

**SIDDAGANGA INSTITUTE OF TECHNOLOGY, TUMAKURU**  
**School of Architecture**

**Vision**

To establish as a pioneer institute in planning and design of built environment through excellence in teaching, research, consultancy and design innovation.

**Mission**

- To create conducive academic ambience that nurtures aesthetic attitude, technical confidence, and critical thinking among students.
- To develop research and design innovation skills in students to address various societal needs.
- To inculcate professional ethics based on values and entrepreneurial skills among students.

## **Program Educational Objectives (PEO's)**

Graduates from school of Architecture will achieve the following Program Educational Objectives within few years of graduation

- Graduates will showcase capabilities for competent practice of Architecture and enhance career by pursuing higher education
- Graduates will exhibit strong design skills to solve complex real-time problems through high technical skills and strong communication along with the knowledge of various domains of architecture including landscape, architectural conservation, interior design, energy conscious architecture, urban design and planning, construction project management, alternative building techniques, building information modeling and digital architecture
- Graduates will demonstrate professionalism, ethical conduct, societal concerns, effective team work and adapt to dynamic global and local needs engaging in lifelong learning

## **Program Specific Outcomes (PSO's)**

**PSO1:** Develop critical thinking to analyze, evaluate, synthesize and generate appropriate design solutions for varying scales and levels of complexity.

**PSO2:** Explore possibilities and application of various building materials, construction techniques, building systems and services.

**PSO3:** Draw inspiration from divergent architectural theories and history along with varied indigenous and vernacular settings.

**PSO4:** Demonstrate effective communication skills to present architectural works and comprehend professional practice.

## **Programme Outcomes (PO's)**

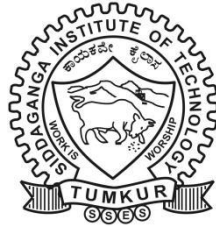
- 1. Architectural Knowledge:** Apply the knowledge of design principles, building systems & technologies, humanities and environmental aspects in design, planning and construction.
- 2. Problem Analysis:** Identify, formulate, review research literature and analyse various scales of architectural projects to arrive at tangible conclusions.
- 3. Design/ Development of solutions:** Design solutions to integrate interdisciplinary approach for contextual issues pertaining to built-environment.
- 4. Conduct investigations of complex problems:** Use research-based knowledge and methodologies including context analysis, case studies, project requirements and synthesis of the information to provide context sensitive solutions.
- 5. Modern tool usage:** Identify, select and apply the appropriate tools, techniques and resources to predict, design and simulate qualitative and quantitative outcomes with an understanding of its limitations.
- 6. The Architect and Society:** Apply reasoning to address socio-cultural, legal and safety aspects relevant to the professional practice and social responsibility.
- 7. Environment and Sustainability:** Understand the importance of the architectural design solutions in environmental and social contexts to demonstrate the need for sustainable built environment.
- 8. Ethics:** Apply ethical principles and commit to professional ethics, responsibilities and norms of Architectural profession.
- 9. Individual and teamwork:** Function effectively as an individual as well as a team member or a leader in diverse interdisciplinary settings.
- 10. Communication:** Comprehend and effectively communicate issues related to architecture, community and society at large through documentation, graphical and verbal presentations.
- 11. Project management and Finance:** Demonstrate knowledge and understanding of professional and management principles to apply to individual work, as a team member and as a leader, to manage projects in multidisciplinary environments.
- 12. Life-Long learning:** Recognize the need for, have the preparation and ability to engage in independent and lifelong learning in the changing domain of societal and technological advancement and adopt it in individual's professional practice.

# **SYLLABUS**

**FOR**

## **VII and VIII semester B.ARCH**

**2023 -2024**



**School of Architecture**  
**Siddaganga Institute of Technology**

(An Autonomous Institution affiliated to V.T.U., Belagavi, Approved by AICTE, New Delhi Accredited by NAAC with 'A++' Grade and ISO 9001:2015 Certified)

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## B.ARCHITECTURE

### SCHEME OF TEACHING AND EXAMINATION (260 Credits Scheme)

(Applicable to the students admitted during 2020-21)

