforced section, effect of compression, steel on deflection.
- Doubly reinforced section, effect of compression, steel on deflection.
- Diagonal tension, its effect and methods of resisting it.
- Design of shear reinforcement.
- Bond and its significance, types of bond, pull out test, factors affecting bond, local and average bond, design for bond, code provisions.
- Elements subjected to axial compression, types of columns, permissible stresses in concrete and steel, analysis and design of short columns, slenderness and its effect on the load carrying capacity, analysis and design of long columns. Columns of a multi-story building, code provisions, derivation of thumb rule.
- Types of foundations and their use, punching shear, analysis and design of spread footings, structural behavior of other types of foundations.
- Principles and Practices of Earthquake Resistant structures.

COURSE 154**Env. Science/Services III**Non-Core course. Lecture based.

CREDITS 2

Emphasis Environmental control systems.

Content

- Water supply and sanitation systems in buildings.
- Layout of mechanical systems
- Electrical systems and layouts.
- Air-cooling and air conditioning systems, plant, supply systems, calculations of basic sizes of components and layout of the system.
- Examples of passive and active cooling systems in traditional and present day conditions.
- Application to a selected project, and case analysis of selected project.

SYNTHESIZING ARCHITECTURE**COURSE 551 Studio V (Multiple Dwelling)**

Core course. Project based CREDITS 8

Emphasis Dwelling community and neighborhood.

Content

Issues of Identity, Scale, Public spaces, Context, Grouping of buildings, infrastructure for community formation etc. will be explored.

Inputs Urban neighborhoods, traditional and present day composition, structure, density, land use coverage, building controls, urban infrastructure and services.
Housing surveys, generalizations, overlays of various determinants, user evaluation.

Projects Urban sector, Low income or mixed income implying characteristics of varied living patterns (Main project).
Part detail to Urban Characteristics (Short Project).

HISTORY/THEORY OF ARCHITECTURE**COURSE 351 History of Architecture III**

Non-core course. Lecture based CREDITS 3

Emphasis Cultural transformation through colonialism.

Content

- Islamic and pre-colonial India.
- Development of Indo-Islamic architectural style from the imperial period to the Mogul period.
- Portuguese influence in Goa.
- Islamic architecture in India: universal abstract principles, regional expressions.
- Scales of city, institutions, dwelling.
- Development of specialized building types and their architectural schemes. Parallels in contemporaneous cities in India: Vijayanagar and Jaipur etc.
- The renaissance in Europe - Urban structure and space, institutional form as expression of abstract ideals.
- Baroque architecture and the development of spatial experience as complex expression.

COURSE 352 Theories of Architecture IIINon-core, Lecture based

CREDITS 2

Emphasis Ideas and ideologies in architecture

Content

Various ideologies that have shaped architectures in the last three centuries will be explored the connections between architecture and the prevailing worldviews.

ELECTIVESNon-core course. Lecture/Project based

CREDITS 2

COURSE 100 Env. Science**COURSE 200** Drawing, Painting, Graphics, Photography etc.**COURSE 300** Social Science, Humanities

SEMESTER SIX

COURSE NO.	COURSE NAME	CREDITS
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MAKING OF ARCHITECTURE

161	Building Construction VI	3
162	Bldg. Services IV	2
163	Topographic systems	2

SYNTHESIZING ARCHITECTURE

561	Studio V (Working Drawings)	8
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HISTORY/THEORY OF ARCHITECTURE

361	History of Architecture IV	3
362	Theories of Architecture IV	2

PRACTICE OF ARCHITECTURE

461	Cost estimation	2
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ELECTIVES

	Choice of following areas	2
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100	Env. Science
200	Drawing, Painting, Graphics, Photography etc.
300	Social Science, Humanities

Total credits=24

Duration 15 + 1 weeks

MAKING OF ARCHITECTURE**COURSE NO. 161 Building Construction VI**Core course. Lecture based.

CREDITS 3

Emphasis Industrialized construction systems and building.

