ANNA UNIVERSITY, CHENNAI

AFFILIATED INSTITUTIONS

M. ARCH (CONSERVATION)

REGULATIONS – 2017

CHOICE BASED CREDIT SYSTEM

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs) :

I. To provide students with additional knowledge and skills as a conservation architect/ researcher/ teacher.

II. To enable students to add value to the process of architectural conservation by incorporating depth in already existing fields of study relevant to architectural conservation.

III. To enable students to widen the scope of their professional abilities through additional fields of study that would enhance their knowledge in intellectual, creative, technical, social and environmental realms.

IV. To enable students to take independent, informed and innovative decisions within the discipline of conservation architecture.

V. To enable students to contribute to larger society through their future career as conservation architect/ researcher/ teacher.

PROGRAMME OUTCOMES (POs):

On successful completion of the programme,

1. Graduates will demonstrate an all round skill in design and research in architectural conservation.
2. Graduates will be able to identify additional parameters/ issues within the context of architectural conservation and resolve them.
3. Graduate will be able to resolve issues relating to conservation with due consideration to historical and environmental issues.
4. Graduates will be able to bring technical expertise in architectural conservation.
5. Graduates will be able to apply cutting edge methods/ tools/ approaches in the resolution of problems.
6. Graduates will be able to bring critical thinking in the consideration of any aspect of conservation- based design and execution.
7. Graduates will be able to identify problems or create design solutions in a holistic manner.
8. Graduates will be able to contribute further to society through their design/ research/ teaching.

Programme Educational Objectives	Programme Outcomes							
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
I	X							
II		X						
III			X	X	X	X		
IV							X	
V								X

			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8
YEAR 1	SEM 1	Contextual Approach to Architectural Conservation		X						
		Built Heritage and Social Sciences							X	
		Traditional Knowledge System				X				
		Materials& Structural System				X				
		Documentation Techniques & Information Data Management**					X			
		Conservation Studio I		X						
	SEM 2	Cultural Landscapes			X					
		Strengthening and Retrofitting Historic structures				X				
		Conservation Project Management					X			
		Conservation Practice in India and Abroad						X		
		Professional Elective I								
		Conservation Studio II		X						
YEAR 2	SEM 1	Services in Historic Structures				X				
		Professional Elective II								
		Professional Elective III								
		Dissertation	X					X		
		Professional Training*	X					X		
		Conservation Studio III		X						
	SEM 2	Professional Elective IV								
		Thesis	X						X	X

ANNA UNIVERSITY, CHENNAI

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M. ARCH (CONSERVATION)

REGULATIONS – 2017

CHOICE BASED CREDIT SYSTEM

CURRICULA AND SYLLABI FOR I TO IV SEMESTERS

SEMESTER I

S. No	Course Code	Course Title	Category	Contact Periods	L	T	P/S	C
Theory								
1.	CO5101	Contextual Approach to Architectural Conservation	PC	3	3	0	0	3
2.	CO5102	Built Heritage and Social Sciences	HS	3	3	0	0	3
3.	CO5103	Traditional Knowledge System	HS	3	3	0	0	3
4.	CO5104	Materials and Structural System	PC	3	3	0	0	3
5.	CO5121	Documentation Techniques and Information Data Management**	PAEC	6	2	0	4	3
Studio								
6.	CO5111	Conservation Studio I	PC	12	0	0	12	6
			TOTAL	**30**	**14**	**0**	**16**	**21**

SEMESTER II

S. No	Course Code	Course Title	Category	Contact Periods	L	T	P/S	C
Theory								
1.	CO5201	Cultural Landscapes	HS	3	3	0	0	3
2.	CO5202	Strengthening and Retrofitting Historic structures	PC	3	3	0	0	3
3.	CO5203	Conservation Project Management	PAEC	3	3	0	0	3
4.	CO5204	Conservation Practice in India and Abroad	PC	3	3	0	0	3
5.		Professional Elective I	PE	3	3	0	0	3
Studio								
6.	CO5211	Conservation Studio II	PC	12	0	0	12	6
			TOTAL	**27**	**15**	**0**	**12**	**21**

SEMESTER III

S. No	Course Code	Course Title	Category	Contact Periods	L	T	P/S	C	Pre-requisites
Theory									
1.	CO5301	Services in Historic Buildings	PC	3	3	0	0	3	Pass in Conservation Studio I (Sem I)
2.		Professional Elective II	PE	3	3	0	0	3	
3.		Professional Elective III	PE	3	3	0	0	3	
Studio									
4.	CO5311	Project Phase I : Dissertation	PC	6	0	0	6	3	
5.	CO5312	Conservation Studio III	PC	12	0	0	12	6	
			TOTAL	**27**	**9**	**0**	**18**	**18**	

**Documentation Techniques & Information Data Management is a theory cum studio course with an end semester examination only

SEMESTER IV

S. No	Course Code	Course Title	Category	Contact Periods	L	T	P/S	C	Pre-requisites
Theory									
1.		Professional Elective IV	PE	3	3	0	0	3	Pass in Conservation Studio II & III and Project Phase I : Dissertation
Studio									
2.	CO5411	Professional Training*	PAEC	-	-	-	-	2	
3.	CO5412	Project Phase II : Thesis	PC	20	0	0	20	10	
			TOTAL	**23**	**3**	**0**	**20**	**15**	

* Professional Training of duration minimum 4 weeks full time or 8 weeks part time to be done under a conservation architect or in an organization involved in conservation during semester vacation.

TOTAL CREDITS: 75

PROFESSIONAL ELECTIVE (PE)

ELECTIVE I

S. No	Course Code	Course Title	Category	Contact Periods	L	T	P/S	C
1.	CO5001	Anthropology and Sociology	PE	3	3	0	0	3
2.	CO5002	Natural and Designed Landscape	PE	3	3	0	0	3
3.	CO5003	History of Western Architectural Conservation	PE	3	3	0	0	3

ELECTIVE II & III

S. No	Course Code	Course Title	Category	Contact Periods	L	T	P/S	C
1.	CO5004	Sustainability and Conservation	PE	3	3	0	0	3
2.	CO5005	Museum Design and Management	PE	3	3	0	0	3
3.	CO5006	Landscape Conservation	PE	3	3	0	0	3
4.	CO5007	Sacred Landscapes	PE	3	3	0	0	3
5.	CO5008	World Heritage Sites	PE	3	3	0	0	3

ELECTIVE IV

S. No	Course Code	Course Title	Category	Contact Periods	L	T	P/S	C
1.	CO5009	Heritage Impact Assessment	PE	3	3	0	0	3
2.	CO5010	Urban Conservation and Practice	PE	3	3	0	0	3
3.	CO5011	Disaster Management of Cultural resources	PE	3	3	0	0	3

PROFESSIONAL CORE (PC)

S. No	Course Code	Course Title	Category	Contact Periods	L	T	P/S	C
1.	CO5101	Contextual Approach to Architectural Conservation	PC	3	3	0	0	3
2.	CO5104	Materials and Structural System	PC	3	3	0	0	3
3.	CO5111	Conservation Studio I	PC	12	0	0	12	6
4.	CO5202	Strengthening and Retrofitting Historic structures	PC	3	3	0	0	3
5.	CO5204	Conservation Practice in India and Abroad	PC	3	3	0	0	3
6.	CO5211	Conservation Studio II	PC	12	0	0	12	6
7.	CO5301	Services in Historic Buildings	PC	3	3	0	0	3
8.	CO5311	Project Phase I : Dissertation	PC	6	0	0	6	3
9.	CO5312	Conservation Studio III	PC	12	0	0	12	6
10	CO5412	Project Phase II :Thesis	PC	20	0	0	20	10

HUMANITIES SCIENCES (HS)

S. No	Course Code	Course Title	Category	Contact Periods	L	T	P/S	C
1.	CO5102	Built Heritage and Social Sciences	HS	3	3	0	0	3
2.	CO5103	Traditional Knowledge System	HS	3	3	0	0	3
3.	CO5201	Cultural Landscapes	HS	3	3	0	0	3

PROFESSIONAL ABILITY AND ENHANCEMENT COURSES (PAEC)

S. No	Course Code	Course Title	Category	Contact Periods	L	T	P/S	C
1.	CO5121	Documentation Techniques and Information Data Management**	PAEC	6	2	0	4	3
2.	CO5203	Conservation Project Management	PAEC	3	3	0	0	3
3.	CO5411	Professional Training*	PAEC	-	-	-	-	2

CO5101 CONTEXTUAL APPROACH TO ARCHITECTURAL CONSERVATION

L	T	P/S	C
3	0	0	3

OBJECTIVES:

- The objective is to introduce the students to heritage conservation in the Indian context.
- The students shall be introduced to Governmental and Non-Governmental agencies that work towards Conservation at various levels in India.
- The students shall be introduced to the various charters and development of UNESCO as the global agency and its role in the field of conservation in India.