#### VII Semester

Sl. No.	Course Code	Course Title	Teaching / Paper setting Dept.	Teaching hrs/week				Examination					Credits
				Lecture	Studio	Practical	Self-Study Component	Duration in hrs.	Mode of Exam	CIE Marks	SEE Marks	Total Marks	
				L	S	P	SS						
1.	7ARL1	Architectural Design-VII		3	5				Viva	50	50	100	8
2.	7ARL2	Interior Design			4				Viva	50	50	100	4
3.	7ARL3	Working Drawing			2	2			Practical	50	50	100	3
4.	7ARL4	Earthquake Resistant Structures		1		2			Viva	50	50	100	2
5.	7AR01	Contemporary Architecture-II		3				3	Theory	50	50	100	3
6.	7AR02	Professional Practice		3				3	Theory	50	50	100	3
7.	7AR03	Urban Design		3				3	Theory	50	50	100	3
8.	7ARE	Elective -II			2				Term Work	50	50	100	2
		<b>Total</b>		13	13	4				<b>400</b>	<b>400</b>	<b>800</b>	<b>28</b>
<b>L –Lecture, S- Studio, P-Practical/ Drawing, SS – Self-Study Component, CIE: Continuous Internal Evaluation, SEE: Semester End Examination</b>													
<b>Elective-II: 1.Portfolio Making 2.Digital Architecture 3.Rural Planning &amp; Infrastructure</b>													



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## B.ARCHITECTURE

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				Lecture	Studio	Practical/ Drawing	Self-Study Component	Duration in hrs.	Mode of Exam	CIE Marks	SEE Marks		Total Marks
				L	S	P	SS						
1.	8ATPT	Professional Training		16 Weeks				Viva	50	50	100	24	
		<b>Total</b>							<b>50</b>	<b>50</b>	<b>100</b>	<b>24</b>	

L –Lecture, S- Studio, P-Practical/ Drawing, SS – Self-Study Component, CIE: Continuous Internal Evaluation, SEE: Semester End Examination

**SIDDAGANGA INSTITUTE OF TECHNOLOGY**  
**Tumakuru-572103**

(An Autonomous Constituent Institution of Visvesvaraya Technological University,  
Belagavi)

**SCHOOL OF ARCHITECTURE**

**DETAILED SYLLABUS FOR**  
**SEVENTH SEMESTER**  
**B. ARCHITECTURE**

## ARCHITECTURAL DESIGN - VII

Contact Hours/Week	: 08	Credits	: 8.0
Total Lecture Hours	: 45	CIE Marks	: 50
Total Studio Hours	: 75	SEE Marks	: 50
Course Code	: 7ARL1	Exam Mode	: Viva

**Course Objectives:** This course will enable students to:

1. Gain knowledge about the principles of inclusive design
2. Interpret symbolism in architecture and its various expressions through elements of Architecture.
3. Create an architectural insert for a given program as a landmark in the given context.
4. Apply the knowledge of advanced roofing and modular construction techniques in detailing the building.

### COURSE OUTLINE:

- Overview of practical rules of thumb related to MEP services, firefighting and acoustics. Study of NBC, ZR, green building rating and other building regulations and their implications on design.
- Introduction to Inclusive design – principles and elements. Formal, informal and interactive public spaces.
- Projects such as Legislative assemblies, GPO, Govt. Administrative complexes, high-rise mixed-use towers, cultural complexes, transit nodes, stadium and sports complexes, shopping mall, urban recreation center and other urban landmarks can be selected as studio projects.
- Design and detailing of advanced building techniques, modular construction, pre-engineered structures incorporated in design.

### NOTE:

- a. Relevant case studies and literature studies can be given by the studio teachers and a report must be compiled by the students.
- b. Minimum of two architectural projects must be tackled in the semester.
- c. One of the design exercises can be carried out as group work to explore possibilities of students working as teams.
- d. A Vertical studio involving other semesters can be encouraged to carry out one full or part-time project.
- e. The portfolio covering the above topics shall be presented viva.

### REFERENCE BOOKS:

1.	Elizabeth M. Golden,	“Building from Tradition: Local Materials and Methods in Contemporary Architecture”, ISBN 9781138909922, Routledge, 2018.
2.	Russell Fortmeyer, Charles F. Linn	“Kinetic Architecture: Designs for Active Envelopes” ISBN 978-1864704952, The Images Publishing Group, 2014
3.	Lisa Iwamoto	“Digital Fabrications: Architectural and Material Techniques” ISBN 978-1568987903, Princeton Architectural Press, 2009.

