

Choice Based Credit System (CBCS) Scheme in the light of NEP-2020 by COA

B. ARCH (2021-26)

COURSE CONTENT

ARCH 301: ARCHITECTURAL DESIGN - II

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STUDIO									INT	EX		INT	EX				
ARCH 301	PC	AR	STUDIO	ARCHITECTURAL DESIGN II				8					200	200	400	400	

L - THEORY; S- STUDIO, T-TUTORIAL, C - CREDIT; HRS. HOURS, MST - MIDTERM TEST, A MST - AVERAGE OF MIDTERM, ESUE - END SEMESTER UNIVERSITY EXAMINATION; IA - INTERNAL ASSESSMENT PROGRESSIVE, SS-FOLIO FINAL Sessional (INTERNAL), EV - EXTERNAL VIVA VOICE, RVW- INTERMEDIATE REVIEW

2ND YEAR / III Semester

ARCH 301: ARCHITECTURAL DESIGN - II

Syllabus: 15 weeks (8 hours/week) Total Teaching hours: 120 Hr.

COURSE OBJECTIVE:

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

To enhance the understanding of the complexities of architectural design for residential needs and develop creative design solutions for good living environments.

COURSE OUTCOME:

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

- Compare the design and structural principles form natural objects.
- Explore the inspiration from nature for design with material understanding.
- Create, from the above exercise, into the design, and construction of a manmade proposal.
- EXPECTED SKILLS / KNOWLEDGE TRANSFERRED:

Use of standards, handling of space, and application of knowledge gained from other subjects in design. **FOCUS:** Material, Structure & Form

- The student will study and analyse the design and structural principles of the natural object.
- The student will explore the inspiration from nature for design.
- The student will apply the above exercise, to the design, and construction of the man-made proposal.

COURSE OVERVIEW:

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

COURSE CONTENTS:

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DESIGN

- Nature is the source of inspiration for the design.
- The design process and product in nature.
- Data collection and compilation analysis inference as an understanding of the design in nature.
- Application of the above learning translates into a man-made product.
- Correlation between material, structure and form.
- Man-Nature Interface in generating space, place
- Theme & Focus of Design: User-activity analysis; context; Functional & aesthetic requirements for the development of design program; Concept & detailed design with a focus on load-bearing structures using brick, stone; timber, etc.; Development of forms through sketches, models, case studies etc.
- Basic Components: Behavioral Science; Functionality; Building Materials; Theory of Design; Form Development; Tectonic decisions - Structures, Building Materials, Services; Site Planning; Building Control

Chairperson	Chairperson	Controller of Examination	Joint Registrar
Board of Studies	Faculty of Studies	Shri Vaishnav Vidyapeeth	Shri Vaishnav Vidyapeeth
Shri Vaishnav Vidyapeeth	Shri Vaishnav Vidyapeeth	Vishwavidyalaya Indore	Vishwavidyalaya Indore
Vishwavidyalaya Indore	Vishwavidyalaya Indore		

TEACHING HOURS:



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		 Regulations; Inclusive Design; Design Communication. Form Development: Exploring form in architecture; Importance; Principles of design; Evolution; Formulation & massing of multiple volumes in response to functional spaces; Interrelationship between multiple spaces & masses; Elements; Materials; Treatments; Stability. The Minor Exercise will be represented through conceptual development (sketches, physical & digital models). Design Analysis: Exploration & analysis of existing iconic Residential Architecture; Understanding design philosophy & process; Learning from design quality; Literature/book reviews; Architectural critiques. Design Exercise: Single building for 4-6 users involving multiple activities & spaces; Residence for single-family; Complexity of major design - Single building for 4-6 users involving multiple activities & spaces; Typology - Residence for single-family; Site extent - Level site up to 500 m2. 	
1	Preparatory exercises/ Programmatic and site analysis	Part-Whole relationship – Back and forth design processes • Exposure to materials, products, and assembly constructional principles. • Site Analysis • Site location or context (Inside city/outside city) • Culture and Socioeconomic condition • Climate and Topography • Built/open relation	15 hrs.
		 Distribution of open space/green space Focused on understanding the interrelationship between some of the fundamental aspects of architecture 	
2	Conceptual stage and Schematic design	 Explore the relationship between 'order of structure' and 'order of space'. The structure is one of the important factors directly affecting the experience of space. Explore the importance of coherence between the 	32 hrs.
3	Preliminary design to Design development	 rhythms of structure and space. Understand the relation between various scales of space, forming a rhythm. To create a coherent experience, it is important to know how to work with dimensional order which acts as a unifying thread creating consistency between the small and the big. Application to know dynamics between different kinds of forces and material properties which play an important role in constructing structures. 	50 hrs.
4	Design Resolution with Synthesis of design parameters	 Explore the light as an animator of static space. It has a major influence on the experience of space. Explore the ways of taking different kinds of light to enrich the experience. 	23 hrs.

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GUIDELINES

- One Major and Minor task/ exercises are to be set from the entire syllabus
- The topic of the project is to be displayed on the Institute Notice Board fifteen days in advance OF the commencement of the classes

NOTE:

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

SUGGESTED READINGS:

Allen, Edward. How Buildings Work: The Natural Order of Architecture. New York: Oxford UP, 1980. Bernard Rudofsky, Architecture without Architects

Chiara Joseph de and Others. Time Savers Standards of Building Types. McGraw – Hill, 1980.

Ching, Francis D. K. Architecture, Form, Space & Order. New York: Van Nostrand Reinhold, 1979.

Ching, Francis D. K. Architecture--form, Space, & Order. Hoboken, NJ: John Wiley & Sons, 2007.

Ching, Francis D. K., Barry Onouye, and Douglas Zuberbuhler. Building Structures Illustrated.

Corbusier, Le, and Frederick Etchells. Towards a New Architecture by Le Corbusier. London: Architectural Pr., 1965.

Corbusier, Le, Stanislaus Von. Moos, Arthur Rüegg, and Robert Venturi. Le Corbusier before Le Corbusier: Applied Arts, Architecture, Interiors, Painting, and Photography, 1907-1922: Exhibition Guide. New York: Bard Graduate Center for Studies in the Decorative Arts, Design, and Culture, 2002. Print.

Curtis, Nathaniel Cortlandt. Architectural Composition. Cleveland, O.: J.H. Jansen, 1923.

Dodds, George, Robert Tavernor, and Joseph Rykwert. Body and Building: Essays on the Changing Relation of Body and Architecture. Cambridge, MA: MIT, 2002.

Encyclopaedia Of Vernacular Architecture by Paul Oliver

Field, M. City Architecture; Or, Designs for Dwelling Houses, Stores, Hotels, Etc. In 20 Plates. With Descriptions and an Essay on the Principles of Design. New York: D. Appleton, 1854.

Hardy, Adam. Indian Temple Architecture: Form and Transformation: The Karṇāṭa Drāviḍa Tradition, 7th to 13th Centuries. New Delhi: Indira Gandhi National Centre for the Arts, 1995.

Hassan Fathy, Architecture for The Poor

Johnson, Paul-Alan. The Theory of Architecture: Concepts, Themes & Practices. New York: Van Nostrand Reinhold, 1994

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

Kostof, Spiro. A History of Architecture: Settings and Rituals. New York: Oxford UP, 1985.

Marcel Vellinga & Lindsay Asquith, Vernacular Architecture in The Twenty-First Century MarkMorris, Architecture and the Miniature: Models, John Wiley & Sons, USA, 2000. National Architectural graphic standards, Ramsey / Sleeper, The American Institute of Architects.

Neufert, Ernst. Neufert Architects Data, Granada Pub. Ltd., London, 1970. Bousmaha Baiche & Nicholas Walliman, Blackwell Science Ltd.

Pallasmaa, Juhani. The Thinking Hand: Existential and Embodied Wisdom in Architecture. Chichester, U.K.: Wiley, 2010.

