



Shri Vaishnav Vidyapeeth Vishwavidyalaya
Shri Vaishnav institute of Architecture
 Choice Based Credit System (CBCS) Scheme in the light of NEP-2020 by COA
B. ARCH (2021-26)

ARCH 401: Architectural Design – III

Course Core	Course Area	Course Typology	Course Code	Course Name	EXAMINATION SCHEME					TOTAL MARKS	TEACHING SCHEME/WEEK			CREDITS
					THEORY			STUDIO			L	T	S	
					End Sem University Exam (50% OR 40%)	Two Term Exam (20%)	Teachers Assessment* (30% OR 20%)	End Sem University Exam (50% OR 10%)	Teachers Assessment* (20% OR 10%)					
PC	AR	STUDIO	ARCH 401	ARCHITECTURAL DESIGN III				200	200	400			8	6

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; S - Studio; C - Credit;

Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

2ND YEAR / IV Semester

ARCH 401: Architectural Design – III

Course Educational Objectives (CEOs):

To develop abilities in design in the context of user requirements.

Course outcomes (COs):

At the end of the course, students will be able to Interpret Environmental, Cultural and Place Dimensions of Space
 Explore the design at the building element level, building level, cluster level and site level
 Demonstrate the connection between the built space and naturally evolved space to convert it into a comprehensive livable environment.

Expected Knowledge Transferred: To enhance the understanding of the complexities of architectural design for residential needs and develop creative design solutions for good living environments. Use of standards, handling of space, and application of knowledge gained from other subjects in design.

Focus: Environment & Services Habitat, Environment & Services
 • The student will develop an understanding of the Environmental, Cultural and Place Dimensions of Space
 • The student will explore the design at the building element level, building level, cluster level and site level
 • The student will establish a connection between the building space and the naturally evolved space to convert it into a comprehensive liveable environment.

Course Overview:

This course is intended to provide skills for designing single-use, small-span and single-one-storey buildings.

Course Contents:

Unit	Syllabus: Topic	Subtopic	Teaching Hours:
DESIGN			
Society, Culture, place and its specific impact on the usage of space. Environment and its influence on built-form. 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.			
I	Preparatory exercises/ Programmatic and site analysis	Theme & Focus of Design: Study & analysis of various user types & their activities in public buildings; Development of design programme; Concept & detailed design with a focus on RCC structures. Factors affecting house form ; Climate o Topography The social and economic aspects ; Temporary (Nomadic) and permanent (Settler) house structure ; Traditional settlement (settler) ; Community-based ;Security based ;Income-based climatic and topographic conditions Temporary settlement (Nomadic) ;Community-based ; Security-based ; Income-based ; Climatic and topographic conditions Site Analysis ;Site location or context (Inside city/outside city) Cultural and Socioeconomic condition ; Climate and Topography ; Built/open relation ;Distribution of open space/green space	14 hrs
II	Conceptual stage and Schematic design	Basic Components: Behavioral Science; Functionality; Building Materials; Theory of Design; Form Development; Tectonic decisions: Structures, Building Materials, Services; Site Planning; Building Control Regulations; Inclusive Design;	14 hrs


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					THEORY			STUDIO			L	T	S	
					End Sem University Exam (50% OR 40%)	Two Term Exam (20%)	Teachers Assessment* (30% OR 30%)	End Sem University Exam (50% OR 10%)	Teachers Assessment* (50% OR 10%)					
PC	AR	STUDIO	ARCH 401	ARCHITECTURAL DESIGN III				200	200	400			8	8

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; S - Studio; C - Credit;

Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Design Communication.

Concept of Mass housing

Type of housing ; Private housing ;Public housing ;Socio-economic condition ;Income-based ;Low income ;Middle income ;High income ;Community/socioeconomic based ; Public participation ;Construction technology-based ;Different types of concepts on housing in the present ;Student Housing Old people's housing ;Green building;Sustainability

III Preliminary design to Design development

Landscape Detail: Importance, exploring & understanding the essence; Detailing process; User analysis; Elements; Functionality & aesthetics; Materials. This Minor Exercise will be represented through conceptual development (sketches, physical & digital models).

20 hrs

Typology of Mass housing ; Income-based ;Community-based Climatic & topographic conditions ;Typology of the house form Low-rise housing ; Midrise housing ;High-rise housing ; Mix use housing ; Scale of housing ;Cluster ;Neighbourhood; Sector ; Block ;City

IV Design Resolution with Synthesis of design parameters

Exploration of Sloping Sites: Exploration & analysis of existing iconic designs on sloping sites; Understanding design philosophy & process; Learning from design quality; Literature/book reviews; Architectural critiques.

12 hrs

Scale of housing ; Nos of Family ; Nos of units ;Characteristic of housing ;Cluster or grouped ; Streets ; Open spaces ;Supporting facilities ;Public open space/Garden/Park/Public square/playground ;Public Amenities Local commercial area

Sessional work:

Guidelines

Assignments /Tasks are to be set from the entire syllabus; The topic of the project is to be displayed on the Institute Notice Board fifteen days - a week time in advance OF the commencement of the classes

Continuous Evaluation shall be made of students' work based on various models, sketch assignments, and market surveys.

Assignments:

One Major And the rest minor tasks are to be set from the entire syllabus

Design Exercise: Design of Multi-Functional Building/s for 30 to 40 users; Typology: Art Gallery, Library, Motel, Cultural Centre, Nursery, Kindergarten, Recreational Club, Guest House, etc.; Site extent - sloping site up to 8000 m2; Topography - average slope ranging from 1:5 to 1:8.

Note:

Evaluation is to be done through viva voce by an external examiner appointed by the university at the Institute. Portfolios, after the university exam, shall be retained at the Institute level for the viva-voce

Necessary theoretical inputs are to be given highlighting the norms and design issues. The topics not covered as design problems will have to be covered by the Studio faculty members through lecture/slideshow sessions and site visits.

At least one major exercise and one minor design with two-time problems should be given.

The final submission shall necessarily include a model for at least one of the two main problems.

In the end, in an exam which is a viva-voce, the students have to present the entire semester's work for assessment.

Suggested Readings:

Barquin, Carlos. How the Other Half Builds. Vol. 2: Plots, Centre for Minimum Cost Housing, McGill University, 1986. w.e.f. the academic year 2020-21

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					THEORY			STUDIO		TOTAL MARKS	L	T		S
					End Sem University Exam (50%OR 40%)	Two Term Exam (20%)	Teachers Assessment out* (30%OR 20%)	End Sem University Exam (50%OR 10%)	Teachers Assessment out* (50%OR 10%)					
PC	AR	STUDIO	ARCH 401	ARCHITECTURAL DESIGN - III				200	200	400			8	8

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; S - Studio; C - Credit;

Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

and onwards

Bhatt, Vikram. How the Other Half Builds. Vol. 3: Self-Selection Process, Centre for Minimum Cost Housing, McGill University, 1990.

Bosma, Koos, et al. Housing for the Millions: John Habraken and the SAR (1960-2000). NAI Publishers, 2000.

Bousmaha Baiche & Nicholas Walliman, Neufert Architect's data, Blackwell Science Ltd.

Building Code – ISI

Chiara Joseph de and Others. Time Savers Standards of Building Types. McGraw – Hill, 1990.

Ching, Francis D.K. Architecture: Form, Space, and Order, 2nd Ed. Van Nostrand Reinhold, New York, 1996.

Correa, Charles. Charles Correa Housing and Urbanisation. Thames & Hudson, 2000.

Crisp B. Mills, Designing with models: A Studio Guide to making & using architectural models, Thomson & Wadsworth, USA, 2000.

DeChiara and Callender, Time-saver standards for building types, Mc Graw Hill Company

Habraken, N. J., and Jonathan Teicher. Supports: an Alternative to Mass Housing. Urban International Press, 2011.

Hanks, A. David. Decorative Designs of Frank Lloyd Wright, Dover Publications, Inc. New York, 1999.

Hepler, E. Donald, Wallach, I. Paul. Architecture Drafting and Design, 3rd Ed. McGraw-Hill Book Company, New York, 1977.

Itten, Johannes. Design and Form: The basic course at the Bauhaus, Thames and Hudson Ltd., London 1997.

Kirk, Paul Hayden and Sternberg, D. Eugene. Doctors Offices and Clinics, 2nd Ed. Reinhold Pub., USA, 1960.

Krier, Rob. Architectural Composition, Academy Editions, London, 1988.

Leupen, Bernard, and Harald Moolj. Housing Design: a Manual. NAI Uitgevers, 2018.

Maier Manfred Basic Principles of Design, Vol.1, 2, 3 & 4, Van Nostrand Reinhold, NY, (1977).

Meiss, Pierre Von. Elements of Architecture: From Form to place, E and FN Spon, London, 1992.

Mike w.Lin, Drawing & Designing with confidence – A step by step guide, John Wiley & Sons, USA, 1998., National Building Code – ISI

Neufert, Ernst. Ernst Neufert Architects Data, Granada Pub. Ltd., London, 2000., New Metric Handbook – Patricia Tutt and David Adler – The Architectural Press,

Peloquin, Albert. Barrier-Free Residential Design. McGraw-Hill, Inc., New York, 1994.,

Pevsner, Nikolaus. A History of Building Types. Thames and Hudson, London, 1976.,

Ramsey / Steeper, National Architectural graphic standards, The American Institute of Architects

Richard Weston, Plan sections & elevations of key buildings of the 20th century, Lawrence King Publishing, London, 2004.

Rybczynski, Witold. How the Other Half Builds. Vol. 1: Space, Centre for Minimum Cost Housing, 1984.