Content

- Industrialized construction systems of buildings with large span or high rise structures.
 - Tool plants and equipment for such construction study through cases.
 - Critical study of building in terms of materials used, construction techniques followed, structural systems provided, other services such as water supply, drainage, electrification, light installation, fire fighting, acoustics, air conditioning, etc.
 - Issues of clear coordination between them during design and construction, causes for failures in performance. Case studies to illustrate coordination and cases of failure.
-

COURSE 162**Bldg. Services IV**Core course. Lecture based.

CREDITS 2

Emphasis Electrical and mechanical services in buildings.

Content

- Electrical distribution systems in buildings - mains and sub distribution, switches and controls, layout systems for lighting, fans, telephones, etc. Implications in building construction.
- Fire protection: Study of fire regulations, fire extinguishing systems, warning systems, fire resistance of different building materials, fire resistant doors.
- Planning of buildings for fire escapes, case studies of building from fire protection requirements.
- Air conditioning systems: Different systems in current use from chilled water cooling systems to air handling package units, etc. their installation requirements and demands in building layout, supply air, return air ducting systems, their layouts and requirements within building systems, co-ordination to building systems.
- Vertical transportation: Lifts, grouping of, lifts, return travel time, design of lift banks for carrying capacity and travel time, installation requirements, escalators.

COURSE 163 Topographic systems**Non-core course. Lecture/project based****CREDITS 2**

Emphasis Methods of recording and representing spatial information.

Content

- Types of information recording: surveys, photography etc.
- Tools & Techniques employed at various scales and complexity of information.
- Types of maps, drawings and digitized data.
- Reading information from visual records, analysis, co-relations etc.
- Degrees of accuracy and errors.
- Reliability of data, cross checking.

SYNTHESIZING ARCHITECTURE**COURSE 541 Studio VI (Working Drawings)****Core course. Project based****CREDITS 8**

Emphasis Execution drawings. Coordination of structure, services and design

Content

Students will be asked to prepare execution drawings of one of their previous design projects.

HISTORY/THEORY OF ARCHITECTURE**COURSE 361 History of Architecture IV****Non-core course. Lecture based****CREDITS 3**

Emphasis Industrialization and the colonial expansion

Content

- Colonial period in India. Portuguese, Dutch, French and British settlements and military installations. Fusion of local and imported styles.
- Comparative development in other parts of the world.
- Early implantation of ideas from Europe. Cross comparison with North and South America.

- Post enlightenment scientific world-view. Development of empirical and analytical approach. Analysis into sub-systems and rules of assembly.
- Forces of industrialization. Changes in social structures, production systems, technology and its impact on lifestyles.
- Scientific thought and its impact on arts.
- Problem solving as a design approach.
- Standardization and the industrial aesthetics.
- Modern Movement, Neo-classicism and Post-Modern movements upto the pre-independence India.

COURSE 362**Theories of Architecture IV**Non-core course. Project based

CREDITS 2

Emphasis Developing analytic ability. Ability for abstraction. History as a way of learning.

Format Seminar format. Groups of students will be asked to select and study a work of an architect and present it to the class articulating its underlying ideas, which might have informed its architecture.

Questions

What is the spatial organization of the work under study?
What does it suggest about the prevailing ideas about Man, Nature, Society etc?

PRACTICE OF ARCHITECTURE**COURSE 461****Cost estimation**Non-core course, Lecture based

CREDITS 2

Emphasis Basic understanding of quantities and cost so as to make estimates in the design process.

Content

- Methods of estimation.
- Materials, labour, transportation and profit.
- Methods of recording measurements.
- Schedule of quantities.
- Rate Analysis of various items of work.

- Specification in brief.
- Principal material requirement and their co-relation with estimates.

ELECTIVES

Non-core course. Lecture/Project based
CREDITS 2

100	Env. Science
200	Drawing, Painting, Graphics, Photography etc.
300	Social Science, Humanities

SEMESTER SEVEN

During the ten semester study program each student is expected to undergo a 20 weeks program of Practical training. This training takes place in semester seven.

Students are placed in practicing architectural offices and are required to complete both the segments in the same office.

COURSE 571 Practical training

Core course

CREDITS 24

Emphasis Professional training through interaction with professional practices.

Expected
Learning Office organization
Client contacts
Brief formation
Site analysis
Process of design development
Construction drawings
Contract
Exposure to consultants
Impact of cost on building design
Site supervision

Certification Offices to certify that the student has completed the required training.