UNIT I INTRODUCTION TO CONSERVATION 6

Understanding Heritage, Types of Heritage, Heritage conservation – Need, Debate and purpose. Defining Preservation, Restoration, Conservation and Adaptive reuse. Distinction between Architectural and Urban Conservation, Heritage conservation in India – issues & challenges

UNIT II THEORY OF CONSERVATION IN INDIA 12

Listing & Documentation of Built Heritage in India - Assessing architectural character – the concept of Jeernodharana — historic structure report guidelines – Principles of Conservation – Conservation ethics - Craft & conservation – intangible heritage

UNIT III AGENCIES & POLICIES IN CONSERVATION 12

Establishment, goals & objectives of Archaeological Survey of India(ASI) - Role and activities of ASI Role of INTACH – Formation, Scope and Principles – Administrative Form -INTACH Charter Central & State Government policies on heritage Conservation - Legislations and legal interventions in Conservation

UNIT IV CASE STUDIES 9

Case study of projects(single building) by conservation architects/firms/organizations in India, Select Case Studies of ancient heritage sites in India such as Hampi, Qutb complex, Mahabalipuram, etc.

UNIT V ROLE OF UNESCO IN CONSERVATION IN INDIA 6

Birth and formation of UNESCO – Charters of UNESCO - Listing of World Heritage Monuments in India – Conservation Strategies – Case studies

TOTAL: 45 PERIODS

OUTCOMES:

- Students shall gain knowledge of a contextual approach to conservation in India along with the various issues & challenges faced.
- The assignments shall include studies of various charters and roles of various organizations in conservation.
- Assignment will be in the form of reports, class reviews and tutorials covering topics mentioned

REFERENCES

1. Biswas, S.S. Protecting the cultural heritage: National Legislation, 344.094BIS-P and International Conventions,1999
2. Pant, Dhirendra Kumar, Care and administration of heritage monuments in India, 725.940954PAN-C1784-1904-2012
3. Bracker, A., Ed. and Richmond, A.,ed., 363.69CON, Conservation: principles, dilemma sand uncomfortable
4. CummingSirJohn, RevealingIndia'sPast(COSMOPUBLICATION), ISBN81-307-0087-5
5. Glendinning, Miles, The Conservation Movement: aHistory of Architectural, Preservation (ROUTLEDGE2013) 978-0-415-54322-4
6. Cleere Henry , Heritage: A, Approaches to the Archaeological, Comparative Study of World ISBN:9780521243056
   truths,2009

CO5102	BUILT HERITAGE AND SOCIAL SCIENCES	L	T	P/S	C
		3	0	0	3

OBJECTIVES:

- The objective is to understand the scientific approach of cultural studies and cultural theories related to perception and interpretation of built heritage.

UNIT I INTRODUCTION TO HISTORY & SOCIAL SCIENCES 6

Understanding the concept and development of society – Core disciplines including social sciences (Anthropology, Sociology, History, Art-History,etc.),Archaeology, Museology and Planning. Synergies between the core disciplines of society in understanding built heritage.

UNIT II STUDY OF CULTURE 9

Definition of culture - aspects, identity of key factors – theories of cultural study - overlap of culture – Approaches and methodologies of study of culture - interrelation between different cultural parameters

UNIT III ARCHITECTURE AND CULTURE 12

Architecture as a cultural element – concept of vernacular architecture – elements and characters of vernacular architecture – selected study of Chettinad houses – Agraharam dwellings – Havelis - NaluKettu houses – Goan houses etc.

UNIT IV CULTURAL STUDY AND CONSERVATION 9

Importance of core disciplines in holistic understanding of conservation - Impacts of core disciplines on Conservation - Understanding various perception and interpretation of heritage - Evolving holistic and integrated habits of thought.

UNIT V CASE STUDY 9

Culture mapping and study of practices of selected social communities of India.

TOTAL: 45 PERIODS

OUTCOMES:

- Students will explore various scientific approaches of cultural studies and cultural theories.
- The assignments shall deal with understanding the core subject initially and later the case studies shall lead to a holistic understanding of conservation.
- Assignment will be in the form of are port, site visit report, class reviews and tutorials covering topics mentioned above with suitable illustrations and supportive material

REFERENCES

1. Blistene, Bernard, ISBN:9782080105646, Historyof20th-centuryArt,Flammarion,2001,
2. Heath, Kingston Wm, Vernacular Architecture and Regional Design:Cultural., 720.103HEA-V, Process and Environmental Response,2009
3. Marie Louise Stig Sorensen, John Carman, ISBN:9780415431859, Heritage Studies: Methods and Approaches
4. Noble, Allen G., Traditional Building:A global survey of structural forms And cultural functions, ISBN:9781890206628
5. Sengupta, Gautam, ed. And Gangopadhyay, Kaushik,ed., 934ARC, Archaeology in India: Individuals, Ideas and Institutions, 2009

CO5103	TRADITIONAL KNOWLEDGE SYSTEM	L	T	P/S	C
		3	0	0	3

OBJECTIVES:

- The objective is to edify the difference between formal education and the traditional knowledge system and to use this traditional and architectural knowledge system for conservation.

UNIT I TRADITIONAL KNOWLEDGE SYSTEM 6

Understanding the concept of traditional knowledge – Difference between traditional knowledge and formal education – advantages and disadvantages – need for safe guarding traditional knowledge – examples of traditional knowledge system in various fields.

UNIT II TRADITIONAL ARCHITECTURAL PRACTICE 9

Need based architecture – evolution of different typologies of architecture – housing – religious – forts – Introduction to books like Manasara, Mayamatam and its contents – Systems of calculations and geometry - Fusing of native knowledge with modern practices - Select case studies.

UNIT III ARCHITECTURE & ASSOCIATED CRAFTS 12

Traditional crafts and craftsmen of Indian architecture – traditional knowledge in building sciences and environmental studies - associated craftsmen like artist, carpenter, weavers - select case studies using materials like bamboo, bricks, lime etc.

UNIT IV DEVELOPMENT OF HISTORIC CITIES 12

Historic City, a product of people, place and time – General Planning strategies for city planning in ancient times – religious structures, road network, irrigation channels, occupation based settlement designs – sustainability of historic cities – selected case studies of Srirangam, Kancheepuram, Hampi, Nalanda, Benaras, etc.

UNIT V TRADITIONAL KNOWLEDGE & CONSERVATION 6

Methods of gaining traditional knowledge – importance and ways of documenting traditional practices – application process of traditional knowledge in practice – site visit and field work

TOTAL: 45 PERIODS

OUTCOMES:

- Students shall apply traditional and architectural knowledge system for conservation.
- Theassignmentsshallincludethestudyofahistoriccityandexplorethearchitecturalknowledge system as a tool for conservation.
- Assignment will be in the form of reports, drawings and presentations. The students shall make progressive presentations for reviews at various stages.

REFERENCES

1. Coomaraswamy,Ananda, K.,Vatsyayan, Kapila. ISBN:9788120716438 The Transformation of Nature in Art (Indira Gandhi, National Centre for the Arts)
2. Foucault, Michel, ISBN:9780415267373, Order of things: An Archaeology of the HumanSciences, 1994
3. Wright,A, ISBN:0713464194, Craft techniques for Traditional Buildings, Batsford,1991

CO5104	MATERIALS AND STRUCTURAL SYSTEMS	L	T	P/S	C
		3	0	0	3

OBJECTIVES:

- The objective is to understand the properties, behavior & changes in traditional building materials due to various factors like wear & tear, atmospheric activity & disasters.
- The students shall have a better understanding of historic structures by having a holistic knowledge of the structural system, the materials used & their behavior over time.

UNIT I HISTORIC BUILDING MATERIALS 9

Historic building materials - location, formation, physical and chemical properties, types, availability, sourcing, characterization of materials & compatibility of its usage, relationship of strength of materials used to the type of heritage structure, weathering characteristics, workability - select building materials like Lime, Stone, Timber, Brick, Glass, Cement, Concrete, etc.

UNIT II HISTORIC STRUCTURAL SYSTEMS 12

Various types of structural systems, Trabeate & arcuate systems, loading patterns, different structural components - arches, domes, vaults, beams, slabs, vertical supports, trusses & foundation with different building materials & loading conditions, their behavior, calculation of stresses & deformations.

UNIT III CAUSES OF DECAY IN MATERIALS & STRUCTURES 6

Gravity factor, Natural factors – climatic, natural disasters, botanical, biological & entomological causes of decay, Termite infestation, other causes for weakening of materials, Man-made factors – lack of maintenance strategies, vibration, atmospheric pollution, inappropriate use, etc.

UNIT IV ASSESSMENT OF MATERIALS & STRUCTURE 9

Methods of assessing materials – Physical & Chemical diagnosis of defects in materials, destructive(sample collection)& non- destructive tests(sound, penetrating radiation, optical & electromagnetic tests), Assessment report.

Structural assessment of historic buildings – types of investigations required, condition mapping, equipment & monitoring, characteristic symptoms of structural distresses, failure of structural elements, Structural Analysis Techniques& Report.

UNIT V CASE STUDIES 9

Case studies of historical buildings with columnar &trabeate structure to understand materials used for various building components, structural behavioral patterns, methods of assessment, defect analysis & reporting.

Case studies of historical buildings with arcuate structure to understand materials used for various building components, structural behavioral patterns, methods of assessment, defect analysis& reporting.

