4TH YEAR / VII Semester

ARCH 701: ARCHITECTURAL DESIGN STUDIO – VII

COURSE	COURSE AREA	COURSE TYPOLOGY	NAME OF THE COURSE	TEACHING SCHEME					EVALUATION									TOTAL MARKS	EXAM DURATION (HRS)
									THEORY						STUDIO				
				L	T	S	CREDIT	TOTAL CLASS HRS	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 701	AR	STUDIO	ARCHITECTURAL DESIGN STUDIO VI			12	12	12							270	180	450	450	

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 course aims at teaching the design of buildings for passive recreation and large span buildings for public uses.

OBJECTIVES OF THE COURSE:

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

EXPECTED SKILLS / KNOWLEDGE the TRANSFERRED:

Design vocabulary, enhancement and sensitization of student in design preparation and its relation to structural systems

COURSE CONTENTS:

- **Theme & focus of design:** Study & analysis of various latest technologies in large-scale Architecture; Understanding, exploration & development of design programme, concept & detailed design with a focus on Prefab.
- **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.
- **Non-linear Designs:** 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 High-tech Architecture; Understanding design philosophy & process; Learning from design quality, Literature/book reviews; Architectural critiques.
- **Design Exercise:** Campus Design /Building Complex Design. Complexity of design: Large-scale Institutional / Commercial / Industrial / Housing / Public use project of diversified activities with focus on horizontal & / or vertical circulation & grid planning. Typology: Campus, Housing, Institutions, Government complexes/offices, Multi-Level Car Park. Site extent: Up to 20000 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 Manfired 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
National Building Code - ISI
Patricia Tutt and David Adler, New Metric Handbook — The Architectural Press
Chiara Joseph de and Others. Time Savers Standards of Building Types.McGraw – Hill, 1980.
Dawes, John. Design and Planning for Swimming Pools. The Architectural Press, London, 1979.
Ruknitein, M. Harvey. Central City Malls.

ARCH 702: HOUSING

COURSE	COURSE AREA	COURSE TYPOLOGY	NAME OF THE COURSE	TEACHING SCHEME					EVALUATION									TOTAL MARKS	EXAM DURATION (HRS)
									THEORY						STUDIO				
				L	T	S	CREDIT	TOTAL CLASS HRS	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 702	AR	THEORY CUM STUDIO	HOUSING	1		3	4	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,RVW - INTERMEDIATE REVIEW

COURSE OVERVIEW:

To create awareness about the causes and consequences of housing problems and to impart knowledge about the possible solutions.

OBJECTIVES OF THE COURSE:

Understanding of the various issues involved in planning knowledge design solutions

EXPECTED SKILLS / KNOWLEDGE TRANSFERRED:

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

COURSE CONTENTS:

- Overview of housing :
- Housing Issues:
- Housing legislations:
- Housing Economics:
- Case Studies:

II Housing Design: Issues to be addressed for the design project pertaining to housing design:

· Density, mixed land use, ground coverage, development controls.
· Urban systems, services and their integration with the project.
· User requirements (derived from surveys)
· Issues in appropriate technology and costs.
· Issues of hierarchy, the identity of space, public and private scales of space.
Integration of community institutions etc.
· Detailing for the disabled and the elderly.
· Indian / local architectural responses to climate, culture, traditional values, building elements, symbols motifs and special character.
Design exercise related to housing design for specific target groups.

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

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 :

Students would need to undertake one of the design subjects for the studio exercise. Students may be required to develop a brief, translate it into requirements and design. One Major design exercise should be given .

The evaluation shall be through periodic internal reviews. The final submission will include a brief report of about 1000 words explaining the concept and design proposals for main portfolio. It will also include a model.

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:

Alexander, Christopher. Pattern language: Towns, Buildings, Construction. Oxford University Press, New York.
Richard. D. Dober. Campus Architecture: Building in the Groves of Academy.McGraw Hill, New York, 1996.
Chiara, De Joseph and Others. Timesavers standard for Housing and Residential development, 2nd ed. McGraw Hill, Inc, New York.
Newman, Oscar and Others. Defensible space: People and Design in theViolent City. Architectural Press, London, 1972.