Evaluation Viva-voce at the end of the semester.

SEMESTER EIGHT

COURSE NO.	COURSE NAME	CREDITS
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MAKING OF ARCHITECTURE

181	Special Structures	2
182	Integration studio	4

SYNTHESIZING ARCHITECTURE

581	Studio VIII (Vertical Studio)	12
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HISTORY/THEORY OF ARCHITECTURE

381	Study of settlements	2
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PRACTICE OF ARCHITECTURE

481	Professional practice I	2
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ELECTIVES

Choice of following areas		2
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101	Env. Science
200	Drawing, Painting, Graphics, Photography etc.
301	Social Science, Humanities
400	Practice, Management etc.

Total credits=24

Duration 15 + 1 weeks

MAKING OF ARCHITECTURE**COURSE 181 Special Structures**Non-core course. Lecture based

CREDITS 2

Emphasis Special structural forms resulting from special technologies.

Content

- **Shell structures** and their structural behavior.
 - **Folded plate** structures. Design of simple V type of folded plates.
 - **Membrane structures.** Form finding methods.
 - **Planar grid and curved grid structures.** Development of simple forms and scale models.
-

COURSE 182 Integration/development studioNon-core course. Project based

CREDITS 4

Emphasis Integration of various services and structure with spatial configuration of a building.

Content Students will be asked to take up one of their small projects done during earlier semesters and modify/redesign it with structure as well as mechanical and electrical services integrated with the spatial form.

- structural system (post/beam or bearing wall) and the disciplines imposed by it.
- Constructional systems.
- Mechanical services such as air-conditioning, lighting, drainage, water supply etc.
- Modifications required in design so that the logic and integrity of these systems are maintained.

SYNTHESIZING ARCHITECTURE**COURSE 581 Studio VIII (Vertical Studio)**Core course Project based

CREDITS 12

Emphasis Vertical integration of students of sem. 8 and 9 and choice of projects. The emphasis of these studios will be on Urban Design.

Contents

These two studios will offer options to a combine group of students. Each of these options will be lead by one of the faculty. Attempt will be made to ensure that each group contains students from each level. Each of these options will undertake to examine and explore areas of design of interest to the faculty and students and would involve the students in raising questions through design.

HISTORY/THEORY OF ARCHITECTURE**COURSE 381 Study of settlements**Non-core course. Lecture based

CREDITS 2

Emphasis Cities and settlements

Contents

- making of the cities.
- Legibility, imagibility, structure, identity, meaning and quality of life in various urban forms. Evolution of settlements over time.
- Components and structures of settlements.
- Settlements in India. Ancient, medieval, colonial and contemporary periods.
- Comparison with European and Eastern cultures.
- Comparison between Architecture and the City.
- Historic cities and formal composition in designed cities.
- Urban laws that govern

PRACTICE OF ARCHITECTURE**COURSE 481 Professional practice I**Non-core course, Lecture based

CREDITS 2

Emphasis Professional practice and code of conduct.

Content

- Vocation, trade union activities Vs. professional activity.
- Historical evolution of a profession.

- Social obligation – Supper Clientele.
- Range of roles – teaching, writing, research etc.
- Office organization and management.
- Expense structure, salaries and overheads.
- Role of the design staff and supporting managerial staff.
- Comparative study of other professions.
- Training responsibility.

Method Class room lectures, interviews with various professional, assignments by students.

SEMESTER NINE

COURSE NO.	COURSE NAME	CREDITS
<u>SYNTHESIZING ARCHITECTURE</u>		
591	Studio IX (Vertical Studio)	12
<u>HISTORY/THEORY OF ARCHITECTURE</u>		
391	Research methods	2
<u>PRACTICE OF ARCHITECTURE</u>		
491	Professional practice II	3
492	Specification and controls	3
<u>ELECTIVES</u>		
	Any two from following areas	2
		2
102	Special/appropriate tech.	
200	Drawing, Painting, Graphics, Photography etc.	
302	Social Science, Humanities	
400	Practice, Management etc.	