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

Pollio, Vitruvius, and M. H. Morgan. Vitruvius: The Ten Books on Architecture. New York: Dover Publications, 1960.

Rich, Peter Maurice., and Yvonne Dean. Principles of Element Design. Oxford: Architectural, 1999.

Shah, S. Charanjit. Architects Hand Book Ready Reckoner. Galogotia Pub. Co.New Delhi, 1996. Sketch Plan Build: World-class architects show how it is done, Harper Design, New York, 2005.

Wittkower, Rudolf. Architectural Principles in the Age of Humanism. New York: W.W. Norton, 1971.

Yacobi, Haim. Constructing a Sense of Place: Architecture and the Zionist Discourse. Aldershot, Hants, England: Ashgate, 2004

Chairperson	Chairperson	Controller of Examination	Joint Registrar
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THEORY	CUM S	STUD	0						INT	EX		INT	EX				
ARCH 303	BS&AE	TE	THEORY CUM STUDIO	BUILDING MATERIALS & CONSTRUCTION - III	1		2	3	30	30	60	120	15	15	30	150	3

SS-FOLIO FINAL Sessional (INTERNAL), EV - EXTERNAL VIVA VOICE, RVW - INTERMEDIATE REVIEW

ARCH 303: BUILDING CONSTRUCTION & MATERIALS – III

Syllabus: 15 weeks (3 hours/week) Total Teaching hours: 45 Hrs.

COURSE OBJECTIVE:

To introduce and expose the students to various ways in which RCC is used in building construction. The course intends to impart the theory of reinforced concrete construction (in conjunction with the Theory of Structures which is a separate course), and practical knowledge through site visits to the construction sites.

COURSE OUTCOME :

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

• Demonstrate basic principles for planning, design and construction of Floors, RCC

frame structure and Opening as used in buildings.

• Explain principles of spanning system and their application.

• Apply requirements and criteria for making openings to build openings with various

materials and techniques

EXPECTED SKILLS / KNOWLEDGE TRANSFERRED:

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

• Demonstrate basic principles for planning, design and construction of Floors, RCC frame structure and Openings as used in buildings.

• Explain principles of spanning system and their application.

• Apply requirements and criteria for making openings to build openings with various materials and techniques.

To understand the techniques of constructing using different materials FOCUS: ADVANCED COMPONENTS

• The student will develop an understanding of the principle of frame structure system

• The student will understand various spanning system

• The student will develop an understanding of R.C.C

COURSE OVERVIEW:

The course focuses on understanding the potential as well as shortcomings of RCC as a building material.

COURSE CONTENTS:

SR. NO.	SYLLABUS: TOPIC	SUBTOPIC	Teaching G Hours:
		 Temporary structures such as shoring, strutting, formwork, scaffolding, etc. Basic application skills of Fundamentals of Reinforcec Cement Concrete: Superstructure, Horizontal Support Systems: Slab & Roof Systems: Vertical Support Systems: Steps, staircase, ramp, threshold – definition, types of stairs with different materials, plans, sections, elevations and enlarged details. Advanced Door Types 	
1	Understanding Floo Systems	 Understanding construction of wooden, steel, precast and RCC floor. Various elements of floors: beams, slab, girders etc. Types of floors: Flat slab, ribbed, metal deck, precast, etc. 	15 hrs.

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COURSE CONTENT

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3		Int Mo pr	roduction aterials operties	on tc • Meta and its metals • Glass	l: Pro		erti Ilas	es ar s pro	ducts:	of both Manu	n ferro factur	ing of	l nonf glass,	errous types	8 hrs.		
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Phillips, David. Detail In Contemporary Concrete Architecture. UK: Laurence King Publishing Ltd, 2012 Punaima, B. C.. Comprehensive Design of Steel Structures. New Delhi: Laxmi Publications Pvt. Ltd., 2012

Ruske, Wolfgang. Timber Construction for Trade, Industry, Administration: Basics and Projects. Switzerland: Birkhauser- Publisher of

Controller of Examination

Shri Vaishnav Vidyapeeth

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Punmia, B. C.. Building Construction. New Delhi: Laxmi Publications Pvt. Ltd., 2008 Rangwala, S. C.. Building Construction. Anand: Charotar Publishing House, 2014 Rangwala, S. C.. Surveying and Leveling. Anand: Charotar Publishing House, 2011

Chairperson

Faculty of Studies

Shri Vaishnav Vidyapeeth

Vishwavidyalaya Indore

Roof Design. Newyork: DAAB Publication, 2007

Architecture, 2004

Chairperson

Board of Studies

Shri Vaishnav Vidyapeeth

Vishwavidyalaya Indore

Shri Vaishnav Vidyapeeth

Vishwavidyalaya Indore

Joint Registrar



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Salvadori, Mario. Why Buildings Stand Up: The Strength of Architecture. New York: W. W. Norton and Co., 1980

Sandaker, Bjorn N. Structural Basis of Architecture. UK: Taylor & Francis, 2011

Schillaci, Fabio. Construction and Design Manual Architectural Renderings. Germany: Dom Publishers, 2010

Schodek, Daniel L. Structures. New Delhi: PHI Learning Private Limited, 2014

Shah, M. G.. Building Drawing: With an Integrated Approach to Built Environment. New Delhi: McGraw-Hill Publishing Company Ltd., 2013

Shah, M. G.; Padki, S. Y.; Kale, C. M.. Building Construction Vol - 4: Metric. New Delhi: Tata McGraw Hill Education Ltd., 2015 Watson, Donald. Time-Saver Standards for Building Materials and Systems: Design Criteria and Selection Data. New Delhi: Tata McGraw Hill Education Private Limited, 2009;

Watts, Andrew. Modern construction handbook. New York: Springer, 2013

Chairperson

Board of Studies Shri Vaishnav Vidyapeeth Vishwavidyalaya Indore Chairperson

Faculty of Studies Shri Vaishnav Vidyapeeth Vishwavidyalaya Indore Controller of Examination

Shri Vaishnav Vidyapeeth Vishwavidyalaya Indore Joint Registrar Shri Vaishnav Vidyapeeth Vishwavidyalaya Indore



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COURSE CONTENT

ARCH 304 ARCHITECTURAL	GRAPHICS & DRAWING – III
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COURSE CORE			GY	NAME OF THE COURSE	TEACHING SCHEME			EVALUATION SCHEME							S	(HRS)	
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ARCH 304	SEC	sк	STUDIO	ARCHITECTURAL GRAPHICS & DRA WING - III				3					75	75	150	150	

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ARCH 304 ARCHITECTURAL GRAPHICS & DRAWING – III

Syllabus: 15 weeks (3 hours/week) Total Teaching hours: 45 Hrs.

COURSE OB JECTIVE:

Visual documentation enables to enhance of the effective use of graphics and artistic skills for visual communication. Measured drawing helps to develop an understanding of real built spaces and represent them graphically.

The objective of this course is to enable the students to learn how to measure and then draw an existing building / Structure / Interior space / Landscape etc. near to the actual. This measurement work is to be done in a group/team.

COURSE OUTCOME :

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

- 1. Choose Tools and Methodology for Measurement.
- 2. Organize Collection of Secondary Information and Reconnaissance Survey.
- 3. Organize Field Data collection.
- 4. Develop drawings through collected field data.
- 5. Analyze measured drawing.

EXPECTED SKILLS / KNOWLEDGE TRANSFERRED:

To expose the students to a real-world situation and to represent the observation and understanding through graphics, sketches and architectural technical drawings

COURSE OVERVIEW:

The course is intended to develop the techniques of architectural drawing for simple and complex Building Documentation.

Identification of site, Tools & Methodology for measurement. Collection of Secondary Information, Reconnaissance Survey. Site measurements, Mapping of Structural details, Materials, Building Elements, Activities, and Supporting Sketches. Preparation of drawings through collected field data. Analysis and inferences from measured drawing.

