

SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY

NEW COURSES INTRODUCED IN B.ARCH PROGRAMME DURING THE ACADEMIC YEAR 2021-22

PREAMBLE

The Board of Studies approved the proposed Curriculum and syllabus of Regulation 2020 for B.Arch. course with incorporation of suggestions and feedback given by the external members. The suggestions made by the external members are presented in the minutes of meeting are given below.

A Board of Studies meeting was held as Virtual mode in ZOOM platform on 30th June 2020 with the following agenda:

1. Welcome address, opening remarks on the proposal to introduce REGULATION 2020 and the methodology adopted.
2. Comparative analysis of existing R 2015 and proposed R 2020 curriculum structure, R 2020 curriculum structure and Salient Features of Regulation 2020.
3. Detailed discussions on the proposed syllabus (from semester I to semester X) and proposed Regulation 2020.
4. Any other matter with the permission of Chair.

Minutes of the meeting:

- Dr. Devyani Gangopadhyay presented the welcome address and briefed the agenda of the meeting
- Prof. Suresh Kuppusamy, discussed on the conceptual framework of the revisions in R2020 syllabus.
- Dr. Devyani Gangopadhyay discussed on the salient features of the proposed revised curriculum structure along with the analysis stating the intent of the revisions in curriculum structure and the content integrating with Design studios.
- The professional training was proposed to be shifted to eighth semester as per Council of Architecture Regulations 2017.
- Prof. Meghal, raised a query on COA's distribution of courses as it is mandatory to be followed or optional.
- Prof. Devyani Gangopadhyay, replied it as optional.
- Prof. Meghal asked on the necessity for **Applied mathematics**. She suggested that it could be Geometry instead of Trigonometry and suggested to reduce credits, asked to review on this.
 - Remove this subject and replace other subject or replace these credits to other subjects and integrate with Design.



- Ar.Pramod said geometrical exercises already there in Architectural Drawing and hence the syllabus can be reoriented apart from geometry.
 - the internal team agreed upon this suggestion.
 - Ar. Pramod, commented that **Soft skill development** cannot be just a theory subject for one semester and needs to be proposed in every semester with introduction in I semester, so that we can ensure continuous learning till 9th semester .
 - Prof. Meghal, seconded on the above citing this will help the agenda of integration much more. She approved for introducing Soft skill development.
 - The internal committee agreed to the external members' decision.
 - Ar.Pramod insisted that **Society culture and environment** can't be dealt fully in one semester. He felt the society connect should be reflected in the semester Design studios.
 - Prof.Suresh Kuppusamy replied that this can be strengthened and shall be proposed in third and fourth as SCE-I and SCE-II respectively. Lectures can be given in the studio hours on these and can integrate with design.
 - Prof.Devyani briefed to the committee members that many students in 9thsem Dissertation project, took society related topics like- Public open spaces, Behavioural study in public spaces like parks, streets and walkability and pursued the dissertation successfully.
 - Ar.Pramod and Prof. Meghal approved on introducing Society Culture and Environment upon insisting that the subject is interrelated with Architectural Design.
 - Ar. Meghal presented her views on **History Of Architecture**. She commented that only styles are mentioned in the syllabus and deep thinking as a lens through approach needs to be done.
 - Ar. Pramod presented his views on the subject -Material and Construction Studio- He suggested that a small- scale design exercise could be given to the students in order to understand the material in detail. Students must have the feel of the material through hands on training, apart from plates.
 - Dr Devyani Gangopadhyay explained the strategy of integrating Materials and Construction with Architectural Design. He explained that the previous semester design proposal may be taken up for detailing in Materials and Construction for the following semester.
 - Prof. Meghal, appreciated the idea of making students developing details from their previous semester design.
 - Prof. Meghal emphasized on the need to integrate some sense of structure in the Materials and Construction. She proposed that the faculty of Structural Engineering and Architecture must work as a team for better understanding of the students. She proposed that preferably a Practicing Architect who has strong knowledge in Structures may take up Structure.
 - Prof.Suresh Kuppuswamy/ internal committee agreed for this suggestion subject to availability of such a resource person.
 - **Model making workshop-** Ar. Pramod advised to set up kiln for model making workshop within the campus for more activities.
 - The internal committee replied that this proposal was already in the budget and will be carried over.
 - Both the external members insisted on the Idea of strengthening infrastructure for workshops.
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Devayani

