FACULTY OF ARCHITECTURE AND PLANNING
DR APJ ABDUL KALAM TECHNICAL UNIVERSITY, UTTAR PRADESH LUCKNOW

Syllabus

For

M.Arch.

(Effective from the Session: 2016-17)

FACULTY OF ARCHITECTURE

MASTERS IN ARCHITECTURE

SEMESTER – I SCHEME OF TEACHING AND EXAMINATION

(Effective from the Session 2016-17)

S. NO.	Subject Code	Name of the subject	Periods			Evaluation scheme						Total	Credits	Duration of ESE
			L	T	P	Sessional assessment			ESE					
					Studio	CT	TA	Total	Theory	Viva	TOTAL			
1	MAR - 101	DESIGN STUDIO -I (URBAN DESIGN)	1	0	9	50	50	**100**	0	50	**50**	**150**	5	
2	MAR - 102	RESEARCH TECHNIQUES IN ARCHITECTURE & PLANNING	2	1	0	15	35	**50**	50	0	**50**	**100**	3	3 HRS.
5	MAR - 103	INFRASTRUCTURE PLANNING	2	1	0	15	35	**50**	50	0	**50**	**100**	3	3 HRS.
4	MAR - 104	MASS HOUSING STRATEGIES	2	1	0	15	35	**50**	50	0	**50**	**100**	3	3 HRS.
3	MAR - 105	CONTEMPORARY ARCHITECTURE THEORY AND TRENDS	1	1	0	15	35	**50**	0	50	**50**	**100**	2	
6	MAR - 106	REMOTE SENSING AND GIS	1	1	0	15	35	**50**	0	0	**0**	**50**	2	
		TOTAL	**9**	**5**	**9**							**600**	**18**	

SEMESTER - II

S. NO.	Subject Code	Name of the subject	Periods			Evaluation scheme						Total	Credits	Duration of ESE
			L	T	P	Sessional assessment			ESE					
					STUDIO	CT	TA	TOTAL	THEORY	VIVA	TOTAL			
1	MAR - 201	DESIGN STUDIO -III (CONSERVATION)	1	0	9	50	50	**100**	0	50	**50**	**150**	5	
2	MAR - 202	SUSTAINABLE HERITAGE	2	1	0	15	35	**50**	50	0	**50**	**100**	3	3 HRS.
3	MAR-203	VERNACULAR ARCHITECTURE	2	1	0	15	35	**50**	50	0	**50**	**100**	3	3 HRS.
4	MAR - 204	ARCHITECTURAL CONSERVATION THEORY	2	1	0	15	35	**50**	50	0	**50**	**100**	3	3 HRS.
5	MAR-205	PROJECT MANAGEMENT AND PLANNING	1	1	0	15	35	**50**	0	50	**50**	**100**	2	
6	MAR - 206	RESEARCH SEMINAR	1	1	0	0	50	**50**	0	0	**0**	**50**	2	
		TOTAL	**9**	**5**	**9**							**600**	**18**	

SEMESTER - III

MASTERS IN ARCHITECTURE

S. NO.	Subject	Name of the subject	Periods			Evaluation scheme							Credits	Duration
	Code		L	T	P	Sessional assessment			ESE			Total		of ESE
						CT	TA	TOTAL	THEORY	VIVA	TOTAL			
1	MAR - 301	SEMINAR I (ARCHITECTURAL PEDAGOGY)	1	5	0	0	50	**50**	0	0	**0**	**50**	4	
2	MAR - 302	SEMINAR II (LEGISLATIVE POLICIES IN ARCH.)	1	5	0	0	50	**50**	0	0	**0**	**50**	4	
3	MAR-303	DISERTATION	0	10	0	0	200	**200**	0	300	**300**	**500**	10	
		TOTAL	**2**	**20**	**0**							**600**	**18**	

SEMESTER - IV

S. NO.	Subject	Name of the subject	Periods			Evaluation scheme							Credits	Duration
	Code		L	T	P	Sessional assessment			ESE			TOTAL		of ESE
					STUDIO	CT	TA	TOTAL	THEORY	VIVA	TOTAL			
1	MAR - 401	THESIS	0	18		0	200	**200**	0	400	**400**	**600**	18	
		TOTAL										**600**	**18**	

M. ARCH. SEMESTER – I

MAR – 101,ARCHITECTURALDESIGN–I(URBAN DESIGN)

PERIODS			EVALUATION SCHEME						SUBJECT TOTAL	CREDITS	DURATION OF THEORY PAPER
LECTURE	TUTORIAL	PRACTICAL/ STUDIO	SESSIONAL ASSESMENT			ESE					
			CT	TA	TOTAL	THEORY	VIVA	TOTAL			
1	0	9	50	50	**100**	0	50	**50**	**150**	5	-

OBJECTIVE:

- To impart to the student a basic knowledge of urban design elements, site analysis, concept development, and applied principles and techniques of urban design.

Module-1 Urban Design Project

A hands-on applications of urban design skills, problems of urban scale and space, massing of built form, urban design approaches and techniques, social and cultural factors, and other aspects of urban design. These skills are applied through a number of exercises for a specific client-based comprehensive urban design project. An in-depth research and analysis of activities below to evaluate the progress of work:

- Geography, local conditions and Climatic conditions
- Special design considerations for the user
- Development control legislations
- Amenities for the urban development
- Case study/ies to substantiate the design philosophy
- Impact of the development on the immediate environment
- Evolving a concept for the urban space
- Detailing the concept

Module-2 Analysis of Urban space/ area

An overview of principles, definitions in urban design .
A case study of a city/ urban space/ special urban area with photographs, sketches, plans and its analysis

REFERENCE BOOKS:

1. Planning and Architecture, Edited by Dennis Sharp Editor
2. Planning feasible learning places by Leggett S Bru Baker C. W. &Cohodes A.
3. Methods in Architecture, by Town Health

MAR – 102,RESEARCH TECHNIQUES IN ARCHITECTURE & PLANNING

PERIODS			EVALUATION SCHEME						SUBJECT TOTAL	CREDITS	DURATION OF THEORY PAPER
LECTURE	TUTORIAL	PRACTICAL/ STUDIO	SESSIONAL ASSESMENT			ESE					
			CT	TA	TOTAL	THEORY	VIVA	TOTAL			
2	1	0	15	35	**50**	50	0	**50**	**100**	3	3HRS.

