M. ARCH (GENERAL) – FULL TIME
CHOICE BASED CREDIT SYSTEM I TO IV SEMESTERS
CURRICULA & SYLLABI

M - ARCH GENERAL (SEMESTER I)						
SL. NO.	COURSE CODE	COURSE TITLE	L	T	P/S	C
THEORY						
1	GMA101	CONTEMPORARY PROCESSES IN ARCHITECTURAL DESIGNI	3	0	0	3
2	GMA102	URBAN CONSERVATION AND PRACTICE	2	0	2	3
3	GMA103	TRADITIONAL AND CONTEMPORARYLANDSACPES	3	0	0	3
4	GMA111	SUSTAINABLE AND GREEN BUILDING DESIGN	2	0	6	4
STUDIO						
1	GMA112	URBAN DESIGN STUDIO	2	0	6	6
TOTAL			12	0	14	19

M - ARCH GENERAL (SEMESTER II)						
SL. NO.	COURSE CODE	COURSE TITLE	L	T	P/S	C
THEORY						
1	GMA201	CONTEMPORARY PROCESSES IN ARCHITECTURAL DESIGN II	3	0	0	3
2	GMA202	PERFORMANCE EVALUATION IN BUILDINGS	2	0	2	3
3	GMA203	SERVICES IN HIGH RISE BUILDINGS	3	0	0	3
4		PROFESSIONAL ELECTIVE-I	3	0	0	3
5		PROFESSIONAL ELECTIVE-II	3	0	0	3
STUDIO						
1	GMA211	ADVANCED ARCHITECTURAL DESIGN STUDIO I	0	0	12	6
TOTAL			14	0	14	21

M - ARCH GENERAL (SEMESTER III)						
SL. NO.	COURSE CODE	COURSE TITLE	L	T	P/S	C
THEORY						
1	GMA301	EMERGING PRACTICES IN HOUSING	2	0	2	3
2	GMA302	RESEARCH METHODOLOGIES IN ARCHITECTURE	3	0	0	3
4		PROFESSIONAL ELECTIVE-III	3	0	0	3
5		PROFESSIONAL ELECTIVE-IV	3	0	0	3
STUDIO						
1	GMA312	ADVANCED ARCHITECTURAL DESIGN STUDIO II	0	0	12	6
2	GMA311	DISSERTATION	0	0	6	3
TOTAL			11	0	20	21

M - ARCH GENERAL (SEMESTER IV)						
SL. NO.	COURSE CODE	COURSE TITLE	L	T	P/S	C
STUDIO						
1	GMA411	THESIS	0	0	22	11
2	GMA401	BUILDING INFORMATION MODELLING	0	0	6	3
TOTAL			0	0	28	14

LIST OF ELECTIVES - M. ARCH (GENERAL)

S. NO.	COURSE CODE	COURSE TITLE	TYPE	L	T	P/S	C
1	GMA001	BUILDING MANAGEMENT AND CONTROL SYSTEMS	PE	3	0	0	3
2	GMA002	APPROPRIATE TECHNOLOGIES AND SUSTAINABLE CONSTRUCTION	PE	3	0	0	3
3	GMA003	ARCHITECTURE AND CRITICAL THEORY	PE	3	0	0	3
4	GMA004	GIS MODELLING IN URBAN PLANNING	PE	3	0	0	3
5	GMA005	ANTHROPOLOGY AND ARCHITECTURE	PE	3	0	0	3
6	GMA006	MATERIAL CONSERVATION	PE	3	0	0	3
7	GMA009	URBAN LANDSCAPE DESIGN	PE	3	0	0	3
8	GMA007	LANDSCAPE ECOLOGY AND PLANNING	PE	0	0	6	3
9	GMA010	WEB DESIGN AND PORTFOLIO PRODUCTION	PE	3	0	0	3
10	GMA008	SUSTAINABILITY AND ENERGY CONSERVATION IN LANDSCAPE ARCHITECTURE	PE	3	0	0	3
TOTAL				**27**		**6**	**30**

L- Lecture **T**- Tutorial **P**- Practical **S**- Studio **C**- Credits

PROFESSIONAL CORE COURSES (PC)