**Course Outcomes:** After the completion of the course, students will be able to:

1. **Apply** various building guidelines and codes to the given project. (PO2)
2. **Develop** proficiency in building envelope design by providing appropriate building services and details for the project. (PO2, PO3, PO5, PO7)
3. **Interpret** the possibility of exploring symbolism through a deeper understanding of the larger context. (PO3, PO4)
4. **Develop** appropriate strategies to make buildings inclusive. (PO3, PO4, PO5, PO7, PO10)
5. **Design** and detail advanced building techniques incorporated in to the given project. (PO3, PO5)

## INTERIOR DESIGN

Contact Hours/Week	: 04	Credits	: 4.0
Total Lecture Hours	: --	SEE Marks	: 50
Total Studio Hours	: 60	CIE marks	: 50
Course Code	: 7ARL2	Exam mode:	: Viva



**Course Objectives:** This course will enable students to:

1. Get introduced to the elements of interior design.
2. Familiarize with various services related to interiors.
3. Explore different materials used for interiors and their finishes.

**COURSE OUTLINE:**

- **Introduction** to interior design and its history of evolution. Basics of interior design - concepts of interior space making/furniture layout, elements of interior design, lighting design, and selection of materials, finishes & colors.
- **Components of Interior Design** - Understanding the proportions to enhance the quality of interior space and its psychological effects of space such as ceiling, flooring, walls, furniture, lighting, etc.
- Services related to interior design to be integrated such as plumbing, air-conditioning, acoustics, electrical & lighting etc.
- **Ergonomics** of furniture, materials used, its style, characteristics and functional applications. Furniture positioning considering day lighting and artificial lighting factors in the interiors.
- **Studio Project** shall include two interior design projects (one major and one minor) to be handled with complete design, detailing, furniture layout, specification for the materials, and their application. The projects shall relate to residential, commercial, educational or interiors of other public spaces.

**REFERENCE BOOKS:**

1.	Francis D.K Ching	Interior design Illustrated, Wiley & Sons, 4th Edition, 2018, ISBN-10: 9781119377207, ISBN-13: 978-1119377207
2.	Julius Panero, Zelnik Martin & Joseph De Chiara	Time Saver’s Standards for Interior Design, McGraw-Hill, 2nd edition, 2017, ISBN-10: 1259004090, ISBN-13: 978-1259004094
3.	Julius Panero & Zelnik Martin	Human Dimension and Interior Space, Watson-Guptill, 1979, ISBN-10: 0823072711, ISBN-13: 978-0823072712
4.	Maureen Mitton	Interior Design Visual Presentation: A Guide to Graphics, Models and Presentation Techniques”, John Wiley & Sons, 4th edition, 2012, ISBN-10: 0470619023, ISBN-13: 978-0470619025
5.	John F Pile	Interior Design, Pearson, 4th edition, 2007, ISBN-10: 0132408902, ISBN-13: 978-0132408905

**Course Outcomes:** After the completion of this course, students will be able to:

1. **Design** interior spaces using various concepts and elements of design. (PO1, PO5)
2. **Develop** schemes for interiors along with technical details and services. (PO2, PO3)
3. **Apply** the knowledge of using materials considering the sensitivity of the design. (PO3, PO10)

**WORKING DRAWING**

Contact Hours/Week	:	03	Credits	:	3.0
Total Lecture Hours	:	30	CIE Marks	:	50
Total Practical Hours	:	30	SEE Marks	:	50
Course Code	:	7ARL3	Exam Mode	:	Practical

**Course Objectives:** This course will enable students to:

1. Recognize the importance of creating working drawings for construction execution.
2. Illustrate the essential components of working drawings, notations & drawing standards.
3. Prepare detailed set of drawings for building elements.

**COURSE OUTLINE:**

- **Introduction to working drawing** - its purpose and importance in building construction. Methods of representing various contents & specific information in working drawings. Study of building bye-laws and preparation of sanction drawings.
- **Preparation** of center-line drawing, excavation drawings, foundation/footing drawings and working plans, elevations and sections.
- **Detailing** of various building elements like Staircases, railings and skylights, etc. Schedule of openings and door-window details.

- **Services** – Electrical layout, Water supply and sanitary drawing. Flooring, tiling and dadoing details. Interior Details of Toilet and Kitchen layout etc.,
- **Site detailing** - Site plan showing water supply, sewage layout and site drainage.

**NOTE:**

- a. One design project handled in the earlier semester can be chosen to execute complete set of working drawings.
- b. Studio teachers can arrange for construction site visits for field supervision.

**REFERENCE BOOKS:**

1.	Mario Carpo	The Working Drawing: The Architect's tool, Park Books, 2016, ISBN-10: 3906027317, ISBN-13: 978-3906027319
2.	Keith Styles	Working Drawings Handbook, Taylor & Francis, 2012
3.	Ernst & Peter Neufert	Nuferts Standards, Wiley & Sons, 4th edition, 2012, ISBN-10: 9781405192538, ISBN-13: 978-1405192538

**Course Outcomes:** After the completion of this course, students will be able to:

1. **Develop** architectural drawings, sanction drawings, and working drawings. (PO1, PO5)
2. **Design and develop** detailed drawings of various building and site elements. (PO10,PO12)

## EARTHQUAKE RESISTANT STRUCTURES

Contact Hours/Week	:	03	Credits	:	2.0
Total Lecture Hours	:	15	CIE Marks	:	50
Total Practical Hours	:	30	SEE Marks	:	50
Course Code	:	7ARL4	Exam mode	:	Viva

**Course Objectives:** This course will enable students to:

1. Get introduced to the basic terminologies associated with the Earthquake phenomenon.
2. Study Vernacular Architecture details and their Earthquake resistant design concepts.
3. Know the process of vulnerability assessment of buildings and settlements.
4. Understand building configuration required for Earthquake resistant design.
5. Explore different building materials and their construction details adoptable in seismic prone area.

**COURSE OUTLINE:**

- **Elementary Seismology** - Introduction to earthquake phenomenon, history of past earthquakes in the world. Earths structure, Plate tectonics, Pangaea, Types of Faults and Earthquake Zones of India. Elementary Seismology, Seismic Waves, Magnitude, Intensity. Seismological Instruments: Seismograph, Accelerograph and Seismoscope.
- **Earthquake effects on structures** - Factors affecting Earthquake Loads on buildings. Load paths, characteristics of Earthquake ground motion. Natural period of vibration, free vibration response of a building, Materials, Plan & vertical irregularities, redundancy. Horizontal & vertical eccentricities in mass and stiffness distribution, soft storey etc.
- **Concepts of Earthquake resistant design** - Seismic resistance, isolation and damping systems. Code requirements (IS code 1893-2002). Vernacular constructions Architectural design Concepts. (IS 4326-1993). Behaviour of Non-structural elements like staircases, parapets, glazing, cladding panels, suspended ceiling, Mechanical services equipment's etc.
- **Guide lines for improving earthquake resistance** - Vulnerability assessment of existing buildings in both Urban areas. Earthen buildings (IS 13827: 1993), Low strength Masonry buildings (IS:13828-1993), Masonry Buildings, R.C.C. Buildings, Ductile R.C. structures (IS13920-1993), MRF and Shear walls.
- **Earthquake safe construction of New Buildings** – General Precautions, Check list, recent technologies used in Earthquake resistant building design.

**NOTE:**

- a. Relevant case studies and literature studies can be given by the studio teachers and report has to be compiled by the students in groups.
- b. Portfolio shall contain one project to the scale of site planning and Earthquake resistant

construction detailing of at-least one or more blocks has to be addressed.

c. Studio teachers can arrange for site visits for field supervision.

**REFERENCE BOOKS:**

1.	Indian Society of Earthquake Technology, Roorkee	Manual of EQR, Non-engineered construction
2.	NPEEE	Resource material for Earthquake Design Concepts
3.	Pankaj Agrawal and Manesh Shrikande	Earthquake resistant design of structures, Prentice Hall India Learning Private Limited, 2006, ISBN-10:9788120328921, ISBN-13: 978-8120328921
4.	Dr Vinod Hosur	Earthquake resistant design of building structures, Wiley & Sons, 2012, ISBN-10: 8126538597, ISBN-13: 978-8126538591
5.	IIT Kanpur- NICEE	Learning earthquake design and construction- earthquake tips

**Course Outcomes:** After the completion of this course, students will be able to:

1. **Elucidate** the basics of seismology and its effects on building. (PO1)
2. **Analyze** the impacts of earthquake on building. (PO3)
3. **Evaluate** the buildings for vulnerability assessments. (PO4)
4. **Design** and detail buildings considering the principles of earthquake resistance. (PO7)

**CONTEMPORARY ARCHITECTURE - II**

Contact Hours/Week	:	03	Credits	:	3.0
Total Lecture Hours	:	45	CIE Marks	:	50
Total Tutorial Hours	:	--	SEE Marks	:	50
Course Code	:	7AR01	Exam Mode	:	Theory

**Course Objectives:** This course will enable students to:

1. Extrapolate the contribution of eminent contemporary architects.
2. Study Ideas and philosophies of renowned International Architects.
3. Discuss the contribution of various architects in shaping the built environment through their noted works.
4. Draw inspiration from Innovative design ideas and use of new materials and technology by eminent architects
5. Sensitize the students toward context and climate-responsive ideas in designing buildings.