Sam F Miller, Design process– Van Nostrand Reinhold,

Shah, S. Charanjit. Architects Hand Book Ready Reckoner. Galgotia Pub., New Delhi, 1996.,

Smithies, K.W. Principles of Design in Architecture. Chapman and Hall, 1983.

Time-saver standards for building types, DeChiara and Callender, Mc Graw Hill Company, Time-saver standards for landscape architecture – Charles W Harris – Mc Graw Hill,

Untermann, Richard and Small, Robert. Site Planning for Cluster Housing.,


Wates, Nick, and Jeremy Brook. The Community Planning Handbook: How People Can Shape Their Cities, Towns, and Villages in Any Part of the World. Earthscan from Routledge, 2017,

White, Edward T. Site Analysis: Diagramming Information for Architectural Design. ArchiBasX Press, 2013.

Wucius, Wong Principles of Two-Dimensional Design. Van Nostrand Reinhold 1972.


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ARCH 403: Building Material & Construction – IV

Course Code	Course Area	Course Typology	Course Code	Course Name	EXAMINATION SCHEME					TOTAL MARKS	TEACHING SCHEME/WEEK			CREDITS
					THEORY			STUDIO			L	T	S	
					End Sem University Exam (50%OR 40%)	Two Term Exam (20%)	Teachers Assessment** (30%OR 20%)	End Sem University Exam (50%OR 10%)	Teachers Assessment** (50%OR 10%)					
B&A E	TE	THEORY CUM STUDIO	ARCH 403	BUILDING MATERIALS & CONSTRUCTION – IV	40	30	30	15	15	150	1	2	3	

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; S - Studio; C - Credit;

Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

ARCH 403: Building Material & Construction – IV

Course Educational Objectives (CEOs):

To introduce and expose students to various aspects involving the use of steel for the construction activity of buildings and structures.

Course outcomes (COs):

- At the end of the course, students will be able to
- Identify the chemical, and physical properties leading to structural strength and aesthetic qualities.
 - Analyze the constructional systems and detailing of metal building components.
 - Demonstrate the construction practices and details about curtain walls.
 - Determine the appropriate structural system and conceptual design of long-span structures.

Expected Knowledge / Focus: Advanced Technology
 Skills Transferred: In
 To understand the techniques of constructing Steel and Pre Fab, staircases and partitions using different materials
 Summarize the building material steel and various construction techniques concerning classification, and composition

Course Overview:

The coursework deals with principles, methods and construction practices of structural steelwork. The outcome of this course is the ability to SPECIFY building materials as per the demands of the Design Program.

Course Contents:

Unit	Syllabus: Topic	Subtopic	Teaching Hours: G
I	Introduction	<ul style="list-style-type: none"> • Precast elements and their applications • Pre-stressing & post-tensioning – definition and use • The conceptual, functional, and structural dimensions of complex elements 	10Hrs.
II	Types of slabs	Long span structures - flat slab, beam and ribbed slab, waffle slab, vault, dome, shell structure, steel trusses, girder, portal frame, folded plate structure, PEB	10Hrs.
III	Details	• Different types of Interior, Exterior, and Vertical & Horizontal Finish i.e. Plaster, Paint, Texture, Paving, Cladding etc.	10 hrs.
IV	technology	Alternative building materials & technology: Mud construction: COB, Rammed earth, Adobe, Daub, Stabilized mud blocks (SMB), compressed stabilized mud blocks (CSMB): bamboo technology, Ferro cement, Fiber-reinforced concrete, Filler SLABS	10Hrs.
V	Finishes	Finishes: Wall finishes, floor finishes, roof finishes, waterproofing, insulations – thermal & acoustical. False ceilings. Panelling.	5 hrs.

Sessional work:

Guidelines

The classwork and home assignments should include appropriate site visits by the students.
 Emphasis should be laid on making students understand the complete construction details of single-story structures.

Assignments:

The student will maintain field observations/record books.
 At least two exercises are to be done in the construction yard.
 Each Unit should include a market survey and construction site to visit compulsorily with the studio working on sheets a minimum of 12 to 15 Nos A-1 Sheets
 Evaluation is to be done through viva voce by an external examiner appointed by

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ARCH 403: Building Material & Construction – IV

Core Course	Course Area	Course Typology	Course Code	Course Name	EXAMINATION SCHEME					TOTAL MARKS	TEACHING SCHEME/WEEK			CREDITS
					THEORY			STUDIO			L	T	S	
					End Sem University Exam (50% OR 40%)	Two Term Exam (20%)	Teachers Assessment* (30% OR 20%)	End Sem University Exam (50% OR 10%)	Teachers Assessment* (50% OR 10%)					
BS&AE	TE	THEORY CUM STUDIO	ARCH 403	BUILDING MATERIALS & CONSTRUCTION - IV	60	30	30	15	15	150	1		2	3

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; S - Studio; C - Credit.

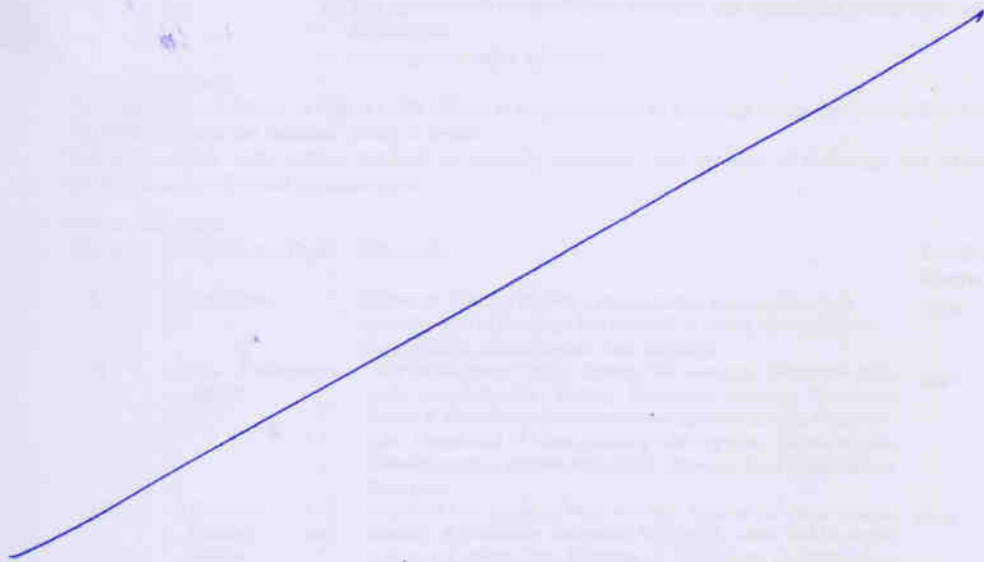
Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Note:


the university at the Institute. Portfolios, after the university exam, shall be retained at the Institute level for the viva-voice
 This is a studio subject and students should be made to prepare construction drawings for studio exercises along with the theoretical inputs. The studio work should be supplemented with appropriate site visits.

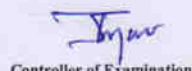
Suggested Readings:

A. Agarwal – Mud: The potentials of earth-based material for third world housing – IIED, London 1981.
 Barry, R. The Construction of Buildings Vol. 2, 5th Ed. East-West Press. New Delhi, 1999.
 Bindra, S P. and Arora, S P. Building Construction: Planning Techniques and methods of Construction, 19th ed. Dhanpat Rai Pub. New Delhi, 2000.
 Dr B.C.Punmia – Building Construction
 Francis D.K.Ching – Building Construction Illustrated. VNR, 1975.
 Hailey and Hancock, D.W. Brick Work and Associated Studies Vol. 2. MacMillan, London, 1979.
 HUDCO – All you wanted to know about soil stabilized mud blocks, New Delhi, 1989.
 McKay J.K. Building Construction Metric Vol. 4, 4th Ed. Orient Longman Pvt. Ltd., Mumbai, 2002.
 Mitchell. Advanced Structures
 Moxley, R. Mitchell's Elementary Building Construction, Technical Press Ltd.
 R.Chudley – Building Construction Handbook – BLPD, London 1990.
 R.Chudley, Construction Technology.
 Rangwala, S.C. Building Construction, 22nd ed. Charotar Pub. House, Anand, 2004.
 Rangwala, S.C. Engineering Materials: Material Science, 31st Ed. Charotar Pub. House, Anand, 2004.
 Sushil Kumar. T.B. of Building Construction, 19th ed. Standard Pub, Delhi, 2003.
 Use of Bamboo and a Reed in Construction – UNO Publications
 W.B. Mackay – Building Construction Vol 1,2 and 3 – Longmans, UK 1981.




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ARCH 404 Working Drawing

Course Code	Course Area	Course Typology	Course Code	Course Name	EXAMINATION SCHEME					TEACHING SCHEME/ WEEK			TOTAL MARKS	CREDITS	
					THEORY			STUDIO		L	T	S			
					End Sem University Exam (50%OR 40%)	Two Term Exam (20%)	Teachers Assessment* (30%OR 20%)	End Sem University Exam (50%OR 10%)	Teachers Assessment* (50%OR 10%)						
PC	SK	STUDIO	ARCH 404	WORKING DRAWING				75	75	150				3	3

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; S - Studio; C - Credit;

Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

ARCH 404 Working Drawing

Course Educational Objectives (CEOs):

To impart training in the preparation of working drawings for buildings with specific reference to the code of practice as per IS Code No. 962 of 1969 and incorporating specifications as complementary to the working drawings.

To sensitize the students in preparing finer design details required for buildings.

The objective of this course is to develop the skills and techniques of preparation of production drawings by taking an already self-designed project from the earlier semester and imparting training in the drafting of working drawing details.

Course outcomes (COs):

At the end of the course, students will be able to
 Develop Set-out marking, Centerline, Excavation, and Plinth Beam Layout for a building.; Develop Floor Plans – Ground Floor, First Floor, and Terrace Floor for a building.; Develop Sections, Elevations, Detailed Sections, and Stairs for a building.