Sl. No.	Course Code	Course title	Category	Contact periods	L	T	P	C
1.	GMA101	CONTEMPORARY PROCESSES IN ARCHITECTURAL DESIGN I	PC	3	**3**	**0**	**0**	**3**
2	GMA102	URBAN CONSERVATION AND PRACTICE	PC	3	**2**	**0**	**2**	**3**
3	GMA103	TRADITIONAL AND CONTEMPORARYLANDSACPE	PC	3	3	0	0	3
4.	GMA111	SUSTAINABLE AND GREEN BUILDING DESIGN	PC	3	2	0	6	4
5	GMA112	URBAN DESIGN STUDIO	PC	8	2	0	6	6
6.	GMA201	CONTEMPORARY PROCESSES IN ARCHITECTURAL DESIGN II	PC	3	3	0	0	3
7	GMA203	SERVICES IN HIGH RISE BUILDINGS	PC	3	3	0	0	3
8	GMA211	ADVANCED ARCHITECTURAL DESIGN STUDIO I	PC	6	0	0	12	6
9	GMA301	EMERGING PRACTICES IN HOUSING	PC	3	2	0	2	3
10	GMA302	RESEARCH METHODOLOGIES IN ARCHITECTURE	PC	3	3	0	0	3
11	GMA312	ADVANCED ARCHITECTURAL DESIGN STUDIO II	PC	8	0	0	6	3
12	GMA411	THESIS	PC	12	0	0	22	11

PROFESSIONAL ABILITY ENHANCEMENT COURSES (PAEC)

Sl. No.	Course Code	Course Title	Category	Contact Periods	L	T	P	C
1.	GMA202	PERFORMANCE EVALUATION IN BUILDINGS	PAEC	3	2	0	2	3
2.	GMA401	BUILDING INFORMATION MODELLING	PAEC	6	0	0	6	3
3.	GMA311	DISSERTATION	PAEC	6	0	0	6	6

GMA101 CONTEMPORARY PROCESSES IN ARCHITECTURE DESIGN I L T P/SC
3 0 03

OBJECTIVES:

- To investigate the contemporary theories of media and their influence on the perception of space andarchitecture.
- To provide an overview of various contemporary design processes and its relation to computation.

UNITI INTRODUCTION 6

Investigation of contemporary theories of media and their influence on the perception of space and architecture. Technology and Art – Technology and Architecture – Technology as Rhetoric – Digital Technology and Architecture.

UNITII ASPECT OF DIGITALARCHITECTURE 9

Aspects of Digital Architecture – Design and Computation – Difference between Digital Process and Non-Digital Process – Architecture and Cyber Space – Qualities of the new space – Issues of Aesthetics and Authorship of Design – Increased Automatism and its influence on Architectural Form and Space.

UNITIII CONTEMPORARY PROCESS 12

Overview of various Contemporary design process and it relation to computation: Diagrams – Diagrammatic Reasoning – Diagrams and Design Process – Animation and Design – Digital Hybrid Design Protocols – Concept of Emergence - Introduction to Cellular Automata and Architectural applications – Genetic algorithms and Design Computation

UNITIV GEOMETRIES ANDSURFACES 12

Fractal Geometry and their properties – Architectural applications - Works of Zvi Hecker–- Shape Grammar - Shapes, rules and Label - Shape Grammar as analytical and synthetic tools- Combining Shape grammar and Genetic algorithm to optimize architectural solutions - Hyper Surface– Introduction to Hyper surface and concepts of Liquidarchitecture.

UNITV CASESTUDIES 6

Case studies- Study, understanding and analysis of known examples at the national and international levels which demonstrates the contemporary theories of media and their influence on the perception of space and architecture, contemporary design processes and its relation to computation.

TOTAL:45 PERIODS

OUTCOMES:

- Understanding of the effect of contemporary theories of media on contemporary architectural design.
- Understanding of various contemporary design process and their relation tocomputation

REFERENCES:

1. Peter Eisenmann, Diagram: An Original Scene of Writing, DiagramDiaries
2. MOVE, UNStudio
3. Grey Lynn, The Folded, The Pliant and The Supple, Animateform
4. Contemporary Techniques in Architecture, Halsted Press,2002
5. Ali Rahim, Contemporary Process in Architecture, John Wiley & Sons,2000
6. Walter Benjamin, Practices of Art in the Age of Mechanical Reproduction Colin press,1977
7. Work of Architecture in the Age of Mechanical Reproduction, Differences MIT press,1997.
8. William J Mitchell, the Logic of Architecture: Design, Computation and Cognition. MITPress, Cambridge, 1995
9. Marcos Novak, invisible Architecture: An Installation for the Greek Pavilion, Venice Biennale, 2000.