OBJECTIVES:

- To understand the importance of research in Architecture and Planning.
- To formulate a research plan through application of research techniques, data collection, analysis and interpretation.
- To understand the methods of writing and presenting a research report.

Module-1	**Introduction to Research Methodology and its relevance in architecture**	Objective of Research, Types of Research, Research Methods and Methodology,Scientific method of Research, Research Process. Types of research in architecture, areas ofresearch in architecture, qualitative and quantitative paradigms.
Module-2	**Research Problem**	Research Problem and Selection of Research Problem, Need for defining the Problem,Techniques for defining a Problem, Development of hypothesis.
Module-3	**Research Design**	Components of research design – formulating the research questions, hypothesis, choosing the sample, methods of data collection, analyzingthe data and inferring from the data. Concepts of dependent and independentvariables, unit of analysis. Defining the scope and limitations of a research plan,significance of the research outcome. Preparing time schedule & budget for a research plan.
Module-4	**Referencing Information Sources**	Using secondary sources of information: using an Encyclopedia, bibliography card,translation card catalogue information, periodic indexes and usage, compiling apreliminary bibliography; Referencing documentation sources: styles of footnotes,endnotes etc., model bibliography entries.
Module-5	**Sampling Design: Quantitative and Qualitative**	Quantitative data collection: Census and Sample survey, Implication of Sample design, Steps in Sampling, Characteristics of a good Sample design, Types of Sample design. Methods of qualitative data collection in Architecture: Interview Techniques: Questionnaires /Face to face Interviews / Internet survey. Designing a Questionnaire / Interview schedule.Visual Techniques: Observations (participant / non-participant / direct), activitymapping, accession/erosion trace observations, cognitive maps, etc.
Module-6	**Analysis**	Content Analysis: Secondary data analysis: Understanding the relativeadvantages, disadvantages and application of various

		methods mentioned above andchoosing a method appropriate for a research to achieve its objectives. Data Documentation and Analysis: Understanding the nature of data collected andmethods of analysis suitable for that data (graphical / numerical / descriptive). Converting data into numerical form for data analysis.
Module-7	**Introduction to Statistics**	Introduction to the simple statistical methods ofanalyzing numerical data – frequencies / percentages, mean / median / mode,correlation, chi square test – inferring from the data and interpreting the meaning ofthose inferences. Use of MS Excel for statistical data analysis. Presentation & Reporting: Presentation of the Data: Techniques of presenting thenumerical data – graphical (pie charts, bar charts, line graphs etc.), tabulations,verbal qualitative data, architectural drawings / maps.
Module-8	**Reporting the research**	Different sections of a research report, technical writing andlanguage (tense, voice, etc.), formatting of a report.

REFERENCE BOOKS:

1. Research Methodology; C.R.Kothari; New Age International (P) Ltd.
2. Research Methodology; D. K. Bhattachary; Excel Books
3. Research Methodology; Goodday& Hack
4. The Practice of Social Research, by Babbie, E. 3rd Ed.,1983 Belmont :Wadsworth Publishing Co..
5. Research Design: Qualitaitve, quantitative and mixed methods approaches
6. By Creswell, J. W., 2nd Ed, 2003.Thousand Oaks : Sage
7. Research Design: Qualitative & Quantitative Approaches, 1994 Thousand Oaks : Sage
8. Surveys in Social Research, Jaipur, By De Vaus, D. A, 2003, Rawat Publications
9. Qualitative Data Analysis : A User Friendly Guide for Social Scientists, By Dey, I, 1993, London :Routledge
10. Architectural Research Methods, By Groat, L & Wang, D., 2002, NY : John Wiley and Sons Inc.
11. Research Methodology : Methods and Techniques By Kothari, C.R., 2005 New Delhi : WishwaPrakashan
12. Research Methods in the Social Sciences, By Nachmias, C. F. and Nachmias, D., 5th Ed 1996 Great Britain: St. Martin's Press Inc
13. Handbook of Qualitative Research By Norman K Denzin and Yvonna S Lincoln (Eds.)
14. pp.377-392., 1994, Thousand Oaks : Sage Publications
15. Qualitative Evaluation Methods, By Patton, M. Q.,1980, Sage Publications
16. Methods of Architectural Programming, By Sanoff, H, 1977 Dowden Hutchinson and Ross, Inc. Vol. 29,Community Development Series
17. Visual research methods in design, By Sanoff, H, 1991 USA : Van Nostrand Reinhold
18. Interpreting Qualitative Data : Methods for Analysing Talk, Text and Interaction By Silverman, D.,1993 , London: Sage Publication
19. Behavioral Methods in Environmental Design, By William Michelson (ed.),1982Stroudsberg, Pennylvania : Dowden Hutchinson and Ross. Inc.

MAR – 103,INFRASTRUCTURE PLANNING AND MANAGEMENT

PERIODS			EVALUATION SCHEME						SUBJECT TOTAL	CREDITS	DURATION OF THEORY PAPER
LECTURE	TUTORIAL	PRACTICAL/ STUDIO	SESSIONAL ASSESMENT			ESE					
			CT	TA	TOTAL	THEORY	VIVA	TOTAL			
2	1	0	15	35	**50**	50	0	**50**	**100**	3	3HRS.