Develop Electrical, Plumbing, and Toilet layout for a building.; Plan Site Development, Door and Window details.

Expected Skills / Knowledge Transferred: Prepare working drawings for a project and resolve complex aspects in the buildings with appropriate materials and design details.

Techniques of estimating and costing and writing specifications related to building construction.

Focus: Manual and computer based Skills Students will learn to Scale drawings and conventional architectural representations in drawings and graphics for drawings on site

The student will learn different methods and techniques to represent an idea & thoughts

Use of presentation software

Course Overview:

The focus of the course is to impart skills related to the preparation of drawings meant for construction work on the site and to improve the students' ability to detail.

The course deals with various methods of quantity surveying, rate analysis of buildings and valuation and specifications for different materials used.

Course Contents:

Sr. No.	Syllabus: Topic	Subtopic	Teaching Hours:
I	Overview:	Overview: Working Drawing, Preparation of working drawings: Suitable scales of drawings, and methods of giving dimensions: on plans, sections, elevations and other standards.	6hrs
II	Site development details	Site development details; Paving, Site drainage, compound wall, gate, etc. Centerline drawing, Excavation drawing, Foundation details & Floor Plans: Roof Plan including roof drainage, Stair room plan. Preparation of Plans Building marking plan, centerline plan, foundation plan, column centerlines drawings, floor plans, terrace floor plan.	6hrs
III	Elevation and Sections details	Elevation and Sections, Wall sections; Kitchen & Toilet details; Sanitary & plumbing; Rainwater harvesting; water tank & septic tank as per calculations. Detailing of architectural elements. Door & window: Details, installation & hardware. Railing details. Wall finishes & colour scheme.	6hrs
IV	Details and Services	Staircase & its components. Electrical layout with furniture; Circuit drawing; Conduit drawing; Voice & data; Fixture mounting heights etc.	8hrs

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ARCH 405: History of Architecture & Culture – IV

Course Core	Course Area	Course Typology	Course Code	Course Name	EXAMINATION SCHEME					TOTAL MARKS	TEACHING SCHEME/ WEEK			CREDITS
					THEORY			STUDIO			L	T	S	
					End Sem University Exam (50% OR 40%)	Two Term Exam (20%)	Teachers Assessment (30% OR 20%)	End Sem University Exam (50% OR 10%)	Teachers Assessment (50% OR 10%)					
PC	AR	THEORY	ARCH 405	HISTORY OF ARCHITECTURE & CULTURE -IV	50	20	30			100	2			2

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; S - Studio; C - Credit;

Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

ARCH 405: History of Architecture & Culture – IV

Course Educational Objectives (CEOs):

- To expose the students to a wide spectrum of architectural styles ranging from pre-historic to modern times.
- To explain to the students the evolution of architecture over time with special emphasis on social, religious and environmental factors.
- To make the students understand the developments in construction technology in different periods.

Course outcomes (COs):

- At the end of the course, students will be able to
 - Demonstrate an understanding of different styles of Indian architecture
 - Compare prominent/important historic buildings by their style of design in the Asian world.
 - Formulate the contributing factors to the design development of different styles.
- Expected Skills / Knowledge Transferred:
 - Acquire knowledge to identify the common characteristics among the monuments of a particular style.
 - Acquire graphic skills to present a building, analyze its elements and explain the composition.
 - Acquire knowledge of good practices of architecture in the past.
- Focus: Indian & Mughal
 - The student will develop an understanding of architecture and urban form in settlements of the medieval period
 - The student will get exposure to the processes and causes that led to the creation of the architecture of the Middle Ages


Course Overview:

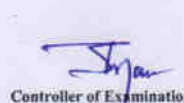
History of Architecture to be studied as the development of building forms in response to social, religious, aesthetic and environmental factors. The study should focus on the three-dimensional forms, plan forms, façade organization, structural solution, construction methods and ornamentation. The study should focus on the general trends and not on specific e.g., on buildings.

Course Contents:

Unit	Syllabus: Topic	Subtopic	Teaching Hours:
	Islamic architecture in India: universal abstract principles, regional expressions		
	• Scales of city, institutions, dwellings		
	• Development of specialized building types and their architectural schemes		
	• Parallels in contemporaneous cities in India: Vijayanagar and Jaipur etc.		
I	Vedic Era	Introduction to Vedic era, society and culture, later Vedic era; Jana padas, the rise of Mahajan padas, Magadha Jainism and Buddhism: Introduction to new religion and ideas	4 hrs
II	Mauryan, Chalukyan and Harshvardhan era	• Introduction to the Mauryan empire, life and culture, important rulers Western Chalukyan architecture, and Badami Chalukyan Architecture Introduction to the Gupta empire, life and culture, important rulers, life and culture. Harshvardhan Era: Introduction to the new religion and ideas Rock-cut architecture of the era	6 hrs
III	Islam and India	Islamic Architecture: Introduction to Islamic culture worldwide; early Islamic architecture in India beginnings under the slave kings (Cir. A.D. 1200 to 1290), The Sayyid (1414-51) and the Lodi (1451-1526) dynasties,	8 hrs
IV	Regional Variation	Provincial styles (Bengal, Gujarat, Malwa Deccan, Sasaram).	4 hrs


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ARCH 405: History of Architecture & Culture – IV

Semester	Course Area	Course Typology	Course Code	Course Name	EXAMINATION SCHEME					TOTAL MARKS	TEACHING SCHEME/ WEEK			CREDITS
					THEORY			STUDIO			L	T	S	
					End Sem University Exam (50% OR 40%)	Two Term Exam (20%)	Teachers Assessment* (30% OR 20%)	End Sem University Exam (50% OR 10%)	Teachers Assessment* (50% OR 10%)					
IV	AR	THEORY	ARCH 405	HISTORY OF ARCHITECTURE & CULTURE -IV	50	20	30			100	2			2

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; S - Studio; C - Credit;

Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

IV Mughal and Islam in the south of India Mughal architecture and its spread across India. Islamic architecture of the south of India. **8Hrs**

Sessional work:

Guidelines

Assignments /Tasks are to be set from the entire syllabus; The topic of the project is to be displayed on the Institute Notice Board fifteen days - a week time in advance OF the commencement of the classes
 Continuous Evaluation shall be made of students' work based on various models, sketch assignments, and market surveys.

Assignments:

One Major And the rest minor tasks are to be set from the entire syllabus
 Emphasis should be laid on understating building evolution and form. The continuous evaluation shall be made of students' work based on various models, assignments and sketching


Note:


Evaluation is to be done through viva voce by an external examiner appointed by the university at the Institute. Portfolios, after the university exam, shall be retained at the Institute level for the viva-voce

Suggested Readings:

"Mughal art and architecture." The Columbia Encyclopedia, 6th ed. 2015. Encyclopedia.com. 14 Mar. 2016
 Bagenal, Philip. 1980 The Illustrated Atlas of the World's Great Buildings: A History of World Architecture. S.I.: Leisure.
 Brown, Percy (1942) Indian Architecture (Islamic Period). D B Taraporevala Sons & Co. Bombay.
 Ching, Francis D.K. Mark Jarzombek and Vikramaditya Prakash. 2007. A Global History of Architecture. Hoboken, NJ: J. Wiley & Sons. Fazio, Michael W., Marian Moffett, Lawrence Wodehouse, and Marian Moffett. 2008. A World History of Architecture Boston: McGraw-Hill. Ferguson J., Burgess, J., & Spiers, R. P. History of Indian and Eastern Architecture. New Delhi: Munshiram Manoharlal, 1972 Fletcher, 1987. Banister. Sir Banister Fletcher's A History of Architecture. London: Butterworths.
 George Michell - Architecture of the Islamic World - - (its history and social meaning), Thames and Hudson, London, 1978.
 Graber, O.1980. "Kubbat al-Sakhra". In Bosworth, C.E.; van Donzel, al. The Encyclopedia of Islam, Volume 2, Part -1 (new ed.). Leiden: E.J.Brill.
 Guruswamy Vaidyanathan Gateway to Indian Architecture, Edifice Publication, 2003
 Hillenbrand, Robert 1994. Islamic Architecture: Form, Function, and Meaning. New York: Columbia University Press.
 Islamic Architecture, Form, Function and Meaning, Robert Hillenbrand, Edinburgh University Press, 1994
 Kamiya Takeo. The Architecture of the Indian Subcontinent. Architecture Autonomous.
 Kostof, Spiro. 1985. A History of Architecture: Setting and Rituals. New York: Oxford UP.
 Lewis, Bernard. The World of Islam. Thames and Hudson, Ltd.
 Moffett, Marian; Fazio, Michael W.; Wodehouse, Lawrence 2003. A World History of Architecture (illustrated ed.). London: Laurence King Publishing. Murray, Peter; Architecture of the Italian Renaissance, 1969
 Nikolaus Pevsner, An Outline of European Architecture, Pelican, 1964
 Norberg-Schulz, Christian and Pier Luigi Nervi. 1971. History of World Architecture. New York: Abrams.
 Percy Brown, Indian Architecture (Islamic Period) - Taraporevala and Sons, Bombay, 1983
 Satish Grover. The Architecture of India (Islamic) Vikas Publishing House Pvt. Ltd., New Delhi, 1981. Subhadra Sen Gupta(2013), " Fatehpur Sikri: Akbars Magnificent city on a hill", Niyogi books
 Tadgell, Christopher (1990). The history of architecture in India: from the dawn of civilization to the end of the Raj. London: Architecture Design and Technology. Tadgell, Christopher. A History of Architecture. London: Ellipsis, 2000.
 Ward, John B. 1979. History of World Architecture. London: Faber. Print


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B. ARCH (2021-26)

ARCH 406: Theory of Architecture

Course Code	Course Name	EXAMINATION SCHEME					TOTAL MARKS	TEACHING SCHEME/WEEK			CREDITS			
		THEORY			STUDIO			L	T	S				
		End Sem University Exam (50%OR 40%)	Two Term Exam (20%)	Teachers Assessment* (30%OR 20%)	End Sem University Exam (50%OR 10%)	Teachers Assessment* (50%OR 10%)								
BS& AE	TE	THEORY	ARCH 406	THEORY OF ARCHITECTURE	50	20	30			100	2			2

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; S - Studio; C - Credit;

Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

ARCH 406: Theory of Architecture

Course Educational Objectives (CEOs):

- To impart the skills of three-dimensional visualization and presentation.
- To train the students in the field of Analytical approach
- To expose the students to a wide spectrum of architectural styles and theories.
- To explain to the students how architecture evolved with special emphasis on social, religious and environmental factors.