COURSE OUTCOMES (COs)	
The student will be able	
CO1	Understandingoftheeffectofcontemporarytheoriesofmediaoncontempo raryarchitecturaldesign.
CO2	Understandingofvariouscontemporarydesignprocessandtheirrelationtoco mputation
CO3	Analyse the new concepts of contemporary architecture which are the result of changing Parameters of technology.
CO4	To Evaluate the concepts of contemporary architecture in ration with ecology urbanization, social patterns, etc.
CO5	To Design with all the terms and terminology of contemporary architecture.
C06	To ApplyEffect of technology on architecture

Mapping of Course Outcomes with Program Outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	a	b	c	d	e	f	g	h	i	j	k	l
2	CO1	H		M	H					H	H		H
	CO2		H		M	H			M		L	H	
	CO3	H				L				M			H
	CO4		L							M		M	
	CO5	H	M	M	M				M		H		H
	C06			M			L						
3	Category	Professional Core (PC)											
4	Approval	6th Meeting of Academic Council											

GMA102 URBAN CONSERVATION AND PRACTICE L T P/S C

2 0 2 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 inIndia.

UNITI INTRODUCTION TOCONSERVATION 15

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 CONSERVATIONIN INDIA 15

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 IIICONSERVATION PRACTICE 15

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 IVURBANCONSERVATION 15

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 heritageprecincts.

UNIT V CONSERVATION ANDURBANPLANNING 15

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 :60 PERIODS

OUTCOMES:

- The students would gain an understanding of the need and benefits of urbanconservation.
- The students would be sensitised as well as informed to carry forth this understanding in the realm of practice/research

REFERENCES:

1. Donald Appleyard, The Conservation of European Cities, M.I.T. Press,Massachusetts.
2. James M. Fitch, Historic Preservation: Curatorial Management of the Built World by University
Press of Virginia; Reprint edition (April 1, 1990)
3. A Richer Heritage: Historic Preservation in the Twenty – First Century by Robert E.Stipe.
4. Conservation Manual, BernardFielden
5. Bernard Feilden, Conservation of Historic Buildings, 2nd Edition, Butterworth,1994.
6. B.K. Singh, State and Culture, Oxford, NewDelhi.
7. A.G.K. Memon ed. Conservation of Immovable Sites, INTACH Publication, N.DelhiSeminar Issue on UrbanConservation.
8. Christropher Brereton, The repair of Historic Buildings. Advice on principles andmethods; English Heritage1991.

COURSE OUTCOMES (COs)	
The student will be able	
CO1	An understanding of the need and benefits of urban conservation.
CO2	Sensitised as well as informed to carry forth this understanding in the realm of practice/research
CO3	Enhancing quality of life, as effective planning strategy, as means of particularization of place and as a way to address issues of memory andidentity.
CO4	To analyse the issues and practices of urban conservation at various levels and scales.
CO5	Apply and overview of current status of conservation in India.
C06	Gainknowledgeofdifferentmethodsforassessingarchitecturalvaluesandsignificance

Mapping of Course Outcomes with Program Outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	a	b	c	d	e	f	g	h	i	j	k	l
2	CO1			M	H					H	H		H
	CO2		H		H	H	M		M		L	H	
	CO3	M				L		M		M			H
	CO4		L							M		L	
	CO5	M	L	M	M				L				H
	C06			M			L						
3	Category	Professional Core (PC)											
4	Approval	5th Meeting of Academic Council											

GMA103 TRADITIONAL AND CONTEMPORARY LANDSCAPES L T P/S C
3 0 03

OBJECTIVES:

- To study the social and cultural influences on traditional landscapes through analysis of form and space, siting principles of each period withexamples.
- To study contemporary landscape and the manifestation in the western and Indiancontext.

UNITI EASTERN TRADITIONS ANDISLAMICLANDSCAPES 15

Early traditions and beliefs about landscape and environment in east. Ancient Indian traditions – Vedic, Jainism, Buddhism and later Hindu movements. Symbolic meanings and sacred value of naturallandscapes.

Transfer of concepts through Buddhism to China –Chinese landscape development – gardens of China – Pre Buddhist Japanese landscapes – impact of China on Japanese gardens – Japanesegardens.

Nomadic culture of central Asia – advent of Islam – concept of Paradise as a garden – spread of Islamic traditions to the West and East. Eastern expression of Islam – Samarkhand and Mughul India – Tomb and pleasure garden – Moghul concepts of site planning. Western expression of Islam – Spain Alhambra and General life, Granada.

UNITII RENNAISSANCE AND THE EVOLUTION OFNEWTHOUGHTS 6

Development of the enclosed garden in the Middle ages. Renaissance – Italy, France and England, Romanticism. Influences and linkages across cultures. Study of the western landscapes till the nineteenth century.

UNITIII THE EVOLUTION OF THEMODERNLANDSCAPE 15

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.

UNITIV THE MODERN MOVEMENT, CONTEMPORARYCONCEPTS ANDCONCERNS 9

Changing concepts of space and the relationship of architecture to landscape. Study of selected works of modern architects and landscape architects. Postwar 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.

UNITV INDIAN CONTEXT 6

Issues in contemporary India, Analysis and understanding of philosophies of contemporary landscape works in India, case studies.