OBJECTIVE:

- To understand the holistic network of infrastructure needed to sustain urban/rural demands.

Module-1	**General Concepts**	Definition, type and characteristics to infrastructure; **Infrastructure provision and guiding principles:** Equity, access, level and quality of service, affordability; **Ownership, control and operation:** Institutions in infrastructure, modes of ownership and operation, infrastructure legislations; **Infrastructure in rapidly growing cities and regions:** Infrastructure monitoring, infrastructure indicators development, standards, benchmarks; **Technological advancements:** Role of spatial information technology in monitoring and planning infrastructure; **Policy issues in infrastructure provision:** policy development and influencing factors, key issues, role of regulatory authorities. Competition Policy; PPP
Module-2	**Water supply and irrigation**	Sources of water, current scenario; **Conflicts and cooperation:** Trans-boundary water conflicts, inter-state river water disputes, India and neighbouring states, water treaties; **Water rights; Excess and under-utilization of water; Access standards; Demand and supply analysis; pricing parameters; Conservation:** Technology, recycling and re-use; **National water policy; Regulation and equity efficiency and pricing issues in irrigation.**
Module-3	**Sanitation**	**Access to sanitation:** Low cost sanitation programme; **Role of institutions:** Public and private sector, community involvement; **Sanitation and MDG:** Resource commitment for provision of sanitation, targets and achievements; **Technological advancement and water provision.**
Module-4	**Solid Waste**	Land use and solid waste, waster generation, current scenario; **Waste collection and disposal:** Methods of collection, disposal, technological innovations; **Waste management:** Formal and informal institutions density and SWM, methods of collection-institutions in solid waste management- formal and informal, role of ULB's, NGO's, informal networks, rag-pickers; **Solid waste as an economy:** Cost recovery in solid waste.
Module-5	**Electricity: Sources of generation**	**Sources of generation:** Conventional and non-conventional; **Current scenario:** Demand and supply projections; **Electricity**

		production and sharing: Trans-boundary issues in sharing; **Pricing; Forms of privatization.**
Module-6	**Transportation**	**Urban and regional transport polisy; Transport standards; Roads:** Types of roads, standards at various levels; **Institutions in road development:** PWD, NHAI, BRO; **Policies and programmes for road development:** NHP, NHDP, PMGSY.
Module-7	**Social Infrastructure:**	Government and NGOs in health and education; PPP in each of these sectors.
Module-8	**Economic Infrastructure**	Definition and types of economic infrastructure; **Institutions in economic infrastructure:** Role of lead and corporate banks, SHGs, NGOs, SEZs, STPs.
Module-9	**Telecommunication**	general concepts, current scenario; **Spread and coverage:** population and area networks; **Policies; Operability.**

REFERENCE BOOKS:

1. Solid waste management: The Regional approach / CLAYTON, C K

2. Water supply, waste disposal & Environmental Engineering / CHATTERJEE, AK

3. Street Lighting / WALDRAM, J M

4. Municipal and Rural Sanitation / EHBEN, V M

5. Solid Liquid flow Slurry pipeline Transportation / WASPE, E J

MAR – 104,MASS HOUSING STRATEGIES AND STANDARDS

PERIODS			EVALUATION SCHEME						SUBJECT TOTAL	CREDITS	DURATION OF THEORY PAPER
LECTURE	TUTORIAL	PRACTICAL/ STUDIO	SESSIONAL ASSESMENT			ESE					
			CT	TA	TOTAL	THEORY	VIVA	TOTAL			
2	1	0	15	35	**50**	50	0	**50**	**100**	3	3HRS.

OBJECTIVE:

- To understand strategies adopted for Mass Housing in India.
- To understand the dynamics of the Housing situation in India.

Module-1 Introduction

1. Concepts, definitions and components of Housing. Role of housing in socioeconomicdevelopment of a nation. Housing in relation to non-residentialcomponents of settlement.
2. Effects of Urbanization & Industrialization in Housing including problems andpossibilities of Slums and Squatters settlement in India and abroad.

Module-2 Housing situation & Government Intervention

1. Theories and empirical methods for measuring housing market. Housing process and sequence ofdevelopment. Housing need, demand and supply, formal and non-formal.
2. Housing characteristics and situation (indices and statistics), Housing in fiveyearplans and social housing programmes.
3. Major elements of a housing policy, land, finance, legislation for housing development, approaches and contents of National Habitat Policy- Inclusive Policy; Rajiv AwasYojna; Indira AwasYojna.
4. Finance for housing: priority in the national plans – role of public and privateagencies, role of cooperatives and various institutions.

Module-3 Social Aspect

0. Built environment and human behavior, Evaluation of user's satisfaction.

Module-4 Housing Standards

1. Housing norms, design and standards, units of housing design, layouts, densities and neighborhood units; infrastructure and community facilities, form and structure of housing as shaped by socio-economic and physical parameters.
2. Materials, technology and housing production, Industrialization and future of housing, including cost reduction techniques in housing.