- Prof. Suresh Kuppaswamy, agreed on the recommendation of the externals and registered that Architectural model making can be dealt not as a separate subject, but can be an integral part of theory and design.
- Prof. Meghal agreed on the above and suggested that the Materials and Construction studio and Structure studio can incorporate model making.
- Prof. Meghal proposed that Architectural Education should stress on computational skills rather Computer skills and proposed that softwares like Sketch up, V-Ray can be learnt by the students themselves and need not be a part of the curriculum.
- Prof.Suresh Kuppaswamy, explained that the students need to equip themselves (based on orientation program on Practical training) for practical training. Hence the computer skills are proposed.
- Prof.Meghal suggested to use" **Design Communication**" to make the student equipped for internship.
- Practical Training- Ar.Pramod suggested that SIST must create relationship with practicing architects so that the students can be referred for Internship.
- Prof. Suresh asked the opinion of externals on having the Professional Training in the 10th semester.
- Ar.Pramod had no objection to this proposal, but Prof.Meghal , preferred the Professional Training in the middle of the curriculum so that the students can benefit from the internship and apply the knowledge gained in their academic exercises.
- Dr. Devyani Gangopadhyay asked for further suggestions on the revised syllabus and curriculum
- Ar. Pramod appreciated that voluminous work has been exercised in revising the syllabus. He pointed out that in few places it has become too much to grasp for a student in the limited period of time. He proposed that Design exercises need not be problem solving and the brief should involve the students to develop the design holistically as his/her contribution.
- Ar. Pramod pointed out that it is more important to articulate the design briefs in a manner which creates more interest within the student and makes the student think out of the box. He also forwarded some interesting Architectural Design Studio methodology to the committee as examples of methodology followed in Design studios practiced by him.
- Ar Pramod suggested that for design evaluation, the faculty members of other classes may be involved as internal jury.
- Prof.Devyani, replied that this practice of involving other faculty members is already in practice and agreed this will be implemented for all semesters.
- Prof.Meghal and Ar. Pramod suggested the same curriculum can be presented to the forthcoming Academic council with incorporation of suggestions made by the members.

Prof. Devyani concluded the meeting with acceptance that all the recommendations and observations of the external members will be carried over and incorporated and consequent BOS meeting shall be convened after incorporating the recommendations. Ar. Shankar delivered the vote of thanks, felicitating the external members.





SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)

Accredited with "A" grade by NAAC
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DEPARTMENT OF ARCHITECTURE

SATHYABAMA INSTITUTE OF SCIENCE AND TECHNOLOGY

Board of Studies meeting for B.Arch. held on 30-06-2020







Venue: Virtual meet in ZOOM platform

Members present:

External Members	Signature	Internal Members	Signature
AR. PRAMOD BALAKRISHNAN Chief Architect, Edifice Chennai		DR. DEVYANI GANGOPHAHY Dean & Head Department of Architecture School of Building & Environment	
		DR. SURESH KUPPUSAMY Senior Professor & Design Chair Department of Architecture	
DR. MEGHAL ARYA Associate Professor Faculty of Architecture, CEPT University, Ahmedabad		AR. EBIN HARRISON Associate Professor	
		AR. ARULMALAR.R Associate Professor	
		AR.V. SHANKAR Associate Professor	

The Board of Studies approved the proposed Curriculum and syllabus of Regulation 2020 for B.Arch. course with incorporation of suggestions and feedback given by the external members. The suggestions made by the external members are presented in the minutes of meeting are given below.