TOTAL : 45 PERIODS

OUTCOMES:

- Relationship between culture and Landscapedesign.
- Perception of open spaces in differentcultures.

REFERENCES :

1. Geoffrey and Susan Jellico, The landscape of Man, Thames & Hudson Publication,1995
2. Robert Holden, New landscape Design, Lawrence king publishing, UK,2003
3. Penelope Hill, Contemporary history of garden design, Birkhauser publishers,2004
4. Elizabeth Barlow Rogers, Landscape Design – A Cultural &Architectural History, Hary & Abram
inc. publishers, 2001.
5. Phillip Pregill & Nancy Volkman, Landscapes in History, Van Nostrand publishers,1993.
6. Jonas Lehrman, Earthly Paradise- Garden and courtyard in Islam, Thames and Hudson,1980.
7. G.B.Tobey, A history of American Landscape architecture, American elsevier Publishing Co.,NY,1973.
8. Pieluigi Nicholin, Francesco Repishti, Dictionary of today's landscape designers, Skira Editores
P.A, 2003.

COURSE OUTCOMES (COs)	
The student will be able	
CO1	Relationship between culture and Landscape design.
CO2	Perception of open spaces in differentcultures.
CO3	To study the social and cultural influences on traditional landscapes through analysis of form and space, siting principles of each period withexamples.
CO4	To study contemporary landscape and the manifestation in the western and Indian context.
CO5	Concepts of individuality in visual creations are enriched through the subjects Drawing, Painting and Composition.
CO6	Courses of studies in Sculpture have been planned with emphasis on the creative expression as well as a refinement in a student's development in practical/technical aspects.

Mapping of Course Outcomes with Program Outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	a	b	c	d	e	f	g	h	i	j	k	l
2	CO1		M				M				H		
	CO2	H			H					M			
	CO3		M				L				L		
	CO4	M			M			H					
	CO5		M			H							L
3	Category	PC											
4	Approval	4th Meeting of Academic Council											

GMA111 SUSTAINABLE AND GREEN BUILDING DESIGN L T P/S C
2 0 65

OBJECTIVES:

- To sensitize the students to the various aspects of sustainable and green building design in the context of global warming and climatechange
- To study the building material for its impact onenvironment.
- To expose the students to green ratedbuildings.

UNITI INTRODUCTION 15

Attitudes to architecture: a historical perspective- General premises and strategies for sustainable and green design- objectives and basis- Eco-mimicry as a design tool based on ecosystem analogy- theoretical basis for a sustainable and eco friendly design.

UNITII ECOHOUSE 30

The form of the house: the building as an analogy- design from first principles: conserving energy;working with climate: passive solar design; minimizing new resources; respect for users; respect for site and holism- photovoltaics and solar hot water systems; water usage; small scale wind systems and hydro power; Case studies- Studio project on design of eco houses: context specific.

UNITIII ENVIRONMENTAL IMPACT OF BUILDINGMATERIALS 15

Measuring the impact of building materials- calculating embodied energy- recycling and embodied energy- processing and embodied energy- time and embodied energy- embodied energy of different building materials- low energy building and masonry materials- life cycle analysis- Case studies and analysis.

UNITIV GREEN CONSTRUCTION ANDENVIRONMENTAL QUALITY 15

Sustainable architecture and Green Building: definition- Green building Evaluation Systems; LEED Certification; Green Globe Certification; Case studies which look at the environmental approachrenewable energy- controlling the water cycle- impact of materials on the environment – optimizing construction- site management- environmental management ofbuildings.

UNITV SUSTAINABLE AND GREEN BUILDINGDESIGNSTUDIO 30

This studio will explore collaborative learning to explore, investigate and apply various parameters of sustainability for design development of projected building/ urban scenarios

TOTAL: 120 PERIODS

OUTCOMES:

- An understanding onsustainability
- Knowledge on renewable energy and energy conservation through materialusage.
- A through understanding on designing greenbuildings.

REFERENCES:

1. Ken Yeang; Eco design - A Manual for Ecological design, Wiley- Academy;2006
2. Sue Roaf et all; Ecohouse: A design Guide; Elsevier Architectural Press;2007
3. Thomas E Glavinich; Green Building Construction; Wiley;2008
4. Brenda and Robert Vale; Green Architecture- Design for a Sustainable Future; Thamesand Hudson;1996.
5. Daniel Vallero and Chris Brasier; Sustainable Design- The science of sustainability and Green
Engineering; Wiley; 2008

COURSE OUTCOMES (COs)	
The student will be able	
CO1	An understanding on sustainability
CO2	Knowledge on renewable energy and energy conservation through material usage.
CO3	A thorough understanding on designing green buildings.
CO4	To expose the students to green rated buildings.
CO5	Analyze the building material for its impact on environment.
C06	Apply and design in the context of global warming and climate change.