Total credits=24

Duration 15 + 1 weeks

SYNTHESIZING ARCHITECTURE**COURSE 591****Studio IX (Vertical Studio)**Core course Project based

CREDITS12

Emphasis Vertical integration of students of sem. 8 and 9 and choice of projects. Emphasis on Urban related projects.

Contents

These two studios will offer four options to a combine group of students. Each of these options will be lead by one of the faculty. Attempt will be made to ensure that each group Contains students from each level. Each of these options will undertake to examine and explore areas of design of interest to the faculty and students and would involve the students in raising questions through design.

This will be the last of the vertical studio sequence

HISTORY/THEORY OF ARCHITECTURE**COURSE 391****Research methods**Non-core course, Lecture based.

CREDITS 2

Emphasis Understanding basic principles of any research task with specific reference to architectural research and its application to the undergraduate level.

Content

- The nature and function of research, scientific research, meaning of research in the field of architecture,
- Pure and applied research, traditional and potential areas/types, the three stages of research,
- Research methodology, various techniques of data collection in general, specific techniques in architectural research, methods of analysis stage, communication of research

	reporting, the structure of a report, the necessity for the development of writing skills, .
	<ul style="list-style-type: none"> • Technical data about formal writing the use of visuals, the qualities of research, the use of primary and secondary references, bibliography, notation, cross reference etc. Issues of selective reference. • Methods of writing draft reports before finalisation. • The nature of an undergraduate thesis, its structure and other requirements, research in the fields of environment, community structure, architectural history and theory, urban structure, building type studies, etc. • Behavioural studies and user evaluation.
Method	Lectures, Assignments by which students will be asked to prepare mock research proposals, which will be discussed and modified.

PRACTICE OF ARCHITECTURE

COURSE 491

Professional practice II

Non core course, lecture based.

CREDITS 3

Emphasis Codes, laws, ethics and practice.

Content

- Profession & Code of Conduct.
- Architectural profession as a vocation. .Comparison of architectural & trade union activities.
- History of architectural profession, its future, degeneration and upgradation.
- Social obligations of an Architect as professional. .Clientele. aspects and roles of architect and client and their relationship within the profession. .
- Comparative study of different professions and also different roles and avenues within the profession of architecture.
- Future of professional directions.
- Code of conduct & ethics.
- Professional role. responsibilities. and liabilities of architects and their indemnity (security against damages).
- Contracts (and sub contracts) between architect & client, between client and contractor (drafted by architect), Management of the contracts.

- Roles of Client, Consultant (coordinator of) Contractor/sub-contractor and their coordination by architect .
- Site supervision
Role and responsibilities of
Architect
Contractor
Clerk of works -Client
- Arbitration

Office Organisation & Management

- Types of offices and their structure
- Nature of emerging practices .
- Roles of various personnel at different levels
Principals/partners
Design staff
Supporting staff
Managerial staff
- Employer-employee relationship .
- Training responsibility .
- Expense structure
Salaries
Overheads
Perks to employees & principals .
- Tax Planning for Architects.

Development Controls

Building regulations, their
purpose
formation with base
generalisation
violation (interpretations)

Professional Associations

. Types
. Purpose

Role

Responsibilities -IIA & COA

Formation, Controls, Activities

Advantages & Lacunas.

Professional ethics

Fee Structure

Architectural Competitions

Architectural Education

COURSE 492 Specifications & ControlsNon core course, lecture based.

CREDITS 3

Emphasis Understanding of the nature of building specifications and contracts and its relevance to architectural practice.

Content Nature of specifications; types of specifications -process oriented and performance specification. Constituents of specification -material qualities and proportions, labour - quality of inputs, tests and acceptance criteria. mode of measurements; methods of structuring and writing specification, role of specifications in a total set of contract. Economic and quality implications of specifications. Trade off between ideal and realistic specifications.

Nature of building contracts.