TOTAL: 45 PERIODS

OUTCOMES:

- Students shall gain knowledge of the various traditional building materials used in heritage buildings, their behavioral patterns in different structural systems &methods of assessment.
- The assignments shall include case studies of heritage buildings with different materials & structural systems
- Assignment will be in the form of reports, drawings and presentations. The students shall make progressive presentations for reviews at various stages.

REFERENCES

1. Bernard Feilden, ISBN: 0750658630, Conservation of Historic Buildings
2. J. Stanley Rabun, ISBN: 978-0-471-31545-2, Structural Analysis of Historic Buildings: Restoration, Preservation, and Adaptive Reuse Applications for Architects and Engineers

CO5121	DOCUMENTATION TECHNIQUES AND INFORMATION DATA MANAGEMENT	L	T	P/S	C
		2	0	4	3

OBJECTIVES:

- The objective is to develop the necessary technical skills and competence required for the preparation of inventories of cultural resource for survey, analysis and documentation.
- The module emphasizes the need for a me thodical and systematic process for inventory as an essential basis for management and conservation plans.
- This section will equip the student stocompetently document, organize, store and manage information in written, oralor visual form using GIS and other tools

UNIT I DOCUMENTATION – Need & types 20

Introduction to documentation – need and importance of documentation and inventory in conservation – maintaining records and using documented work–archiving - Available methods of documentation and communication – recording oral facts – standards of documentation - measurement book – field survey books – selection of appropriate method of documenting – tools selection – preparation for field documentation

UNIT II DOCUMENTATION TECHNIQUES – Manual & Digital 20

Introduction to methods of physical documentation – hand sketching – measured drawing – colour coding

Exercise - Documentation of a live case study including field work

Photography – archiving digital data – use of software for measured drawing – 2D and 3D rendering of historic structures for documentation - Communicating documentation including technical skills and competence

Exercise - Documentation of a live case study including field work

UNIT III DATA COLLECTION, STORAGE, ORGANIZATION & ANALYSIS 20

Different methods of data collection (primary & secondary) - Library & archives – Internet – importance of reliability of source – classification & reviewing data – understanding the value of data – Documents as a source of data collection.

Data compilation & storage – storage of classified data – Data cleaning – Data theft – need for Backup – Digitizing & listing stored data – Data saving techniques - Challenges in data collection & storage.

Interpretation of data - cross comparison and over lapping of data collected - Data Linking - Data Analysis – Archiving of analyzed Data – System Data Storage – Tools and equipments for storage - Compiling and Report generation – Drafting a report and presentation

UNIT IV DIGITAL IMAGING 15

Digitizing entities – artifacts, architectural elements, architectural sites, Digitizing details, easel paintings, sculpture, etc. , Use of advanced technology in the capture & delivery of certain types of digital images – Digital photography(field visits & photo sessions) – image enhancement techniques, application of filters, image editing & other tools

UNIT V MODERN DOCUMENTATION & DATA MANAGEMENT TECHNIQUES 15

Photogrammetry – modern survey equipments – remote sensing tools for measuring – laser detection tools for measuring and survey - digitized survey tools – usage of cloud computing – creating and maintaining digital archive - Applying Digital Imaging to Cultural Heritage, Introduction, use & application of GIS in heritage conservation – digital mapping – storing and safe guarding GIS images

TOTAL: 90 PERIODS

OUTCOMES:

- Students shall acquire necessary skills in documenting and communication techniques.
- The assignments would include preparation of inventories, drawings and collection of data.
- Assignment will be in the form of reports, drawings and presentations.
- The students shall make progressive presentations for reviews at various stages.

REFERENCES

1. David O'Sullivan and David J. Unwin, 910.285SUL-G, Geographic Information Analysis
2. EunSulLee and Ronald N. Forthofer, 300.727LEE-A, Analyzing Complex Survey Data
3. ICOMOS, ISBN:075061210X, Guide to recording Historic Buildings, Butterworth,1990.
4. John Krygier and Denis Wood, 526KRY-M, MakingMaps: a Visual Guide to Map Design for GIS
5. Lindsay MacDonald (ed.), ISBN 13:978-0-75-066183-6, Digital Heritage: Applying Digital Imaging to Cultural Heritage
6. Meredith H.Sykes, ISBN:9789231020803, Manualon Systems of Inventorying Immovable Cultural Property,UNESCO,1984
7. Proceedings, French Ministry for education and culture, ISBN:9287123411, Architectural Heritage: Inventory and Documentation, Methods in Europe, Council of Europe,1992.
8. Swallow, Peter, ISBN:9781873394083, Measurement and Recording of Historic Buildings – Donhead,1993
9. Watt,D & Swallow P, ISBN:9781873394670, Surveying Historic Buildings, Donhead,1996

CO5111	CONSERVATION STUDIO I	L	T	P/S	C
		0	0	12	6

OBJECTIVES:

- The objective is to experience and find solutions to the problems and issues confronting historic buildings/site.

CONTENTS

Projects either by individuals or groups shall be worked upon emphasizing on the following:

- Understanding historic buildings / site.
- Demarcation of historic sites and its relationship to surroundings.
- Detailed documentation of the site/structure.
- Understanding the building and composition of building materials.
- Identification of function, use and condition of the buildings/site.
- Statement of Significance of historic buildings/site.
- Maintenance, Management and Conservation of the buildings/site includes planning interventions.

The project contents would include programming for the project, appreciation and identification of heritage value, interpretation and interventions. Exploring various research methods & data collection techniques would be part of the exercise. The tutorials and studio program will help the students in the development of project statement, data analysis and critical inferences for design application.

TOTAL: 180 PERIODS

OUTCOMES:

- Students shall study and find solutions to problems and issues confronting historic building/site.
- The studio shall be progressive work in groups.
- Deliverables shall include drawings and report. Progressive presentations shall be made for reviews at various stages.

CO5201	CULTURAL LANDSCAPES	L	T	P/S	C
		3	0	0	3

OBJECTIVES:

- The objective is to build understanding for protection and management of cultural landscapes.
- To look at a region from a cultural perspective and approach conservation from a cultural stand point.
- Its aim is to evolve the scope, scale and meaning of heritage from buildings to entire regions.

UNIT I INTRODUCTION TO CULTURAL LANDSCAPE 6

Definition of landscape-ecology - Defining and recognizing Cultural Landscapes/Regions-location, formation, characteristic features– Definition of cultural landscapes as understood by other disciplines like US National Park Services and UNESCO.

UNIT II CULTURAL GEOGRAPHY 9

Techniques for assessing the cultural values of a Cultural Landscapes/Region - Demarcating Cultural Landscapes through various parameters like political, physical, natural, linguistic boundaries, etc. - Describing the cultural region through its components – the tangible heritage and the intangible aspects like crafts, traditional skills and local knowledge systems of such zones

UNIT III ASSESSMENT OF CULTURAL LANDSCAPE 12

Need and use of assessment of cultural landscape –Methods of mapping the Cultural Landscapes– Forests and vegetation – their cultural values - Cultural Geography and regional symbolism - meanings behind cultural landscapes - components that make them unique - Review of contemporary regional boundaries based on standard parameters - cultural boundaries that exist in people's minds integrated with their lifestyles and culture

UNIT IV PRESERVATION OF CULTURAL LANDSCAPE 12

Analysis of Cultural Landscapes - Case study – identified in World Heritage List and in India like Braj, Bundelkhand, Kutch, Rock Shelters of Bhimbetka, etc. – cultural restoration of Ganga river.

UNIT V MANAGEMENT OF CULTURAL LANDSCAPE 6

Management and Conservation of Cultural Landscapes /Regions – preservation strategies – tourism potential – threats to cultural landscapes and the causes – methods to safe guard and promote these landscapes

TOTAL: 45 PERIODS

OUTCOMES:

- Students shall acquire knowledge about cultural landscapes.
- The assignments would include application of concepts towards identification, demarcation and mapping of cultural landscapes.
- Assignment will be in the form of reports, drawings and presentations.The students shall make progressive presentations for reviews at various stages.

REFERENCES

1. Agnoletti,Mauro,ed.,Conservationof CulturalLandscapes,2006 304.2CON
2. Oliver,Paul, Builttomeet Needs:Cultural Issues in Vernacular Architecture, 2006 720.103OLI-B
3. Singh Purushottam, Archaeology of the Ganga Plain:Cultural-Historical Dimensions,2010, 930.10954SIN-A
4. Singh, Rana P.B.,ed. Heritage scapes and CulturalLandscapes,2011, 304.2HER.

CO5202 STRENGTHENING AND RETROFITTING HISTORIC STRUCTURES

L	T	P/S	C
3	0	0	3

OBJECTIVES:

- The objective is to understand solutions for repair and strengthening of structural system of historic structures and also upgrading them to cater to the contemporary demands and needs.
- The detailing of appropriate options of intervention will lead to making of an implementable document. Case studies of completed projects shall be evaluated towards quantification and quality.

UNIT I INTRODUCTION **4**

Degrees of Intervention in Historic buildings, Definition of Restoration, Retrofitting & Adaptive re-use, Major issues & challenges faced in India

UNIT II REPAIR & RETROFITTING PROCESS **9**

Building/Site Inspection, assessment procedure for evaluating a damaged structure- **Research, analysis & Recording**, causes of deterioration &testing techniques – **Diagnosis& Cure** - **Budget**– **Design Strategies** – **Execution** - Strategic Maintenance Plan, Advantages of preventive maintenance

UNIT III STRENTHENING & TREATMENTS **12**

Assessment Report reading – immediate rescue measures for distress in buildings – shoring, underpinning, shuttering, etc.