Mapping of Course Outcomes with Program Outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	a	b	c	d	e	f	g	h	i	j	k	l
2	CO1			M	H					H	H		M
	CO2		H		H	M	M		M		L	L	
	CO3	L				L		M		M			M
	CO4		H							M		L	
	CO5	M	L	H	M				L				M
	C06			M			M						
3	Category	Professional Core (PC)											
4	Approval	3rd Meeting of Academic Council											

GMA112 URBAN DESIGN STUDIO L T P/S C
2 0 65

OBJECTIVES:

- To introduce and identify the issues/ aspects of contemporary urban form through study of history of urbanism, contemporary urban theories, urbanism and urban designprecedents.
- To intervene through design, addressing the effects of some of these aspects/issues

UNITI INTRODUCTION 25

Introduction to origin and evolution of cities and urbanism- historic review of the development of the urban design discipline and principles- introduction to various issues and aspects that impinge on the urban condition today such as globalisation, digital revolution, contemporary processes,sustainability, splintering urbanism through changes in information and communication networks and transportation.

UNITII READING THEURBAN FABRIC 20

Introduction to different ways of reading of the urban fabric- ways of interpreting the city such as type, phenomenology, etc.,- tools of mapping.

UNITIII SUSTAINABLE DEVELOPMENT 25

Sustainable development– Sustainable Cities Program - Revitalization of brown field sites- Transit Metropolis- Case Studies.

UNITIV RESTRUCTURINGTHECITY 20

Contemporary Processes in Urban Design- Place making in the Digital Age – reconfiguring public realm – Urbanisation and Excursions on density.

UNITV APPLICATION OF DIGITAL TECHNIQUES INURBANDESIGN 30

Depiction of Urban Spaces in Digital Media - Role of Digital Media in Reconfiguring Urban Space –Case studies – Application of Geographic Information Systems, diagramming and 3D Modeling tools in Urban Design - Digital Media as a facilitator for participatory, sustainable urbandesign.

TOTAL:120 PERIODS

OUTCOMES:

- The students would become aware of the determinants of contemporary urban formand ways to understand theireffects.
- The students would learn to address issues of contemporary urban form through planning and design using appropriatetools.

REFERENCES :

1. Crigore Birdea (ed.), Virtual Reality Technology. Wiley and Sons, New York,1994
2. William J. Mitchell, City of Bits: Space, Place and the infobahn, MIT Press,1996
3. Charles Correa, Housing and Urbanisation, Thames and Hudson,1999
4. Neil leach, Designing for the digital world, John Wiley and Sons,2002
5. Edmond Bacon, Design of Cities, Penguin1967
6. Christian Norberg Schulz- Towards a Phenomenology of Architecture, Rizzoli New York, 1980
7. Donald Appleyard, Kevin Lynch, John R. Myer, The View from the Road, MIT Press1965
8. Benjamin Woolley, Virtual Worlds. Penguin Books,19931994
9. Peter Calthorpe, The Next American Metropolis, Princeton Architectural Press,1993
10. Thomas A, Horan, Digital Places: Building our city of bits, Urban Land Institute,2000

COURSE OUTCOMES (COs)	
The student will be able	
CO1	Understand the determinants of contemporary urban form and ways to understand their effects.
CO2	Knowledge to address issues of contemporary urban form through planning and design using appropriate tools.
CO3	Analyze the issues/ aspects of contemporary urban form through study of history of urbanism, contemporary urban theories, urbanism and urban design precedents.
CO4	Apply and addressing the effects of some of these aspects/ issues.
CO5	Analyze on globalization, digital revolution, contemporary processes, sustainability, etc.
C06	Application of Geographic Information Systems, diagramming and 3D Modeling tools

Mapping of Course Outcomes with Program Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	a	b	c	d	e	f	g	h	i	j	k	l
2	CO1	L		M	M					H	H		L
	CO2		H		H	M	M		M		L	M	
	CO3	L				L		M		M			M
	CO4		L							M		L	
	CO5	H	L	H	M			H	L				H
	C06			M		L	M						
3	Category	Professional Core (PC)											
4	Approval	7th Meeting of Academic Council											

GMA201 CONTEMPORARY PROCESSES IN ARCHITECTURAL DESIGN II L T P/S C
3 0 03

OBJECTIVES:

- To provide an overview of various contemporary architects in terms of their works, design philosophies andprocesses.
- To investigate the effect of various digital technologies on architecture in the real and virtual Realms.