ARCH 703: ADVANCED BUILDING CONSTRUCTION

COURSE	COURSE AREA	COURSE TYPOLOGY	NAME OF THE COURSE	TEACHING SCHEME					EVALUATION									TOTAL MARKS	EXAM DURATION (HRS)
									THEORY						STUDIO				
				L	T	S	CREDIT	TOTAL CLASS HRS	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 703	TE	THEORY CUM STUDIO	ADVANCED BUILDING CONSTRUCTION	1		2	3	3	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,RVW - INTERMEDIATE REVIEW

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

COURSE CONTENTS

PREFAB

Introduction to Prefab:

Precast Concrete:

Substructure & support system:

Roof & wall systems:

Precast Components:

FAILURES:

Introduction to building failures: causes of decay and damage in old buildings, issues of maintenance and repair. Preliminary inspection and general observation, decayed elements difference between decay and damage.

Timber: Bricks: R.C. Concrete:

Methodical approach to Repairs:

Unusual problems: Repairs to large span rooms, waterproofing the roof terraces, leakages from toilets, case studies and site visits.

Note: 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

GUIDELINES FOR QUESTION PAPER SETTING

All Theory cum studio-based courses

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

(Since they are a mix of drawing and theory content, all

Part-A questions relate theory

Part–B questions are drawing based.

It is not possible for a candidate to answer more than 4 drawing questions in a three-hour duration)to theory and all

- Students will be required to attempt 5+2 questions from the Eight questions, are to be set from entire syllabus. where 2 questions may be short answer , 2 questions may be short answer type with 2- 3 subheads and 2, short with 4 subheads answer type and 2 essay type questions which is compulsory.
- Students should attempt total 7 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:

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, 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.

ARCH 706: URBAN DESIGN

COURSE	COURSE AREA	COURSE TYPOLOGY	NAME OF THE COURSE	TEACHING SCHEME					EVALUATION									TOTAL MARKS	EXAM DURATION (HRS)
									THEORY						STUDIO				
				L	T	S	CREDIT	TOTAL CLASS HRS	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 706	AR	THEORY	URBAN DESIGN	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:

The overall goal of the course is to help students formulate an understanding of the urban forms and spaces. City HISTORY OF ARCHITECTURE will be examined. The contemporary needs of the society and the role of spaces will be dealt along with the need for design control.

OBJECTIVES OF THE COURSE:

Students will understand the fundamental concepts and theories of urban design and apply them in their design projects.

EXPECTED SKILLS / KNOWLEDGE TRANSFERRED:

To develop a conceptual understanding of Urban design and contextual planning principles in the built environments

COURSE CONTENTS:

Introduction: Introduction to Urban Design; Terminologies; Stakeholders & their role in the process of Urban Design; Urban Design as a Multidisciplinary field; Necessity & benefits of quality urban design; Scope, strategies, levels, legislation & scale of Urban Design.

The emergence of urban design as a discipline – Concepts of urban design –Urban design theories of Gordon Cullen and Kevin Lynch

People's Perception:

Anatomy of an Urban Area: Urban morphology & urban character; Elements & aspects of Urban Design; Built & Unbuilt spaces; Buildings, public spaces, streets & transport; pedestrianisation & streetscape; movement pattern; services; safety & sensitive urban development – defensible spaces. Nature and urban design - open spaces; Environment & urban design.

Urban scale, Mass and Space; Understanding components of urban fabric; Making a Visual survey;

Understanding the various urban spaces in the city and their hierarchy- Spaces for residential, commercial, recreational and industrial use: Special focus on streets; Expressive quality of built forms, spaces in public domain

Urban Design Process: Survey techniques; Evolution analysis; Townscape analysis; Perceptual structure; Permeability study (privacy & accessibility) & visual analysis. Constraints & possibilities; Designing in a context and site planning; Articulation of spaces; Multi-functionality, flexibility, adaptability; Generating alternatives; Formulation of issues for intervention.

STUDY OF URBAN SPACES THROUGH HISTORY

A brief Analysis of urban spaces in history – in the West (Greek, Roman, Medieval and Renaissance towns) and the East (Vedic, temple towns, medieval and Islamic towns); Relevance of the historical concepts in the present context; Critical analysis of some Indian cities like New Delhi, Chandigarh

Application of Urban Design: Examples of good urban design; Urban design in history, aspects of heritage and historical continuity; Applications of urban design principles in existing developments as well as in news proposals; Theories & protocols of Urban Design -New Urbanism; Case studies of modern & contemporary urban interventions.