Course outcomes (COs):

- At the end of the course, students will be able to
 - To impart the skills of three-dimensional visualization and presentation
- Expected Skills / Knowledge Transferred:
 - To develop an understanding of the basic principles of space and mass, circulation and architectural composition
 - Acquire knowledge to identify the common characteristics among the monuments of a particular Style.
- Focus: Design Language
 - To impart knowledge about the various processes in design that have been prevalent in the world over time

Course Overview:

To provide the student of architecture a foundation in the conception of forms, spatial aspects, compositions and their analysis in buildings.

Course Contents:

Sr. No.	Syllabus: Topic	Subtopic	Teaching Hours:
	Theory Of Design		
I	Design And Its Process	Definition of design, understanding of design, the purpose of design, nature of good design and evaluation of design, types of design classifications, the role of designer, and design in history. Design Process : The context for architectural design problems, design process, stages in the design process, different considerations, and different ideas of design methodology.	5 hrs.
II	Design Problems And Solutions	Different approaches to design, problem-solving or intuitive, formulation of problems, nature of creative design problems, and goals in design. Design Thinking : Understanding the terms - creativity, imagination, etc. Theories on thinking, convergent and divergent thinking, lateral and vertical thinking, creative techniques like checklists, brainstorming, syntactic, etc. design puzzles and traps, and blocks in creative thinking. Design Concepts, Philosophies And Strategies : Various approaches to generate ideas for architectural design - types of concepts, personal philosophies and strategies of individual designers, channels that foster creativity in architecture.	5 hrs.
	Theory Of Architecture		
III	Architectural And Mass Space	Definition of architecture- elements of architecture - Space defining elements, openings in space-defining elements, spatial relationship, spatial organization Primary forms, properties of form, a transformation of forms - dimensional transformation, subtractive, additive forms, organization of additive forms - Articulation of forms Aesthetic Components Of Design : Exploration of the basic principles of design such as Proportion, scale, balance, rhythm, symmetry,	5 hrs.

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B. ARCH (2021-26)

ARCH 406: Theory of Architecture

Course Code	Course Area	Course Typology	Course Code	Course Name	EXAMINATION SCHEME					TOTAL MARKS	TEACHING SCHEME/WEEK			CREDITS
					THEORY			STUDIO			L	T	S	
					End Sem University Exam (50% OR 40%)	Two Term Exam (20%)	Teachers Assessment (50% OR 20%)	End Sem University Exam (50% OR 10%)	Teachers Assessment (20% OR 10%)					
BSE/AE	TE	THEORY	ARCH 406	THEORY OF ARCHITECTURE	50	20	30			100	2			2

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; S - Studio; C - Credit;

Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

hierarchy, and the axis with building e.g.

Circulation :Components of building circulation - The building approach, The building entrance, Configuration of the path, Path space relationship, Form of circulation space -Circulation diagram for residence and restaurant

IV Principles Of Composition Involves the study of the basic principles that govern architectural components such as Unity, Harmony, Dominance, Fluidity, Emphasis, Contrast etc. **5 hrs.**

V Design Process And Analysis Of Building Design process -integration of aesthetics and function - Understanding of formative ideas, organization concepts, spatial characteristics, - Massing and circulation in the design analysis of the following buildings: Falling water house, & Guggenheim museum by F. L. Wright -Villa Savoye & Chapel of Notre-dame DuHaut by Le Corbusier. **5 hrs.**

Sessional work:

Guidelines

Assignments /Tasks are to be set from the entire syllabus; The topic of the project is to be displayed on the Institute Notice Board fifteen days - a week time in advance OF the commencement of the classes

Continuous Evaluation shall be made of students' work based on various models, sketch assignments, and market surveys.

Assignments:

One Major And the rest minor tasks are to be set from the entire syllabus


Emphasis should be laid on understating building evolution and form w.r.t climate, client. The continuous evaluation shall be made of students' work based on various models, assignments and sketching

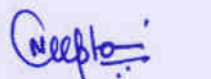
Note:


Evaluation is to be done through viva voce by an external examiner appointed by the university at the Institute. Portfolios, after the university exam, shall be retained at the Institute level for the viva-voice

Suggested Readings:

Benevolo, Leonardo. History of Modern Architecture: the modern movement Vol.2. Routledge and Kegan Paul, London, 1971.
 Benevolo, Leonardo. History of Modern Architecture: the tradition of modern architecture Vol.1. Routledge and Kegan Paul, London, 1971.
 Bryan Lauson - How Designers Think, Architectural Press Ltd., London, 1980.
 Curtis, J.R. William. Modern Architecture since 1900. Prentice-Hall, Inc., New Jersey, 2002.
 Ernest Burden, Elements of Architectural Design - A Visual Resource, Van Nostrand Reinhold Company, 1994
 Frampton Kenneth Modern Architecture: A Critical History London: Thames & Hudson, 1980
 Francis D. K. Ching, Architecture - Form, Space and Order, Van Nostrand Reinhold Company, 1979
 Geoffrey Broadbent - Design in Architecture - Architecture and the human sciences - John Wiley & Sons, New York, 1981
 Giedion, Sigfried, Space, Time and Architecture: the growth of a new tradition, 4th ed. Harvard University Press, Cambridge, 1962.
 Hilberseimer, L. Contemporary Architecture: Its roots and trends. Paul theobald, Chicago, 1964.
 K.W.Smithies, Principles of Design in Architecture, Van Nostrand Reinhold Company, 1981
 Nigel Cross - Developments in Design Methodology, John Wiley & Sons, 1984
 Norberg Schulz C., Principles of Modern Architecture, London Andreas papadakes, 2000.
 Pevsner, Nicolaus Oersonem: Pioneers of Modern Design from William Morris to Walter Gropius-.
 Roger H. Clark, Michael Pause, Precedents In Architecture, Van Nostrand Reinhold Company, 1996
 Sam F. Miller, Design Process - A Primer For Architectural & Interior Design, Van Nostrand Reinhold Company, 1995
 Sharp, Dennis. Twentieth-Century Architecture: A Visual History, Facts On File. New York, 1991
 Tom Heath - Method in Architecture, John Wiley & Sons, New York, 1984
 V.S.Pramar, Design Fundamentals In Architecture, Somaiya Publications, New Delhi, 1973


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B. ARCH (2021-26)

ARCH 407: Structural Design I

Course Code	Course Area	Course Typology	Course Code	Course Name	EXAMINATION SCHEME					TOTAL MARKS	TEACHING SCHEME/WEEK			CREDITS
					THEORY			STUDIO			L	T	S	
					End Sem University Exam (50%OR 40%)	Two Term Exam (20%)	Teachers Assessment* (30%OR 20%)	End Sem University Exam (50%OR 10%)	Teachers Assessment* (50%OR 10%)					
BSc AE	TE	THEORY	ARCH 407	STRUCTURAL DESIGN I	50	20	30			100	2			2

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; S - Studio; C - Credit;

Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

ARCH 407: Structural Design I

Course Educational Objectives (CEOs):

To develop structural design skills in RCC elements

Course outcomes (COs):

At the end of the course, students will be able to

Expected Knowledge Transferred:

Focus: R.C.C

- to enable students to design simple RCC structures and their basic components, viz, columns, beams, slabs and staircases. (To design a beam for a given system of loading and structural geometry, for flexure and shear. Evaluate To design a slab for a given building floor for different end support conditions, a column for a given axial load and moments, and a dogleg staircase for a given stairwell space in a residential or public building.)

Ability to analyze the standard members in structures IN R.C.C.

to understand RC structure and its application in a consecutive design project.
 To distinguish and classify various types of RCC material depending on the strength and durability parameters.
 To outline the features of IS code provisions regarding the limit state method for designing the concrete structure
 To summarize the conceptual idea behind the development of pre-stressed structural components for general use

Course Overview:

This course focuses on the structural design of different elements of buildings in RCC.

Course Contents:

Unit	Syllabus: Topic	Subtopic	Teaching Hours:
I.	Introduction	Introduction to RCC design, Design Philosophies: Situations were doubly reinforced beams	6hrs
II.	slabs	T-beams: Slabs: Columns Design of the staircase	6hrs
III.	beams	Design of lintels and cantilever beams and slabs using the limit state method only	6hrs
IV.	footings	Design of RCC Isolated footings for columns (Square and Rectangle) – Limit state method.	6hrs
V.	Pre-stressed, pretension	Introduction, to prestressed concrete, Pretension & Post-tensioning methods, and Problems of beams.	6hrs

Sessional work:

Guidelines

Assignments /Tasks are to be set from the entire syllabus; The topic of the project is to be displayed on the Institute Notice Board fifteen days - a week time in advance OF the commencement of the classes

Continuous Evaluation shall be made of students' work based on various models, sketch assignments, and market surveys.