Non-structural repairs - simple traditional remedies, advanced methods, mortar repair for cracks– preventive measures.

Special Techniques of repair & reconstruction – consolidation, grouting, painting, strengthening & replacement, Jacking, drilling, Scaffolding, etc.

Structural repairs - Various advanced techniques of strengthening and retrofitting - Gunite and shotcrete epoxy injection.

Repairs to overcome low member strength like deflection, cracking, chemical disruption, weathering, wear, fire, marine exposure, etc. like section enlargement, rust eliminators and polymers coating for rebar's, etc.

Engineered demolition techniques for dilapidated structures

Case studies

UNIT IV CASE STUDIES **12**

Select case studies of restored/conserved buildings in India to understand the process & details of strengthening & retrofitting heritage structures including financial implications

UNIT V ADAPTIVE REUSE **8**

Need for adaptive reuse - Issues to be explored in building adaption - Economic, social, environmental, and assessment models for adaptive reuse - Case studies of buildings with adaptive reuse.

TOTAL: 45 PERIODS

OUTCOMES:

- Students will acquire skills to find appropriate remedial measures and solutions for strengthening and retro fitting of structure.
- Assignments will include on site observation and analysis and formulating proposal for remedial measures and solutions for strengthening and retro fitting of a structure.
- Assignment will be in the form of reports, reviews and tutorials with suitable illustrations.

REFERENCES

1. Beckmann, Poul Structural Aspects of Building Conservation, McGraw Hill, 1995 ISBN:0750657332
2. Benya, James R. Lighting Retrofit and Relighting: a Guide to green lighting solutions, 2011621.321BEN-L
3. CPWD Analysis of Rates for Delhi-CPWD cpwd.gov.in/deputation/ar1- final.pdf
4. John Marshall Conservation Manual: A handbook for the use of Archaeological Officers and other sentrusted with the care of ancient monuments,1923 Calcutta: Superintendent Government Printing, Archaeological Survey of India
5. Murthy, K.L. Structural Conservation of Monuments in South India,1997 720.954MUR-S
6. Powys, A.R. Repair of Ancient Buildings, Society for Protection of Ancient Buildings,1981 ISBN:189885601X
7. Thorpe, David, Sustainable Home Refurbishment: the Earth scan expert guide to retro fitting homes for efficiency,2010 696THO-S

CO5203 CONSERVATION PROJECT MANAGEMENT L T P/S C
3 0 0 3

OBJECTIVES:

- The objective is to understand core principles of Project Management
- The focus is on using Project Management tools for effective conduction of conservation projects in particular

UNIT I INTRODUCTION TO PROJECT MANAGEMENT 6

Introduction - Project management, Project management versus Traditional management, Different forms of Project Management – Project Phases – Project Life Cycle – Project Management Process through Initiation, Planning, Execution, control and closure within the triple constraints of scope, time and cost with all inputs, tools & techniques and outputs.

UNIT II CONSERVATION PROJECT PLANNING 9

Project Plan Development - Scope planning with inputs –Master Plan – Programming – Scheduling – Project Organization–Scope planning and Work Definition, Tools and techniques-Expert Judgment and meetings, Monitoring Plan – Operational Plan - Outputs of scope planning-Collect requirements, defining scope - WBS, Classification of levels, Scope Control- scope verification and change control

UNIT III COMMUNICATION MANAGMENT 12

Project Management plan - The Project Management Configuration Plan - Stakeholder register, Documentation and Communication “Road Map” –Enterprise environmental factors, Organizational process assets. Tools & techniques - Communication requirements analysis, Communication Technology –Communication models and methods: General Guidelines for Effective Communication - Communication Management plan to manage stakeholder engagement -Project Manager’s Checklist& Project documents update

UNIT IV SAFETY & RISK MANAGEMENT 12

Identifying risk, preparing for risk identification, risk categories, referring to historical information - Identifying the project risk – Reviewing project documents, brainstorming, analyzing SWOT – Examining the results of risk identification, qualitative and quantitative risk analysis - Safety in construction contracts - Safety record keeping - Safety culture - Safe workers - Safety and first line supervisors, safety and middle managers, top management practices - Company activities and safety - Safety Personnel - Contractual obligation - Project Coordination and Safety Procedures - Workers Compensation

UNIT V PORTFOLIO MANAGEMENT 6

Defining and Implementing Project Portfolio Management – Objectives, practices and organizational roles – evolution of PPM - Bridging the Gap between Operations management and Project Management for multiple projects -Project Portfolio Optimization- PPM tools -Standardization, measurement and process improvement, Project Selection and Risk.

TOTAL: 45 PERIODS

OUTCOMES:

- Students shall learn about law for protection of heritage in India.
- The assignments shall be based on legal documents and their reviews.
- Assignment will be in the form of reports, reviews and tutorials with suitable case studies.

REFERENCES

1. Bruce Barkley Project Risk Management (Project Management), McGraw-Hill Professional, 2004, **ISBN** :9780071436915
2. Calin M. Popescu, Chotchai Charoenngam Project planning, Scheduling and Control in Construction: An Encyclopedia of Terms and Applications, John Wiley, New York, 1995 **ISBN**: 978-0195084948
3. James B. Atkins and Grant A. Simpson Managing Project Risk: Best Practices for Architects and Related Professionals, Wiley, 2008, **ISBN**: 978-0-470-27381-4
4. Jonathan F. Hutchings Project Scheduling Handbook (Civil and Environmental Engineering), CRC Press, 2003 **ISBN** 9780824746216
5. Project Management Institute A Guide to the Project Management Body of Knowledge (PMBOK Guide), Project Management Institute, Incorporated, 2013 **ISBN** 978-1-935589-67-9

CO5204 CONSERVATION PRACTICES IN INDIA AND ABROAD L T P/S C

3 0 0 3

OBJECTIVES:

- The objective is to understand relationship between laws with the irjurisdiction and its relationship to conservation practice.

UNIT I CONDITION OF HERITAGE IN INDIA 6

Definition of heritage – types of heritage and their value – classification of heritage assets – their condition – means of safe guarding heritage assets – law and its jurisdiction

UNIT II NATIONAL LEGISLATION I 9

Laws for protection of heritage in India including the provisions under the Constitution of India and 73rd and74th amendments to the Constitution; AMASR act1958, Antiquities and Art Treasures Act1972,The Public Records Act of 1993, Hampi World Heritage Area Management Authority Act 2002, Majuli Cultural Landscape Region Act 2006;

UNIT III NATIONAL LEGISLATION II 12

Town and Country planning Act, Maharashtra Region - Town and Country Planning Act 1966 Gazettea‘ Draft list of heritage buildings and precincts for Greater Mumbai the Andhra Pradesh Urban Area Act1975;Indian forest Act, Land Acquisition Act 1827, Public Premises Eviction Act1971etc. Coastal Regulation Zone(CRZ) Regulation; Cantonment Act 2006 and Environment(Protection) Act,1986etc.

UNIT IV NATIONAL LEGISLATION III 12

Legal protection under Ancient Monuments and Archaeological Sites and Remains Actof1958 with all its amendments (July 1992notification and The Ancient Monuments and Archaeological Sites and Remains (Amendment and Validation) Act,2010) and the corresponding State Acts. Role of Archeological Survey of India, National Monument Authority, etc in protection of heritage in India.

UNIT V INTERNATIONAL LEGISLATION 6

Legal systems of protection of heritage across the globe – Listing of monuments by UNESCO – norms and criteria for protection of world heritage - UNESCO intervention in protecting world heritage – case study - Various plans for conservation including, management plan, conservation plan, etc and its statutory status.

TOTAL: 45 PERIODS

OUTCOMES:

- Students shall learn about law for protection of heritage in India.
- The assignments shall be based on legal documents and their reviews.
- Assignment will be in the form of reports, reviews and tutorials with suitable casestudies.

REFERENCES

1. E.F.N.Ribeiro The Law and the Conservation of Man-made HeritageinIndia,1989 New Delhi: INTACH
2. McGlade, James, ed.and Leeuw Time, Process and Structured Transformation in Archaeology, 2010, Sander VanDer,ed. 930.1TIM.
3. Tripathi, Alok Ancient monuments and Archaeological Sites and Remains Act,1958: with Rules Amendments, Notifications and Orders,2007 344.094TRI-A.

CO5211	CONSERVATION STUDIO II	L	T	P/S	C
		0	0	12	6

OBJECTIVES:

- The objective is to introduce the problems and issues confronting historic core and urban areas.
- The aim of the studio in this semester is to introduce the students to a historic site, historic city or environment which is more complex and larger in scale to the building.
- The exercise shall address issues related to heritage at the urban scale.
- The attempt will be to adopt an integrated approach.

CONTENTS

Projects by either individuals or groups shall be worked upon emphasizing on the following:

- Understanding historic core and its linkage to developing city.
- Demarcation of historic core and its relationship to surroundings.