Minutes approved by:

External Members	Signature	Internal Members	Signature
AR. PRAMOD BALAKRISHNAN Chief Architect, Edifice Chennai		DR. DEVYANI GANGOPHAHY Dean & Head Department of Architecture School of Building & Environment	
DR. MEGHAL ARYA Associate Professor Faculty of Architecture, CEPT University, Ahmedabad		DR. SURESH KUPPUSAMY Senior Professor & Design Chair Department of Architecture	
		AR. EBIN HARRISON Associate Professor	
		AR. ARULMALAR.R Associate Professor	
		AR.V. SHANKAR Associate Professor	



SARA2301	MATERIALS AND CONSTRUCTION STUDIO - II			L	T	P	Credits	Total Marks
				1	1	3	3	200
Continuous Assessment	End Semester Examination	Min Pass Marks						
		Continuous Assessment	End Semester Examination					
150	50	75	25					

COURSE OBJECTIVES:

- To trace the various stages involved in timber processing and the associated defects.
- To comprehend the various types of timber joinery adopted in the movable and fixed barriers in the external walls.
- To figure out the ways through which timber is utilized in the built environment.

MODULE I TIMBER AS A BUILDING MATERIAL

30 Hrs.

Introduction to timber, types of trees for timber production, processing of timber, defects of timber, conservation and preservation of timber, timber as a building material construction (types, seasoning, defects), manufactured timber - Mangalore tiles, madras terrace roofing, applications of timber in contemporary architecture

MODULE II TIMBER JOINERY

45 Hrs.

Timber joinery details – doors, Drawings on Methods of construction using natural timber in joinery works including methods of fixing and options for finishing, fixing details. - Different types and methods of fixing - Windows (paneled, louvered, glazed, pivoted and sliding windows) - Doors (paneled, glazed, sliding, folding, louvered and pivoted) - Ventilators (top hung, louvered, and glazed) - Hardware for doors, windows and ventilators and application for a simple structure with schedule of joinery windows, partitions, paneling, truss, simple staircase – thumb rules

Max. 75 Hours

Modules	Assignments	Suggestive Outdoor/hands on Workshop	Construction plates	No.	Remarks
I	Applications of timber in building, Timber in vernacular and contemporary architecture - case studies	Carpentry Workshop Understanding of joineries (doors, windows, chairs, tables)	Types of timber trusses and Madras terrace roofing	1	Facilitates Architectural design IV
II	Sketching of	Report – Observe the activity of a	Timber joinery details	1	

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	various joineries in timber	carpenter who is in the process of making a joinery and document the same	Types of timber joinery in doors, windows and ventilators	3	
	Sketching – trusses, staircase in vernacular houses		Partitions and paneling	1	
			Design and develop joinery details for the outcome of Architectural design II.	1	

COURSE OUTCOME:

On completion of the course the student will be able to

- CO1** Explain the treatment of timber the various applications in buildings.
- CO2** Demonstrate the types of joinery adopted in doors, windows and furniture
- CO3** Design timber partitions and paneling.
- CO4** Illustrate the utilization of timber in roofs and simple staircases.
- CO5** Design and develop timber joineries in architectural designs.

TEXT / REFERENCE BOOKS

1. Arora, S. P., Arora, S. P., & Bindra, S. P. (1984). Text Book of Building Construction: Including Engineering Materials. Dhanpat Rai and Sons.
2. Chudley R., (1999). Construction Technology (Volume 1), Longman publications 3rd Edition.
3. Watson, D.A. (1972). Construction Materials and Processes, McGraw Hill.
4. Ching, F.D.K. (2000). Building Construction Illustrated, John Wiley & Sons
5. McKay W.B. (1981). Building construction, Volume 1 and 2, Longman UK
6. Rangwala S.C. (2000). Building Construction, Anand Charotar Publishing House, India
7. Sharma S.K. (1998). A Text book of Building Construction, S. Chand and company, New Delhi
8. Bayliss R. (1969). Carpentry and Joinery (Volume 1), Hutchinson Technical Education Publishers
9. Kumar, S. (2010). Building Construction, Standard Publishers Distributors
10. Herzog, T., Natterer, J., Schweitzer, R., Volz, M., & Winter, W. (2012). Timber construction manual. Walter de Gruyter.