COURSE CONTENTS:		
SR. NO. SYLLABUS: TOPIC	SUBTOPIC	TEACHING HOURS:
1	 Introduction to drawing techniques and advanced 2d drafting techniques: 	
2	Measured drawing:	
3	Architectural Documentation:	
4	 Plans & Sections of Buildings: 	
5	Sketching	
GUIDELINES		

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One Major and Minor task/ exercises are to be set from the entire syllabus The topic of the project is to be displayed on the Institute Notice Board fifteen days in advance OF the commencement of the classes

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Joint Registrar Shri Vaishnav Vidyapeeth Vishwavidyalaya Indore



Choice Based Credit System (CBCS) Scheme in the light of NEP-2020 by COA

B. ARCH (2021-26)

COURSE CONTENT

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NOTE: This is a studio subject and students should be made to prepare a measure to draw about two buildings in detail individually one small and another big project for studio exercises along with the theoretical inputs. The studio work should be supplemented with appropriate site visits.

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

SUGGESTED READINGS

Albert O'Halse Architectural Rendering. The Techniques of Contemporary Presentation. By Pub. McGraw Hill Book Company. New York.

Atkin, William W, Corbelletti, Raniero and Firore, R. Vincent. Pencil Techniques in Modern Design, 4th Ed. Reinhold Pub. Corporation, New York, 1962.

Bhatt, N.D. and Panchal V.M. Engineering Drawing: Plane and Solid Geometry, 42nd ed. Charotar Pub., Anand, 2000. Billings, Lance Bowen. Perspective-Space and design.

Burden, Ernest. Architectural Delineation: A photographic approach to presentation, 2nd Ed. McGraw-Hill, Inc., New York, 1982.

Ching, F. D. K. (2011). A Visual Dictionary of Architecture. 2nd Ed. Hoboken: John Wiley & Sons. ;

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Claude Batley - Design Development of Indian Architecture

Conli, Claudius. Drawings by Architects.

David E. Carter, The Big Book of Design, David E. Carter Books Joyce Rutter Kaye, Design Basics, Rockport.

Ellen Lopton and Jennefer Cole Phillips, Graphic Design The New Basics, Princeton Architectural Press

Ernest Burden - Architectural Delineation

Francis D.K.Ching &Steven P Juroszek, Design drawing, John Wiley & Sons, USA, 1998

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I.H. Morris, Geometrical Drawing for Art Students, Orient Longman Chennai.

Lockard, W. K. (1992). Drawing as a Means to Architecture. 6th Ed. New York: Van Nostrand Reinhold Company.

M.G. Shah & K.M. Kale, Perspective Principles of Asia publication Mumbai.

Nichols, T.B. and Keep, Norman. The geometry of Construction, 3rd ed. Cleaver – Hume Press Ltd., London, 1959.

Pranchlay, H. Perspective

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Shah, M.G., Kale, C.M. and Patki, S.Y. Building Drawing: with an integrated approach to the built environment, 7th Ed. Tata McGraw Hill Pub., Delhi, 2000.

Shankar Mulik, Perspective & Sciography, Allied Publishers;

Thoms, E. French. Graphic Science and Design, New York: Mc Graw Hill.

William A. Radford. (2002)

Architectural Details and Measured Drawings of Houses of the Twenties. Dover Architecture.

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Choice Based Credit System (CBCS) Scheme in the light of NEP-2020 by COA

B. ARCH (2021-26)

COURSE CONTENT

ARCH 305: HISTORY OF ARCHITECTURE & CULTURE – III

OURSE		OGY A		TEACHING SCHEME				EVALUATION SCHEME						S S	(HRS)		
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ARCH 305	PC	AR	THEORY	HISTORY OF ARCHITECTURE & CULTURE -III	2			2	20	30	50	100				100	3

305 PC JAK _____A. CULTURE -III __Z ___ Z __ZU __SU __SU __IUU __S _____ L + THEORY; S-STUDIO, T-TUTORIAL; C - CREDIT: HRS: HOURS; MST - MIDTERM TEST, A MST - AVERAGE OF MIDTERM, ESUE - END SEMESTER UNIVERSITY EXAMINATION; IA - INTERNAL ASSESSMENT PROGRESSIVE, SS-FOLIO FINAL SESSION AI [INTERNAL], EV - EXTERNAL VIVA VOICE, RVW - INTERMEDIATE REVIEW

ARCH 305: HISTORY OF ARCHITECTURE & CULTURE – III

Syllabus: 15 weeks (2 hours/week) Total Teaching hours: 30 Hrs.

COURSE OBJECTIVE:

- To impart knowledge about Indian culture, building art and vernacular construction techniques that would influence the architecture student to develop designs that are rooted in this country and suitable to the lifestyle of its people
- To expose the students to a wide spectrum of architectural styles ranging from prehistoric to the preindependence period in India.
- 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 OUTCOME:

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

• Demonstrate the understanding of architecture and urban form in settlements of the medieval period

• Analyse the processes and causes that led to the creation of the architecture of an era

Assess the impact of technology on the architecture

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: Medieval World
 - The student will develop an understanding of architecture and urban form in settlements of the medieval period
 - The student will develop an understanding of architecture in unified cultural systems: universality and abstract models
 - The student will get exposure to the processes and causes that led to the creation of the architecture of the Middle Ages
 - The student will learn about the development of Renaissance principles after the Middle Ages and their expression in building

COURSE OVERVIEW:

- Detailed study & analysis of architectural design fundamentals through significant e.g., in the light of the following for the periods mentioned in the modules –
- Genesis of seed ideas & concepts; Timeline; Socio-political background, key people involved; Climatic & geographic influence; General settlement pattern; Cities & its civic places; Construction technology & material; Design principles; Typology; Evolution; Spatial organization; Form & Detailing.
- The e.g., to represent the following historical styles are suggestive & students are encouraged to explore additional e.g., for a comprehensive understanding of the respective styles.

COURSE CONTENTS:

SR. NO. SYLLABUS: TOPIC SUBTOPIC

TEACHING HOURS:

• Architecture in India in the Gupta & Medieval periods was studied at the scales of settlements, institutions, dwellings and community form

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Choice Based Credit System (CBCS) Scheme in the light of NEP-2020 by COA

B. ARCH (2021-26)

COURSE CONTENT

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ARCH 305	PC	AR	THEORY	HISTORY OF ARCHITECTURE & CULTURE -III	2			2	20	30	50	100				100	3
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		 Islamic architecture in the Middle East & Central Asia Japanese Architecture as a comparison of a codified system Romanesque & Gothic Architecture as the continuous avalution of articer al articles. 	
1	Early Christian Architecture	 The emergence of early Christian architecture towards the end and the fall of the Roman empire and its development into Byzantine architecture 	4 hrs
2	Romanesque & Byzantine	Romanesque & Byzantine Architecture as the evolution of artisanal craft and structural principal	6 hrs
3	Gothic	• The progress of technology, civilization and philosophy created the architecture of the Gothic era	8 hrs
4	Renaissance	 Renaissance in Europe. Early renaissance to high renaissance. Urban structure and space, institute form as an expression of abstract ideas (work of architects like Brunelleschi, Bramante, Michael Angelo etc.) The Renaissance in Europe – Urban structure and space, institutional form an expression of abstract ideas. 	8 hrs
5	Baroque and Rococo	 Baroque architecture and the development of spatial experience as a complex expression. Mannerism/ Late Renaissance was influenced by and a reaction to the ideals of the Renaissance architecture continuing to develop into Baroque and Rococo 	4 hrs
NOTE: -Em shall be mo	phasis should be laid o ade of students' work	on understating of building evolution and form. The continuous ev based on various models, assignments and sketching	valuation
SUGGESTE Bagenal, Phili	D READINGS: p. 1980 The Illustrated Atlas	s of the World's Great Buildings: A History of World Architecture. S.I.: Leisure.	