- Understanding the historic core in terms of built and open spaces, skyline, interface and transitions.
- Identification of function, use and condition of the buildings/site/historic cores.
- Statement of Significance.
- Maintenance, Management and Conservation plan.
- Planning Interventions.

The project shall emphasize on assessment of cultural significance and community participation for conservation and area and city level issues in architectural conservation. Identification of Heritage Zones and their appreciation of architectural vocabulary. Traditional building technology, streets, markets, neighborhoods and their heritage value.
Preparation of conversation plans and management plans as required. Formulation and application of conservation policy and guidelines for historic areas and extensions.

TOTAL: 180 PERIODS

OUTCOMES:

- Students shall study and find solutions to problem and issues confronting historic core/urban areas.
- The studio shall be progressive work in groups. Deliverables shall include drawings and report. Progressive presentations shall be made for reviews at various stages.

CO5301	**SERVICES IN HISTORIC BUILDINGS**	**L**	**T**	**P/S**	**C**
		3	**0**	**0**	**3**

OBJECTIVES:

- The objective is to introduce the students to various fields of services involved in heritage structures.
- The focus will be on an integrated approach to services on historic structures.

UNIT I INTRODUCTION TO SERVICES IN HISTORIC STRUCTURES 6

Need and necessity for services – Permissible interventions – Norms to be followed – Planning of service lines – Service provisions and adaptive reuse – Provisions by ASI for service system installations, ducting etc

UNIT II PLUMBING SERVICES IN HISTORIC STRUCTURES 9

Plumbing Codes -Health Requirements for Plumbing - Water Quantity calculations- Water-Pipe Sizing- Waste water piping-Wastewater-System Elements - Waste-Pipe Materials - Layout of Waste Piping - Interceptors - Piping for Indirect Wastes - Venting - Plumbing-System Inspection and Tests.

UNIT III ELECTRICAL, LIGHTING & AIRCONDITIONING SERVICES 15

Electrical power – DC / AC system, electrical load and emergency power – electrical conductors and raceways – electrical distribution in buildings –power distribution system – standby and alternate power supply system.
Light and sight – quality of light – lighting methods – daylight – system design of lighting.–selection of recommended I luminance - - Lamp characteristics and Selection Guide –Impact of light on colour - Integration of services – Electrical power monitoring
Major Factors in HVAC Design – Ventilation - Duct Design - Heat Losses - Heat Gains - methods of cooling and air conditioning - Sizing an Air- Conditioning Plant – Refrigeration - Cycles - Air-Distribution Temperature for Cooling - Energy efficiency techniques in air conditioning - Air conditioning in museums, historic structures etc.,

UNIT IV FIRE SAFETY & CONTROL SYSTEMS 6

Fire detection & Fire alarm systems – fire protections systems – study of codes and standards - sprinkler systems -Automatic Sprinklers - System Design and layout – Standpipes- Water Supplies for sprinkler and Standpipe Systems – Central Station Supervisory Systems— fire alarm system – fire-fighting system and monitoring –safety and security systems – FAS, PAS – access control system-fire fighter telephone system – CCTV surveillance system – IBMS system.

UNIT V INTEGRATED SERVICE PLANNING 9

Vibrations from mechanical equipment-Pumps & motors - basic practice of vibration isolation & guidelines, wall, floor & ceiling construction AC ducts - Characteristics of duct system noise, noise sources in ducts,Building Codes& Standards, Civil infrastructure services for residential and institutional complexes with planning, design, construction and maintenance of external development works such as water supply, sewerage, solid wastes, roads and storm water drainage, including rain water harvesting methods

TOTAL: 45 PERIODS

OUTCOMES:

- Students will acquire skills to find appropriate solutions for integrating various modern services in historic structures.
- Assignments will include on-site observation and analysis and formulating proposal for integrating the various services in a heritage structure.
- Assignment will be in the form of reports, reviews and tutorials with suitable illustrations.

REFERENCES

1. Fred hall and Roger Greeno, Building Services Handbook
2. Gurcharan Singh, Jagdish Singh, Water Supply & Sanitary Engineering
3. Krieder, J. F., Handbook of Heating Ventilation and Air Conditioning
4. Shri V.K. Jain, Fire Safety in Buildings
5. W. E. Steward, T. A. Stubbs Modern Wiring Practice Design and Installation BIS, National Building Code 2005.

CO5311	PROJECT PHASE I : DISSERTATION	L	T	P/S	C
		0	0	6	3

OBJECTIVES:

- To expose the students to the various thrust areas in Architectural Conservation.
- To inculcate the spirit of research in Conservation by providing opportunities to read on various issues.
- To expose the students to the finer details of technical writing.
- To provide a platform for a prelude to the ‘Design Thesis’.

Dissertation is best expressed as ‘Design in text’. It offers an opportunity to look at the research component in Conservation in various thrust areas such as history, theory, design and other value based aspects through texts. Students are encouraged to choose any topic of their interest. This may range from analyzing and a critique of the works of an architect, ideologies and philosophies of architects that get transformed spatially, history, typological architecture, sustainability issues and so on. The dissertation must comprise of an aim, the objectives, the scope and limitations of their dissertation, hypothesis (if any), methodology followed by extensive review of literature through references and documentation. The analysis of the work must be substantiated either empirically or through extensive arguments. A dissertation could also be a Thesis preparation course and gives the

student scope for independent study and opportunity to explore specific area of interest which will form the basis of his/ her design thesis project in the next semester. The topic will have to be approved at the start of the semester and reviewed periodically by a jury at the end of the semester.

TOTAL: 90 PERIODS

OUTCOMES:

- A Dissertation book which is based on accepted norms of technical writing.
- An understanding leading to formation of thesis ideas.

CO5312	CONSERVATION STUDIO III	L	T	P/S	C
		0	0	12	6

OBJECTIVES:

- The objective is to introduce the students to the identification of problems and issues confronting heritage at a regional scale.

CONTENTS

Projects by either individuals or groups shall be worked upon emphasizing on the following:

- Understanding heritage at a regional scale like-cultural landscapes, etc.
- Identification of heritage with acknowledge system approach.
- Demarcation of the heritage are a including revenue boundaries and ownership.
- Statement of Significance.
- Identification of function, use and interdependency within the region.
- Understanding the needs of heritage management and development towards sustainable future.
- Preparation of heritage management strategy.

TOTAL: 180 PERIODS

OUTCOMES:

- Students shall study and find solutions to problem and issues confronting heritage at regional scale.
- The studio shall be progressive workingroup. Deliverables shall include drawings and report.

CO5411	PROFESIONAL TRAINING	L	T	P/S	C
		-	-	-	2

OBJECTIVES:

- To strengthen further the understanding of students to the nuances of conservation practice through Professional Training.
- To facilitate an understanding of the evolution of a conservation project from documentation to execution.
- To enable an orientation that would include the process of identification, documentation, presentation skills, involvement in office discussions, client meetings, development of the drawings, report/ manual writing, site supervision during execution and coordination with the agencies involved in the conservation process.

Professional Training of duration minimum 4 weeks full time or 8 weeks part time to be done under a conservation architect or in an organization involved in conservation during semester vacation. The choice of Office / Organization must be approved by the Head of the Institute.

At the end of the Professional Training, a portfolio of work done during the period of Training along with certification from the office is to be submitted for evaluation by a viva voce examination. This will evaluate the understanding of the students about the drawings, detailing, materials, construction method and the knowledge gained during client meetings, consultant meetings and site meetings.

CO5412	**PROJECT PHASE II : THESIS**	**L**	**T**	**P/S**	**C**
		0	**0**	**20**	**10**

OBJECTIVES:

- The objective is to develop and acquire more specialized knowledge in the field of conservation through conservation projects or scientific research.
- The Thesis Project is a final culmination of knowledge acquired by students through the course of their sustainability curriculum.
- Theoretical, cognitive, empirical and analytical skills pertaining to architectural sustainability will be tested during the thesis program.
- Students shall consider large scale campus, environmental site planning, conservation, heritage districts etc.

CONTENTS

- Thesis is the main academic effort and culmination of all information and techniques learnt in the preceding semesters.
- Selection of thesis topic shall be from any aspect of Conservation whether theoretical, technical, management, operational or intervention.
- It is expected to undertake original work including data collection and primary surveys
- As part of the studio requirements, it is expected to go through a process of documentation, analyses and synthesis related to the specific topic and related area of work·
- It is required to work under the guidance of a supervisor allotted by the department and complete the requisite work in the course of the semester, ending in a viva-voce exam by a panel of examiners both external and internal.
- Progressivee valuation would be done by a panel of external and/or internal jurors during reviews held at intervals during the course of the semester.

Students will submit a detailed proposal on their topic of interest. The Proposal shall be approved by the thesis review committee. The thesis project will be reviewed periodically by the review committee. At the end of the semester, the final thesis will be submitted and presented through a viva voce examination before a jury. Submission and defense of the thesis will be through drawings, reports, study sheets, models and digital presentations and verbal communications in all the reviews and the final viva-voce.

TOTAL: 300 PERIODS

OUTCOMES:

- Students would be able to integrate various contemporary and advanced issues and techniques into the architectural conservation process.
- Students would be able to identify and go in depth into specific and appropriate aspects relating to the discipline of conservation and reflect this in the realm of design.