UNITI QUALITIES OFVIRTUAL ARCHITECTURE 9

Discussing the differences between the real and virtual space. Virtual space as the potential space.Qualities of the new space: Disconnection of the body, new laws of proximity and increased automatism and its influence on architectural form and space

UNITII MEDIA ANDARCHITECTURE 9

Visions unfolding/ Media Architecture as desirable/ Films as a space for virtual architecture.

UNITIII ISSUES 9

Towards new paradigm – A myth or a promise. / Need versus desire/ anxiety of new/ identity andFashion.

UNITIV IDEAS AND WORKS OFCONTEMPORARY ARCHITECTS 12

Ideas and works of contemporary architects - Greg Lynn, Reiser + Umemotto, Lars Spuybroek / NOX Architects, UN studio, Diller Scofidio, Dominique Perrault, Decoi, Marcos Novak, Foreign Office Architects, Asymptote, Herzog and de Meuron, Neil Denari.

UNITV SEMINARPRESENTATION 6

Students presentation on the ideas and works of architects known for process oriented approach to architecture. Topics to be discussed with course faculty prior topresentation.

TOTAL: 45PERIODS

OUTCOMES:

- The student will learn about various design methodologies employed by contemporary architects.
- The student will be acquainted with the use of computation and digital technologies in contemporary architecturaldesign.
- The student will learn to investigate the influence of various media, especially films, on architecture and viceversa.

REFERENCES:

1. L. Convey et. al. Virtual Architecture, Batsford,1995.
2. William J Mitchell, City of bits: Space, Place and the Infobahn. MIT Press, Cambridge,1995.

COURSE OUTCOMES (COs)	
The student will be able	
CO1	Knowledge about the various design methodologies employed by contemporary architects
CO2	Analyse the use of computation and digital technologies in contemporary architectural design.
CO3	Evaluate the influence of various media, especially films, on architecture and viceversa.
CO4	Analyse the contemporary architecture works, design philosophies and processes.
CO5	To Design with all the terms and terminology of contemporary architecture.
C06	Apply the effect of various digital technologies on architecture in the real and virtual Realms.

Mapping of Course Outcomes with Program Outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	a	b	c	d	e	f	g	h	i	j	k	l
2	CO1	M		L	L					H	H		L
	CO2	L	L		M								
	CO3	M						M					M
	CO4		H										
	CO5	L	M	L	L			H	L		L		H
	C06			M									
3	Category	Professional Core (PC)											
4	Approval	4th Meeting of Academic Council											

GMA202 PERFORMANCE EVALUATION OF BUILDINGS L T P/S C
2 0 23

OBJECTIVE:

- To investigate the simulation and audit techniques for assessing the energy performance, environmental response and impact of builtform.

UNITI INTRODUCTION TO BUILDINGPERFORMANCEEVALUATION 3

Emerging role of performance evaluation in building design and master planning- Performance audit and rating systems- GRIHA, LEED IGBC and BREAM – Architectural Computation and performance audit- Introduction to ECOTECT.

UNITII PRINCIPLES OF SUSTAINABLE DESIGN 12

E's of sustainability **-** Integrated approach to environmental design – Case studies – Comparative analysis of green rating systems, LEED, BREAM and GRIHA – Cognitive , analytical and simulated modeling and design of buildings. Zero Carbon Footprint Building.

UNITIII ENVIRONMENTAL ASSESSMENT METHODS AND MODELING FORPASSIVE SYSTEMS. 12

Modelling and experimental techniques for building assessment/ evaluation and design – Basics of thermal comfort, solar shading/access/ control, day lighting, acoustics air movement etc. – issues and opportunities with current assessment modes/ evaluation tools- Evaluation and assessment based on Building type/ function and program – Building performance with respect to function, program, micro climate, urban planning, envelope design, material – Computer studio and simulation-Mathematical models of heat and mass transfer phenomena through building components: transfer function methods and numerical methods – Models of radiative and convective heat transfer phenomena within buildings

UNITIV ADVANCE ECOTECT ANDENERGY MODELLING 12

Integration of ECOTECT with BIM, RAPID ENERGY MODELLING- Modelling and performance simulation of existing buildings – residential-institutional- design of a new residential building withECOTECT

UNITV SEMINAR AND CASESTUDYPRESENTATION 6

Case study presentation of students on performance evaluation of a building identified by them and approved by the course faculty – Seminar on topics approved by the course faculty.

TOTAL: 45 PERIODS

OUTCOMES:

- The students will gain knowledge on environmental assessment methods, audit and simulationtechniques.
- Will add value to architectural design processes and equip students with energymodeling skills.