REFERENCE BOOKS:

1. Financing of Housing and community Improvement Programmers / United Nation
2. Housing Act / H.M.O.S
3. Housing and town and country planning: Urban land Problems and Policies /ABRAMS, C.
4. Town and Country Planning and Housing / MODAK, N.V.
5. Low Cost housing in development countries / MATHUR, G C Sustainable housing: Principles and Practice / EDWARDS, BRIAN
6. The Economics of Housing Policy / STAFFORD, D C.
7. Urban Housing in Third World / Payne, G K.
8. Housing By Macsai John 1982 John Wiley and Sons, NewYork
9. Population and Housing problems inIndiaVol. I & II Maurya S. D.1989 Chugh Publication, Allahabad
10. The social impact ofhousing goals standards 1977 U. N., New York
11. G.I.C. :An Introduction tohousing layout 1978 HNS

MAR – 105,CONTEMPORARY ARCHITECTURE THEORY

PERIODS			EVALUATION SCHEME						SUBJECT TOTAL	CREDITS	DURATION OF THEORY PAPER
LECTURE	TUTORIAL	PRACTICAL/ STUDIO	SESSIONAL ASSESMENT			ESE					
			CT	TA	TOTAL	THEORY	VIVA	TOTAL			
1	1	0	15	35	**50**	50	0	**50**	**100**	2	

OBJECTIVE:

- To enrich the student's awareness of the theories and ideas that inform contemporary practice and debate.
- To sensitize on issues like:
    - The idea that contemporary issues are an outgrowth of, and at times a reaction to, prior preoccupations.
    - The fact that architecture is interdisciplinary and draws its theories and ideas from both the arts (philosophy, cultural theory, aesthetics) and the sciences (biology, anthropology, mathematics and computer science, for example).
- To enhance the student's ability to speak and write effectively on architectural history, theory and criticism.
- To complement the design studio by surveying and analyzing historical precedents, investigating their meaning, and evaluating their usefulness as formal or programmatic models.
- To raise the student's awareness of the parallels and divergences between Western and non-Western architecture as they relate to contemporary practice.

Module-1	**Introduction**	An overview of the leading movements, individuals, and historical forces that have shaped contemporary and recent architectural history.
Module-2	**The Machine**	Le Corbusier: Towards New Architecture
Module-3	**Critical Modern**	Architecture in the Developing World: Algiers, Chandigarh, Brasilia, and Beyond
Module-4	**Postmodern Reactions and Extensions**	Over-all view Blade runner: film
Module-5	**Urban Response**	Bernard Tschumi: Manhattan Transcripts Robert Venturi: Learning from Las Vegas Aldo Rossi- SMLXL
Module-6	**Contextual Diagrams**	Peter Eisenman's works Tschumi's works
Module-7	**Critical Regionalism**	Doshi's philosophy and work Correa's Housing Tadao Ando's spaces

REFERENCE BOOKS:

- Benton, Tim, and Charlotte Benton. 1975. *Architecture and Design, 1890-1939: An International Anthology of Original Articles*. New York: Whitney Library of Design/Watson-Guptil Publication Imprint.
- Colquhoun, Alan. 2002. *Modern Architecture*. Oxford: Oxford UP
- Conrads, Ulrich. 1971. *Programs and Manifestoes on 20th-Century Architecture*. Cambridge: MIT
- Curtis, William J. R. 1996. *Modern Architecture Since 1900*. 3rded. NY:Phaidon.
- Doordan, Dennis P. 2001. *Twentieth-Century Architecture*. Upper Saddle River, NJ: Prentice-Hall.
- Frampton, Kenneth. 1980. *Modern Architecture: A Critical History*. London: Thames and Hudson.
- Hays, K. Michael, ed. 1998. *Architecture Theory Since 1968*. Cambridge: MIT.
- Jencks, Charles. 1985. *Modern Movements in Architecture*. Harmondsworth: Penguin.
- Jencks, Charles, and Karl Kropf. 1997. *Theories and Manifestoes of Contemporary Architecture*. New York: Wiley.
- Larson, MagaliSarfatti. 1995. *Behind the Postmodern Facade : Architectural Change in Late Twentieth-Century America*. Berkeley: University of California Press
- Nesbitt, Kate. 1996. *Theorizing a New Agenda for Architecture: An Anthology of Architectural Theory 1965-1995*. NY: Princeton University Press.
- Noever, Peter, ed. 1997. *Architecture in Transition : Between Deconstruction and New Modernism*. NY: Prestel USA.
- Ockman, Joan, ed. 1993. *Architecture Culture 1943-1968: A Documentary Anthology*. NY: Rizzoli.

MAR – 106,REMOTE SENSING AND GIS

PERIODS			EVALUATION SCHEME						SUBJECT TOTAL	CREDITS	DURATION OF THEORY PAPER
LECTURE	TUTORIAL	PRACTICAL/ STUDIO	SESSIONAL ASSESMENT			ESE					
			CT	TA	TOTAL	THEORY	VIVA	TOTAL			
1	1	0	15	35	**50**	0	0	**0**	**50**	2	-

OBJECTIVE:

- To comprehend the evolution of urban form and conscious urban planning
- To understand the various strategies planners employ for an ideal urban plan.

Module-1 Introduction to Remote Sensing

1. Basic concepts; Multi-concepts in Remote Sensing
2. Advantages of Remote Sensing data
3. Applications of Remote Sensing

Module-2 Remote sensing tools and methodology

1. Remote Sensing Platforms & Sensors
2. Remote sensing Data products
3. referencing scheme
4. digital data format and characteristics
5. High resolution images
6. Image processing software

Module-3	**Remote Sensing analysis**	1. Geometric & Radiometric corrections 2. Visual image interpretation methods 3. Digital image enhancement 4. Digital image classification methods 5. Accuracy assessment
Module-4	**Geographical Image System**	1. Basic concepts of GIS 2. Digital representation of geographic data, digitization of features; 3. Database creation 4. Raster and vector based GIS data 5. Overlay analysis, Buffering, Query, Spatial analysis / 3D analysis Introduction software, Application of GIS.
Module-5	**Data and national Policies**	1. National Spatial Data Infrastructure in India, National Urban Information system, National Map Policy.