Braun, Hugh, An Introduction to English Mediaeval Architecture, London: Faber and Faber, 1951

Browne, Edith A. (2005). Romanesque Architecture. Kessinger Publishing

Ching, Francis D.K. Mark Jarzombek and Vikrmaditya Prakash. 2007. A Global History of Architecture. Hoboken, NJ: J. Wiley & Sons. Christy Anderson. Renaissance Architecture. Oxford 2013

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.

Hale, J.R.; The Civilization of Europe in the Renaissance, 1993

Howard Saalman, Filippo Brunelleschi: The Buildings, London: Zwemmer, 1993

Ilan Rachum, The Renaissance, an Illustrated Encyclopedia, 1979, Octopus

Joachim E. Gaehde (1989). "Pre-Romanesque Art". Dictionary of the Middle Ages

Jones, Tom Devonshire; Murray, Linda; Murray, Peter, eds. (2013). The Oxford Dictionary of Christian Art and Architecture (illustrated ed.). Oxford University Press

Kostof. Spiro. 1985. A History of Architecture: Setting and Rituals. New York: Oxford UP.

Krautheimer, Richard (1986). Early Christian and Byzantine Architecture (4 ed.). Yale University Press

Kubach, Hans Erich: Romanesque Architecture, 1988.

Lowry.B.(1987). Renaissance architecture. New York: Braziller.

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.

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Choice Based Credit System (CBCS) Scheme in the light of NEP-2020 by COA

B. ARCH (2021-26)

COURSE CONTENT

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ARCH 305	PC	AR	THEORY	HISTORY OF ARCHITECTURE & CULTURE -III	2			2	20	30	50	100				100	3

LC THEORY: 5 STUDIO, T-TUTORIAL; C - CREDIT, INS HOURS, MST - MIDTERM TEST, A MST - AVERAGE OF MIDTERM, ESUE - END SEMESTER UNIVERSITY EXAMINATION; IA - INTERNAL ASSESSMENT PROGRESSIVE, SS-FOLIO FINAL Sessional (INTERNAL), EV - EXTERNAL VIVA VOICE, RVW - INTERMEDIATE REVIEW

Percy Brown, Indian Architecture (Islamic Period) - Taraporevala and Sons, Bombay, 1983

Tadgell, Christopher. A History of Architecture. London: Ellipsis, 2000.

V.I.Atroshenko and Judith Collins, 1985, The Origins of the Romanesque. (Lund Humpheries, London

Ward, John B. 1979. History of World Architecture. London: Faber. Print

Watkin, David (Sep 2005), A History of Western Architecture, Hali Publications

Willis, R. (1835). Remarks on the Architecture of the Middle Ages, Especially of Italy. Cambridge: The Pitt Press.

Wittkower.R.(1998). Architectural principles in the age of humanism. Chichester, West Sussex Academy Editions

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Choice Based Credit System (CBCS) Scheme in the light of NEP-2020 by COA

B. ARCH (2021-26)

COURSE CONTENT

ARCH 306: CLIMATIC RESPONSIVE DESIGN

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ARCH 306	PC	AR	THEORY	CLIMATIC RESPONSIVE DESIGN	2			2	20	30	50	100				100	3

S. FOLIO FINAL Sessional (INTERNAL), EV - EXTERNAL VIVA VOICE, RVW - INTERMEDIATE REVIEW

ARCH 306: CLIMATIC RESPONSIVE DESIGN

Syllabus: 15 weeks (2 hours/week) Total Teaching hours: 30 Hrs.

COURSE OBJECTIVE:

To equip the student with the basic understanding of climatic types in India, and the impact on requirements of building design and site planning; to introduce them to the basic science of building design and site planning for thermal comfort, daylighting and natural ventilation; familiarize them with the data, methods, principles, standards and tools for planning and designing for climatic comfort

COURSE OUTCOME:

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

and • Explain importance climate the the role of as one of major determinant of built form. modifying factor of built Identify climate as environment. • Comprehend various climate-controlling device

EXPECTED SKILLS / KNOWLEDGE TRANSFERRED:

The student should be able to 'predict' climatic conditions in a given building (simple residence) and undertake redesign for given parameters. understanding architecture about the natural and built environment.

• Students will understand the role and importance of climate as one of the major determinants of built form.

- The student will understand the climate as modifying factor of the built environment.
- The student will learn various climate-controlling devices.

COURSE OVERVIEW:

This subject area also known by the term building science in earlier times enlightens the students about the processes by which buildings and entire habitats can be designed to respond to nature, with climate as the basic parameter of design. Science (tools, data, standards, methods and principles) of building design and site planning is related to climate, particularly in tropical climates as found in India.

COURSE CONTENTS:

SR. NO.	SYLLABUS: TOPIC	SUBTOPIC	TEACHING HOURS:	G
1		 Introduction to climatic design: Impact of climate on design: 		
2		• Bioclimatic & low-energy design: Understanding the sun path & shading devices, the orientation of the building, openings- sizes, and position. Examples of Low-energy projects & discussion on solar architecture.		
3	Introduction to climatology	Elements of climate, & their impact on global, local, site & building context.Solar Geometry its effect & importance Built environment, conditions, impact and issues of climatic balance in traditional/ vernacular and contemporary built environments. Study of Passive Environmental Control Mechanisms Tropics and its Climatic zones Macro and Micro Climate (site climate)	20 hrs.	

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B. ARCH (2021-26)

COURSE CONTENT

ARCH 306: CLIMATIC RESPONSIVE DESIGN



Passivhaus Designer's Manual: A Technical Guide to Low and Zero Energy Buildings: Routledge Taylor & Francis Ltd.

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B. ARCH (2021-26)

COURSE CONTENT

ARCH 306: CLIMATIC RESPONSIVE DESIGN

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ARCH 306	PC	AR	THEORY	CLIMATIC RESPONSIVE DESIGN	2			2	20	30	50	100				100	3

SS-FOLIO FINAL Sessional (INTERNAL), EV - EXTERNAL VIVA VOICE, RVW - INTERMEDIATE REVIEW

Rajagopalan, R. Environmental Studies: From Crisis to Cure. New Delhi: Oxford University Press, 2011

Shah. M G, Padki. S Y, Kale, C M, Building Drawing: with an integrated approach to building environment, New Delhi: Tata McGraw-Hill Education, 2002

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Tipnis, Aishwarya. Vernacular Traditions- Contemporary Architecture. New Delhi: The Energy and Resources Institute, 2012, Print. **Desai, Madhavi**. Traditional Architecture: House from the Islamic Community of Bohra in Gujarat. Maharashtra: National Institute of Advanced Studies in Architecture (NIASA), COA,2007

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Olgay, Victor. Design With Climate – Bio-Climatic Approach to Architectural Regionalism. New Jersey: Princeton University Press, 1963 Moore, Fuller. Concepts and practice of architectural daylighting. New Delhi, New York: Van Nostrand Reinhold 1991

Steane, Mary Ann. . Architecture of light: recent approaches to designing with natural light Book.London: Routledge, 2011

Zaretsky, Michael. Precedents in zero-energy design: architecture and passive design in the 2007 solar decathlon. London & New York: Routledge, 2010

Goswami, D. Yogi, Principles of solar engineering. New York Taylor and Francis group 2000

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Choice Based Credit System (CBCS) Scheme in the light of NEP-2020 by COA

B. ARCH (2021-26)

COURSE CONTENT

ARCH 307: THEORY OF STRUCTURES - III

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THEORY						2 26 - 72			INT	EX		INT	EX				
ARCH 307	BS&AE	TE	THEORY	THEORY OF STRUCTURES - III	2			2	20	30	50	100				100	3

L - THEORY; S- STUDIO, T -TUTORIAL; C - CREDIT; HRS: HOURS; MST - MIDTERM TEST, A MST - AVERAGE OF MIDTERM, ESUE - END SEMESTER UNIVERSITY EXAMINATION; IA - INTERNAL ASSESSMENT PROGRESSIVE, SS- FOLIO FINAL Sessional (INTERNAL), EV - EXTERNAL VIVA VOICE, RVW - INTERMEDIATE REVIEW

ARCH 307: THEORY OF STRUCTURES – III

Syllabus: 15 weeks (2 hours/week) Total Teaching hours: 30 Hrs.