One Major And the rest minor tasks are to be set from the entire syllabus

Assignments:

Emphasis should be laid on understating building structures. The continuous evaluation shall be made of students' work based on various models, assignments and sketching

Note:

Evaluation is to be done through viva voce by an external examiner appointed by the university at the Institute. Portfolios, after the university exam, shall be retained at the Institute level for the viva-voice

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B. ARCH (2021-26)

ARCH 407: Structural Design I

Course Code	Course Area	Course Typology	Course Code	Course Name	EXAMINATION SCHEME					TOTAL MARKS	TEACHING SCHEME/WEEK			CREDITS
					THEORY			STUDIO			L	T	S	
					End Sem University Exam (50%OR 40%)	Two Term Exam (20%)	Teachers Assessment (50%OR 20%)	End Sem University Exam (50%OR 10%)	Teachers Assessment (50%OR 10%)					
BS&AE	TE	THEORY	ARCH 407	STRUCTURAL DESIGN I	50	20	30			100	2			2

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; S - Studio; C - Credit;

Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

Suggested Readings:

A.K.Jain. Reinforced Concrete: Limit State Design, 5th Ed. New Chand and Bros., Roorkee, 1999.
Ramamrutham. S. and Narayan, R. Design of RCC Structures, 12th Ed. Dhanpat Rai Pub. Co. Pvt. Ltd., Delhi, 1998.

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B. ARCH (2021-2G)

ARCH 408: Computer Application II

Course Code	Course Area	Course Typology	Course Code	Course Name	EXAMINATION SCHEME					TOTAL MARKS	TEACHING SCHEME/WEEK			CREDITS
					THEORY			STUDIO			L	T	S	
					End Sem University Ex (50%OR 40%)	Two Term Exam (20%)	Teachers Assessment (30%OR 20%)	End Sem University Exam (50%OR 10%)	Teachers Assessment (50%OR 10%)					
SEC	SK	STUDIO	ARCH 408	COMPUTER APPLICATION II				50	50	100			2	2

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; S - Studio; C - Credit;

Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

ARCH 408: Computer Application II

Course Educational Objectives (CEOs):

To familiarize the students with the concepts of 3D modelling. To enable them to experiment with forms, mapping, rendering and presentation techniques.

Course outcomes (COs):

At the end of the course, students will be able to

- Develop an understanding of parametric design & digital fabrication
- Maximize the understanding of digital three-dimensional modelling by further exploring computers as a tool for architectural representation.
- Create Architectural Visualization & Develop 3D Rendering of a computer-generated model.

Expected Skills / Knowledge Transferred: understanding architecture about the virtual world to help explain the design properly.

Focus: Computer-Based Skill

- The student will develop an understanding of the computer-generated model
- The student will develop an understanding of complex parametric designs through the software
- The student will develop an understanding of digital fabrication and create models using the 3d er
- The student will learn to Design Scripts

Course Overview:

To enhance the visualizing skills of the students by exposing them to the latest modelling software.

Course Contents:

Unit	Syllabus: Topic	Subtopic	Teaching Hours:
		• Application of CAD Software in Design Development ; Parametric Designs ; Design Scripts –Python, Grasshopper, Rhino ; Digital Fabrication – 3d Ing ; Documentation, Rendering ; 3D Modelling in Cad:	
I.	Introduction To 3ds Max:	Rendering & Animation: Textures And Texture Mapping: Site Modelling: Modelling Techniques: Building Modelling: Customization: Presentation: Rendering Views, Creating Walkthrough, Layouts.	6 hrs
II.	Photo Editing and Desktop Publishing	Photo Editing and Desktop Publishing (application)	6 hrs
III.	Parametric Designs	Parametric Design (Rhino Grasshopper or Equivalent) Introduction to Parametric Design Small Design (or Installation) Project	6 hrs
IV.	Digital Fabrication	Digital Fabrication Introduction to Digital Fabrication & its applications Introduction to 3D printing Small Design (or Installation) Project	6 hrs
V.	3D	3D Max, V-Ray or equivalent software Generating 3D rendered visualization (understanding Material, Texture, Natural Light, Artificial Light etc.)	6 hrs

Sessional work:

Guidelines

Assignments/Tasks are to be set from the entire syllabus; The topic of the project is to be displayed on the Institute Notice Board fifteen days - a week time in advance OF the commencement of the classes

Continuous Evaluation shall be made of students' work based on various models, sketch assignments, and market surveys.

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ARCH 408: Computer Application II

Sl. No.	Course Area	Course Typology	Course Code	Course Name	EXAMINATION SCHEME					TOTAL MARKS	TEACHING SCHEME/WEEK			CREDITS
					THEORY			STUDIO			L	T	S	
					End Sem University Exam (50%OR 40%)	Two Term Exam (20%)	Teachers Assessment (30%OR 20%)	End Sem University Exam (50%OR 10%)	Teachers Assessment (50%OR 10%)					
SEC	SK	STUDIO	ARCH 408	COMPUTER APPLICATION II				50	50	100			2	2

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; S - Studio; C - Credit;

Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

One Major And the rest minor tasks are to be set from the entire syllabus

Assignments:

Note:

Evaluation is to be done through viva voce by an external examiner appointed by the university at the Institute. Portfolios, after the university exam, shall be retained at the Institute level for the viva-voce

Suggested Readings:

3DS MAX 8 Bible – Kelly C.Murdock
 3DS MAX- Advanced 3D modelling and animation – C & M, CADD Centre
 Adobe Creative Team. Adobe Photoshop CS (Class Workbook).
 Adobe Photoshop 7.0 Classroom in a Book – Adobe creative team
 AUTODESK Publications Autodesk REVIT 9.1 Manual, Autodesk publications
 Bachman, D. (2017). Grasshopper: Visual Scripting for Rhinoceros 3D. South Norwalk (CT): Industrial Press.
 Droblas, Adele. Fundamental Photoshop: A Complete Introduction, Greenberg.HTML Black Book
 Dunn, N. (2012). Digital fabrication in architecture. London: Laurence King.
 Farrelly, L. (2008). Representational techniques. Lausanne: AVA Book. 4
 Hogrefe, A. (2016). Visualizing architecture volume 4: Architecture portfolio. Boston, MA: Alex Hogrefe Visualization LLC.
 Jabl, W. (2013). Parametric design for architecture. London: Laurence King Publishing.
 Jongh, R. (2010). Sketchup 7.1 for architectural visualization: Beginners guide. Birmingham, UK: Packt Publishing.
 Kuhlo, M., & Eggert, E. (2017). Architectural rendering with 3ds Max and V-Ray: Photorealistic visualization. New York: Focal Press.
 Photoshop CS Bible – Deke McClelland
 Photoshop CS Bible – Deke McClelland
 REVIT 9.1 Tutorials, Autodesk publications
 Sagman. Microsoft Office for Windows, India Addison Wesley, 1999.
 Tal, D. (2013). Rendering in Sketchup: From modelling to presentation for architecture, landscape architecture and interior design. Hoboken, NJ: Wiley.
 Woody, Leon Hard. Microsoft Office 2000, Prentice Hall of India, New Delhi.
 Tedeschi, A. (2010). Parametric Architecture with Grasshopper. Primer. Brienza: Le Penseur

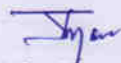
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B. ARCH (2021-26)

ARCH 409: Building Systems And Services -III Acoustics & Advanced

Course Code	Course Area	Course Typology	Course Code	Course Name	EXAMINATION SCHEME					TOTAL MARKS	TEACHING SCHEME/ WEEK			CREDITS
					THEORY			STUDIO			L	T	S	
					End Sem University Exam (50%OR 40%)	Two Term Exam (20%)	Teachers Assessment* (30%OR 20%)	End Sem University Exam (50%OR 10%)	Teachers Assessment* (50%OR 10%)					
B34 AE	TE	THEORY	ARCH 409	BUILDING SYSTEMS AND SERVICES-III (ACOUSTICS & ADVANCED)	50	20	30	20		100	2			2

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; S - Studio; C - Credit;

Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

ARCH 409: Building Systems And Services -III Acoustics & Advanced

Course Educational Objectives (CEOs)::

To gain knowledge regarding the layout of utilities and services in the building envelope, the functioning of services and their applications in the building

Course outcomes (COs):

- | | |
|---|--|
| <p>At the end of the course, students will be able to</p> | <p>Interpret the behavior of sound and the acoustical properties of materials.
 To analyze and design various built spaces with different end-user acoustical requirements.
 Identify the requirements for an acceptable illumination system for various functions in buildings. Propose lighting schemes in building design. List and outline the requirement and arrangements for the mechanical transport system, fire safety and firefighting systems in the building. Combine this and develop a building design.
 Interpret the relevant building code/ regulations for compliance in design and detailing.
 Integrate the application of artificial intelligence in building services systems towards an optimized, efficient, reliable management system</p> |
|---|--|

Expected Knowledge / Skills Transferred: Acquire knowledge of good practices in services for better layout planning.