REFERENCE BOOKS:

1. Principles of Remote Sensing / Curran, P.J.
2. Remote Sensing & DIP / Lillesand&Keifer.
3. Fundamentals of geographical Information System / DeMers, Michael N, John Wiley & Sons, Inc.
4. Principles of Geographical Information Systems / Burrough, P.A., Oxford University Press.
5. The GIS Book, (5^{th} ed.) / Korte, George, Thomson Learning.
6. Analyzing Urban Poverty: GIS for Developing World / De Parez, R.G., ESRI, Redlands. (2008).
7. Remote Sensing and Image Interpretation / Lillesland,T and Kiefer,R, Wiley, London.
8. Landscape Planning: environment Applications / March, W.M., Wiley and Sons, New York. (1991).
9. Remotely Sensed Cities / Mesev, V. E., Taylor and Francis, London etc. (2003).
10. Remote Sensing of Human Settlements / Ridd, M.K.E and Hipple, J.D.E., American Society of Photogrammetry and Remote Sensing (ASPRS), Bethesda. (2006).

M. ARCH. SEMESTER – II

MAR – 201,ARCHITECTURAL DESIGN–II (ARCHITECTURAL CONSERVATION)

PERIODS			EVALUATION SCHEME						SUBJECT TOTAL	CREDITS	DURATION OF THEORY PAPER
LECTURE	TUTORIAL	PRACTICAL/ STUDIO	SESSIONAL ASSESMENT			ESE					
			CT	TA	TOTAL	THEORY	VIVA	TOTAL			
1	0	9	50	50	**100**	0	50	**50**	**150**	5	-.

OBJECTIVE:

- To understand what is heritage and its importance in terms of Architecture, structure, materiality and its significance in the evolution of the mankind in understanding nature and adapt and make its dwelling units respecting the nature and local climatic conditions.
- The overall goal is to conserve our rich heritage specially built heritage to showcase the richness of our Architecture, culture & society during various period of time and regime and promote conservation of our heritage for our future generations to see and learn evolution in building architecture and technologies during various time periods.
- Our main objective will be to document the heritage of our city and make guidelines, policies, conservation plans for built heritage structures, Heritage precincts and region with respect to its economic viability and spread awareness in the localsand institutions through workshops which will help in sustainable development of the societies.

Modul-1 **Understanding heritage (Knowing our heritage)**

Interactive session on what is heritage, its value and why to conserve heritage.

- Type of heritage and its characterization
- Identification of heritage.(Built Heritage), Architectural style and Building materials
- Understanding parameters for its Relevance and Significance.

Module-2

Documentation Part 1(Broad study) (on site experience)

What is documentation, Role or need of documentation for the conservation & restoration of the any Heritage Built form, Heritage precincts or any sort of tangible and Intangible heritage.

- Listing of the Region or Precincts for generating a data base of the heritage properties.
- Development of regional level maps for various types of heritages. (Heritage site maps, Heritage land-use maps,).
- Buildings and Precincts **typology study** according to is usage, Architectural style, religion (study of demography and its comparison past and present) study.
- **Building material, Construction techniques** of Heritage structures in various typology of buildings with respect to time.

Documentation and

Complete Documentation and Condition mapping of a Heritage built structure.

- Measured drawing of heritage structures.
- Documentation of the built form in terms of its Usage, Planning,

	Condition Mapping Part 2 (Building level study)	Architecture, Style, decorative architectural features, Construction techniques and Building materials. • Condition Mapping of the heritage structures (Plans Elevations, Sections and Details).
Module-3	**Analysis**	Analysis of Construction technology in terms of walls, arches domes and other structural and architectural elements which may help in the conservation and restoration of the heritage structures.
Module 4	**Comprehensive Conservation plan for the heritage precincts and structures and Adaptive Reuse of heritage structures.**	Development of comprehensive heritage plan for the heritage precincts and structure in order to make sustainable scheme which can enrich and protect our heritage. • Regional and precincts **level policies and guidelines** for heritage regions • Building level guidelines for the heritage structures • Development of **comprehensive conservation** plan for the heritage structures. • **Adaptive Reuse** of the heritage building with respect to present and future aspects considering its socio-economic viability. • Introduction of **services and new infrastructure** into the heritage structures **without disturbing its Integrity and Authenticity.**
Module 5	**Hands on workshop for conservation and restoration of heritage structures.**	Hand on workshop on the heritage site in collaboration with the govt. heritage authorities or bodies, NGO or any conservation architects, in order to give first-hand experience with traditional materials and construction techniques and promote and encourage to save heritage.

REFERENCE BOOKS:

1. An introduction to conservation by Feildon B. M.
2. Conservation of Building by I. H. Harvey
3. INTACH Publications on: Documentaion, Lime, Wood and others

MAR – 202 SUSTAINABLE HERITAGE

PERIODS			EVALUATION SCHEME						SUBJECT TOTAL	CREDITS	DURATION OF THEORY PAPER
LECTURE	TUTORIAL	PRACTICAL/ STUDIO	SESSIONAL ASSESMENT			ESE					
			CT	TA	TOTAL	THEORY	VIVA	TOTAL			
2	1	0	15	35	**50**	50	0	**50**	**100**	3	3HRS.

OBJECTIVE:

- To familiarise the students with the environmental, social and economic aspects of sustainability
- To explore aspects of sustainability in heritage especially buildings and lessons from them useful in modern context also.
- Utilise simulation tools and studies/ surveys to examine selected heritage buildings for their responses to effective site-planning; water management & waste-water treatment techniques; solid waste management; passive solar design; building materials and technologies
- To analyse the suitability of heritage buildings in the contemporary context and formulate proposals for their adaptive re-use and sustainability.