COURSE OBJECTIVE:

To impart sound knowledge of strength, the behaviour of various materials and techniques in the analysis of structures.

COURSE OUTCOME:

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

- Develop to gain understanding by using the abstract method of analysis of structures
- Evaluate basic requirements of stability and strength of materials.
- Evaluate structural elements and their importance in Structural System.

EXPECTED SKILLS / KNOWLEDGE TRANSFERRED:

Ability to analyze the standard members of structures.

COURSE OVERVIEW:

Gives an in-depth understanding of the concepts associated with different Elements of Structures.

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2	Resolution	of	 bending, determining Concept of trianguing 	M.I. of simple and compound Ilation and its application ir	d sections n pin jointed	6 hrs
1	Concept of C of gravity	entre	 Steel as a structural case studies. Determining the centra Moment of inertia 	material, structural systems bid of simple figures.	in steel with	6 hrs
			Torsion of Shafts: • The arch is a curved an arch. Three hinged importance of the sho loading.	element. Arch in history, the arches. Simple problems to ape of an arch, rise end co	efficiency of illustrate the nditions and	
			system and portal from resisting horizontal force Continuous beams: mod / Rotation Contribution wind pressure on chime stress at bottom of chime pressure.	ames. Importance of porta es. oment Distribution Method: Ka Method: Columns and Strut neys, Maximum & Minimum mneys Retaining walls subjec	al frames in ani's method s: intensities of ted to earth	
			 Analysis of indeterm and distribution factor factors, introduction to Indeterminacy of c 	inate structures. Introduction rs, introduction to moment the moment distribution me frame, comparison of po	n to stiffness t distribution thod. st and lintel	HOURS:
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Choice Based Credit System (CBCS) Scheme in the light of NEP-2020 by COA

B. ARCH (2021-26)

COURSE CONTENT

ARCH 307. THEORY OF STRUCTURES -Ш

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ARCH 307							-			INT	EX		INT	EX			
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B. ARCH (2021-26)

COURSE CONTENT

ARCH 307: THEORY OF STRUCTURES - III

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L - THEORY; S-STUDIO, T - TUTORIAL; C - CREDIT; HRS: HOURS; MST - MIDTERM TEST, A MST - AVERAGE OF MIDTERM, ESUE - END SEMESTER UNIVERSITY EXAMINATION; IA - INTERNAL ASSESSMENT PROGRESSIVE, SS-FOLIO FINAL Sessional (INTERNAL), EV - EXTERNAL VIVA VOICE, RVW - INTERMEDIATE REVIEW

Sarkisian, Mark P. Designing Tall Buildings: Structure as Architecture. New York: Routledge, 2012.

Schodek, Daniel L. Structures. Englewood Cliffs, NJ: Prentice-Hall, 1980.

Seward, Derek. Understanding Structures: Analysis, Materials, Design. Basingstoke: Palgrave Macmillan, 2003.

SP – 16, Design Aids for Reinforced Concrete to IS 456

Steel Design, Newyork, DAAB Publication, 2007

Subramanian, N., Design of Steel Structures, New Delhi, Oxford University Press, 2012

Watson, Donald, Time-saver Standards for Building Materials and Systems: Design Criteria and Selection Data, New Delhi, Tata McGraw Hill Education Private Limited, 2009

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B. ARCH (2021-26)

COURSE CONTENT

ARCH 308: COMPUTER APPLICATION I

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L - THEORY; S- STUDIO, T -TUTORIAL; C - CREDIT; HRS. HOURS; MST - MIDTERM TEST, A.MST - AVERAGE OF MIDTERM, ESUE - END SEMESTER UNIVERSITY EXAMINATION; IA - INTERNAL ASSESSMENT PROGRESSIVE, SS- FOLIO FINAL Sessional (INTERNAL), EV - EXTERNAL VIVA VOICE, RVW - INTERMEDIATE REVIEW

ARCH 308: COMPUTER APPLICATION I

Syllabus: 15 weeks (2 hours/week) Total Teaching hours: 30 Hrs.

COURSE OBJECTIVE:

The course imparts basic knowledge of computers to upgrade the general understanding and ability in computing in the realm of architecture. To enhance the visualizing skills of the students by exposing them to the latest modelling software.

COURSE OUTCOME:

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

- Utilize two-dimensional digital software (Auto CAD, Illustrator, Photoshop or equivalents)
- Maximize possibilities of representation on an analytical level.

• Imagine complex forms using software (Auto CAD, Rhino or equivalents) and will be able to manifest it in a physical model.

EXPECTED SKILLS / KNOWLEDGE TRANSFERRED:

Developing overall skills in various computer-aided tools, processes and presentations.

FOCUS: Computer

- The student will become adept at using CAD software for drafting
- The student will be able to create digital 3d models

COURSE OVERVIEW:

The course provides the foundation and capability to represent the concepts threedimensionally.

Sketching Techniques

COURSE CO	ONTENTS:		
SR. NO. S	Syllabus: Opic	SUBTOPIC	TEACHING HOURS:
1	Representation Techniques using drafting software (Auto CAD or equivalent)	 CAD Drafting (e.g., AutoCAD, ArchiCAD, Rhino, Vector work, etc.) CAD Modeling, I (e.g., Sketch-Up, etc.) 3D Rendering & Architectural Visualization (Vray, 3D Max, Lumion, etc.) Fundamentals of CAD Drafting (Setting up Scale & Units, Working With Layers, Line weights, Composition of different scaled drawings in a single sheet, Plotting etc) Advanced Geometry, Patternmaking and analysis Uses of computer-generated drawings to execute basic design ideas (Physical model & Drawings) 	10 hrs

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B. ARCH (2021-26)

COURSE CONTENT

ARCH 308: COMPUTER APPLICATION I

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L - THEORY; S- STUDIO, T-TUTORIAL; C - CREDIT; HRS: HOURS; MST - MIDTERM TEST, A MST - AVERAGE OF MIDTERM, ESUE - END SEMESTER UNIVERSITY EXAMINATION; IA - INTERNAL ASSESSMENT PROGRESSIVE, SS- FOLIO FINAL Sessional (INTERNAL), EV - EXTERNAL VIVA VOICE, RVW - INTERMEDIATE REVIEW

2	Understanding complex forms & Surfaces (AutoCAD 3D, Rhino or equivalent)	 Loft, sweep, Doubly curved surfaces Interpenetrations of Solids (Interpenetrations of Flat & Curved Surfaces, Interpenetrations of solid forms) Multiple Section Method (Digital model, Physical model & Drawings) 	10 hrs
3	Representation Techniques using other software (Photoshop, Illustrator, In- design or equivalent)	 Understanding the difference between Raster & vector-based software Exploring the idea of rendering, composing and compiling architectural work. 	10 hrs

GUIDELINES

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

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

The topic of the project is to be displayed on Institute Notice Board fifteen days in advance OF the commencement of the classes

NOTE :

Evaluation is to be done through viva voice. Portfolios, after the university exam, shall be retained at the Institute level for the viva-voice

SUGGESTED READING:

Botello, C. (2011). Adobe Illustrator CS5 illustrated. Boston: Cengage Learning.

Daniel Tal., Rendering in SketchUp. Wiley

Farrelly, L. (2008). Representational techniques. Lausanne: AVA Book.

Gladfelter, Donnie. AutoCAD 2013 and AutoCAD LT 2013: No Experience Required. Indianapolis, IN: Wiley, 2012.

Helsel, J. D. (2007). Engineering drawing and design. Place of publication not identified: Glencoe Mcgraw-Hill Post.

John, E. (2013). CAD fundamentals for architecture. London: Laurence King Publishing.