Focus: acoustics and advance services The student will learn the theory, principles & Design of acoustics

Course Overview:

- Study of Building Services and Utilities generally installed in buildings and their role in enhancing the utilitarian value of the buildings. The study focuses on understanding basic working, principles, terms and definitions, as well as practical aspects and solutions utilized in architecture

Course Contents:

Unit	Syllabus: Topic	Subtopic	Teaching Hours:
I.	Introduction	Sound & Acoustics: Principles & design Acoustics: Physics of sound - Sound propagation; Sound Measurement; Sound in enclosed space - Properties & behaviour; Acoustical Defects; Constructional measures; various sound-absorbing material & its applications. Acoustical properties of building materials, Sound insulation; Room acoustics; Reverberation time - control; design for the listening room; acoustical requirements; Effects of noise - Environmental noise, Impact noise, Sound Transmission - airborne & structure-borne noise, STC, Noise control techniques in different building types.	6 Hrs
II.	acoustics	Acoustical Design: for performance spaces- drama hall, music, speech, cinemas, open-air theatre, workplaces, education spaces, & other acoustically sensitive environments; Design of Theaters & Concert Halls, recording rooms- open-air theatres; Designing of the stage, seating & false ceiling design, Sound amplification systems; Acoustical treatment materials, Case studies; Calculations & designing of acoustical treatment of various spaces.	6Hrs
III.	Sound & Acoustics	Sound waves, their nature, power, transmission & spread pattern. The intensity of the sound output level of various activities hearing mechanics-ear's sensitivity. Noise control and protection methods Acoustics methods and material, designed for desired hearing.	6 hrs

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B. ARCH (2021-26)

ARCH 409: Building Systems And Services -III Acoustics & Advanced

Course Code	Course Area	Course Typology	Course Code	Course Name	EXAMINATION SCHEME					TOTAL MARKS	TEACHING SCHEME/WEEK			CREDITS
					THEORY			STUDIO			L	T	S	
					End Sem University Exam (50%OR 40%)	Two Term Exam (20%)	Teachers Assessment* (30%OR 20%)	End Sem University Exam (50%OR 10%)	Teachers Assessment* (50%OR 10%)					
B5& AE	TE	THEORY	ARCH 409	BUILDING SYSTEMS AND SERVICES-III (ACOUSTICS & ADVANCED)	50	20	30	20		100	2			2

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; S - Studio; C - Credit;

Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

- IV. Lighting aspects of a building
 - Sound insulation, introduction to reverberation
 - Case study and demonstration in building design with suitable conditions.
 - Lighting • Sunlight, its principles, radiation Spectrum and onward aspects of a building
 - Vision, Colors and Visual Comfort
 - Day-Lighting in buildings, its sources, lighting criteria, the visual field, Behavior-transmission, reflection
 - Daylighting factor, prediction methods
 - Physics of light, Photometry
 - Artificial lighting, lighting levels for various activities

6Hrs
- V. Advanced Services
 - List and outline the requirement and arrangements for the mechanical transport system, fire safety and firefighting systems in the building. Combine this and develop a building design.
 - Interpret the relevant building code/ regulations for compliance in design and detailing.
 - Integrate the application of artificial intelligence in building services systems towards an optimized, efficient, reliable management system

6hrs

Sessional work:

Guidelines

Assignments /Tasks are to be set from the entire syllabus; The topic of the project is to be displayed on the Institute Notice Board fifteen days - a week time in advance OF the commencement of the classes
 Continuous Evaluation shall be made of students' work based on various models, sketch assignments, and market surveys.

Assignments:

One Major And the rest minor tasks are to be set from the entire syllabus
 Emphasis should be laid on understating building evolution and form. The continuous evaluation shall be made of students' work based on various models, assignments and sketching

Note:

Evaluation is to be done through viva voce by an external examiner appointed by the university at the Institute. Portfolios, after the university exam, shall be retained at the Institute level for the viva-voice

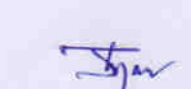
NOTE:-Emphasis should be laid on understating building evolution and form. The continuous evaluation shall be made of students' work based on various models, assignments and sketching

SUGGESTED READINGS :

Poella, L. Lestie. Environmental Acoustics.
 Moore, J.E. Design of Good Acoustics, The Architectural Press, London, 1961.
 Burris, Harold. Acoustics for the Architect.
 Lord, Peter and Templeton, Duncan. The Architecture of Sound: Designing Places of Assembly. Architectural Press Ltd., London, 1986.
 Egan, David. Architectural Acoustics, Mc Graw-Hill Book Company, New York, 1988
 Handbook for Building Engineers in Metric systems, NBC, New Delhi, 1968.
 Philips Lighting in Architectural Design, McGraw Hill, New York, 1964.
 Dr.V. Narasimhan - An introduction to Building Physics- Kabeer ing works, Chennai -5
 Jaramillo, Ana. M. Steel, Chris. Architectural Acoustics. New York: Routledge, 2015
 Ermann, Michael. Architectural Acoustics Illustrated. USA: John and Wiley Sons, Inc, 2015
 Egan, M Paul. Architectural Acoustics: J. Ross Publishing Classics, Jan 2007
 Noise mapping in the EU: models and procedures. New York: CRC Press Taylor & Francis Group, 2013
 Muneer, T. & others. Windows in buildings: thermal, acoustic, visual and solar performance. Oxford, Amsterdam, New York: Architectural Press 2000


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B. ARCH (2021-76)

ARCH 410: Internship II

Cm File Code	Course Area	Course Typology	Course Code	Course Name	EXAMINATION SCHEME					TOTAL MARKS	TEACHING SCHEME/WEEK			CREDITS
					THEORY			STUDIO			L	T	S	
					End Sem University Exam (50%OR 40%)	Two Term Exam (20%)	Teachers Assessm ent* (30%OR 20%)	End Sem University Exam (50%OR 10%)	Teachers Assessm ent* (50%OR 10%)					
SEC	SU	INTERNS HIP	ARCH 410	INTERNSHIP II				50	50	100			2	2

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; S - Studio; C - Credit;

Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

ARCH 410: Internship II

Summer Internship: 4-5 Weeks (6 Hours/Day)

Course Educational Objectives (CEOs):

To allow the student to see how classroom concepts and skills are professionally practised.

To expose students to aspects of landscape architecture, planning, and design that are best experienced in practice.

Course outcomes (COs):

At the end of the course, students will be able to

Gain an understanding of workplace dynamics, professional expectations, and the influence of culture on both.
 Build proficiency in a range of business or industry skills appropriate to the field of the internship placement, including professional and intercultural communication through written, verbal, and non-verbal means. ; Refine and clarify professional and career goals through critical analysis of the internship experience or research project; Give academic value to the internship. ; Add an analytical dimension to the overall experience; Encourage a professional approach to academic work

Expected Skills / Knowledge Transferred:

Focus: Professional training

Ability to translate skills and knowledge of architecture acquired at university into a professional setting.; Knowledge of the professional practice of architecture.; Increased skills in performing tasks in a professional office; Increased ability to communicate in a professional setting; Increased understanding of the social and ethical role of the architect; Advanced skills in using software applications in a professional context

By the end of this course, students will be able to articulate a reflection and draw personal insights related to their own beliefs and worldviews about individuals and society, based on the cultural and professional dimensions of their experience, namely:
 what makes their company succeed – or not – in its field, how it operates as a community and in the community, what main issues it has to face, both internally and on the market; what it takes to work in/with other cultures (and/or languages) and to adapt to an unfamiliar environment to be part or at the service of a new community, how to approach cultural differences in their daily experience and what they can learn from them, both about themselves and others – as individuals but also as part of a global world; what they can bring to a professional environment, how they can draw skills from experience and process challenges, how they can contribute to a company's project and community ;
 who they are as a result of this growing process, in terms of civic-mindedness, cultural awareness, professional goals, and personal aspirations.

Course Overview:

Students will develop professional skills & understanding.

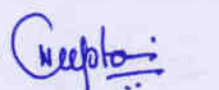
Course Contents:


Unit Syllabus: Topic Subtopic

Teaching Hours:

This course provides an opportunity for students to experience a working environment in an architecture firm in which to observe and apply their knowledge and skills for the degree. Projects will be negotiated between the School and the host organisation, involving students in a variety of design stages from preliminary design, design development, documentation, and presentation to a client. Students may also be involved in meetings, clerical work and administration to gain insight into the day-to-day functioning of a business. ; The course will be offered to students based on academic merit through a competitive application and interview process. Students must complete the course to the satisfaction of the host organisation and academic supervisor


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B. ARCH (2021-22)

ARCH 410: Internship II

Course Core	Course Area	Course Typology	Course Code	Course Name	EXAMINATION SCHEME					TOTAL MARKS	TEACHING SCHEME/WEEK			CREDITS
					THEORY			STUDIO			L	T	S	
					End Sem University Exam (50% OR 40%)	Two Term Exam (20%)	Teachers Assessment (30% OR 20%)	End Sem University Exam (50% OR 10%)	Teachers Assessment (50% OR 10%)					
SEC	SU	INTERNSHIP	ARCH 410	INTERNSHIP II				50	50	100			2	2

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; S - Studio; C - Credit.

Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

- I **Analytical Approach** The general idea for this course is to encourage students to truly reflect on the varied subjects it covers, and not merely state facts and observations. The first crucial step for this consists in raising the right questions. Investigation (within the company, through research, through self-questioning) follows, allowing to find nuanced answers or further questions. Organized Outline This writing process is the opportunity to put into practice, a method consisting of organizing ideas in a structured outline. The format includes visible titles and subparts with explicit titles for all sections. Specific angles General Introduction The introduction will present the student's background, motivations and initial goals for the internship.
- The Company and its Sector:** In this section, the student must show an insider's understanding of the organization, not only through a clear description of the company, what it does/offers, and how it operates internally, but also through an analysis of its strengths and weaknesses, of the general context in which it operates, of the challenges it faces, of its identity as a community and position in a border community. It should NOT be written in the first person.
- The Intercultural Experience:** In this section, the student will account for his/her experience and understanding of cultural differences, both on a general scale, as a process of adjustment, and through specific examples related to human relationships, work environment and ethics, the vision of life or society and issues related to the sector.
- The Professional Experience:** In this section, the student will recount his/her internship experience in terms of missions and tasks, but also in terms of accomplishments, challenges, lessons, developed skills or competencies, and contribution to the community.
- General Conclusion** The conclusion will focus on the outcomes of this experience, how the student has evolved, what kind of professional they aspire to be and how this experience will impact future professional or personal choices. Assignments will be emailed as Microsoft Word documents. Methodological handouts and readings are available on Blackboard. Please note: it is the student's responsibility to organize their time and respect deadlines.