Module-1	**Understanding Sustainability**	• Definition, objectives, aspects principles, approaches & characteristics. • Attributes of Environmental, Economic and Social sustainability
Module-2	**Exploring the Heritage of a city.**	• Investigating the aspects constituting heritage in a cultural city and the role of each in forming the resulting context. • Focussing on the built heritage of the city and identify cases that could be taken up for further study
Module-3	**Detailed analysis of selected heritage buildings**	• In depth documentation and analysis of selected heritage buildings with respect to sustainable issues like site planning, passive solar design, building material & technologies. • Also scrutinizing the studies for their provisions in water, waste and solid waste management
Module 4	**Retrofitting or redesign proposal**	• Exploring the usage and sustainability aspects of selected case in contemporary contexts. • Formulating retrofitting & adaptive re-use proposals for the same studies including installation of active energy systems making them more sustainable in modern contexts.

REFERENCES:

1. Sustainable Building Design Manual. TERI New Delhi
2. Daylighting in Architecture. N. Baker; Fanchiotti et.al
3. Science & Technology of Building Materials

MAR – 203,VERNACULAR ARCHITECTURE

PERIODS			EVALUATION SCHEME						SUBJECT TOTAL	CREDITS	DURATION OF THEORY PAPER
LECTURE	TUTORIAL	PRACTICAL/ STUDIO	SESSIONAL ASSESMENT			ESE					
			CT	TA	TOTAL	THEORY	VIVA	TOTAL			
2	1	0	15	35	**50**	50	0	**50**	**100**	3	3HRS.

OBJECTIVES:

- To understand the importance of the instinctive attitude of vernacular design and embody the sustainable and creative aspect in contemporary design.
- To formulate a state specific data bank of untapped vernacular design through on site studies.

Module-1	**Introduction to Vernacular architecture**	Introduction to Vernacular architecture - nature, purpose and scope. Importance of sustainable material, resources, climate-sensitivity. Creativity and design in limited means.
Module-2	**Vernacular as shelter**	Study of examples of Vernacular architecture in history of the world architecture, with a special emphasis on Indian architecture to understand shelter based onfunctions, building materials and construction techniques, art and craft, localconditions, traditions, climate and geography, religion & culture.
Module-3	**Learning from Vernacular**	Works of architects in contemporary architecture whose works are influenced by the Vernacular Architecture of the region. Details adapted in modern context by using old/new materials , systems and contexts.
Module-4	**Primary survey of a region in Uttar Pradesh**	Measured drawing of a typical vernacular settlement in India with details of construction, joinery, furniture etc. to be catalogued in hard as well as soft copy.

REFERENCE BOOKS:

1. Vernacular Architecture: An Illustrated Handbook By R.W. Brunskill, 4th ed 2000, Faber and Faber ISBN-10: 0571195032
2. Architecture Without Architects: A Short Introduction to Non-pedigreed Architectureby Bernard Rudofsky
3. Bhatia, Gautam,Laurie Baker, Life, Work, Writings, New Delhi, India,1994, Penguin Books, ISBN 0-14-015460-4
4. Voluntary Agencies and Housing: A Report on Some Voluntary Agencies Working in theField of Housing in India, by MadhaoAchwal.Published 1979, UNICEF
5. Handmade Houses and Other Buildings The World of Vernacular Architecture by John May, 2010, Thames & Hudson
6. Hassan Fathy- Architectural Monographs,By James Steele, 1988, St. Martin's Press
7. Encyclopedia of Vernacular Architecture edited by Paul Oliver.
8. The Well-tempered Environment by R. Banham.
9. House. Form and Culture by Amos Rappaport.
10. Shelter and Society by Paul Oliver.

MAR – 204,ARCHITECTURAL CONSERVATION THEORY

PERIODS			EVALUATION SCHEME						SUBJECT TOTAL	CREDITS	DURATION OF THEORY PAPER
LECTURE	TUTORIAL	PRACTICAL/ STUDIO	SESSIONAL ASSESMENT			ESE					
			CT	TA	TOTAL	THEORY	VIVA	TOTAL			
2	1	0	15	35	**50**	50	0	**50**	**100**	3	3HRS.

OBJECTIVE:

- To understand the purpose, methodology and techniques of conserving historical buildings.

Module-1	**Introduction to architectural conservation**	Definition of heritage, its significance and scope. Introduction to architectural conservation of buildings of importance -definition nature, purpose and scope. Values in conservation; Ethics of conservation building conservation legislation etc.*)*
Module-2	**Preparatory procedure for conservation**	Preparatory procedure for conservation : Inventories, inspection, documentation; degree of intervention for prevention of deterioration, prevention of existing state, consolidation of the fabric, restoration, rehabilitation, reproduction, reconstruction etc. Structural aspects of building to study structural elements such as beams, arches and domes; thumbs and walls, piers and columns, foundation etc. Causes of decay in buildings by natural and human factors, Disasters, Botanical, Biological and Microbiological causes.
Module-3	**Charters**	Introduction to various charters their significance and their role in guiding our conservation policies and guidelines or regional level and structural level (special reference to Barra and Venice charter)
Module-4	**Conservation procedure**	Conservation procedure -the work of conservation Architect and his team of coworkers: inspection documentation and reports, Research, analysis, Preventive maintenance, fire and security, cost control, special skills in arts and crafts
Module-5	**Case study / appraisal of Conservation project**	Appraisal report of a historical building/precinct to be undertaken.

REFERENCE BOOKS:

1. An introduction to conservation by Feildon B. M.
2. Conservation of Building by I. H. Harvey.
3. A critical bibliography of Building Conservation By Smith I. H.