John, Elys. CAD Fundamentals for Architecture. London: Laurence King, 2013.

Onstott, S. (2011). Enhancing architectural drawings and models with photoshop. San Francisco: Wiley Pub.

Onstott, S. (2012). AUTOCAD 2013 AND AUTOCAD LT 2013: ESSENTIALS. Hoboken, NJ: John Wiley & Sons.

Pottmann, H., Asperl, A., Hofer, M., & Bentley, D. (2009). Architectural geometry. Exton: Bentley Institute Press. Scott Onstott. Enhancing architectural drawing and models with Photoshop. Sybex

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B. ARCH (2021-26)

COURSE CONTENT

ARCH 309: BUILDING SYSTEMS AND SERVICES -III ELECTRICAL & MECHANICAL

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ARCH 309	BS&AE	TE	THEORY	BUILDING SYSTEMS & SERVICES-III (ELECTRICAL & MECHANICAL)	2			2	20	30	50	100				100	3

L - THEORY, S STUDIO, I -TUTORIAL, C - CREDIT, HKS. HOURS, MSI - MIDTERM TEST, AMSI - AVERA SS-FOLIO FINAL Sessional (INTERNAL), EV - EXTERNAL VIVA VOICE, RVW - INTERMEDIATE REVIEW

ARCH 309: BUILDING SYSTEMS AND SERVICES -III ELECTRICAL & MECHANICAL

Syllabus: 15 weeks (2 hours/week) Total Teaching hours: 30 Hrs.

COURSE OBJECTIVE:

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 OUTCOME

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

- 1. Understand basic knowledge of ventilation and techniques (natural/mechanical) of air conditioning.
- 2. Apply the working principles of various mechanical systems of air conditioning.
- 3. Outline various components of a typical electrification system for a building.

4. Identify the relevant standards for quantification and representation of the electrical system for a building.

5. Analyze various literature, case studies, and site visits for understanding HVAC and Electrification in a building.

EXPECTED SKILLS / KNOWLEDGE TRANSFERRED:

Acquire knowledge of good practices in services for better layout planning.

- The student will understand the principles of artificial light & electrification
- The student will learn the methods of Heating & cooling devices for natural and artificially ventilated building design
- Students will learn the principles of firefighting

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:

SR. NO.	SYLLABUS: TOPIC	SUBTOPIC	TEACHING HOURS:
1	Contemporary Building Services: Intelligent Buildings:	 Concept & use; Sensors – working & application in, security & safety systems & general energy efficiency. Building management/automation systems: principles, working & integration in building design, IBMS; Reticulated Gas Systems. IT Services: Communication systems, CCTV, Wireless systems; digital systems. 	8 hrs.
2	H.V.A.C. [Heating, Ventilating, Air- conditioning and cooling]:	 Mechanical thermal controls, their type, and their effects of it on heating ventilating, air-conditioning or cooling an enclosed space. Air-conditioning or cooling systems, various types of practice, chilled water cooling system air handling package unit & their installation, demand and consumption as peruse & volume of space. Supply plants and service layouts, supply and return air's ducting and Channeling systems, calculations for consumption and basic sizes of 	8 hrs.

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Vishwavidyalaya Indore	Vishwavidyalaya Indore		



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B. ARCH (2021-26)

COURSE CONTENT

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L - THEORY; S STUDIO, T - TUTORIAL; C - CREDIT; HRS. HOURS; MST - MIDTERM TEST, A MST - AVERAGE OF MIDTERM, ESUE - END SEMESTER UNIVERSITY EXAMINATION; IA- INTERNAL ASSESSMENT PROGRESSIVE, SS: FOLIO FINAL Sessional (INTERNAL), EV - EXTERNAL VIVA VOICE, RVW- INTERMEDIATE REVIEW

Components

3	Artificial light, Electrification & Communication Network: Lighting aspects of a building	 Basic electrical supply & distribution to the building, alternate supply & Power connections. Various components & elements of layouts as peruse, lifesaving auto-cut circuits & other fixtures. Communication systems like fax, telecom, EPABX, alarm, audio-video monitoring, etc. & their layouts. Criteria for designing various communicating service layouts Sunlight, its principles, radiation Spectrum Vision, Colors and Visual Comfort Day-Lighting in buildings, its sources, lighting criteria, the visual field, Behavior-transmission, reflection 	8 hrs.
		 Daylighting factor, prediction methods Physics of light, Photometry 	
		 Artificial lighting, lighting levels for various activities 	
4	Firefighting & Protection:	 -Fire protection systems, Study of firefighting regulations, fire alarming & extinguishing system, fire hydrants-their types, location, spacing, distance & specifications. Fire resistance of different building materials, designing of fires resistant doors, gangways, and stair & lift blocks for escape. Case studies of service and escape layouts of building for fire protection system & requirement. 	6 hrs.

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

SUGGESTED READINGS:

Bovay. H.E., Handbook of Mechanical and Electrical Systems for Buildings New York: McGraw Hill Dr Frith Abnwos and others, Electrical Engineering hand Book

Dr.V. Narasimhan - An introduction to Building Physics- Kabeer ing works, Chennai -5

E.R.Ambrose, Heat pumps and Electric Heating, John and Wiley and Sons Inc, New York, 1968.

Electrical wiring and Contracting (Vol.1 to Vol.4), London the New Era Publishing Company.

Grondzik, Walter T.Mechanical and electrical equipment for buildings.Canada: John and Wiley Sons, Inc., 2015

Handbook for Building Engineers in Metric systems, NBC, New Delhi, 1968.

Howell, Ronald H. & others. Principles of heating ventilating and air conditioning: a textbook with design data based on the 2009 ASHRAE handbook - fundamentals. Atlanta: American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., 2009 Parker, Steve.Electricity.Lon don: Dorling Kindersley,2013

Philips Lighting in Architectural Design, McGraw Hill, New York, 1964.

Prakash, N. Sesha. Manual of Fire Safety. New Delhi: CBS Publishers and Distributors, 2011

R.G.Hopkinson and J.D.Kay, the Lighting of Buildings, Faber, and Faber, London, 1969.

Roberts, Victor & Krepchin, Ira Eds. lighting: technology atlas Book. Colorado: Platts research and consulting., 2005

Sugarman, Samuel C.Testing and balancing HVAC air and water systems.Lilburn:Taylor & Francis, 2014 Classics, Jan 2007

William. J. Guinness, Mechanical and Electrical Equipment for Buildings, New York: Willey

Dekay, Mark, Sun, Wind, And Light: Architectural Design Strategies. USA: John and Wiley Sons, Inc., 2014

Olgay, Victor. Design With Climate – Bio-Climatic Approach to Architectural Regionalism. New Jersey: Princeton University Press, 1963 Laureano.Water conservation techniques in traditional human settlements.Ghaziabad: Copal, 2013

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B. ARCH (2021-26)

COURSE CONTENT

ARCH 309: BUILDING SYSTEMS AND SERVICES -III ELECTRICAL & MECHANICAL														& M	CHAN	ICAL	
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ARCH 309	BS&AE	TE	THEORY	BUILDING SYSTEMS & SERVICES-III (ELECTRICAL & MECHANICAL)	2			2	20	30	50	100				100	3

L - THEORY; S- STUDIO, T - TUTORIAL; C - CREDIT; HRS. HOURS; MST - MIDTERM TEST, A.MST - AVERAGE OF MIDTERM, ESUE - END SEMESTER UNIVERSITY EXAMINATION; IA - INTERNAL ASSESSMENT PROGRESSIVE, SS- FOLIO FINAL Sessional (INTERNAL), EV - EXTERNAL VIVA VOICE, RVW - INTERMEDIATE REVIEW

Livingston, Jason. Designing with light: the art, science, and practise of architectural lighting design. Canada: John and Wiley Sons, Inc., 2014

Muneer, T. & others.Windows in buildings: thermal, acoustic, visual and solar performance. Oxford, Amsterdam, New York: Architectural Press 2000