Sessional work:

Guidelines

The place of the internship is to be finalised and displayed on the Institute Notice Board fifteen days in advance of the commencement of the vacation

Internship: During the internship phase (last four to five weeks of the program), students will be working at their internship placement for around 30 hours a week, from Mondays to Saturdays

Employment Requirements and Internship Initiation Summary:

Minimum of 4-5 weeks (summer semester) of full-time work. For summer interns, this allows securing a position as late as June 1st, and working until fall classes begin. Note that internships may begin as early as the year schedules can be arranged, providing a 7-8 Weeks opportunity as part-time

Must be under the supervision of a graduate Architect or other design professional. Registered Architects, Engineers, and Certified Planners also qualify.

Submit 2 copies of the Internship Program Application to the Internship Coordinator, before starting the internship.


Assignments:


The student will maintain field observations/record books.

Note:

the internship should be supervised by a licensed or registered design professional (LA, Architect, Planner, Engineer). However, the qualification as a graduate design professional


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B. ARCH (2021)

ARCH 410: Internship II

Sem	Course Area	Course Typology	Course Code	Course Name	EXAMINATION SCHEME					TOTAL MARKS	TEACHING SCHEME/ WEEK			CREDITS
					THEORY			STUDIO			L	T	S	
					End Sem University Exam (50% OR 40%)	Two Term Exam (20%)	Teachers Assessment (30% OR 20%)	End Sem University Exam (50% OR 10%)	Teachers Assessment (50% OR 10%)					
SEC	SU	INTERNSHIP	ARCH 410	INTERNSHIP II				50	50	100			2	2

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; S - Studio; C - Credit;

Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

is also acceptable. • For Design-Build settings, there must be another landscape architect on the staff (if not registered, then someone with an LA degree). Internship work must have a design/office component, preferably at least 50% of the time. Credit is not given for "build" work only.

Arboretum/Botanical Garden settings must be supervised by an LA or professional horticulturist. An office component is desirable, but if the internship involves outdoor training, etc., there should be no problem.

• With unusual internship opportunities, it's required to talk with the Intern Coordinator ahead of time. • If you are having trouble locating an internship, contact the Intern Coordinator. For year students and Grads: even if an internship has not been secured for the summer, advance enrolls. If an internship is not secured, an incomplete will be given in the fall, allowing an additional year to satisfy the requirements. If you fall in this category, talk to the Internship Coordinator.

• Intended primarily to give students office experience, the program is flexible enough to allow a balance of both in the field and the office situations, if appropriate. Positions involving only site construction or maintenance, while valuable in their own right, are not permitted for internship credit.

Evaluation

Evaluation is to be done through viva voce by an external examiner appointed by the university at the Institute. Portfolios, after the university exam, shall be retained at the Institute level for the viva-voce

Evaluation: Stages: Proposal and on final submission of the paper /DOCUMENTATION of places visited Students contribute to the topic/area is of critical importance, detailed out as per the academic calendar

a paper presentation on any subject of interest in the core or elective subjects.

The student needs to identify an area for research and in consultation with a guide propose first. On approval, this is to be developed through the summer and culminate as a research paper. Requirements (from students): Proposal, reviews, final presentation and paper.

a summer case study where the student has to select a built building by one of the architects and have a live document of the building and analyse the building and a word of the concept according to the architect.

Fraud Awareness

Students are reminded that to maintain the academic integrity of all programs and courses, the university has a zero-tolerance approach to students offering money or significant value goods or services to any staff member who is involved in their teaching or assessment. Students offering lecturers tutors or professional staff anything more than a small token of appreciation is unacceptable, in any circumstances. Staff members are obliged to report all such incidents to their supervisor/manager, who will refer them for action under the university's student disciplinary procedures.

Attendance Penalties For This Course*

1 absence from a workshop = 1 point off the course's final grade

1 absence from work (internship placement) = 1 point off the course's final grade

more than 3 unexcused absences = f for the course

unsubmitted written work* = f (0 points) for the assignment in question

work handed in late = 1 point off the assignment per day

unsubmitted midterm evaluation = 2 points off the course's final grade

poorly filled out midterm evaluation = 1 point off the course's final grade

plagiarism = f (0 points) for the assignment in question

* past Friday - week 15 (11:59 pm), no written work will be accepted (grade for the assignment = 0).

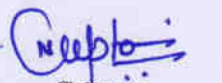
Written Work

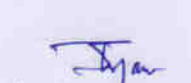
Total length for all assignments combined: 15 pages in English General goal These written assignments will cover all aspects of the internship experience: the company, the sector, the intercultural experience, and the individual professional development. The final result will be a comprehensive account of the experience and its impact. Each section must incorporate elements related to the student's internship credits.

Requirements:

Submit at least bi-weekly reports during the internship (the form will be sent to the internship location, by the intern coordinator).


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B. ARCH (2021-26)

ARCH 410: Internship II

Course Core	Course Area	Course Typology	Course Code	Course Name	EXAMINATION SCHEME					TOTAL MARKS	TEACHING SCHEME/WEEK			CREDITS
					THEORY			STUDIO			L	T	S	
					End Sem University Exam (50%OR 40%)	Two Term Exam (20%)	Teachers Assessment* (30%OR 20%)	End Sem University Exam (50%OR 10%)	Teachers Assessment* (50%OR 10%)					
SEC	SU	INTERNSHIP	ARCH 410	INTERNSHIP II				50	50	100			2	2

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; S - Studio; C - Credit;

Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

2. Paper – A 2-page, single-spaced, paper describing your experience, specifically discussing office structure, clients, responsibilities, and accomplishments, is due the first Monday of the Month.

3. An 8 1/2" x 11" graphic brochure describing your place of employment with appropriate contact information is due the first Monday of the Month.

4. Mentoring – Work with at least one student and assist them in focusing their search and acting as a resource. Identify students, contact them and meet with the Internship coordinator. Work with them to create a one-page plan by the first Monday of the Month.

5. Panel display – A panel will be assigned for you to create an interesting display describing your internship and place of employment. This will be up for 2 weeks beginning It is the responsibility of the student to display and remove it promptly.

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B. ARCH (2021-26)

ARCH 419: Elective – IV

Con 178 Core	Course Area	Course Typology	Course Code	Course Name	EXAMINATION SCHEME					TOTAL MARKS	TEACHING SCHEME/ WEEK			CREDITS
					THEORY			STUDIO			L	T	S	
					End Sem University Exam (50%OR 40%)	Two Term Exam (20%)	Teachers Assessm ent** (30%OR 20%)	End Sem University Exam (50%OR 40%)	Teachers Assessm ent** (30%OR 20%)					
SEC	SU	THEORY /STUDIO	ARCH 419	ELECTIVE- IV (PC- II)				50	50	100			2	2

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; S - Studio; C - Credit;

Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

ARCH 419: Elective – IV

- 4 Sem Elective IV**
- 419.1 Spatial Narratives: Stories On Still
 - 419.2 Building Performance And Compliance
 - 419.3 Road Safety And Civic Sense
 - 419.4 MOOC: Designers, Know Your Duties /Sense N Sensibility: Acedge

Course Educational Objectives (CEOs):

overall nurturing of the student with issues in practice and field outside

Course outcomes (COs):

At the end of the course, students will be able to overall nurturing of the student with issues in practice and field outside

Expected Skills / Knowledge Transferred: better grooming than just books and theories.

Focus: Manual Skills

The creative electives provide an opportunity to express talents that are different from architecture but related to imagination, visualization & creation. They offer hands-on experience of unique ingenuity & workmanship. The essence of a creative domain can be achieved by exploring different materials, techniques, and processes; developing creative products; and finishing & presenting the product for the concepts that evolved. The outcome will be through portfolio & presentations. As Per Pool Electives Choices Stage I odd semester pool

Course Overview:

The following is a representative list of Institute projects: Seminars, Tutorials/ additional classes for any course, Guest Lectures, Workshops, Providing knowledge to support students being sensitive to design;

Sessional work:

- Guidelines** The topic of the project is to be displayed on the Institute Notice Board fifteen days in advance OF the commencement of the classes
 Assignments /Tasks are to be set from the entire syllabus; The topic of the project is to be displayed on the Institute Notice Board fifteen days - a week time in advance OF the commencement of the classes
- Assignments:** One Major And the rest minor tasks are to be set from the entire syllabus
 Evaluation is to be done through viva voce by an external examiner appointed by the university at the Institute. Portfolios, after the university exam, shall be retained at the Institute level for the viva-voice
- Note:** Evaluation: Stages: Proposal and on final submission of the paper /DOCUMENTATION of places visited Students contribute to the topic/area is of critical importance. Evaluation is to be done through viva voce, Portfolios after the university exam shall be retained at the Institute level for the viva-voice

ARCH 419.1 : Spatial narratives

Spatial narratives Introduction: Concepts of spatial narratives in the built environment; significance; Terminologies; Physical expression of socio-cultural aspects; Environmental Psychology; Cognitive mapping; Defensible spaces, perceptions, association to space. Elements: Leading to perception & interpretation of built & urban space; Development of experiential

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B. ARCH (2021-26)

ARCH 419: Elective – IV

Sl. No.	Course Area	Course Typology	Course Code	Course Name	EXAMINATION SCHEME					TOTAL MARKS	TEACHING SCHEME/ WEEK			CREDITS
					THEORY			STUDIO			L	T	S	
					End Sem University Exam (50% OR 40%)	Two Term Exam (20%)	Teachers Assessment (30% OR 20%)	End Sem University Exam (50% OR 10%)	Teachers Assessment (50% OR 10%)					
SEC	SI	THEORY /STUDIO	ARCH 419	ELECTIVE - IV (POE-4)				50	50	100			2	2

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; S - Studio; C - Credit;

Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

between road design and road safety.

Unit II: Types of road intersections: basic forms of at-grade junctions (T, Y, Staggered, skewed, cross, scissors, rotary etc. grade-separated junctions (with or without interchange)three-leg, four-leg, multi-leg etc.; Design of intersections: design and spatial standards for traffic islands, turns, turning radii, directional lanes, pedestrian crossings, median openings, traffic calming components like speed breakers and tabletop crossing etc Design considerations for diverging, merging and weaving traffic ; Location and design for traffic signals

Requirement of pedestrian infrastructure: sidewalks and footpaths, recommended sidewalk widths, pedestrian crossings, pedestrian bridges, subways, cycle tracks, etc.

Barrier-free design: location and design standards for ramps for wheelchair access, other provisions like tactile for visually challenged etc ;Safety provisions: pedestrian railings, anti-skid flooring, pedestrian signal, walk button, etc.

Unit III: Traffic signs and road markings ;Type for traffic signs: principles and types of traffic signs, danger signs, prohibitory signs, mandatory signs, informatory signs, indication signs, direction signs, place identification signs, route marker signs etc. reflective signs, LED Signs, static and dynamic signs.;Standards for traffic signs: location, height and maintenance of traffic signs ; Types of road markings: centre lines, traffic lane lines, pavement edge lines, no-overtaking zone markings, speed markings, hazard markings, stop lines, pedestrian crossings, cyclist crossings, route material, colour and typography of the markings.

Traffic signals, traffic control aids, street lighting ; Traffic signals: introduction, advantage and disadvantages ;Signal indications: vehicular, pedestrian and location of the signals.;Signal face, illustration of the signals, red, amber, green signals and their significance, flashing signals warrant of signals coordinated control of signals

Traffic control aids roadway delineators (curved and straight sections), hazard markers, object markers, speed breakers, tabletop crossings, rumble strips, guard rails, crash barriers etc.;Street lighting: the need for street lighting, type of lighting, illumination standard, location and intermediate distance

Unit IV: Nature and types of road accidents(grievously injured, slightly injured, minor injury, non-injury etc) ;The situation of road accidents in India (yearly), fatality rates etc.

Factors(and violations) that cause accidents, prevention and first aid to victims Collision diagrams and condition diagrams exercises.Traffic management measures and their influence on accident prevention.

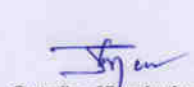
Unit V: Road safety and civic sense need for road safety, category of road users and road safety suggestions Precautions for driving in difficult conditions (night, rain, fog, skidding conditions, non-functional traffic lights, etc) ;Types of breakdowns and mechanical failures. Accident sign (warning light, warning triangle, etc)

Introduction to the concept of civic sense and its relationship to road safety: the importance of civic sense, road etiquette and road user behaviour, rules of the road, and right of the way. assisting accident victims. sensitisation against road rage

Traffic regulations, laws and legislation ; Indian motor vehicles act (chapter viii: control of traffic to be discussed in detail); Regulations concerning traffic: cycles, motorcycles and scooters, rules for pedestrian traffic, keep to the left rule, overtaking rules, turning rules, priority rules, hand signals etc. ;Speed and hazard management. penal provisions. ;National road safety policy, central motor vehicle rules, state motor vehicle rules introduction to good practices


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B. ARCH (2021-26)

ARCH 419: Elective – IV

Course Code	Course Area	Course Typology	Course Code	Course Name	EXAMINATION SCHEME					TOTAL MARKS	TEACHING SCHEME/WEEK			CREDITS
					THEORY			STUDIO			L	T	S	
					End Sem University Exam (50%OR 40%)	Two Term Exam (20%)	Teachers Assessment out* (30%OR 20%)	End Sem University Exam (50%OR 10%)	Teachers Assessment out* (50%OR 10%)					
SEC	SU	THEORY /STUDIO	ARCH 419	ELECTIVE- IV (POOL II)				50	50	100			2	2

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; S - Studio; C - Credit;

Teacher Assessment shall be based following components: Quiz/Assignment/ Project/Participation in Class, given that no component shall exceed more than 10 marks.

quality; Interrelationships between space & its user; Delineation of space; Stimulation of activities; Timescale & temporal transformations. Indian architecture & spatial narrative: Factors affecting the process of experiencing Indian architecture, its complexities, & spatial narrative; Impact of socio-cultural aspects; Religious complexes, civic buildings & fortified settlements. Urban space & spatial narrative: Experiencing & perceiving urban spaces; Methods of comprehension; Spatial order; Sequence of experiencing a space; Understanding multi-layered information system in an urban space. Exploring spatial narratives: Case studies; Learnings from architectural reviews; Development of personal philosophies through primary experience; Critical analysis of experience through writings, visuals & sketches; Comparisons of interpretations.

ARCH 419.2 : Building performance and compliance

Building performance and compliance

After completion of this course, the student will be able to: 1. Analyze the performance of the building based upon different parameters. 2. Apply the knowledge of Building Energy codes in building components. 3. Make use of an integrated design approach related to code compliance. 4. Make use of energy simulation software for early design decisions concerning ventilation, lighting, etc. 5. Conceptualize the building design concerning benchmark values of the different applicable codes like ECBC, NBC, BIS SP 41, etc.

Objective: To understand the parameters, terminologies and technologies associated with Building performance assessment **Outline:** Building performance assessment, Building Code and Energy Conservation Building Code, Various compliance approaches; Building Envelope; Comfort Systems; Lighting systems; Electrical and renewable energy systems, Energy Plus™ to model both energy consumptions for heating, cooling, ventilation, lighting and process loads and water use in buildings, Heat balance-based solution of radiant and convective effects. Kubba, S. (2012). Handbook of green building design and construction: LEED, BREEAM, and Green Globes. Butterworth-Heinemann.
 Haselbach, L. (2010). The engineering guide to LEED—New Construction: Sustainable construction for engineers (GreenSource). McGraw-Hill, New York.
<https://energyplus.net/>
<https://www.designbuildit.com/>

ARCH 419.3 : Road safety and civic sense

Road safety and civic sense

Objective: To introduce the concepts, principles, tools and aids of road safety and civic sense to the students of B.Arch. to acquaint them with the design and safety standards for roads, also, inculcate the practice of safe road behaviour and a civic sense among them.

Methodology: lectures, tutorials and case studies.

Unit 1: introduction to road safety

Road as an active space, types of users, user behaviour, and sensory factors like vision and hearing in user behaviour. Types of vehicles: heavy vehicles, light motor vehicles, two-wheelers, auto-rickshaws, bicycles and cycle rickshaws, non-motorized vehicles

Vehicle characteristics: dimensions, weight, turning radii, braking distance, lighting system, tyres, etc. Type of hazards: conflicts and accidents.

a typology of roads: components and design ; Road classification: national highways, state highways, district roads (MDR and ODR), Village Roads Urban Road classification: expressway, arterial, sub-arterial, collector, local, service roads, one-way, two-way etc .mountainous roads, speed limits of the road types ;Design of roads: cross-sectional elements -the right of way, carriageway, median, shoulders, sidewalks, lanes cycling track green strip, curbs, camber etc. spatial standards for the cross-section design, relationship

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ARCH 419: Elective – IV

Sl. No.	Course Area	Course Typology	Course Code	Course Name	EXAMINATION SCHEME					TOTAL MARKS	TEACHING SCHEME/WEEK			CREDITS
					THEORY			STUDIO			L	T	S	
					End Sem University Exam (50% OR 40%)	Two Term Exam (20%)	Teachers Assessment* (30% OR 20%)	End Sem University Exam (50% OR 10%)	Teachers Assessment* (50% OR 10%)					
SEC	SU	THEORY /STUDIO	ARCH 419	ELEC _{ARCH} 3- IV (POOL II)				50	50	100			2	2

Legends: L - Lecture; T - Tutorial/Teacher Guided Student Activity; S - Studio; C - Credit;

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Suggestive readings:

- Srinivasa Kumar, Introduction to traffic engineering
- LR Kadiyali, Traffic engineering and transport planning
- Ministry of road transport and highways (govt of India)Book on road safety signage and signs,
- MORT & H Pocketbook for highway engineers, 2019(3rd revision)
- Publications by UTTIPEC namely, street design guidelines, UTTIPEC guidelines for road markings, UTTIPEC guidelines and specifications for crash barriers, pedestrian railing and dividers, UTTIPEC standard typical crossing design
- Street design standards as provided in times savers, neuferts etc
- Publications by Indian Road Congress

ARCH 419.4. MOOC

Course Educational Objectives (CEOs):

overall nurturing of the student with issues in practice and field outside

Course outcomes (COs):

At the end of the course, students will be able to

Expected Knowledge: Focus: Manual Skills
 Skills Transferred:

Tell different types and techniques of collages and/or manages
 Illustrate the importance of collages and/or montages as a tool to represent and communicate ideas
 mpose a collage/montage
 better grooming than just books and theories.

The creative electives provide an opportunity to express talents that are different from architecture but related to imagination, visualization & creation. They offer hands-on experience of unique ingenuity & workmanship. The essence of a creative domain can be achieved by exploring different materials, techniques, and processes; developing creative products; and finishing & presenting the product for the concepts that evolved. The outcome will be through portfolio & presentations.
 As Per Pool Electives Choices Stage I odd semester pool

Course Overview:

The following is a representative list of what may :
 Tutorials/ additional classes for any course on online mode of platforms, Provides knowledge to support student being sensitive to design;
 • a paper presentation

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