REFERENCES:

1. Energy Audit of Building Systems – Moneef Krarti (Ph.D) – CRC Press2000
2. Clarke, J.A., "Energy simulation in building design", Adam Hilger Ltd, Bristol,1985
3. ESRU,. "ESP-r A Building Energy Simulation Environment; User Guide Version 9 Series. "ESRU Manual U 96/1, University of Strathclyde, Energy Systems Research Unit, Glasgow, 1996.
4. Kabele, K., "Modeling and analyses of passive solar systems with computer simulation", in Proc. Renewable energy sources, PP. 39 – 44, Czech Society for Energetics Kromeriz 1998 (inCzech).

COURSE OUTCOMES (COs)	
The student will be able	
CO1	Knowledge on environmental assessment methods, audit and simulationtechniques.
CO2	Evaluate the architectural design processes and equip students with energy modeling skills.
CO3	Analyse the techniques for assessing the energy performance, environmental response and impact of built form.
CO4	Evaluation and assessment based on Building type/ function and program
CO5	Design implementing Performance audit and rating systems
C06	Analyse a case study on various performance evaluation in buildings.

Mapping of Course Outcomes with Program Outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	a	b	c	d	e	f	g	h	i	j	k	l
2	CO1	L							M				M
	CO2				H							M	
	CO3		M					L					M
	CO4			L		H				L			
	CO5	L											L
	C06						M					H	
3	Category	Professional Ability Enhancement Courses (PAEC)											
4	Approval	5th Meeting of Academic Council											

GMA203 SERVICES IN HIGH RISE BUILDINGS L T P/S C
3 0 03

OBJECTIVES:

- This course will examine various services in high risebuildings.
- Understand how services integration can translate into an intelligent and energy efficient system which will enable sustainability of thestructure.

UNITI INTRODUCTION 3

Standards of high Rise buildings- Indian Standards and Global Standards on High Rise Buildings;Introduction to various services; their significance with regards to High Rise Buildings; Some examples of Buildings and services used in them A brief on evolution of High Rise Buildings.Aspects and Integration of services- Concepts of Intelligence Architecture and BuildingAutomation

UNITII WATER SUPPLY ANDWASTE DISPOSAL 9

Water supply and waste water collection systems- water storage and distribution systems- Planning and Design- Selection of pumps- rain water harvesting – Sewage collection systems and recycling of water- solid waste disposal . “Some latest Trends Observation, NBC’s recommendations. in these areas can be included.

UNITIII HVAC, ELECTRICAL ANDMECHANICAL SYSTEMS 15

Natural and Mechanical Ventilation systems- Air conditioning systems and load estimation- Planning and design for efficiency-Basic concepts- Automation and Energy Managementconcepts.Natural lighting systems- Energy efficiency in lighting systems- load and distribution-Planning and Design for energy efficiency- Automation- basic concepts , Glass and Glazing system for natural lighting. Types of elevators, systems and services- Lobby design- Escalators- safety principles, Some latest Trends, NBC’srecommendations.

UNITIV SAFETYAND SECURITY 6

Security systems- Access Control and Perimeter Protection- CCTV Intruder alarms- Passive fire safety- Fire Detection and Fire Alarm Systems- Planning and Design- NBC Some latest Trends

UNITV CASESTUDIES 12

Case Studies of High Rise buildings and skyscrapers through appropriate examples- Norman Foster; Ove Arup; Ken Yeang, etc.

TOTAL: 45 PERIODS

OUTCOME

- Students can apply some or all of these services in one of their designprojects.

REFERENCES:

1. William J. Mcguinness, Benjamin Stein and John S. Reynolds, Mechanical and Electrical Equipment for Buildings, John Wiley & Sons, Inc.1980.
2. Donald Watson, Michael J. Crosbie and John Hancock Callender, Time-Saver Standards for Architectural Design Data, Mcgraw – Hill International Editions,1997.
3. A K Mittal, Electrical and Mechanical Services in High Rise Buildings Design andEstimation Manual,2001
4. Yahya Mohamad Yatim, Fire Safety Issues in High-Rise Residential Buildings: escape routes design and specification, Lambert Academic Publishing,2011
5. Johann Eisele and Ellen Kloft, High-Rise Manual, Birkhäuser-Publishers for Architecture, 2003

COURSE OUTCOMES (COs)	
The student will be able	
CO1	Apply some or all of these services in oneof their design projects.
CO2	Centric Knowledge of service base high rise design projects.
CO3	Understand the services integration.
CO4	Analyze on intelligent and energy efficient system which will enable sustainability of the structure
CO5	Apply various safety systems in high rise buildings
C06	Analyze a case study on various services in high rise buildings.