Moore, Fuller. Concepts and practice of architectural daylighting. New Delhi, New York: Van Nostrand Reinhold 1991

Steane, Mary Ann. . Architecture of light: recent approaches to designing with natural light Book.London: Routledge, 2011

Zaretsky, Michael. Precedents in zero-energy design: architecture and passive design in the 2007 solar decathlon. London & New York: Routledge, 2010

Goswami, D. Yogi, Principles of solar engineering. New York Taylor and Francis group 2000

Tregenza, Peter; Loe, David. Design of lighting Book. Oxon: Taylor & Francis,2009 Edwards, Brain Ed. Green buildings pay Book.London: Spon Press, 2003

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B. ARCH (2021-26)

COURSE CONTENT

ARCH 310: STUDY TOUR II

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L - THEORY; S- STUDIO, T-TUTORIAL; C - CREDIT; HRS. HOURS MST - MIDTERM TEST, A MST - AVERAGE OF MIDTERM, ESUE - END SEMESTER UNIVERSITY EXAMINATION; IA - INTERNAL ASSESSMENT PROGRESSIVE, SS- FOLIO FINAL Sessional (INTERNAL), EV - EXTERNAL VIVA VOICE, RVW - INTERMEDIATE REVIEW

ARCH 310: STUDY TOUR II

COURSE OBJECTIVE:

To analyse various art forms, and understand the techniques involved in creative thinking.

COURSE OUTCOME:

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

• Get exposure to the various built environment at different places of architectural relevance across the state,

region, country and the world.

• Apprise the relevance of the built environment by observing & photo documentation of selected places EXPECTED SKILLS / KNOWLEDGE TRANSFERRED:

different skills for creative thinking, understanding various art forms and appreciating art and architecture. a paper presentation and a summer case study

• Students will get an understanding of the "synthesis of learning from various courses" by observing; registering & mapping built buildings.

• Programme outcome will be extremely valuable in creating a knowledge base on the architecture field not only in India but in nearby countries as well.

• Production of Accurate and precise drawings of many a monument, institutions, and settlements in India, which become a basis for future research.

Provides knowledge on the traditional art form, innovations in and influences on architecture and thinking process in design;

COURSE OVERVIEW:

Students will develop the skills & understanding of measure drawing.

COURSE CONTENTS:

SR. NO. SYLLABUS: TOPIC SUBTOPIC

TEACHING HOURS:

The STUDY TOUR (SBP) at the Institute of Architecture is a unique contribution to Architectural education. Initially called measure drawings, it is intended to take the students out into the field to get a first-hand experience of traditionally built environments. This subject recognizes the value of traditional architecture as well as the importance of field experiences and travel in the learning of architecture. The students are encouraged to learn about not only the architectural form but also related components of architectural relevance.

• Student and faculty members stay at the selected Village for 8 to 15 days.

• Students will get a comprehensive awareness of that village.

• Students will measure the built environment in terms of a cluster of houses, individual houses, and building elements of that house.

• Students will also document the social, cultural, and environmental aspects of that village.

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Vishwavidyalaya Indore	Vishwavidyalaya Indore		



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B. ARCH (2021-26)

COURSE CONTENT

ARCH 310: STUDY TOUR II

			GY			TEACI	HING S	CHEME			EV	ALUATION SC	HEME			s	(HRS)
JRSE	H H	E AREA	VPOLO	NAME OF THE COURSE						THE	ORY			STUDIO		MARK	VIION
COL	C	COURS	COURSET	NAME OF THE COURSE	ι	т	s	CREDIT	2 -TERM EX AM 20%	TA 20%08 30%	ESUE 40%0R 50%	TOTAL	TA 10% OR 50%	EV 10% OR 50%	TOTAL	TOTAL	EXAM DURA
FIELD W	ORK								INT	EX		INT	EX				
ARCH 310	SEC	su	PROJECT	STUDY TOUR II VILLAGE DOCUMENTATION			2	2					50	50	100	100	

L - THEORY; S- STUDIO, T - TUTORIAL; C - CREDIT; HRS: HOURS; MST - MIDTERM TEST, A MST - AVERAGE OF MIDTERM, ESUE - END SEMESTER UNIVERSITY EXAMINATION; IA - INTERNAL ASSESSMENT PROGRESSIVE, SS- FOLIO FINAL Sessional (INTERNAL), EV - EXTERNAL VIVA VOICE, RVW - INTERMEDIATE REVIEW

• Students came back to the institute and make the final Drawings and reports within the remaining days.

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

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

Chairperson

Board of Studies Shri Vaishnav Vidyapeeth Vishwavidyalaya Indore Chairperson

Faculty of Studies Shri Vaishnav Vidyapeeth Vishwavidyalaya Indore Controller of Examination Shri Vaishnav Vidyapeeth

Shri Vaishnav Vidyapeeth Vishwavidyalaya Indore Joint Registrar Shri Vaishnav Vidyapeeth Vishwavidyalaya Indore



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B. ARCH (2021-26)

COURSE CONTENT

ARCH 319: ELECTIVE – III

			GY		1	TEACHING SCHEME EVALUATION SCHEME								v	(HRS)		
JRSE	DRE	E AREA	YPOIO	NAME OF THE COURSE						THEORY STUDIO					1	MARK	VIION
COL	2	COURS	COURSE T	NAME OF THE COURSE	ı	т	s	CREDIT	2 -TERM EX AM 20%	TA 20%08 30%	ESUE 40%0R 50%	TOTAL	TA 10% OR 50%	EV 10% OR 50%	TOTAL	TOTAL	EXAM DUR
THEORY,	/STUDI	0							INT	EX		INT	EX				
ARCH 319	SEC	SU	ELECTIVE- II (POOL II)	ELECTIVE- III (POOL II)			2	2					100		100	100	

L - THEORY; S- STUDIO, T - TUTORIAL, C - CREDIT; HRS. HOURS, MST - MIDTERM TEST, A.MST - AVERAGE OF MIDTERM, ESUE - END SEMESTER UNIVERSITY EXAMINATION; IA- INTERNAL ASSESSMENT PROGRESSIVE, SS- FOLIO FINAL Sessional (INTERNAL), EV - EXTERNAL VIVA VOICE, RVW - INTERMEDIATE REVIEW

ARCH 319: ELECTIVE – III

319.1

Syllabus: 15 weeks (2 hours/week) Total Teaching hours: 30 Hrs.

3 Sem

ELECTIVE- III (POOL II)

- Ergonomics
- 319.2 Architecture and human behaviour
- 319.3 Advanced computing techniques in design
- 319.4 MOOC: BUILD WITH HUNNARSHALA/CHAUKAT, DARWAZA& JHAROKA: ACEDGE

COURSE OBJECTIVES:

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

COURSE OUTCOME:

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

better grooming than just books and theories EXPECTED SKILLS / KNOWLEDGE TRANSFERRED: better grooming than just books and theories.

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 design;

COURSE CONTENTS:

|--|

TEACHING G HOURS:

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

semester pool

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

NOTE: Evaluation is to be done through viva voce, Portfolios after the university exam shall be retained at the Institute level for the viva-voice

Ergonomics

Introduction to human function human being in the man-made world and importance of ergonomics, gross human anatomy, ergonomics for children - at workplace old people Ergonomics

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B. ARCH (2021-26)

COURSE CONTENT

ARCH 319: ELECTIVE – III

			GY		Т	TEACHING SCHEME EVALUATION SCHEME									v	(HRS)			
URSE	DRE	E AREA	YPOLO	NAME OF THE COURSE						THEORY		THEORY				STUDIO		MARK	ATION
CO	5	COURS	COURSET	NAME OF THE COURSE	L	T	s	CREDI	2 - TERM EX AM 20%	TA 20%08 30%	ESUE 40%0R 50%	TOTAL	TA 10% OR 50%	EV 10% OR 50%	TOTAL	TOTAL	EXAM DUR		
THEORY/	STUDI	0							INT	EX		INT	EX						
ARCH 319	SEC	su	ELECTIVE- II (POOL II)	ELECTIVE- III (POOL II)			2	2					100		100	100			

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> and design, disability, ageing and inclusive design, environmental ergonomics, health effects of environmental stressors

> **Subject Objective**: To expose the students to the requirements of designing for human comfort by anthropometry. The students will know about ergonomics and its applications in design including designing for the physically challenged and the elderly.