CO5001	**ANTHROPOLOGY AND SOCIOLOGY**	**L**	**T**	**P/S**	**C**
		3	**0**	**0**	**3**

OBJECTIVES:

- The objective ofthemoduleistosensitizestudentstothesignificanceofculturalinfluences.
- To become aware of cultural differences and similarities, and to encourage others to interact and communicate efficiently with people of diverse cultural backgrounds.

UNIT I INTRODUCTION 6

Definition of Anthropology& Sociology – Its origin & development - Culture studies – Debate on the need for cultural studies – Popular theories of cultural interference – Cultural influence on life style

UNIT II ANTHROPOLOGY 6

Anthropology as a field of enquiry - nature and scope of anthropology - relationship of anthropology with architecture and other social sciences **-** Principles and methods of anthropological research - conceptualization of research - formulation of hypothesis, source of data, techniques of data collection - sampling, presentation and interpretation of data - methods of exploration.

UNIT III NATIONAL & INTERNATIONAL CULTURE 9

Concepts and principles of national and international culture – Inter cultural and cross-cultural communication - Individual and collective, Social Interaction &Structure, Culture &community life, Socialization & social processes – Primary and Secondary Relations – material and mental - Culture, Authority, Social Control, conformity and Deviance, Difference and inequality.

UNIT IV CULTURE & ARCHITECTURE 12

Cultural concept: of house, neighborhood and cultural identity of a place - Settlement plans: cultural perspective, villages – tribes and non tribal rural towns and township and cities - Cultural role of cities and sacred complex, rituals and festivals - Rural and urban Continuum

UNIT V GLOBALISATION 12

Coding and Decoding of verbal and non-verbal communication in its cultural context – Developing skills for inter cultural communication – Understanding relationship between culture and globalization – Understanding process of globalization to international politics including politics of/for heritage - Understanding the relationship between local culture and global citizenship.

TOTAL: 45 PERIODS

OUTCOMES:

- Students shall be equipped to interact and communicate with people of diverse cultural background.
- The assignments shall include application of skills in primary survey.
- Assignment will be in the form of reports, reviews and tutorials with suitable illustrations.

REFERENCES

1. Barry, Peter Beginning theory: An Introduction to literary and culturaltheory,2011 801.95BAR-B
2. Bono, Edwardde Lateral and Parallel Thinking http://www.edwdebono.com/debono/lateral.htm
3. Pande, Anupa, Art of Central Asia and the Indian subcontinent in Cross-Cultural Perspective,2009 ed. 709.58ART
4. PaulOliver(Editor) Encyclopedia of Vernacular Architecture of the World ISBN-10:0521564220
5. Verma,S. P. Crossing cultural frontiers: Biblical themes in Mughal painting,2011 759.04VER-C

CO5002 NATURAL AND DESIGNED LANDSCAPE L T P/S C

3 0 0 3

OBJECTIVES:

- The objective is to understand the difference between Natural and Designed Landscape.
- It shall elaborate on the need and means to tackle the various issues related to conserving the historic landscapes, asan important aspect of cultural heritage.

UNIT I NATURE & ECOLOGY 6

Understanding the ecosystem and their functioning — components of ecosystem - natural processes - Fundamentals of ecology - Ecological processes and dynamics– understanding ecological concepts like population growth, regulation, carrying capacity - colonization and succession - stability and resilience of ecosystem – ecosystem degradation.

UNIT II LANDSCAPE & ECOLOGY 6

Introduction to landscape ecology – formation of various landforms – landforms and landscape process – pattern and structure of landscapes– concepts of patch, corridor and matrix - landscape dynamics and function – topological and chorological process within landscape - concept of landscape metrics – understanding dynamic interaction between landscape structure and function – ecological services of landscape.

UNIT III SITE PLANNING PRINCIPLES 9

Contours – representation of landforms and landform design, interpolation of contours, slope analysis, uses and function - Earth works – principles of earth work, cut and fill calculations – borrow pit method, average end area method, average spot level method, precautions taken in cut and fill methods in relation to soil conditions, amount of precipitation etc.,

UNIT IV LANDSCAPE DESIGNS OF INDIA 12

Early traditions and beliefs about landscape and environment in east - Ancient Indian traditions – Symbolic meanings and sacred value of natural landscapes - Open space development and its urban design and planning context - Public park as a major component of urban landscape - Open space development and Close conceptual relationship between Town planning, urban design and landscape architecture - Issues in contemporary India, Analysis and understanding of philosophies of contemporary landscape works in India, case studies.

UNIT V LANDSCAPE MANAGEMENT 12

Landscape management at the regional scale in relation to soil conservation, Land use planning and resource management - water management, forest management, grassland and agricultural management. Management practice related to urban ecology and urban habitats such as urban forests, urban water sheds, regional parks, green belts, Ecological, Economic and administrative issues, management models.

TOTAL: 45 PERIODS

OUTCOMES:

- Students shall develop skills to identify, maintain and manage natural and designed landscapes.
- The assignments shall include case studies and application of principles for conservation.
- Assignment will be in the form of reports, reviews and tutorials with suitable illustrations.

REFERENCES

1. Gokhale, Yogesh, ed. And Negi, AjeetK. 333.9516COM, Community-based biodiversity conservation in the Himalayas,2011
2. Lindenmayer, D.B., ed. And Hobbs, R.J.,ed. Managing and designing landscapes for conservation: moving from perspective sto principles,2007 712MANk8
3. Nigel,ed. Arguments for protected areas: Multiplebene fits for conservation and use, 2010 Stolton, Sue, ed.AndDudley, 333.9516ARG
4. Priyaleen Singh Historic Gardens: making an Inventory for the Indian context, 2006. New Delhi: INTACH.

5. Rose, Dilys, ed. And Elliott, Joanna Earth-scan reader in poverty and biodiversity conservation, 2010, ed. 333.9516EAR
6. Trombulak, StephenC., ed. AndBaldwin,RobertF., ed. Landscape-scale conservation planning, 2010 333.72LAN

CO5003 HISTORY OF WESTERN ARCHITECTURAL CONSERVATION

L	T	P/S	C
3	0	0	3

OBJECTIVES:

- The objective is to introduce personalities, ideologies and various philosophies that helped to formulate the principles of conservation discipline as it exists today abroad.
- The students shall be introduced to the various charters and development of UNESCO as the global agency and its role in the field of conservation.

UNIT I EARLY APPROACH TO CONSERVATION 6

Beginnings in the Renaissance – Works of Filippo Brunelleschi – Architectural Treatises of 15th Century – Early practice and protection - Conservation practices in the 17th Century – Reformist Movements and Neo Classicism –Archaeological Interests in the Age of Enlightenment - French Revolution, destruction and orders for protection

UNIT II DEVELOPMENT OF CONSERVATION THEORIES IN EUROPE 12

Restoration of Classical monuments – English Antiquarianism - Early Restoration in Germanic Countries – Early Efforts in Conservation in France - Organization and Administration — Discussion on Principles in France - Viollet-le-Duc, 'Stylistic Restoration'— The Gothic Revival and Restoration— The Anti-Restoration Movement - Restoration Influences in Italy - Germanic Countries, 'Denkmalkultus'

UNIT III CASE STUDIES 12

Stylistic restoration & conservation movement in Italy - Restoration & conservation in the Papal states of Rome, Restoration & protection in Athens, Restoration of Durham Cathedral, Restoration of Magdeburg Cathedral, Restoration of la Madeleine, Vézelay

UNIT IV ARCHITECTURAL CONSERVATION IN THE USA 9

Conserving Historic Engineering Structures: Bridges, Emergence of an Historic Preservation System in the 1960s, The Economics and Standards of Historic Preservation, The Defining Role of U.S. Conservation Science and Technology, Preserving a Mosaic of Heritages in the United States and Its Territories, Historic Preservation and Sustainable Development

UNIT V RECENT TRENDS 6

Governmental indulgence in conservation in developed nations of the west – Financial and Administrative policies for conservation in developed countries – International Charters on conservation,

International Concern in Cultural Heritage — Formation of International Guidelines - International agencies involved in conservation – Contemporary aspects of heritage and conservation in the age of globalization

TOTAL: 45 PERIODS

OUTCOMES:

- Students shall be introduced to the evolution and principles of conservation in the West.
- The assignments shall include studies of various charters and roles of various organizations in conservation.

- Assignment will be in the form report, class reviews and tutorials covering topics mentioned

REFERENCES

1. Bracker, A., Ed. and Richmond, A.,ed. Conservation: principles, dilemmas and uncomfortable truths,2009 363.69CON
2. Cleere Henry Approaches to the Archaeological Heritage: A Comparative Study of World ISBN:9780521243056
3. Cumming Sir John Revealing India's Past(COSMOPUBLICATION) ISBN81-307-0087-5
4. Glendinning, Miles The Conservation Movement: a History of Architectural Preservation (ROUTLEDGE2013) 978-0-415-54322-4
5. John H. Stubbs and Emily G. Makaš Architectural Conservation in Europe and the Americas - National experiences and practice ISBN 978-0470603857
6. JukkaJokhileto A History of Architectural Conservation ISBN 07506 55119

CO5004	SUSTAINABILITY AND CONSERVATION	L	T	P/S	C
		3	0	0	3

OBJECTIVES:

- The objective is to develop skills towards understanding the need for conservation of energy systems and water ways.
- The focus will be on traditional systems of water management and contemporary methods of conserving energy.

UNIT I INTRODUCTION 6

Aim and purpose of conserving energy and water – Need and objectives – National policies and legislations of the same – Introduction to National and International agencies that works towards conserving energy and water

UNIT II INTRODUCTION TO FORMS OF ENERGY 6

Definition, classification and types of energy - Current energy requirements, growth in future energy requirements, Review of conventional energy resources: coal, gas and oil reserves and resources, tar sands and oil shale, nuclear energy - Need for conversion to renewable energy - Sources of renewable energy – Case studies on advantages, disadvantages of Solar, Wind, oceanic &geothermal forms of energy.

UNIT III ENERGY CONSERVATION TECHNIQUES 12

Energy conservation and sustainability, principles of energy systems, energy and global environment, scope for energy conservation in architecture- Various methods of energy conservation in architecture, energy conservation techniques in various climates- hot and humid, hot dry, etc., Energy efficient site planning and development, Energy efficient design detailing

UNIT IV TRADITIONAL METHODS OF WATER CONSERVATION 9

Traditional community wisdom regarding water conservation from different climatic zones of the world - Traditional Architecture of wells in Rajasthan, Gujarat, Tamilnadu – Stepped Wells, Baoris, Pushkarnis, Tanks, etc. Design for water conservation – Building and products - Designing building services, plumbing and sanitary design for effective water reuse, recycling, and recharge -Rain water harvesting techniques – Basic Concepts, piping techniques and pit design for groundwater recharge of wells.

UNIT V INTRODUCTION TO ENERGY CONSERVATION 12

Conservation of the water cycle as a single system – Conserving water supply, sanitation and drainage systems in neighbourhood - Social imperatives, environmental considerations and economic challenges and Technological options for water conservation, recycling, reuse, conservation and

treatment - Planning of settlements and large campuses based on principles of sustainable watershed development with water as a priority resource. Reuse of grey water for non-potable uses - Wetlands for natural waste water treatment, use of wetlands for natural storm water and vegetated natural roof tops.

TOTAL: 45 PERIODS

OUTCOMES:

- Students shall gain awareness of the need and importance of conserving energy and water.
- Students would have gained technical knowledge about conservation techniques to conserve water and other forms of energy.

REFERENCES

1. Ahmed F. Zobaa Handbook of Renewable Energy Technology
2. John Briscoe, R.P.S. Malik(Ed.) Handbook of Water Resources in India: Development, Management, and Strategies Oxford University Press, 2007
3. K. Nageswara (Ed.) Water Resources Management: Realities and Challenges Eastern Book Corpn., 2006.
4. Robert Brown and Jenny J Gillespie, Micro climatic landscape design – creating thermal comfort and energy efficiency, John Wiley, N.Y, 1995

CO5005	MUSEUM DESIGN AND MANAGEMENT	L	T	P/S	C
		3	0	0	3

OBJECTIVES:

- The objective is to train and develop skills for Museum Design.

UNIT I INTRODUCTION **6**

Introduction to Museums – Collections and Artifacts – Types of objects – Public and private collections and museums – Characteristics of different display objects like historic, natural, prints, paintings, sculpture etc.

UNIT II PLANNING & DESIGN **12**

Spatial Planning – Classification of spaces into public, private etc – Hierarchy of spaces – Safety and intrusions prevention - Vertical movement planning – Services including HVAC, Lighting, IAQ etc - Adapting an existing structure to set a museum – Case studies

UNIT III ARCHIVING & INVENTORY **9**

Collection of artifacts – Methods of collecting – Certification of antiquity – Registering – Log maintaining – Storage facilities in museums – Classification of objects – Display of artifacts – Rotational display system

UNIT IV DIGITAL INTERFERENCE **12**

Digital tools in museum management – CCTV and other safety equipments – Information system – IBMS in museums – Digital Inventory – Information sharing to public through internet – Online information system on the museum

UNIT V MUSEUM MANAGEMENT **6**

Legislations and governance policies of museums in India – Safety Management – Security system – Precaution from natural disasters – Visitor management

TOTAL: 45 PERIODS

OUTCOMES:

- Assignment will be in the form of are port, site visit report, class reviews and tutorials covering topics mentioned above with suitable illustrations and supportive material.

REFERENCES

1. BarryLord, GailDexter Lord, Lind say Martin Manual of Museum Planning: Sustainable Space, Facilities and Operations ISBN:0759121478
2. Edward Porter Alexander Museums in motion: an introduction to the history and functions of museums ISBN:075910509X
3. George Jacob Museum: Design the Future,BooksurgeLlc,2009 ISBN:1439235740
4. Kevin Moore Museum Management ISBN:1134830653
5. Suzanne Macleod Reshaping Museum Space, Routledge,2005 ISBN:0203483227

CO5006 LANDSCAPE CONSERVATION L T P/S C
3 0 0 3

OBJECTIVES:

- The objective of this course is to introduce the students to different types of historic landscape planning principles as found in various parts of world
- The subject will focus on ways to conserve the landscape through various traditional and modern means.

UNIT I INTRODUCTION TO HISTORIC LANDSCAPE DESIGNS 6

Introduction to landscape architecture, ecology, ecological balance, landscape conservation - reclamation and restoration of derelict landscapes, environmental impact assessment - Landscape and garden design in history - Japanese, Italian Renaissance and Moghul gardens in India, Study of notable examples, Spatial development in landscape design.

UNIT II EVOLUTION OF MODERN LANDSCAPE DESIGNS 9

Industrialization and urbanization – impacts and development of the concept of public, open spaces, open space development in new towns, parks movement, Open space development and its urban design and planning context, Early industrial towns and the garden city movement, Public park as a major component of urban landscape, the works of F.L.Ohmstead, and other pioneers, Open space development and Close conceptual relationship between Town planning, urban design and landscape architecture, Examples.

UNIT III MODERN MOVEMENTS & CONTEMPROARY CONCEPTS 12

Changing concepts of space and the relationship of architecture to landscape, Study of selected works of modern architects and landscape architects, Post-war development in Europe, The influence of Ian Mcharg on Landscape architecture, The works of Jellicoe, Burle Marx and others, Concept of sustainable landscape development, Cultural landscapes their definition, identification, characteristics, policies, Artistic sensibility in landscape architecture and land art, New development in urban Landscape design.

UNIT IV SUSTAINABLE PRACTICES IN LANDSCAPE CONSERVATION 12

Need and concept of sustainability, Brundtland report, World Commission on environment and development, sustainable development, sustainable growth, sustainable economy and sustainable use. Visions of sustainability, Source and ethics of sustainability. Sustainability and Climate Change -

Sustainable landscape maintenance and management, Conservation and preservation of ecological fragile areas such as wetlands, creeks etc. - Conservation ordinances

UNIT V CASE STUDIES 6

Selected case studies on various types of landscape conservation in India and abroad

TOTAL: 45 PERIODS

OUTCOMES:

- Students will be able to understand the historic development and growth of various types of landscape planning
- Students would be able to identify various methods of landscape conservation and apply specific methods wherever required.

REFERENCES

1. Anne Simon Moffat and Marc Schiller Landscape design that saves energy William Monow and co.,Inc., New York, 1981
2. Geoffrey and Susan Jellico The Landscape of Man Thames and Hudson, 1987
3. John.F.Benson and Maggie.H.Roe Landscape and sustainability John Wiley Publication, New York, 2000
4. O.R.Gray Landscape Planning for Energy Conservation

CO5007 SACRED LANDSCAPES L T P/S C

3 0 0 3

OBJECTIVES:

- The objective is to understand the concept of sacred landscapes, understanding and its connection to religion as a way of living.

UNIT I INTRODUCTION 6

Concept of sacred landscape – Connection between religion and sacred landscape - Historic/religious cities as sacred landscape - Components of sacred landscapes including built, forest, water systems, etc – Analysis of sacred landscape.

UNIT II EVOLUTION OF SACRED TOWN 6

Historic evolution of sacred towns – Religious aspects of geographical features like rivers, mountains, hillocks, tanks – Development and planning strategies of religious towns – Settlement study – Characteristic features of these towns

UNIT III PILGRIMAGE AND ARCHITECTURE 9

Importance of pilgrimage in various religious contexts – Prominent pilgrimage routes in India – Characteristic of landscape in these towns – Architecture associated with travel – Development of settlements based on natural resource availability.

UNIT IV RELIGIOUS TOWN CONSERVATION 12

Over view of urban development of religious towns in India and Tamil Nadu- understanding the character and issues of historic cities – select case studies of towns like Srirangaram, Kumbakonam and Kanchipuram historic districts and heritage precincts.

UNIT V TOURISM MANAGEMENT 12

Tourism Planning Methods and Analysis, Transport and other Infrastructure planning in tourism development, Urban and Rural based tourism - Tourism as a system- market, function and external

factors, Government and tourism policy and priorities, Role of local community and Tourism promotion.