Devarajani

SARA2401	MATERIALS AND CONSTRUCTION STUDIO - III			L	T	P	Credits	Total Marks	
				1	1	3			3
Continuous Assessment	End Semester Examination	Min Pass Marks							
		Continuous Assessment	End Semester Examination						
150	50	75					25		

COURSE OBJECTIVES:

- To explore the types of concrete and the applications in the built forms.
- To understand the various contexts in which concrete is used in constructing walls, roofs and foundations along thumb rules.
- To comprehend the ways to prevent the entry of water and dampness in buildings.

MODULE I APPLICATIONS OF CONCRETE IN CONSTRUCTION 40 Hrs.

Introduction to reinforced cement concrete, suitability requirements for aggregates, grading of aggregates, reinforcement, admixture - Mix proportioning, batching, mixing, transporting, placing, compaction, Ready Mix Concrete, curing formwork - Quality control, tests for concrete, joints in concrete including role of expansion joint, vacuum dewatering, concrete finishes, Centering, Scaffolding, formwork.

Introduction to concrete and its applications – deep foundations, framed structure, expansion joints, slab, WPC, DPC, staircase, cold storage, RCC Columns and Foundations - Different Types of foundations - Detailing of columns - Shallow (Mat and Raft foundation), spread (Square, rectangle, circle, combined, strip and ring foundation), deep (pile, piers, caissons) .Super Structure - Beams, sill level, detailing of apertures (lintels, sunshades, arches etc.) - Roofs (one way slabs, 2-wayslab, continuous, flat slab, coffer slab etc.) – Staircases – thumb rules

MODULE II SPECIAL CONCRETE AND APPLICATIONS IN CONSTRUCTION 35 Hrs.

Introduction to special concrete and its applications – light weight, foam, ferrocement, Construction methods for different types of Special Concrete like Pre and post tensioning and precast concrete - Ferro cement, Lightweight concrete, high density, fiber reinforced polymer concrete. Detailing of Ferro cement water tanks, toilet units, slabs, waffle slab, filler slab, funicular shell, and other precast systems. Design and detailing of building materials and components developed by research organizations like CBRI, SERC, NBO, and BMTPC.

Max. 75 Hours



Modules	Assignments	Suggestive Outdoor/hands on Workshop	Construction plates	No.	Remarks
I	Applications of concrete in buildings – foundation, flooring, shear walls, sill, lintels, slabs, planter box, retaining wall	Report – students have to visit and study the building in construction with respect to the thrust area and give a brief report with sketches and photographs. Emphasis is on the details related to barrier free environment. Ferrocement Workshop	Deep foundation – types, grouping	1	Facilitate Architectural design V
			Types of slabs – one way, two way, coffered, flat slab	2	
			Staircase – dog legged staircase	1	
			WPC, DPC, cold storage, expansion joint	1	
II	Sketching – types of staircases, domes and shells		Swimming pool and terrace gardening	1	
			Application of concrete in the outcome of Architectural design III	1	

COURSE OUTCOME:

On completion of the course the student will be able to

- CO1** Explain the applications of concrete in the built forms along with the thumb rules.
- CO2** Categorize the types of special concrete and the respective utilization in building construction.
- CO3** Explain the components of the concrete staircase and the design thumb rules.
- CO4** Develop the details for cold storage, swimming pool and terrace gardens.
- CO5** Integrate the applications of concrete and special concrete in architectural design studios.

TEXT / REFERENCE BOOKS

1. Arora S.P. & Bindra S.P. (1990) A Text Book of Building Construction, Dhanpat Rai Publishing Company Pvt. Ltd., New Delhi, 1990
2. Punmia B.C. (2005). A Text book of Building Construction, Laxmi Publications Pvt. Ltd., New Delhi
3. Chudley R. (1999). Construction Technology, Volume 1, Longman publications 3rd Edition.
4. McKay W.B (1981). Building Construction, Volumes 1,2 and 3, Orient Longman, UK, 1981
5. Rangwala S.C. (1982). Engineering Materials, Anand Charotar Publishing House
6. Kumar, S, (2010). Building Construction, Standard Publishers Distributors, 2010
7. Kind-Barkauskas, F., Kauhsen, B., Polónyi, S., & Brandt, J. (2013). Concrete construction manual. Walter de Gruyter.