- Introduction to Human Function Human being in the manmade world and the importance of ergonomics, Gross human anatomy, Ergonomics for children at workplace old people.
- Ergonomics and Design Introduction to Anthropometrics, static and dynamic anthropometrics, Muscles and work physiology, Static and Dynamic work including maximum capacity.
- Disability, Ageing and Inclusive Design Built environment for the physically handicapped, Ramp, toilets and corridor design, Spatial Requirements for wheelchair movement-Design issues in the design of old age homes, Criteria to be considered when designing for the visually impaired.
- Environmental Ergonomics Biomechanics, Environmental Condition including, thermal, illumination, noise and vibration, Bio transducers and ner5rvous system including their limitations
- Health Effects of Environmental Stressors Controls and Displays, psycho psychological aspects of Design, Occupational hazards in the work environment, Visual stress, Postural Stress, Stress due to commuting.
- Chaira, J. D. and Callender, J. H. (1987). Time Savers Standards for Building Types.
 Singapore: McGraw-Hill.
 Crosbie, M. J. and Watson, D. (2005). Time Savers Standards for Architectural Design: Technical Data for Professional Practice. 8th Ed. The McGraw-Hill Company

At the end of the course, students will be able to • Understand the domain & scope of Computer-Aided Design • Applications of digital fabrication in architecture design • Generate digital models of buildings & convert it to actual physical models

• Explore the software to design parametric forms and evaluate and analyze the form on various parameters. • Generate physical models of the designed form using a digital fabrication process

Introduction Overview of advanced computer application Application of CAD software in design development Domain & scope of Computer-Aided Design, Design Scripts - Python,

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ADVANCED COMPUTING TECHNIQUES in design



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B. ARCH (2021-26)

COURSE CONTENT

ARCH 319: ELECTIVE – III

			GY		Т	TEACHING SCHEME EVALUATION SCHEME									v	(HRS)	
URSE	ORE	E AREA	WPOLO	NAME OF THE COURSE					THEORY STUDIO						MARK	ATION	
CO	5	COURS	COURSE 1	NAME OF THE COURSE	L	T	s	CREDI	2 - TERM EX AM 20%	TA 20%08 30%	ESUE 40%0R 50%	TOTAL	TA 10% OR 50%	EV 10% OR 50%	TOTAL	TOTAL	EXAM DUR
THEORY/	STUDI	0							INT	EX		INT	EX				
ARCH 319	SEC	su	ELECTIVE- II (POOL II)	ELECTIVE- III (POOL II)			2	2					100		100	100	

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grasshopper, rhino etc.

Digital model to physical model Digital Fabrication, 3d printing, laser-cut, assembling of pieces etc.

Objective: The course shares an In-depth understanding of 3D modelling through digital software to enable the student to make effective audiovisual presentations, create threedimensional models and visualization of interiors. The intent is to possess intermediate to advanced skills with improvement in the speed and quality of modelling.

Creating solid models and surfaces using 3d modelling software such as 3dsmax, Revit, Rhino etc. Developing Interior Views and simple designs, applying materials and creating rendered images through rendering software such as Lumion, VRay etc. Introduction to Animation.

Application of CAD software in design development Exploring grasshopper as a tool to generate parametric forms and evaluate them using environmental analysis plugins. Plugins to be explored: Octopus Kangaroo Parakeet Weaverbird Pufferfish Anemone Ladgybug Rabbit CFD analysis Rhino Vault 22.5 hours

2 Physical models using digital fabrication Constructing a physical model of the parametric design form using digital fabrication process of Laser cutting, 3d printing or CNC cutting Braumann, J., Brell-Cokcan, S., Willette, A., McGee, W., & León, M. P. (2014). Robotic

fabrication in architecture, art and design 2014. Berlin: Springer. Adriaenssens, S. (2016). Advances in architectural geometry 2016. Zürich: Vdf

Hochschulverlag AG an der Ell Zürich.

Beorkrem, C. (2013). Material strategies in digital fabrication. New York: Routledge, Taylor & Francis Group.

Gramazio, F., Kohler, M., Picon, A., Roche, F., & Verebes, T. (2014). Made by robots: challenging architecture at a larger scale. London: John Wiley & Sons. Gramazio, F., & Kohler, M. (2014). Fabricate: Negotiating Design and Making. Zürich: Gta

Verlag / Eth Zürich. Naboni, R., & Paoletti, I. (2015). Advanced customization in architectural design and

Naboni, R., & Paoletti, I. (2015). Advanced customization in architectural design and construction. Cham: Springer.

Pell, B. (2010). The articulate surface: ornament and technology in contemporary architecture. Basel: Birkhäuser

Oscar Riera Ojed, Lucast Guerre, Hyper-realistic Computer Generated Architectural Renderings. Giuliano Zampi Conway Lloyd Morgan, Virtual Architecture. Aidan Chopra, Rebecca Huehls, SketchUp For Dummies Bonnie Roskes, Modeling with SketchUp for Interior Design Daniel Tal, Rendering in SketchUp Inside Rhinoceros 5 Ron K.C. Cheng

Braumann, J., Brell-Cokcan, S., Willette, A., McGee, W., & León, M. P. (2014).

Robotic fabrication in architecture, art and design 2014. Berlin: Springer.

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B. ARCH (2021-26)

COURSE CONTENT

ARCH 319: ELECTIVE – III

			GY		1	TEACHING SCHEME EVALUATION SCHEME							s	(HRS)			
URSE	DRE	E AREA	YPOLO	NAME OF THE COURSE			THEORY			STUDIO		MARK	ATION				
COL	22	COURS	COURSET	NAME OF THE COURSE	ι	т	\$	CREDI	2 -TERM EX AM 20%	TA 20%0R 30%	ESUE 40%OR 50%	TOTAL	TA 10% OR 50%	EV 10% OR 50%	TOTAL	TOTAL	EXAM DUR
THEORY	STUD	0							INT	EX		INT	EX				
ARCH 319	SEC	su	ELECTIVE- II (POOL II)	ELECTIVE- III (POOL II)			2	2					100		100	100	

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Pell, B. (2010). The articulate surface: ornament and technology in contemporary architecture, Basel: Birkhäuser,

Architecture and human behaviour

Introduction: Classification; History & evolution; Types, Scales, locations, significance & impact- Socio-Cultural & Economic, infrastructure, civic amenities, Health urban impact, Psychological impact, Ownership, management. Scope for Architectural & Inter-professional services.Standards: Design criteria: Technical systems: Case Studies: Exploration & analysis of different industrial environments; Study of plant systems, spatial organizations, design interventions, technical provisions, relevance, impacts - physical, administrative, socio-cultural, sustainable; future forecasts & trends.

4. MOOC

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

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

COURSE OUTCOME: EXPECTED SKILLS / KNOWLEDGE TRANSFERRED: better grooming than just books and theories.

COURSE CONTENTS: SR. NO. SYLLABUS: TOPIC **SUBTOPIC**

> The creative MOOC provide an opportunity to access a different form of architecture related to imagination, visualization & creation. They offer the experience of unique ingenuity, theory or workmanship. The essence of the creative domain can be achieved by exploring different materials, techniques, and processes; developing creative products/theories; finishing & presenting the product for the concepts evolved. The outcome will be through portfolio & presentations. Where these workshops or MOOCs help them explore the different topics relevant to individual interests and in the palette of choices for the semester

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TEACHING G HOURS: