

3<sup>RD</sup> YEAR / VI Semester

**ARCH 601: ARCHITECTURAL DESIGN STUDIO – V**

COURSE	COURSE AREA	COURSE TYPOLOGY	NAME OF THE COURSE	TEACHING SCHEME					EVALUATION							TOTAL MARKS	EXAM DURATION (HRS)			
				L	T	S	CREDIT	TOTAL CLASS HRS	THEORY				STUDIO							
									MST 1 10%	MST 2 10%	A. MST 10%	SS 50% OR 30%	ESUE 40%	TOT AL	IA 10% OR 60%			EV 10% OR 40%	TOTAL	
ARCH 601	AR	STUDIO	ARCHITECTURAL DESIGN STUDIO V			1 2	1 2	8								240	160	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

**COURSE OVERVIEW:**

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

**OBJECTIVES OF THE COURSE:**

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

**EXPECTED SKILLS / KNOWLEDGE TRANSFERRED:**

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

**FOCUS: Design Development**

- The student will learn to develop the design proposal, which could reach the execution stage.
- The student will achieve the capacity of Production of detail drawings necessary for the execution of building
- The student will develop understanding and importance of detail, integration of Building systems, clarity and effective communication of production drawings

**COURSE CONTENTS:**

- Part-Whole relationship – Back and forth design processes
- Exposure to materials, products, assembly constructional principles.
- Methods of specification writing information systems used in working drawings.
- Structural and Services Resolution of Part (Short Project) including calculations and specifications/approximate costing
- **Theme & focus of design:** Study, analysis & utilization of Contemporary Structural Systems in Hi-tech Architecture; Understanding, exploration & development of design programme, concepts & detailed design with a focus on Steel.
- **Basic Components:** Behavioral Science; Functionality; Building Materials; Theory of Design; Form Development; Tectonic decisions: Structures, Building Materials, Services; Site Planning; Building Control Regulations; Inclusive Design; Design Communication.
- **Temporal Architecture:** Importance, Exploring & Understanding the essence; detailing process; User analysis; Elements; functionality, aesthetics; Materials. This Minor Exercise will be represented through conceptual development (sketches, physical & digital models).
- **Design Analysis:** Exploration & analysis of works of iconic Hi-tech Architecture; Understanding design philosophy & process; Learning from design quality, Literature/book reviews; Architectural critiques.
- **Design Exercise:** Building Design. The complexity of design: Multi-storied building/s or large span structures. Focus on building services as an integral part of the design & construction process. Typology: Transport Hubs, Shopping Malls, Hotels, Hospitals, Media Houses, Broadcasting Stations, Sports Facilities, Apartments, etc. Site extent: Up to 8000 m2.

**GUIDELINES**

One Major And Minor tasks/ exercises 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 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 exercises 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 end exam which is a viva-voce, the students have to present the entire semester 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

**REFERENCE BOOKS:**

- Bousmaha Baiche & Nicholas Walliman**, Neufert Architect's data, Blackwell Science Ltd.  
**Building Code – ISI**  
**Chiara Joseph de and Others**, Time Savers Standards of Building Types. McGraw – Hill, 1990.  
**Ching, Francis D.K.** Architecture: Form, Space, and Order, 2nd Ed. Van Nostrand Reinhold, New York, 1996.  
**Criss B.Mills**, Designing with models: A Studio guide to making & using architectural models, Thomson & Wadsworth, USA,2000.  
**DeChiara and Callender**, Time-saver standards for building types, Mc Graw Hill company  
**Hanks, A. David**. Decorative Designs of Frank Lloyd Wright, Dover Publications, Inc. New York, 1999.  
**Hepler, E. Donald, Wallach, I. Paul**. Architecture Drafting and Design, 3rd Ed. McGraw-Hill Book Company, New York, 1977.  
**Itten, Johannes**. Design and Form: The basic course at the Bauhaus, Thames and Hudson Ltd., London 1997.  
**Kirk, Paul Hayden and Sternberg, D. Eugene**. Doctors Offices and Clinics, 2nd Ed. Reinhold Pub., USA, 1960.  
**Krier, Rob**. Architectural Composition, Academy Editions, London, 1988.  
**Maier Manfred** Basic Principles of Design, Vol.1, 2, 3 & 4, Van Nostrand Reinhold, NY. (1977)  
**Meiss, Pierre Von**. Elements of Architecture: From form to place, E and FN Spon, London, 1992.  
**Mike w.Lin**, Drawing & Designing with confidence – A step by step guide, John Wiley & sons, USA,1998.  
**Neufert, Ernst**. Ernst Neufert Architects Data, Granada Pub. Ltd., London,2000.  
**Peloquin, Albert**. Barrier-Free Residential Design. McGraw-Hill, Inc., New York,1994.  
**Pevsner, Nikolaus**. A History of Building Types. Thames and Hudson, London,1976.  
**Ramsey / Sleeper**, National Architectural graphic standards, The American Institute of Architects  
**Sam F Miller**, Design process– Van Nostrand Reinhold  
**Shah, S. Charanjit**. Architects Hand Book Ready Reckoner. Galogotia Pub., New Delhi, 1996.  
**Smithies, K.W.** Principles of Design in Architecture. Chapman and Hall, 1983.  
**Untermann, Richard and Small, Robert**. Site Planning for Cluster Housing.  
**Wucius, Wong**. Principles of Two Dimensional Design. Van Nostrand Reinhold 1972.  
Time saver standards for building types, DeChiara and Callender, Mc Graw Hill company  
Neufert Architect's data, Bousmaha Baiche & Nicholas Walliman, Blackwell Science Ltd  
National Building Code - ISI  
New Metric Handbook – Patricia Tutt and David Adler – The Architectural Press

## ARCH 602: INTRODUCTION TO TOWN PLANNING

COURSE	COURSE AREA	COURSE TYPOLOGY	NAME OF THE COURSE	TEACHING SCHEME					EVALUATION								TOTAL MARKS	EXAM DURATION (HRS)	
				L	T	S	CREDIT	TOTAL CLASS HRS	THEORY					STUDIO					
									MST 1 10%	MST 2 10%	A. MST 10%	SS 50% OR 30%	ESUE 40%	TOT AL	IA 10% OR 60%	EV 10% OR 40%			TOTAL
ARCH 602	AR	THEORY CUM STUDIO	INTRODUCTION TO TOWN PLANNING	1		5	6	4	15	15	15	45	60	120	0	30	30	150	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,RVV - INTERMEDIATE REVIEW

### COURSE OVERVIEW:

This course focuses on the review of the origin of Human Settlements to the level of understanding of the various Town Planning problems.

### OBJECTIVES OF THE COURSE:

To make the student understand various planning related issues.

### EXPECTED SKILLS / KNOWLEDGE TRANSFERRED:

Should be in a position to make a neighbourhood plan for 5000 people.

### COURSE CONTENTS:

A brief introduction to the implication of town forms in urban planning and development processes. National, regional, urban, rural, local etc. emphasizing the difference and relationships among them.

- Urbanization: Facts, Theories. Socio-spatial problems of migrants, slums, high and low-density housing; high rise living such as isolation, alienation, accessibility, conflicts etc as related to planning and design of buildings in different areas of the city. Social Survey and social research.
- Transportation and communication:
- CONTEMPORARY CONCEPTS IN TOWN PLANNING: Role and contribution of the following towards contemporary town planning thought - Patrick Geddes, Patric Abercrombie, Daniel Burnham, Soria Y Mata, Frederick Olmstead, Henry Wright, Ebenezer Howard, Clarence Perry, Clearance Stein, CA Doxiadis, Le Corbusier, Frank Lloyd Wright
- Principles of Ekistics: Introduction to the concepts of green belts, satellite towns, neighbourhood, roads in solving some of the problems in urban development. Indian context: Growth pattern of urban and rural settlements; problems and potentials.
- PRINCIPLES AND PROCESS OF PLANNING:
- Development plans-
- A general and introductory study of inputs, objectives, preparation and outputs of Master plan for a city; land-use classification, features and relationships with transportation. Meaning and use or implication of O-D surveys, desire line diagrams trip generation, attraction, distribution and modal split.
- Introduction to housing and community facilities; the role of F.S.I, densities in housing. The basic methodology for the planning of industrial areas and recreation areas.
- NEW HORIZONS: Rebuilding our cities – penalty for neglect, Urban renewal, Necessity and Advantages of urban renewal- various steps in urban renewal programme New utopians – the search for space – the search for form – density equation, A brief introduction to redevelopment schemes and urban renewal, the problem of slum and shanty areas and a review of the concepts regarding solutions: clearance, rehabilitation and improvement.

**Note:** At least one exercise related to the preparation of a layout for a residential neighbourhood of about 5000 populations. This is a studio subject and students should be made to prepare layout drawings as studio exercises along with the theoretical inputs. The studio work should be supplemented with appropriate site visits.

### GUIDELINES FOR QUESTION PAPER SETTING

All Theory Courses

- Part- A (5 NOS X 6 MARKS = 30 MARKS) Answer all questions
- Part- B (2 NOS X15 MARKS = 30MARKS)
- (Either or type)

- Students will be required to attempt five questions from the Eight questions, are to be set from entire syllabus. where 2 questions may be short answer type which is compulsory with 2- 3 subheads and 2, short with 4 subheads answer type and 4 essay type questions.

- Students should attempt total Seven Questions including the compulsory question.
- Question paper is to be set covering the entire syllabus.

**Reference books:**

**Bhagiratha Rao, E.L.** Land Acquisition Manual in Andhra Pradesh.  
**Buch, N. Mahesh.** Planning the Indian city.  
**Chand, Mahesh & Puri, Vinay Kumar.** Regional Planning in India. Allied Pub.Ltd., Bombay, 1990.  
**Doxiadis, C.L.** Ekistics: Introduction to the science of Human Settlement.  
**Gallion, B. Arthur & Eisner, Simon.** Urban Pattern: City Planning & Design, 5th Ed. Van Nostrand Reinhold, New York, 1986.  
**Hyderabad Urban Development Authority.** Hyderabad Urban Development Authority, HUDA, 1981.  
**Khosla, R.K.** Urban and Rural Development in India.  
**Patterson, T. William.** Land-use Planning Techniques of Implementation.  
**Rama Reddy, Padala & Srinivas Reddy, Padala.** Commentates on Land Reforms Laws in Andhra Pradesh.  
**Rame Gowda, K.S.** Urban and Regional Planning. Univ. of Mysore, Mysore, 1972.  
**Rangwala, S.C. & Others.** Town Planning, 18th Ed. Charotar Pub. House, Anand, 2003.  
**Textbook of Town Planning, A. Bandopadhyay, Books and Allied, Calcutta 2000**  
1. John Ratcliffe, An Introduction to Town and Country Planning, Hutchinson 1981  
2. Arthur B. Gallion and Simon Eisner, The Urban Pattern – City planning and Design, Van Nostrand Reinhold company  
3. Rangwala, Town Planning, Charotar publishing house  
4. G.K.Hiraskar, Town Planning  
5. Rame Gowda, Urban and Regional Planning  
6. S.K.Khanna, Highway Engineering, C.E.G. Jhusto, Nemchand & Bros. Roorkee 1997  
7. N.V.Modak, V.N.Ambedkar, Town and country planning and Housing, Orient Longman, 1971  
Rappoport, Amos. House, Form and Culture.  
Singh, Alok Kumar, & Others (ed). Strategies in Development Planning.

**ARCH 603: BUILDING MATERIAL AND CONSTRUCTION VI**

COURSE	COURSE AREA	COURSE TYPOLOGY	NAME OF THE COURSE	TEACHING SCHEME					EVALUATION								TOTAL MARKS	EXAM DURATION (HRS)	
				L	T	S	CREDIT	TOTAL CLASS HRS	THEORY					STUDIO					
									MST 1 10%	MST 2 10%	A. MST 10%	SS 50% OR 30%	ESUE 40%	TOT AL	IA 10% OR 60%	EV 10% OR 40%			TOTAL
ARCH 603	TE	THEORY CUM STUDIO	BUILDING MATERIALS & CONSTRUCTION – VI	1		2	3	2	15	15	15	45	60	120	0	30	30	150	3

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**COURSE OVERVIEW:**

The course focuses on issues related to failures in buildings, decay and damage, approaches for maintenance, repairs and renovation of buildings. and introduce to new advanced materials and techniques in use

**OBJECTIVES OF THE COURSE:**

To create awareness among the students regarding problems related to old buildings and methods to mitigate their problems. and cope up to work with newer techniques.

**EXPECTED SKILLS / KNOWLEDGE TRANSFERRED:**

To understand the techniques of constructing repairs, Steel And Pre Fab, staircase and partitions using different materials

**FOCUS: MISCELLANEOUS**

- Students will develop the understanding of advanced building systems
- Students will develop the understanding of Earthquake resistance structure
- The student will be equipped with a Basic understanding of quantity, estimation and costing
- Students will understand different types of mechanical circulation systems

**COURSE CONTENTS:**

- Study of Suspended, tensile and tensegrity, space frame, geodesic structure, pneumatic structure structures
- The principle of Earthquake resistance structure
- Introduction, Different types of estimation techniques
- Data required for the preparation of estimation
- Rate analysis: Purpose, importance & factor affecting rate analysis
- General information regarding S.O.R., B.O.Q. & Specifications
- Different types of mechanical circulation systems i.e. Escalators, Elevators, Travelator etc.
- Different types of ducts & shafts

**GUIDELINES FOR QUESTION PAPER SETTING**

**All Theory Courses**

- Part- A (5 NOS X 6 MARKS = 30 MARKS) Answer all questions
- Part- B (2 NOS X15 MARKS = 30MARKS)
- (Either or type)

- Students will be required to attempt five questions from the Eight questions, are to be set from entire syllabus. where 2 questions may be short answer type which is compulsory with 2- 3 subheads and 2, short with 4 subheads answer type and 4 essay type questions.
- Students should attempt total Seven Questions including the compulsory question.
- Question paper is to be set covering the entire syllabus.

**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

This is a studio subject and students should be made to document the problems in old buildings through inspections and propose remedial measures by preparing construction drawings as studio exercise with the theoretical inputs given through lectures.

to prepare construction drawings for studio exercises along with the theoretical inputs. The studio work should be supplemented with appropriate site visits for the technology

**REFERENCE BOOKS:**

1. Barry, R. Construction of Buildings Vol - 3: Single Storey Frames, Shells and Lightweight Coverings. New Delhi: Affiliated East-West Press Pvt. Ltd., 1999
2. Barry, R. Construction of Buildings Vol - 4: Multi-Storey Buildings, Foundation and Substructures, Structural Steel Frames, External Walls and Cladding of Framed Buildings. New Delhi: Affiliated East-West Press Pvt. Ltd., 1999
3. McKay J. K. Building Construction Vol - 2: Metric. Delhi: Pearson Education Asia Pte. Ltd., 2014
4. McKay, J. K. Building Construction Vol - 3: Metric. Delhi: Pearson Education Pte. Ltd., 2013
5. McKay, J. K. Building Construction Vol - 4: Metric. Delhi: Pearson Education Pte. Ltd., 2013
6. McKay, W. B. Building Construction Vol - 1: Metric. New Delhi: Pearson Education Asia Pvt. Ltd.: India, 2013
7. McLeod, Virginia. Detail In Contemporary Timber Architecture. UK: Laurence King Publishing, 2010

8. Millias, Malcolm. Building structures from concept to design. London: Spon Press, 2005
9. Muttoni, Aurelio. Art of Structures: Introduction to the Functioning of Structures in Architecture. UK: Taylor & Francis, 2011
10. Paulson, Boyd C.. Computer Applications in Construction. New Delhi: McGraw Hill Education India Pvt Ltd, 2014
11. Phillips, David. Detail In Contemporary Concrete Architecture. UK: Laurence King Publishing Ltd, 2012
12. Punaima, B. C.. Comprehensive Design of Steel Structures. New Delhi: Laxmi Publications Pvt. Ltd., 2012
13. Punmia, B. C. . Building Construction. New Delhi: Laxmi Publications Pvt. Ltd. , 2008
14. Rangwala, S. C. . Building Construction. Anand: Charotar Publishing House, 2014
15. Ruske, Wolfgang. Timber Construction for Trade, Industry, Administration: Basics and Projects. Switzerland: Birkhauser- Publisher of Architecture, 2004
16. Salvadori, Mario. Why Buildings Stand Up: The Strength of Architecture. New York: W. W. Norton and Co., 1980
17. Schodek, Daniel L.. Structures. New Delhi: PHI Learning Private Limited, 2014
18. Watson, Donald. Time Saver Standards for Building Materials and Systems: Design Criteria and Selection Data. New Delhi: Tata McGraw Hill Education Private Limited, 2009
19. Watts, Andrew. Modern construction handbook. New York: Springer, 2013
20. . Construction And Design Manual Mobile Architecture. Germany: Dom Publishers, 2012
- A.Agarwal –Mud: The potentials of earth-based material for third world housing – IIED, London 1981.**
- Barry, R.** The Construction of Buildings Vol. 2, 5th Ed. East-West Press. NewDelhi, 1999.
- Bindra, S P.and Arora, S P.** Building Construction: Planning Techniques and methods of Construction, 19th ed. Dhanpat Rai Pub. New Delhi, 2000.
- Dr.B.C.Punmia – Building construction**
- Feilden, M. Bernard.** Conservation of Historic Buildings. Butterworth Scientific, London, 1992.
- Francies D.K.Ching – Building Construction Illustrated. VNR, 1975.**
- Hailey and Hancock, D.W.** Brick Work and Associated Studies Vol. 2. MacMillan, London, 1979.
- HUDCO – All you wanted to know about soil stabilized mud blocks, New Delhi, 1989.**
- McKay J.K.** Building Construction Metric Vol. 4, 4th Ed. Orient Longman Pvt. Ltd., Mumbai, 2002.
- McKay, W.B.** Failures and Repair of Concrete Structures Vol. IV.
- Mitchell.** Advanced Structures.
- Moxley, R. Mitchell's** Elementary Building Construction, Technical Press Ltd.
- R.Chudley – Building Construction Handbook – BLPD, London 1990.**
- R.Chudley,** Construction Technology.
- Raikar, R.N.** Learning From Failures: Deficiencies in Design. Construction and Service, R and D Centre, New Bombay, 1987.
- Rangwala, S.C.** Building Construction, 22nd ed. Charotar Pub. House, Anand,2004.
- Rangwala, S.C.** Engineering Materials: Material Science, 31st Ed. Charotar Pub. House, Anand, 2004.
- Sushil Kumar.** T.B. of Building Construction, 19th ed. Standard Pub, Delhi, 2003.
- Use of Bamboo and a Reed in Construction – UNO Publications
- W.B. Mackay – Building construction Vol 1,2 and 3 – Longmans, UK 1981.**
- Feilden, M. Bernard. Conservation of Historic Buildings. Butterworth Scientific, London, 1992.
- McKay, W.B. Failures and Repair of Concrete Structures Vol. IV.
- Raikar, R.N. Learning From Failures: Deficiencies in Design. Construction and Service, R and D Centre, New Bombay, 1987.
1. Bachmann, Hugo. Seismic Conceptual Design of Buildings: Basic Principles for Engineers, Architects, Building Owners and Authorities. Kanpur: National Information Centre of Earthquake Engineering, 2003
2. Barrie, Donald S. Professional Construction Management: Including CM, Design-Construct and General Contracting. New Delhi: McGraw Hill Education India Pvt Ltd, 2013
3. Barry, R. Construction of Buildings Vol - 5: Building Services: Water, Electricity and Gas Supplies Foul Water Discharge, Refuse Storage. New Delhi: Affiliated East-West Press Pvt. Ltd., 1999
4. Barry, R.. Construction of Buildings Vol - 2: Windows, Doors, Fibers, Stairs Finishes. New Delhi: Affiliated East-West Press Pvt. Ltd., 1999
5. Brzev, Svetlana. Earthquake Resistant Confined Masonry Construction. Kanpur: National Information Centre of Earthquake Engineering, 2007
6. Callahan, Michael T. Construction Project Scheduling. New Delhi: McGraw Hill Education India Pvt Ltd, 2014
7. Chitkara, K. K. Construction Project Management: Planning, Scheduling and Controlling. New Delhi: Tata McGraw-Hill Publishing Company Ltd., 2011
8. Das, P. K. Introduction to Seismic Safety in Architecture. Maharashtra: National Institute of Advanced Studies in Architecture (NIASA), COA, 2007
9. Gahlot, P. S. Construction Planning and Management. New Delhi: New Age International (P) Limited, 2014
10. Hinz, Jimmie. Construction Contracts. New Delhi: Tata McGraw Hill Education Private Limited,2013
11. McLeod, Virginia. Detail In Contemporary Timber Architecture. UK: Laurence King Publishing, 2010
12. Murty, C. V. R. . Earthquake Design Concepts. Kanpur: National Information Centre of Earthquake Engineering, 2006
13. Murty, C. V. R. . Earthquake Rebuilding in Gujarat: An EERI Recovery Reconnaissance Report.Oakland: Earthquake Engineering Research Institute, 2005
14. Paulson, Boyd C.. Computer Applications in Construction. New Delhi: McGraw Hill Education India Pvt Ltd, 2014
15. Peurifoy, Robert. Estimating Construction Costs. New Delhi: Tata McGraw-Hill Publishing Company Ltd., 2011
16. Peurifoy, Robert L. . Construction Planning Equipment and Methods. New Delhi: Tata McGraw Hill Education Private Limited, 2012
17. Phillips, David. Detail In Contemporary Concrete Architecture. UK: Laurence King Publishing Ltd, 2012
18. Punaima, B. C.. Comprehensive Design of Steel Structures. New Delhi: Laxmi Publications Pvt. Ltd., 2012
19. Rangwala, S. C. . Estimating, Costing and Valuation. Anand: Charotar Publishing House, 2012
20. Ruske, Wolfgang. Timber Construction for Trade, Industry, Administration: Basics and Projects.Switzerland: Birkhauser- Publisher of Architecture, 2004
21. Schacher, Tom. Confined Masonry: For One and Two Storey Buildings in Low Tech Environments: A Guide Book for Technicians and Artisans. Kanpur: National Information Centre of Earthquake Engineering, 2009
22. Guidelines for Earthquake Resistant Non-Engineered Construction. Kanpur: National Information Centre of Earthquake Engineering, 2004
23. IITK - GSDMA Guidelines for Seismic Design of Liquid Storage Tanks: Provisions with Commentary. Kanpur: National Information Centre of Earthquake Engineering, 2007
24. IITK - GSDMA Guidelines for Structural Use of Reinforced Masonry: Provisions with Commentary and Explanatory Examples. Kanpur: National Information Centre of Earthquake Engineering, 2007
25. IITK - GSDMA Guidelines for Seismic Evaluation and Strengthening of Buildings: Provisions with Commentary and Explanatory Examples. Kanpur: National Information Centre of Earthquake Engineering, 2007
26. IITK - GSDMA Guidelines for Seismic Design of Earth Dams and Embankments: Provisions with Commentary and Explanatory Examples. Kanpur: National Information Centre of Earthquake Engineering, 2007
27. IITK - GSDMA Guidelines for Seismic Design of Buried Pipelines: Provisions with Commentary and Explanatory Examples. Kanpur: National Information Centre of Earthquake Engineering, 2007

## ARCH 606: HERITAGE AND CONSERVATION

COURSE	COURSE AREA	COURSE TYPOLOGY	NAME OF THE COURSE	TEACHING SCHEME					EVALUATION							TOTAL MARKS	EXAM DURATION (HRS)	
				L	T	S	CREDIT	TOTAL CLASS HRS	THEORY					STUDIO				
									MST 1 10%	MST 2 10%	A. MST 10%	SS 50% OR 30%	ESUE 40%	TOT AL	IA 10% OR 60%			EV 10% OR 40%
ARCH 606	AR	THEORY	HERITAGE AND CONSERVATION	2			2	2	10	10	10	50	40	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

### COURSE OVERVIEW:

- To develop understanding of the importance of historical and heritage buildings

### OBJECTIVES OF THE COURSE:

- Knowledge about the various techniques of conservation in architecture and the development of the commitment

### EXPECTED SKILLS / KNOWLEDGE TRANSFERRED:

- to conserve old buildings of cultural importance

### COURSE CONTENTS:

- Introduction:
- Architectural Conservation: Preservation & conservation philosophies; Pioneers & societies in the field of conservation; International Charters; International approaches .; Techno legal provisions, codes & byelaws for interventions.
- Assessment of Building Condition:
- Preservation Techniques In Architectural Conservation: Analysis of problem; Types, Degrees & Limitations for intervention; Levels of intervention- Structure, building complex, precinct & heritage zone; Provision of solutions for repair & replacement of components; Restoration (in case of living monuments), preservation, reconstruction & maintenance. Sequence & phasing; Materials & methods; Detailing & finishing.
- Case Studies in Architectural Conservation: Examples of iconic conservation projects; Heritage zones; Conservation strategies- documentation, analysis, techniques, interventions & outcomes; Models of preservation, reconstruction & adaptive reuse. Influences & benefits - Physical, contextual, political, social, cultural, economic, ecological, tourism, technological, material, spatial & visual.

### GUIDELINES FOR QUESTION PAPER SETTING

All Theory Courses

- Part- A (5 NOS X 2 MARKS = 10 MARKS) Answer all questions
- Part- B (2 NOS X15 MARKS = 30 MARKS)
- (Either or type)

- Students will be required to attempt five questions from the Eight questions, are to be set from entire syllabus. where 2 questions may be short answer type which is compulsory with 2- 3 subheads and 2, short with 4 subheads answer type and 4 essay type questions.
- Students should attempt total Seven Questions including the compulsory question.
- Question paper is to be set covering the entire syllabus.

**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

### Reference books:

- Bernard Fielder (INTACH), Guide to Conservation
- Conservation of European Towns
- Peter Marston – The book of the Conservation – Orion House, London

## ARCH 607: STRUCTURAL DESIGN – II

COURSE	COURSE AREA	COURSE TYPOLOGY	NAME OF THE COURSE	TEACHING SCHEME					EVALUATION							TOTAL MARKS	EXAM DURATION (HRS)		
				L	T	S	CREDIT	TOTAL CLASS HRS	THEORY				STUDIO						
									MST 1 10%	MST 2 10%	A. MST 10%	SS 50% OR 30%	ESUE 40%	TOT AL	IA 10% OR 60%			EV 10% OR 40%	TOTAL
ARCH 607	TE	THEORY	STRUCTURAL DESIGN II	2			2	2	10	10	10	50	40	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

### COURSE OVERVIEW:

- Course focus is on Structural Design of elements of Industrial Building in Steel.

### OBJECTIVES OF THE COURSE:

- To develop the structural design skills of the student in steel.

### EXPECTED SKILLS / KNOWLEDGE TRANSFERRED:

- Develop the capability to design Steel structures.

### COURSE CONTENTS:

- Design of simple beams including a check for shear and deflection for laterally supported and unsupported conditions,
- analysis of simple beam from strength and stiffness considerations.
- Design of built-up beams with flange plates only, Introduction to plate girders (No Design calculations)
- Axially loaded tension members: introduction, net effective areas, analysis and design of tension members including rivet and welded connections, (L-Angle and T-section only)
- Columns: Analysis and design of axially loaded steel columns using single Section, 2 channels placed back to back and toe to toe, 4-angles etc., including lacing system.
- Design of slab base and gusseted base for axial loads (without moments) for different columns. Design of grillage Foundation for isolated columns only
- Purlins: Introduction, Dead load, live load and wind loads, the design of angle purlin and I-section purlin
- Bracket Connections, Riveted & Welded Connections design of Joints.

### GUIDELINES FOR QUESTION PAPER SETTING

All Theory Courses

- Part- A (5 NOS X 2 MARKS = 10 MARKS) Answer all questions
- Part- B (2 NOS X15 MARKS = 30 MARKS)
- (Either or type)

- Students will be required to attempt five questions from the Eight questions, are to be set from entire syllabus. where 2 questions may be short answer type which is compulsory with 2- 3 subheads and 2, short with 4 subheads answer type and 4 essay type questions.
- Students should attempt total Seven Questions including the compulsory question.
- Question paper is to be set covering the entire syllabus.

**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

Reference books:

Ram Chandra. Design of Steel Structures Vol. I, 10th Ed. Standard Book House, Delhi, 1999.  
 Dayaratnam, P. Design of Steel Structures. Wheeler Pub., Allahabad, 1992.  
 Ramamrutham, S. and Narayanan, R. Design of Steel Structures, 4th Ed. Dhanpat Rai and Sons, Delhi, 1995.  
 IS CODE FOR STEEL

**ARCH 609: BUILDING SYSTEMS AND SERVICES -III**  
ACOUSTICS AND ADVANCED

COURSE	COURSE AREA	COURSE TYPOLOGY	NAME OF THE COURSE	TEACHING SCHEME					EVALUATION									TOTAL MARKS	EXAM DURATION (HRS)
				L	T	S	CREDIT	TOTAL CLASS HRS	THEORY					STUDIO					
									MST 1 10%	MST 2 10%	A. MST 10%	SS 50% OR 30%	ESUE 40%	TOT AL	IA 10% OR 60%	EV 10% OR 40%	TOTAL		
ARCH 609	TE	THEORY	BUILDING SYSTEMS AND SERVICES-III (ACOUSTICS & ADVANCED)	2			1	2	10	10	10	50	40	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

**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 to focus on understanding basic working, principles, terms and definitions, as well as practical aspects and solutions utilized in architecture

**OBJECTIVES OF THE COURSE:**

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

**EXPECTED SKILLS / KNOWLEDGE TRANSFERRED:**

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

- The student will learn theory, principles & Design of acoustics

**COURSE CONTENTS:**

- Sound & Acoustics: Principles & design
- Acoustics: Physics of sound - Sound propagation; Sound Measurement; Sound in enclosed space – Properties & behaviour; Acoustical Defects; Constructional measures; various sound absorbing material & its applications. Acoustical properties of building materials, Sound insulation; Room acoustics: Reverberation time - control; design for the listening room; acoustical requirements; Effects of noise - Environmental noise, Impact noise, Sound Transmission – airborne & structure-borne noise, STC, Noise control techniques in different building types.
- Acoustical design : for performance spaces- drama hall, music, speech, cinemas, open-air theatre, workplaces, education spaces, & other acoustically sensitive environments; Design of Theaters & Concert Halls, recording rooms- open-air theatres; Designing of stage, seating & false ceiling design, Sound amplification systems; Acoustical treatment materials, Case studies; Calculations & designing of acoustical treatment of various spaces.
- Contemporary Building Services: Intelligent Buildings: Concept & use; Sensors – working & application in – HVAC, Fire protection systems, 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.

**GUIDELINES FOR QUESTION PAPER SETTING**

All Theory Courses -

- Part- A (5 NOS X 2 MARKS = 10 MARKS) Answer all questions
- Part- B (2 NOS X15 MARKS = 30 MARKS)
- (Either or type)

• Students will be required to attempt five questions from the Eight questions, are to be set from entire syllabus. where 2 questions may be short answer type which is compulsory with 2- 3 subheads and 2, short with 4 subheads answer type and 4 essay type questions.

- Students should attempt total Seven Questions including the compulsory question.
- Question paper is to be set covering the entire syllabus.

**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

**Reference books:**

Poella. L. Lestlie. Environmental Acoustics.  
 Moore, J.E. Design of Good Acoustics, The Architectural Press, London, 1961.  
 Burris, Harold. Acoustics for the Architect.  
 Lord, Peter and Templeton, Duncan. The Architecture of Sound: Designing Places of Assembly. Architectural Press Ltd., London, 1986.  
 Egan, David. Architectural Acoustics, MC Graw-Hill Book Company, New York, 1988  
 Handbook for Building Engineers in Metric systems, NBC, New Delhi, 1968.  
 Philips Lighting in Architectural Design, McGraw Hill, New York, 1964.  
 R.G.Hopkinson and J.D.Kay, the Lighting of Buildings, Faber, and Faber, London, 1969.  
 Dr.V. Narasimhan – An introduction to Building Physics- Kabeer printing works, Chennai -5

**ARCH 619: ELECTIVE - VI**

COURSE	COURSE AREA	COURSE TYPOLOGY	NAME OF THE COURSE	TEACHING SCHEME					EVALUATION							TOTAL MARKS	EXAM DURATION (HRS)			
				L	T	S	CREDIT	TOTAL CLASS HRS	THEORY					STUDIO						
									MST 1 10%	MST 2 10%	A. MST 10%	SS 50% OR 30%	ESUE 40%	TOT AL	IA 10% OR 60%			EV 10% OR 40%	TOTAL	
ARCH 619	SU	STUDIO	ELECTIVE- VI (POOL II)			1	1	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

**COURSE OVERVIEW:**

The following is a representative list of what may constitute Institute projects:  
 Seminars, Tutorials/ additional classes for any course, Guest Lectures, putting up Exhibitions, Workshops, participating in Architectural Competitions or conducting Site Visits or Study Tours. Provides knowledge to support student being sensitive design;

- a paper presentation and a summer case study

**OBJECTIVES OF THE COURSE:**

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

**EXPECTED SKILLS / KNOWLEDGE TRANSFERRED:**

better grooming than just books and theories.

**COURSE CONTENTS:**

The creative electives provide an opportunity to express talents which are different from architecture but related to imagination, visualization & creation. They offer hands-on experience of unique ingenuity & workmanship. The essence of the creative domain can be achieved by exploring different materials, techniques, 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 Even semester pool

**GUIDELINES**

One Major And Minor tasks/ excercises is 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 commencement of the classes

**NOTE :**

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

## ARCH 610: STUDY TOUR III

COURSE	COURSE AREA	COURSE TYPOLOGY	NAME OF THE COURSE	TEACHING SCHEME					EVALUATION							TOTAL MARKS	EXAM DURATION (HRS)			
				L	T	S	CREDIT	TOTAL CLASS HRS	THEORY					STUDIO						
									MST 1 10%	MST 2 10%	A. MST 10%	SS 50% OR 30%	ESUE 40%	TOTAL	IA 10% OR 60%			EV 10% OR 40%	TOTAL	
ARCH 610	SU	PROJECT	STUDY TOUR III				1									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,RVV - INTERMEDIATE REVIEW

### COURSE OVERVIEW:

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

### OBJECTIVES OF THE COURSE:

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

### EXPECTED SKILLS / KNOWLEDGE TRANSFERRED:

different skills for creative thinking, understanding various art forms, appreciate art and architecture.

The following is a representative list of what may constitute Institute projects:

Seminars, Tutorials/ additional classes for any course, Guest Lectures, putting up Exhibitions, Workshops, participating in Architectural Competitions or conducting Site Visits or Study Tours. Provides knowledge to support student being sensitive design;

- Students will develop the skills & understanding of measure drawing.
- Students will get the understanding of “synthesis of learning from various courses” by observing, registering & mapping of actually built buildings.
- Program outcome will be extremely valuable in creating a knowledge base on architecture field not only in India but of nearby countries as well.
- Production of Accurate and precise drawings of many a monument, institution, settlement in India, which become a basis for future research.

### COURSE CONTENTS:

Evaluation: Stages: Proposal and on final submission of the paper.

Students contribute to the topic/area is of critical importance.

Note:

- The Related Study Program (RSP) 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 the first-hand experience of traditionally built environments. This subject recognizes the value of the 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 also related components of architectural relevance.
- 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 to make a proposal 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 the building and analyze the building and a word of the concept according to the architect.

OR

### EDUCATIONAL TOUR- I (during semester break)

A study of Indian architecture both traditional and contemporary to be done during the educational tour and a precise report to be submitted. b) Thorough measured drawing of architecture/ architectural elements/ pieces to be done owing to a particular style, period, influence, spatial appraisal, social or cultural importance etc. at least within seven days at a particular location of interest should be submitted by each student.

OR

### WORK AT ARCHITECTS OFFICE - I (during semester break)

#### GUIDELINES

Problem is 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 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 to make a proposal 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 the building and analyze the building and a word of the concept according to the architect.

**Chairperson**  
Board of Studies  
Shri Vaishnav Vidyapeeth Vishwavidyalaya  
Indore

**Deputy Registrar**  
Shri Vaishnav Vidyapeeth Vishwavidyalaya  
Indore