Renewal, Redevelopment And Formulating Urban Design Policies: Understanding urban renewal and the need for it, Scope, challenge and Implementation methods; Public participation; Townscape policies and urban design guidelines for new developments- Case studies

Urban Design Problem: Conducting an urban design survey, Analysis of data, Formulating urban design guidelines for an area - practical problem solving

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

Assignments

Simple exercises in urban design exercise using elements, Studio exercise emphasizing the relationship between built form and outdoor areas, and site planning issues. design of a neighbourhood open space (area of 2000 to 3000 sq. metres)

Reference books:

- The Concise townscape- Gordon Cullen, The Architectural Press
- Image of the city - Kevin Lynch
- The architecture of town and cities - Paul D. Speriregon, The MIT Press
- Urban design – Ornament and decoration, Cliff Moughtin, Bath Press
- Urban design – street and square, Cliff Moughtin, Bath Press
- Town and square - Paul Zucker
- The urban pattern - Arthur B Gallion, CBS publishers
- Architecture and the urban experience - Raymond J Curran. Van Nostrand Reinhold Company
- Indian city in the arid West - Kulbashan Jain, Aadi Centre
- Indian mega city and economic reforms - A.K.Jain, Management publishing Company

ARCH 707: STRUCTURAL DESIGN III

COURSE	COURSE AREA	COURSE TYPOLOGY	NAME OF THE COURSE	TEACHING SCHEME					EVALUATION									TOTAL MARKS	EXAM DURATION (HRS)
									THEORY						STUDIO				
				L	T	S	CREDIT	TOTAL CLASS HRS	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 707	TE	THEORY CUM PRACTICAL	STRUCTURAL DESIGN III			2	2	2							60	40	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 focus of the course is to impart skills related to the preparation of drawings meant for construction work on the site and to improve the students' ability to detail.

To create skill among students to apply the knowledge gained regarding structural design in an applied project and to make buildings safe against natural/ manmade disasters

OBJECTIVES OF THE COURSE:

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

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

Student shall prepare a report consisting of Detailed Structure Design of a building considering all safety factors including fire, earthquake, cyclone, floods, etc.

Report to be prepared in bound form with drawings attached.

EXPECTED SKILLS / KNOWLEDGE TRANSFERRED:

To prepare working drawings for a project and resolve complex aspects in the buildings with appropriate materials and design details.

COURSE CONTENTS:

Overview: Working Drawing, of a project .the structures design of a project from foundation to the final structural plans of slabs beams and columns and structural drawings

- Detailed Structural Design & Drawings of a Public /Residential Building, (R.C.C. frame structure) with emphasis laid on practical design considerations.
- Earthquake Resistant Design.
- Introduction to Codal provision, IS- 4326 and IS- 1893 for Earthquake Resistant Design of Buildings.
- Earthquake Resistant provisions for Brick Masonry& R.C.C. Buildings.

GUIDELINES

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

***Note: -** Students shall prepare at least two structural drawing sets and design the structures, one for a small residence and one for a large building than the other

Evaluation is to be done through viva voce by an external examiner appointed by the university at Institute.

REFERENCE BOOKS:

- IS -456 CODE BOOK
- IS -800 CODE BOOK
- IS- 4326 CODE BOOK
- IS- 1893 CODE BOOK
- Rani Vazi, "RCC, Khanna Publishers New Delhi. 2000
- Jain A.K., "RCC, Lakshmi Publication (P) LTD

ARCH 708: ACOUSTICS AND ADVANCED SERVICES

COURSE	COURSE AREA	COURSE TYPOLOGY	NAME OF THE COURSE	TEACHING SCHEME					EVALUATION									TOTAL MARKS	EXAM DURATION (HRS)
									THEORY						STUDIO				
				L	T	S	CREDIT	TOTAL CLASS HRS	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 708	TE	THEORY	ACOUSTICS & ADVANCED SERVICES	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:

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:

Electrical wiring and Contracting (Vol.1 to Vol.4), London The New Era Publishing Company.
Dr Frith Abnwos and others, Electrical Engineering hand Book
William. J. Guinness, Mechanical and Electrical Equipment for Buildings, New York: Willey
Bovay. H.E., Handbook of Mechanical and Electrical Systems for Buildings New York: Mc Graw Hill
E.R.Ambrose, Heat pumps and Electric Heating, John and Wiley and Sons Inc, New York, 1968.
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 709: BUILDING SYSTEMS AND SERVICES -III