TOTAL: 45 PERIODS

OUTCOMES:

- Students shall acquire knowledge about uniqueness of sacred landscapes and its importance in Indian context.
- Assignments will include exploration to analyze the sacredness in a landscape and its uniqueness and its connection to historic core.
- Assignment will be in the form of reports, drawings and presentations. The students shall make progressive presentations for reviews at various stages.

REFERENCES

Chakravarthy, Pradeep Thanjavur:a Cultural History, 2010 726.145CHA-T

1. Behera,K.S. Lingraja temple of Bhubaneshwar: Art and Cultural Legacy,2008 726.1450954133BEH-L
2. Filliozat, Vasundhara Kalamukha temples of Karnataka : Art and Cultural Legacy,2012 726.145095483FIL-K
3. Jackson, W.J. Vijayanagara Visions: Religious Experience and Cultural Creativityina SouthIndian empire, 2007 954.87JAC-V
4. Lin,Jan Power of Urban Ethnic Places: Cultural Heritage and CommunityLife,2011 307.7608900973LIN-P
5. Ray,H.P.(ed) Sacred Landscapes in Asia: Shared Traditions, Multiple Histories,2007 NewDelhi:IIC-Manohar

CO5008	WORLD HERITAGE SITES	L	T	P/S	C
		3	0	0	3

OBJECTIVES:

- The objective is to develop skills in management of World Heritage Sites.

UNIT I INTRODUCTION **7**

Definition and list of World Heritage Sites - UNESCO World Heritage Convention and its implementation, including the processes of inscription and monitoring of World Heritage properties

UNIT II ROLE OF UNESCO **9**

Formation of UNESCO – Charters pertaining to WHS – Nomination Criteria – Current state of affairs - theory and practice of conserving natural heritage, i.e. species, ecosystems and biodiversity, and cultural heritage, i.e. monuments, sites and landscapes – Brief discussions on select UNESCO Projects pertaining to conservation

UNIT III MANAGEMENT POLICIES **9**

Nomination Dossiers - Funding – Listing of Structures under danger – Inter-relational approach – Intercontinental participation – Directions and Principles – Management hierarchy – Managing selected sites – Local representation - Operational Guidelines – Facilitation requirements – Impact of nomination of World Heritage Site on socio-economic condition of the surroundings.

UNIT IV PROTECTION GUIDELINES **10**

Conservation activities of UNESCO – Strategies – Planning of phased conservation – conservation guidelines – Community participation - Case Study Abu Simbel restoration – Ankorwat , Cambodia

UNIT V CASE STUDIES **10**

Select Case studies from India and abroad

TOTAL: 45 PERIODS

OUTCOMES:

- Students will acquire knowledge about nomination process of World Heritage Site.
- Assignment shall include preparation of tentative list document for a given site.

REFERENCES

1. Convention concerning the protection of the World Cultural and Natural Heritage: adoptedby the General Conference at its 17thsession, Paris. UNESCO1972
2. Operational Guidelines for the implementation of World Heritage Convention, World Heritage Centre.UNESCO, 2003.

CO5009	HERITAGE IMPACT ASSESSMENT	L	T	P/S	C
		3	0	0	3

OBJECTIVES:

- The objective is to develop skills towards Heritage Impact assessment to assess the impact of development on heritage in various conditions.

UNIT I INTRODUCTION **6**

Definition of heritage – Factors that impact heritage – Internal and external factors – results of impact

UNIT II METHODOLOGY **12**

Methods of assessment – Documentation – Interviews – Visual analysis – Lab testing – Material and Structural analysis – Photography Techniques – Compilation of collected data – Scientific methods

UNIT III ASSESSMENT TOOLS **9**

Qualitative and quantitative assessment – OUV for World Heritage Sites – Threats at Regional, National and Global level – means to safe guard at various levels – Monument Management – safety and security

UNIT IV CASE STUDY AND REPORT WRITING **12**

Choosing, analyzing and presentation of a HIA for a structure/site – Collecting data – Investigation of the selected site – HIA report writing

UNIT V GUIDELINES FOR HIA **6**

Programming and guidelines as prescribed by National and International agencies like ASI – ICCROM – ICOMOS - UNESCO

TOTAL: 45 PERIODS

OUTCOMES:

- Students shall acquire skills towards Heritage Impact Assessment.
- Assignment shall include a case study and preparation of Heritage Impact Assessment.
- Assignment will be in the form of reports, drawings and presentations.
- The students shall make progressive presentations for review satvarious stages

REFERENCES

1. ICOMOS, ICOMOS guidelines for cultural worldheritage properties, Jan, ICOMOS publication, 2011.

2. ICOMOS, A Cultural heritage assessment of the impact on the outstanding universal value of the Greenwich maritime world heritage site, ICOMOS publication, 2010.
3. Stovel, H, Risk Preparedness:A Management Manual for World Cultural Heritage ICCROM, ICCROM publication 2007.

CO5010 URBAN CONSERVATION AND PRACTICE L T P/S C
3 0 0 3

OBJECTIVES:

- To introduce to the students the idea of conservation as enhancing quality of life, as effective planning strategy, as means of particularization of place and as a way to address issues of memory and identity.
- To introduce the students to issues and practices of urban conservation at various levels and scales.
- To give an overview of current status of conservation in India.

UNIT I INTRODUCTION TO CONSERVATION 5

Understanding Heritage. Types of Heritage. Heritage conservation – Need, Debate and purpose. Defining Conservation, Preservation and Adaptive reuse. Distinction between Architectural and Urban Conservation. International agencies like ICCROM, UNESCO and their role in Conservation

UNIT II CONSERVATION IN INDIA 8

Museum conservation – monument conservation and the role of Archeological Survey of India – role of INTACH – Central and state government policies and legislations – inventories and projects – select case studies – craft Issues of conservation –conservation project management.

UNIT III CONSERVATION PRACTICE 12

Listing of monuments – documentation of historic structures – assessing architectural character – historic report – guidelines for preservation, rehabilitation and adaptive re-use of historic structures – seismic retrofit and disabled access /services additions to historic buildings – heritage site management.

UNIT IV URBAN CONSERVATION 12

Over view of urban history of India and Tamil Nadu – understanding the character and issues of historic cities – select case studies of sites like Thanjavur, Kumbakonam, Kanchipuram, Chettinad – historic districts and heritage precincts.

UNIT V CONSERVATION AND URBAN PLANNING 8

Norms for conservation of heritage buildings and sites as part of Development Regulations - Conservation as a planning tool – financial incentives and planning tools such as TDR, (transferable development right) – Urban conservation and heritage tourism.

TOTAL: 45 PERIODS

OUTCOME:

- The students would gain an understanding of theneed and benefits of urban conservation.
- The students would be sensitized as well as informed to carry forth this understanding in the realm of practice/research.

REFERENCES:

1. A Richer Heritage: Historic Preservation in the Twenty – First Century by Robert E. Stipe.

2. A.G.K. Memon ed. Conservation of Immovable Sites, INTACH Publication, N.Delhi Seminar Issue on Urban Conservation.
3. B.K. Singh, State and Culture, Oxford, New Delhi.
4. Bernard Feilden, Conservation of Historic Buildings, 2nd Edition, Butterworth, 1994.
5. Christropher Brereton, The repair of Historic Buildings. Advice on principles and methods; English Heritage 1991.
6. Conservation Manual, Bernard Fielden
7. Donald Apple yard, The Conservation of European Cities, M.I.T. Press, Massachusetts.
8. James M. Fitch, Historic Preservation: Curatorial Management of the Built World by University Press of Virginia; Reprint edition (April 1, 1990)

CO5011 DISASTER MANAGEMENT OF CULTURAL RESOURCES L T P/S C
3 0 0 3

OBJECTIVES:

- The objective is to train and develop skills for Disaster Management of Cultural resources.

UNIT I INTRODUCTION 6

Introduction to Disaster Management - Analyze the vulnerability of cultural heritage for physical, socio-economic and political risks– Risksto Cultural Resources during disasters.

UNIT II DISASTER MANAGEMENT 6

Natural Hazards and risk preparedness – global, regional and Indian Context and international cooperation - prevention, mitigation and preparedness - Disaster response relief and recovery- Protecting Heritage in times of conflict and other emergencies.

UNIT III DISASTER MITIGATION IN INDIA 9

National Disaster Management System of India – Precaution to prone areas – Disaster assessment and estimation of loss – Techniques and Strategies for mitigating risks to cultural heritage - Agencies for rehabilitation of structural damages and rebuilding of structures – Role of NGOs

UNIT IV POST DISASTER MITIGATION 12

Planning for post-disaster recovery of cultural heritage – Training craftsmen and artisans for rehabilitation of structures in such situations – role of government in the post disaster period

UNIT V CASE STUDY 12

Selected case study of architectural and cultural rehabilitation for structures post natural disasters from India and abroad

TOTAL: 45 PERIODS

OUTCOMES:

- Assignment will be in the form of are port, site visit report, class reviews and tutorials covering topics mentioned above with suitable illustrations and supportive material.

REFERENCES

1. Harsh K. Gupta, Disaster management, ISBN: 8173714568.
2. Powell, Kenneth, Architecture Reborn: Converting Old buildings for New Uses, Rizzoli, University of Michigan, 1999.
3. Stratton, Michael, Industrial Buildings: Conservation and Regeneration, Taylar and Francis, 2009, ISBN:1135807817.