Special lecture on:

1. Historic building Materials (Mrs. SangeetaBais)
2. NDT (Non Destructive Techniques) for analysis of heritage structures.
3. Local Historians (Mr.Yogesh Praveen and professor from LU).
4. Conservation works and polices for Grant Trunk road. (Ms.Ridhima Bajaj)
5. Conservation OfHazratGanj by Ar.Ashish Srivastava.
6. Conservation works by ASI, State Archeology.

MAR – 205,PROJECT MANAGEMENT AND PLANNING

PERIODS			EVALUATION SCHEME						SUBJECT TOTAL	CREDITS	DURATION OF THEORY PAPER
LECTURE	TUTORIAL	PRACTICAL/ STUDIO	SESSIONAL ASSESMENT			ESE					
			CT	TA	TOTAL	THEORY	VIVA	TOTAL			
1	1	0	15	35	**50**	0	50	**50**	**100**	3	-

OBJECTIVE:

- To understand the holistic network of infrastructure needed to sustain urban/rural demands.

Module-1 **Introduction and Resource Allocation Framework**

Introduction to Project; nature of planning projects-Project Life-cycle,Capital expenditure, Phases of capital budgeting, Levels of decision making, Facets of project Analysis, Feasibility Study, Objective of capital budgeting. Key issues of Resource Allocation, Elementary investment strategies, Strategic position and action Evaluation (SPACE), Interface between strategic planning and capital budgeting

Module-2 **Project Generation and Analysis**

Generation of ideas, Monitoring the environment, Corporate appraisal, Project Rating Index, Finance, cost recovery, standards, operational maintenance, institutional arrangement, design viability, density and cost, public participation , Situational Analysis , Collection of secondary information, Conduct of market survey, Characterization of market survey, Demand forecasting, Market planning etc.

Module-3 **Technical Analysis**

Magnitude, processes, materials inputs and utilities, Manufacturing process/technology, Product mix, location and site , equipment, suitability of the plans, layout and design, structures and civil work, work schedule, necessary infrastructure, factors of production availability, methods of implementation, contracting, timing, phasing and realism of the implementation schedule, need for considering alternatives

Module-4	**Financial Analysis**	Cost of project, Means of finance, Estimates of sales and production, cost of production, Working capital requirement and its funding, profitability projections, Break Even Point(BEP), Projected cash flow statement, Projected balance sheet, Project profitability at market prices; techniques of financial appraisal (methods not based on time value of money and use of time value of money in appraisal); financial effects on the intended beneficiaries, financial risk and sensitivity to price changes, adequacy, autonomy and financial standards and over-all financial viability of the project through Internal Rate of Return (IRR).
Module-5	**Economic Analysis**	Project cash flows, Efficiency pricing- market distortions- shadow pricing of labour, foreign exchange, land and capital; Income distribution effect of the project; saving and investment adjustments; adjustments for the project's production and use of resources;; calculation of Economic rate of return (ERR).
Module-6	**Risk and Uncertainty**	Types and measures of project risk, Analytical derivation or simple estimation, Sensitivity analysis, scenario analysis, Monte Carlo Simulation, Decision Tree Analysis , selection of a project, Risk analysis-Firm risk and market risk. Methods- conservative estimates, project classification, shorter payback period, risk adjustment discount rate; Capital Asset Pricing Method (CPAM); Cost and Time over runs in project.
Module-7	**Social Cost Benefit Analysis (SCBA)**	Rational for SCBA, UNIDO approach, Net benefit in terms of economic prices, Income distribution impact, Saving impact and its value, Little Mirrless Approach, Shadow price, Socio-cultural context of a project, demographic changes and its impact on project design, size , social structure and organization of communities in the project area and the intended beneficiaries, cultural acceptability of the project, social engineering, anthropological appraisal- ethnic issues in relocation and resettlement.
Module-8	**Environmental Analysis**	Resource Pricing, green accounting, methods of identifying the environmental costs of the project- replacement costs, preventive/ mitigation expenses benefit transfers, productivity changes; Costing and pricing of environmental pollution and its effect on project; Preparation of EIA/EIS.
Module-9	**Appraisal Criteria**	Net present Value (NPV), Benefit cost ratio (BCR), Internal rate of return (IRR), Urgency, Payback period, Accounting rate of return, Assessment of various methods, Investment appraisal-Indian practice and international practice .

Module-11	**Project management and Network Techniques**	Project planning, Project control, Human aspect of project management, Pre requisites for successful project implementation, Development of project network, PERT Model, CPM Model, Time estimation , determination of critical path, Scheduling when resources are limited.

MAR – 206,RESEARCH SEMINAR

PERIODS			EVALUATION SCHEME						SUBJECT TOTAL	CREDITS	DURATION OF THEORY PAPER
LECTURE	TUTORIAL	PRACTICAL/ STUDIO	SESSIONAL ASSESMENT			ESE					
			CT	TA	TOTAL	THEORY	VIVA	TOTAL			
1	1	0	0	50	**50**	0	0	**0**	**50**	2	-

OBJECTIVE:

- To write a technical paper that can be published in a refereed journal

Module-1 Paper Writing

- Select a topic of one's choice and write a technical paper
- Write an Abstract
- Write a technical paper of 3,000- 4,000 words
- Get it published in a refereed journal

M. ARCH. SEMESTER – III

MAR – 301,SEMINAR I- (ARCHITECTURAL PEDAGOGY)

PERIODS			EVALUATION SCHEME						SUBJECT TOTAL	CREDITS	DURATION OF THEORY PAPER
LECTURE	TUTORIAL	PRACTICAL/ STUDIO	SESSIONAL ASSESMENT			ESE					
			CT	TA	TOTAL	THEORY	VIVA	TOTAL			
1	7	0	0	50	**50**	0	0	**0**	**50**	4	.