ELECTRICAL AND MECHANICAL

COURSE	COURSE AREA	COURSE TYPOLOGY	NAME OF THE COURSE	TEACHING SCHEME					EVALUATION									TOTAL MARKS	EXAM DURATION (HRS)
									THEORY						STUDIO				
				L	T	S	CREDIT	TOTAL CLASS HRS	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 709	TE	THEORY	BUILDING SYSTEMS AND SERVICES-III (ELECTRICAL &MECHANICAL)	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:

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 understand 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 CONTENTS:

- Artificial light, Electrification & Communication Network: Basic electrical supply & distribution to the building, alternate supply & Power connections. Various components & elements of layouts as per use, lifesaving auto-cut circuits & other fixtures. Communication systems like fax, telecom, EPABX, alarm, audio-video monitoring, etc. & their layouts. Criteria of designing of various communicating service layouts
- H.V.A.C. [Heating, Ventilating, Air-conditioning and cooling]: Mechanical thermal controls, its type, 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 Components
- Firefighting & Protection: 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 door, gangway, and stair & lift block for escape. Case studies of service and escape layouts of building for fire protection system & requirement.

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:

1. Prakash, N. Sesha.Manual of Fire Safety.New Delhi: CBS Publishers and Distributors,2011
2. Parker, Steve.Electricity.Lon don: Dorling Kindersley,2013
3. Sugarman, Samuel C.Testing and balancing HVAC air and water systems.Lilburn:Taylor & Francis,2014 Classics,Jan 2007
4. Grondzik, Walter T.Mechanical and electrical equipment for buildings.Canada: John and Wiley Sons, Inc.,2015
5. Roberts, Victor & Krepchin, Ira Eds. lighting: technology atlas Book. Colorado: Platts research and consulting., 2005
6. 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
Electrical wiring and Contracting (Vol.1 to Vol.4), London The New Era Publishing Company.

Dr Frith Abnwos and others, Electrical Engineering hand Book
William. J. Guinness, Mechanical and Electrical Equipment for Buildings, New York: Willey
Bovay. H.E., Handbook of Mechanical and Electrical Systems for Buildings New York: Mc Graw Hill
E.R.Ambrose, Heat pumps and Electric Heating, John and Wiley and Sons Inc, New York, 1968.
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 719: ELECTIVE - VI

COURSE	COURSE AREA	COURSE TYPOLOGY	NAME OF THE COURSE	TEACHING SCHEME					EVALUATION									TOTAL MARKS	EXAM DURATION (HRS)
									THEORY						STUDIO				
				L	T	S	CREDIT	TOTAL CLASS HRS	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 719	SU	STUDIO	ELECTIVE- VI (POOL II)			1	1	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,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 on 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 creative domain can be achieved by exploring different materials, techniques, processes; developing creative products; finishing & presenting the product for the concepts evolved. Outcome will be through portfolio & presentations.

As Per Pool Electives Choices Stage II Odd semester pool

ARCH 710: STUDY TOUR IV

COURSE	COURSE AREA	COURSE TYPOLOGY	NAME OF THE COURSE	TEACHING SCHEME					EVALUATION									TOTAL MARKS	EXAM DURATION (HRS)
									THEORY						STUDIO				
				L	T	S	CREDIT	TOTAL CLASS HRS	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 710	SU	PROJECT	STUDY TOUR IV				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:

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 on to support student being sensitive design;

- Students will get exposure & awareness of various built environment at different geographical places of architectural relevance across the state, region, country & world.
- Students will get the understanding of "synthesis of learning from various courses" by observing, registering & photo documenting of above-stated places.
- Programme 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 classified images, sketches, notes on first-hand experiences. of many a monument, institution, settlement in India, which become a basis for future research.

COURSE CONTENTS:

- Student and faculty members stay at the selected place for 8 to 15 days.
- Students will get comprehensive awareness of that place.
- Students will sketch, write notes,& photo/video document that place.
- Students will also document the social, cultural, environmental aspects of that place
- Students came back at the institute and make the final edited document and report within remaining days.

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

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

Note:

- The Related Study Programme (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 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 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