Tenders -calling, scrutiny and recommendations open and selective tender systems; two stage tender scrutiny process. Pretender qualifications and registrations of contractors. Condition of contracts; obligations and responsibilities of clients, contractors and architects, Deposits, labour laws and obligations; disputes and

SEMESTER TEN

COURSE NO.	COURSE NAME	CREDITS
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SYNTHESIZING ARCHITECTURE

COURSE 5101	Dissertation	
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<u>Core course, Project based</u>	CREDITS 24
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This is the culmination of the Undergraduate program in architecture. It is expected that each student will have begun to develop a personal direction in which he/she wants to pursue further carrier. During this semester they will undertake an in-depth investigation of an area of architecture that each student is interested in. These will be done with the help of a faculty guide. Two options will be offered.

- 1 A complete design project of requisite quality and detail. This option will insist on a level of resolution that combines technical expertise with an understanding of the elements of building and their appropriate use and expression.
The chosen project should demonstrate a student's ability to work independently, decide what is important to him/her and schedule himself to adhere to a time frame.

Projects will be chosen within the following parameters. They should

- 1 be within the urban context and have the potential for a valid relationship between Architecture and the city/environment.
- 2 have the potential to probe issues of cultural continuity and the language of the present in the Indian context, reinterpreting tradition anew into contemporary statement.
- 3 be of approx. 3,000 to 5,000 sq. Mts. of built up area (not too large in scale because the project must be developed to design details and not too small to lack potential of requisite design complexities). If the project is larger, it should be possible to develop a part of it after stage 3 to required detail in consultation with faculty. And
- 4 be real, but not necessarily a live project, and must have the potential to demonstrate your strengths in terms of scope – capacity of the project.

- 2 A dissertation document with necessary critical depth will be accepted as a thesis.. The second option will look for a depth of inquiry, criticality and logic in pursuing an idea. Both these options will be perused with the help of a faculty adviser, or guide and will be completed within stipulated time.

The area of work chosen by the student with the guidance of a faculty member could be in any of the following:

Architectural theory, history, design determinants. design language. design evaluation, building types. urban design, housing, interior design, landscape design, building technology. Environmental science. professional practice or any other related field accepted by the School as relevant to the field.

The study may involve within the chosen area

- Analysis of data. inferences to establish underlying principles.
- Evaluation of existing theory in new contexts. .
- Establishment of a hypothesis and its substantiation.
- The emphasis will be on the Indian context.

Evaluation

The study would be presented as a written document with supporting illustrations. be periodically reviewed and examined by an external examiner.

The Periodic Reviews will be as under:

4th. Week: Proposal

Topic, Scope and Limitations, Introduction. Focus of StIJDy, Criteria of Study, Identification of Case Studies, Basic Bibliography.

10th. Week: Structure, Chapterisation.

16th. Week: Subchapters, Basic Outline of chapter content, Development of Criteria of Study, and tentative application to the case study.

The weightage evaluation will be

Periodic Reviews (10%), Guides Assessment (30%) Internal Examiner (20%)
External Examiner (30%) and Viva (10%)

Regular submission of thesis will be of minimum 16 weeks and maximum 1 year from date of registration. Thesis will be accepted upto 2 years from date of registration with 1 % deduction for 1 month of delay upto maximum of 10%.

Date of registration will be considered as start of semester immediately after completion of Studio I X

STUDY TOURS

Every year during the winter break (Dec.-Jan.) the College will organize three study tours. Each student are required to take part in at least three such tours during the five years that they spend at the College. Participation in this program is mandatory and a prerequisite for the award of Degree of B.Arch.

Objective

To observe, document, analyze, traditional and contemporary built environment at scales of dwelling- cluster neighbourhood. Institutions and urban fabric so as to understand the lessons of history and to develop data base for research and teaching. Each of these tours will involve observing and recording (through photographs and measured drawings) on site and preparing good quality presentation documentation in campus.

STUDY TOUR-1

Theme - Village

Dwelling cluster, environment, observation, recording analysis patterns of space use, constructional systems, basic climatic performance, study of form, unit and the collective.

STUDY TOUR -2

Theme- Traditional urban neighborhoods

Dwelling, cluster, neighbourhood scales, documentation and analysis for types, variation, elements, patterns of space use, climatic influences structural and material systems, proportional systems.

STUDY TOUR-3

Theme- Traditional institutions and urban structure

Documentation and analysis of typology, relationships, use pattern, spatial and structural systems, material, construction, proportions, canonical principles.