OBJECTIVES:

- To understand the techniques of teaching a specialized course like architecture.
- To analyze a syllabus keeping in mind the goal of the institution.
- The Course would attempt encouraging students to evolve individual, creative yet pragmatic thought process through SEMINARS and PRESENTATIONS.

Module-1	**Introduction to the techniques of lecturing**	1. Composition of a lecture. 2. Tradition techniques in imparting a good lecture. 3. Presentation Skills
Module-2	**Analyzing syllabii**	1. Various schools of architecture in history and their thinking, e.g. Bahaus, Chicago, Arts & Crafts movement etc. 2. Analyzing the content of three main syllabii and understanding the thrust area of an Indian institution. 3. Ideal syllabus/ system
Module-3	**Design Studio approach**	1. Contextual input (exposure of student) 2. Psychological models (using intuitive insight of students)
Module-4	**Making theory subjects comprehensible**	Scope of making subjects like History of Architecture, Climatology, Construction and Materials etc. more activity oriented.
Module-5	**Workshop**	Live demonstartion of lectures/studio management in groups- the topic, content and strategy to be prepared before hand.

REFERENCE BOOKS:

MAR – 302,SEMINAR II- (LEGISLATIVE POLICIES AND ARCHITECTURAL PRACTICE)

PERIODS			EVALUATION SCHEME						SUBJECT TOTAL	CREDITS	DURATION OF THEORY PAPER
LECTURE	TUTORIAL	PRACTICAL/ STUDIO	SESSIONAL ASSESMENT			ESE					
			CT	TA	TOTAL	THEORY	VIVA	TOTAL			
1	7	0	0	50	**50**	0	0	**0**	**50**	4	.

OBJECTIVE:

- To get an overview of the different laws related to the profession through SEMINARS and PRESENTATIONS

Module-1	**Legislation regarding the profession**	• An overview of the Architects Act 1972 in India & COA: Architects Act 1972 in India – Scope of work, Professional conduct, Scale of fees, etc. Architect's Professional liabilities and responsibilities. Architectural Competitions. Registration and continuation of registration of COA. • Architects office and office Management. Interaction with the consultants. Design Management Issues. Role & Duties of Architect as an Employer or Employee. International Architectural practice and role of Various Statutory / Regulatory bodies in licensing like RIBA, AIA, etc • Lawslike IT license procurement, Service Tax, Contract law etc • Regulations, Conditions and requirements of qualification, equivalence etc. forInternational practice in countries other than India like: USA, UK, Europe, Gulf countries, Asian countries etc.
Module-2	**Development legislation**	An overview of the Town Planning Acts of Urban Development ministry of States &Central Government. The rules and regulations

for Development Control and theprinciples behind the framing of these. Regional Plan, Development Plans, at State,District, Urban agglomeration, Municipal Corporations & Councils, Improvement trusts& Regional Development Authorities, CRZs, etc. Procedures for formulations,Implementation and applying fro Approvals at various levels.

Module-3 Relevant Acts

An overview of various Acts relevant to the Architectural profession: like Environment related laws
Laws regarding historical pricincts
Special zone Acts like forest area/ capital regions
Clearances needed for bigger projects

REFERENCE BOOKS:

- COA Handbook of Professional Documents 2009
- Maharshtra Regional Town Planning Act 1966
- Land Revenue Code 1966
- Professional Practice By Roshan Namavati 2005 Lakhani Book Depot
- Professional Practice By MadhavDeobhakta
    - COA Handbook of Professional Documents
    - Income Tax Act
- Service Tax Act
    - Environmental Laws
    - Indian Contract Act

MAR – 303,DISSERTATION

PERIODS			EVALUATION SCHEME						SUBJECT TOTAL	CREDITS	DURATION OF THEORY PAPER
LECTURE	TUTORIAL	PRACTICAL/ STUDIO	SESSIONAL ASSESMENT			ESE					
			CT	TA	TOTAL	THEORY	VIVA	TOTAL			
0	10	0	0	200	**200**	0	300	**300**	**500**	10	-

OBJECTIVE:

- To research on a topic relevant to the final thesis topic and do the necessary background work.
- Present the findings in report form

Module-1 DISSERTATION

Preparation of an Architectural Dissertation including reference to an extensive study of architectural exemplars and precedents in the selected field of study. This can be a related study for the final thesis next semester.

M. ARCH. SEMESTER – IV

MAR – 401 THESIS

PERIODS			EVALUATION SCHEME						SUBJECT TOTAL	CREDITS	DURATION OF THEORY PAPER
LECTURE	TUTORIAL	PRACTICAL/ STUDIO	SESSIONAL ASSESMENT			ESE					
			CT	TA	TOTAL	THEORY	VIVA	TOTAL			
0	18	-	0	200	**200**	0	400	**400**	**600**	18	-

OBJECTIVE:

- To research on a thesis topic and do the necessary background work.
- Present the findings in report form.
- Design a built form/ campus/ proposal that incorporates or is based on the research that was done.

Module-1	**Preliminary work**	A précis of scholarly article [select from JSTOR or library] A précis of thesis from History Library
Module-2	**Synopsis**	Thesis description, primary and secondary sources
Module-3	**Bibliography**	List of references/ bibliography and their brief precis
Module-4	**Thesis**	A thesis introductory paragraphs and/or outline First draft Revisions: second draft Final draft Design proposal – 3 stages Completed thesis with proposal drawings and proposed research report

REFERENCES:

- Turabian's A Manual for Writers of Research Papers, Theses, and Dissertations [7th edition]
- MLA Handbook for Writers of Research Papers [7th edition]