**UNIT I**

Ideas & Works of Richard Meier – Smith House - Connecticut, Getty Centre - Brentwood, Los Angeles & Jubilee Church Rome  
 Ideas and works of Norman Foster - Hong Kong Shanghai Bank, Renault Distribution Centre - England & Zayed National Museum – Abu Dhabi.  
 Ideas & Works of Renzo Piano – Pompidou Centre – Paris, Zentrum Paul Klee- Bern & Jean - Marie Tjibaou Cultural Centre – Tinu Peninsula **09 Hrs**

**UNIT II**

Ideas and works of Bernard Tschumi- Park de la Villete – Paris & New Acropolis Museum –Athens, Paul& Henri Carnal Hall, Institut Le Rosey, Rolle, Switzerland  
 Ideas and works of Frank Gehry – Vitra Design Museum – Germany, Guggenheim Museum – Bilbao & Museum of Pop Culture - Seattle  
 Ideas and works of Zaha Hadid – Heydar Aliyev Cultural Canter – Baku, London Aquatics Center- London &Maxxi National Museum - Rome **09 Hrs**

**UNIT III**

Ideas and works of Daniel Libeskind - Jewish Museum – Berlin, Ground Zero - New York & Denver Art Museum - Colorado  
 Ideas and works of Santiago Calatrava - Lyon-Satolas Railway Station, Olympic Stadium- Athens & Turning Torso - Sweden

Ideas and works of Rem Koolhaas - The CCTV building - Beijing, The Maison à Bordeaux – France & Seattle Central Library – Seattle **09 Hrs**

#### UNIT IV

Ideas and works of I M Pei - Pyramide Du Louvre - Paris, Museum of Islamic Art –Doha & Luce Memorial Chapel – Taiwan

Ideas & works of Jean Nouvel – Louvre Abudhabi, 100 Eleventh Avenue- Manhattan & DR Koncerthuset - Copenhagen

Ideas & Works of SOM Architects – The Willis Tower, 1973, Chicago Burj Khalifa – Dubai, Sheikh Khalifa Medical City – Abu Dhabi **09 Hrs**

#### UNIT V

Ideas and works of Geoffrey Bawa - Kandalama Hotel - Dambulla, Bawa House – Colombo & Srilankan Parliament Building

Ideas and Works of Hassan Fathy - New Gournia Village - Luxor, Hamid Said house – Cairo & Ceramics Factory in Qina - Egypt

Ideas and works of Tadao Ando - Church of light - Osaka, Naoshima contemporary Art museum – Japan & Water Temple – Japan **09 Hrs**

#### REFERENCE BOOKS:

1	Richard Meier, Architect Volume 4, Rizzoli Publishers
2	Norman Foster: A Global Architecture (Architecture/Design Series)
3	Renzo Piano: The complete Log book
4	Architecture & Disjunction - Bernard Tschumi
5	Building Art: The life & work of Frank Gehry
6	The Complete Zaha Hadid - Aaron Betsy
7	Santiago Calatrava: Drawing, Building, Reflecting
8	Rem Koolhaas: Elements of Architecture
9	I M Pei: A profile in American Architecture

**Course Outcomes:** After the completion of this course, students will be able to:

1. **Elucidate** the works of world-renowned Architects. (PO1)
2. **Analyse** the context and climate responsiveness of the projects.(PO1)
3. **Explore** the approaches to form and function by various architects. (PO1)
4. **Identify** Innovative design ideas and use of new materials and technology in projects. (PO1)
5. **Interpret** the philosophies and innovative technologies of eminent architects as inspiration in their design. (PO1)

#### PROFESSIONAL PRACTICE

Contact Hours/Week	:	03	Credits	:	3.0
Total Lecture Hours	:	45	CIE Marks	:	50
Total Tutorial Hours	:	--	SEE Marks	:	50
Course Code	:	7AR02	Exam mode	:	Theory

**Course Objectives:** This course will enable students to

1. Get familiarize with the characteristics and duties of the profession.
2. Explain the importance of the provisions of the Architect's Act 1972 and it' regulations.
3. Understand the role of Architect in the management of contracts.
4. Get introduced to the tendering process.
5. Explain the role of Architect in supervision and arbitration.

#### UNIT I

**Architect and profession** - Introduction, profession, its characteristics and essential difference between profession and other occupations. Owner's expectation from an architect, ethics.

Architect's profession: Duties and liabilities. Architectural practice: Office management, business development, accounts. Types of architectural organizations and laws relating to architectural practice, general administration. **09 Hrs**

## UNIT II

**The Architect's Act 1972** - Introduction, council of architecture, its main functions, registration of architects, architect's (professional conduct) regulations 1989. Conditions of engagement, scope of comprehensive services. Architectural competitions – its purposes, guidelines, conditions, types of competitions, classification of competitions, competition organization, step by step procedure to conduct architectural competition. **09 Hrs**

## UNIT III

**Tenders** - Introduction, objective of tendering, technical terms, tenders based on economic classification, method of inviting tenders, notice inviting tenders, prerequisites for tendering, issues encountered on opening of tenders and suggested guidelines. Receipt and opening of tenders, evaluation of tenders. Selection of contractor – public tenders, pre-qualification and post-qualification of contractors, limited tenders and single tenders, nomination. Award of contract. Issue of work order. **09 Hrs**

## UNIT IV

**Management of contracts** -Introduction, contract, objective of contract management, technical terms, the Indian contract act 1872, types of contracts. General conditions of contract, performance bond, damages for non-completion, determination of contract, interim payment, completion certificate, virtual completion certificate, penultimate certificate, interim and final certificate, materials, fluctuations, variations, defective work, defect liability period, arbitration, excepted matters, disputes in contract and architect's role in resolving such disputes.

Supervision- Definition, its characteristics, duties of an architect, engineer in charge, site visits, site meeting, co-ordination with various agencies, site book and site office. **09 Hrs**

## UNIT V

**Arbitration** - Definition, Arbitration and conciliation act 1996, arbitrator, umpire, order of reference, selection of arbitrators, powers and duties of arbitrators, arbitration award and implementation of award.

Valuation and Dilapidation - Definitions and architect's role in preparation of valuation and dilapidation reports and certifications. Physical and Economic life of buildings. Introduction to valuation, essential characteristics, classifications and purpose of classifications. Methods of valuation, standard rent and cost of construction.

Byelaws and easements - Building byelaws, National Building Code, floor area ratio, floor space index, floating FAR, zoning regulations.

Easements, various easement rights, architect's role in protecting easement rights. **09 Hrs**

### REFERENCE BOOKS:

1.	K.G.Krishnamurthy and S.V.Ravindra	Professional Practice for Architects, Engineers and Builders, PHI Learning Pvt. Ltd, 2nd edition, 2022, ISBN-10: 8120348745, ISBN-13: 978-9391818593
2.	Roshan Namavathi	Professional Practice for Architects and Engineers, Lakhani Book, 2016, ISBN-10: 9385492667, ISBN 978-9385492662
3.	Bob Greenstreet	Legal Contractual Procedures for Architects, Architectural Press, 5 <sup>th</sup> edition, 2002, ISBN-10:0750654082, ISBN-13 978-0750654081

**Course Outcomes:** After the completion of this course, students will be able to:

1. **Elucidate** the responsibilities and liabilities of the profession. (PO6,PO8,PO12)
2. **Describe** the role of the provisions of the Architect's Act 1972 and its regulations. (PO6,PO8,PO12)
3. **Comprehend** the types of tenders with the process and procedures for particular project. (PO9,PO11)
4. **Identify** the role of architect in contract management. (PO9,PO11)
5. **Explore** the importance of building bye-laws and zoning regulations. (PO6,PO12)

## URBAN DESIGN

Contact Hours/Week	:	03	Credits	:	3.0
Total Lecture Hours	:	45	CIE Marks	:	50
Total Tutorial Hours	:	--	SEE Marks	:	50
Course Code	:	7AR03	Exam Mode	:	Theory

**Course Objectives:** This course will enable students to:

1. Get introduced to theories of Urban Design.

2. Understand the changing attitude toward Urban form/Space and Architecture.
3. Familiarize Urban Design concepts through traditional and contemporary examples.
4. Get introduced to the concepts of sustainability in urban design.

#### UNIT I

Introduction and Scope Relationship between Architecture, Urban Design and Urban Planning; Brief review of the evolution of the urban design as a discipline, basic principles and theories. Broad understanding of urban forms and spaces at various spatial scales through examples from historic cities.

**07 Hrs**

#### UNIT II

**Typologies and Procedures:** Concepts of public and private realm; understanding different types and procedures of urban design interventions their scale relationships; constraints and challenges of urban design in democratic versus authoritarian settings.

**09 Hrs**

#### UNIT III

**Elements of Urban Design:** Understanding the city as a three-dimensional element; Urban form as determined by interplay of masses, voids, order, scale, harmony, symmetry, colour and texture; Organization of spaces and their articulation in the form of squares, streets, vistas and focal points; Concept of public open space; Image of the city and its components such as edges, paths, landmarks, street features.

**10 Hrs**

#### UNIT IV

**Urban Design and Sustainability:** Sustainability concept; Relationship of urban design with economic, environmental and social sustainability; Urban renewal and urban sprawl; Concepts of Transit Oriented Development, Compact City, Healthy City and Walkable City.

**10 Hrs**

#### UNIT V

**Urban Design Implementation:** Urban design and its control; Institutional arrangements for design and planning, their roles, powers and limitations; Types of planning instruments, structure plans, master plans and local area plans and zoning guidelines; Design communication and role of public participation.

**09 Hrs**

**NOTE:**

- a. Assignments to include study of concepts relating to cultural and religious systems, structure, climatic interfaces and integration of all these in the resultant forms.
- b. Models, analytical studies and paper presentations individually or in groups.

**REFERENCE BOOKS:**

1.	Larice, M. and Macdonald E.	The Urban Design Reader. 2nd Ed. The Routledge Urban Reader Series, Abingdon, Oxon : Routledge. 2013 ISBN: 978-0415668088
1.	Carmona, M., Heath, T., Oc, T. and Tiesdell, S.	Public Places - Urban Spaces. Oxford : Architectural Press. 2010 ISBN: 0-7506-3632-7
2.	Marshall, S.	Cities design and evolution. New York : Routledge. 2009 ISBN: 978-1138174313
3.	Lang, J. T.	Urban Design: A Typology of Procedures and Products. Oxford : Elsevier/Architectural Press. 2005 ISBN: 978-1138188358
4.	Moughtin, C., Cuesta, R., Sarris, C. and Signoretta, P.	Urban Design - Methods and Techniques. Oxford : Architectural Press. 2003. ISBN: 978-0750641029
5.	Watson, D., Plattus, A. and Shibley, R.	Time-Saver standards for urban design. New York : McGraw Hill. 2003 ISBN: 978-1259002908
6.	Kevin Lynch	The Image of the City, The MIT Press, 1964. ISBN: 978-0262620017

**Course Outcomes:** After the completion of this course, students will be able to:

1. **Describe** the role of urban design as a discipline. (PO1)
2. **Explore** the typologies of design interventions at urban scale. (PO1, PO2, PO7)
3. **Identify** morphological changes through space and time, through works by eminent urban designers. (PO2, PO6, PO7)
4. **Explore** the sustainability approaches for various scales of urban design projects. (PO2, PO7)
5. **Implement** tools and techniques for mapping urban places. (PO7)

## ELECTIVE - II

Contact Hours/Week	:	02	Credits	:	2.0
Total Lecture Hours	:	-	CIE Marks	:	50
Total Studio Hours	:	30	SEE Marks	:	50
Course Code	:	7ARE	Exam Mode	:	Term Work

### 7ARE1: Portfolio Making

**Course Objectives:** This course will enable students to:

1. Understand the presentation techniques in preparing portfolios.

#### **COURSE OUTLINE:**

Digital presentation of works of students to form a portfolio which would be a reflection of the students calibre to present his overall ideas of architecture. Digital tools could be explored to compile the work of students and architects in a professional manner. These templates developed could be developed later to make their individual portfolio.

### 7ARE2: Digital Architecture

**Course Objectives:** This course will enable students to:

1. Familiarize with Parametric Architecture and Computational designing tools.
2. Develop proficiency in Rhino modelling of complex NURB surfaces.
3. Illustrate and explain the algorithmic coding in Grasshopper, visual programming language.

#### **COURSE OUTLINE:**

Introduction to parametric architecture & computational design. Basics & working of computational design - algorithms & coding. Introduction to software's like rhino & grasshopper. Basic modelling & form generation using these software's. Theory & application of logic & concepts in form generation.

### 7ARE3: Rural Planning & Infrastructure

**Course Objectives:** This course will enable students to:

1. Acquire knowledge about settlements as an expression of culture, influenced by climate and geographical location.
2. Understand the dynamics of human settlements, both past and present, through various theories and approaches.

#### **COURSE OUTLINE:**

This elective is to introduce students to understand the difference between Urban and Rural settlements and to understand the rural physical setting wrt social and economical aspects. The students shall understand the process of documenting the rural settlement, its physical setting, Occupation structure and living environment. The infrastructural requirements and incentives by government towards rural development will be studied.

**Course Outcomes:** After completion of course, Students would be able to:

1. **Apply** desired knowledge and skill in a particular domain of Architecture
2. **Analyse** the processes required for the particular subject.
3. **Develop** an expertise in the chosen field for career enhancement.

**SIDDAGANGA INSTITUTE OF TECHNOLOGY**

**Tumakuru-572103**

(An Autonomous Constituent Institution of Visvesvaraya Technological University,  
Belagavi)

**SCHOOL OF ARCHITECTURE**

**DETAILED SYLLABUS FOR  
EIGHTH SEMESTER  
B. ARCHITECTURE**



## PROFESSIONAL TRAINING

Contact Hours/Week	:	-	Credits	:	24
Total Lecture Hours	:	-	SEE Marks	:	50
Total Practical Hours	:	-	CIE marks	:	50
Course Code	:	8ATPT	Exam mode:	:	Viva

**Course Objectives:** This course will enable students to:

1. Equip with a practical approach to implementing building projects, basic knowledge about the construction industry, and project management techniques needed for managing and coordinating building projects in a professional manner.

### COURSE OUTLINE:

- The aim of introducing one complete term for the students to undergo practical training is to expose them to the world of Professional Practice and get hands-on training under the guidance of a professional who is actively engaged in Architectural Practice. It will give the students first-hand experience of dealing with live projects of various natures and also the site experience to see how the projects get built on the site.
- The students will also be able to learn about Office Management, Project Management, Contract Management, Human Resource Management, new techniques of construction, advanced building services, landscape, and environmental designing etc. This rich experience is expected to enhance the student's ability to think comprehensively and better prepare them for undertaking the Architectural Project work in the final semester.

### Guidelines:

- (1) The term of Practical Training will commence after the examination of VII semester and will continue till the end of VIII semester or thereabout. The students are expected to work in the organization where architecture and its related practice are carried out and under the guidance of the professional who is registered with Council of Architecture. In case the student opts to go abroad he / she will work under the guidance of the professional who is registered with the council / any other organization controlling the profession of Architecture in the respective country. The students will decide very carefully about their placement venue as it is expected that they learn best ethics in Professional Practice and which produces quality architecture.
- (2) Student will have to maintain a weekly record of their engagement for the period of training. This will be recorded in an authorized log-book to be counter-signed by architect at the end of each month.
- (3) At the end of the training period, student will have to procure a certificate of training and satisfactory performance from the concerned office in the prescribed form.
- (4) Certificate of satisfactory completion of training same shall be submitted the College, along with the report and drawings made during the training period and appear for Viva-voce.
- (5) The total duration of the training will be minimum 16 working weeks / 90 working days

### Submission of Portfolio:

Students shall present a portfolio containing the following works before the examiners for Viva-Voce Examination:

- a. **Training Report:** This shall contain copies of various drawings done by the student either drafted or designed. It shall also contain other works like photographs of sites visited, models done, computer output produced etc.,
- b. **Building Study:** This shall be a detailed critical study of a building designed by the architect with whom the student has worked. It shall include the study of function, aesthetics, context, structure etc., this shall be presented through drawings, photographs, write ups etc.
- c. **Building Material Study:** This shall be a detailed study of a new or relatively new building material available in the market. A study of its properties, uses, cost, maintenance etc., is expected to be done. Samples of materials shall also be obtained and presented.

### NOTE:

- a. Students shall work only in architectural firms functioning over 5 years and headed by an

- architect registered with Council of Architecture, New Delhi.
- b. In case of architectural firms abroad, the Principal Architect of the firm should hold the title of architect under the law of that country.
  - c. A candidate failing in the viva examination shall repeat the training afresh for 16 weeks, the starting date coinciding with the beginning of a subsequent semester.

**Course outcomes:** After the completion of the course, students will be able to:

1. **Identify** how architectural projects are carried out. (PO4, PO5, PO6)
2. **Explore** techniques of office management and teamwork to enhance employability. (PO9, PO10, PO11, PO12)