Mapping of Course Outcomes with Program Outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	a	b	c	d	e	f	g	h	i	j	k	l
2	CO1	H	M						L				L
	CO2				M							M	
	CO3	M	L					L					M
	CO4			M		L				M			
	CO5	M											L
	C06					L	H					M	
3	Category	Professional Core (PC)											
4	Approval	4th Meeting of Academic Council											

GMA211 ADVANCED ARCHITECTURAL DESIGN STUDIO I **L T P/S C**
0 0 126

OBJECTIVES:

- To understand in depth the increasing complexity of buildings today with respect to technology, services andplanning.
- To design within thiscontext.

The design studio will focus on emerging transformations in architecture in terms of aspects such as planning, building heights, floor area, technology, management, etc., It will explore the challenges of designing high rise and high tech buildings. It will enable collaborative learning through exploration,investigation and application of various parameters such as energy efficiency, green concepts,sustainability, services. The studio will integrate all these aspects through appropriate design projects.

OUTCOMES:

- Students would be made aware of the emerging technical areas ofarchitecture.
- Students would get an understanding of designing optimally, balancing the basics of architectural design with emerging new technical and planningparameters.

TOTAL:180 PERIODS

COURSE OUTCOMES (COs)	
The student will be able	
CO1	Understand the emerging technical areas of architecture.
CO2	Understanding of designing optimally, balancing the basics of architectural design with emerging new technical and planning parameters.
CO3	Ability to design buildings as positive additions to the city.
CO4	Ability to plan infrastructural buildings in positive additions to the city.
CO5	Understand in depth the increasing complexity of buildings
C06	Explore the challenges of designing high rise and high tech buildings.

Mapping of Course Outcomes with Program Outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	a	b	c	d	e	f	g	h	i	j	k	l
2	CO1		L						L				L
	CO2				H	M				M		M	
	CO3	L	M				L	L					M
	CO4			L		M				M			
	CO5	H			H			M					L
	C06					M	L					M	
3	Category	Professional Core (PC)											
4	Approval	4th Meeting of Academic Council											

GMA301 EMERGING PRACTICES IN HOUSING **L T P/S C**
2 0 23

OBJECTIVE:

- This course will examine the redefinition of contemporary housing within the contextsof multicultural cities due toglobalisation.

UNITI INTRODUCTION **10**

Introduction to this building type, from its industrial beginnings in London and Paris to New York City's Lower East Side and the 20th-century designs of Le Corbusier, Antonio Sant'Elia, and Mies van der Rohe to mention a few.
Investigation of contemporary life and its influence on space and architecture-Globalization and influences on economy- Alternate housing solutions: Commune, Co Housing, Cooperatives, etc.

UNITII SINGLE FAMILY, MULTI FAMILYHOUSING **12**

Review of latest developments in single family and multi family housing by examining the works of Wiel Arets, Shigeru Ban, Ben van Berkel, Kees Christiaanse, Philippe Gazeau, Frank O. Gehry,Steven Holl, Hans Kollhoff, Morger & Degelo, , Jean Nouvel, Kas Oosterhuis, MVRDV.

UNITIII HIGHDENSITY HOUSING **9**

Issues and concerns- Review of the current state of high density houses - the perspectives and future developments through a study of a few international projects.

UNITIV NEW FORMS OF LIVING AND HOUSING IN THEDIGITAL ERA **9**

Hyper Housing- Multi cultural Housing- lab rooms and cyber homes- Network housing- hybrid buildings- individual sheltered residences; residence cities and bio homes for senior citizens- Works of UN Studio; FOA;; OMA

UNITV DEFINITION OF HOUSING IN THE INDIANCONTEXT **20**

Design strategies in the context of Indian metropolitan cities will be explored through a studio Exercise.

TOTAL:60 PERIODS

OUTCOME:

- The students will understand the latest development, issues and design strategies governing the Housing in National and internationallevel.

REFERENCES:

1. Manuel Gausa and Jaime Salazer; Housing+ Single Family Housing; Birkhauser- Publishers for Architecture;2005
2. Vincene Guillart; Sociopolis:Project for a city of the Future; ACTAR;2004
3. Jingmin ZHOU; Urban housing Forms; Architectural Press;2005
4. Adrienne Schmitz; Multifamily Housing Development Handbook; Urban Land Institute;2001
5. Carles Bronto; Innovative Public Housing; Gingko Press;2005.

COURSE OUTCOMES (COs)	
The student will be able	
CO1	To learn latest developmental and architectural
CO2	Understand the issues of latest development
CO3	To know about the design strategies of modern architects
CO4	Analyze the evolutionof modern housing
CO5	Evaluate the development in various countries
C06	To understand international standards of Housing

Mapping of Course Outcomes with Program Outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	a	b	c	d	e	f	g	h	i	j	k	l
2	CO1	H	H	M		M			M	H	H		H
	CO2	L		M	M						L	H	L
	CO3		L			L			M				H
	CO4									M		M	H
	CO5		M	M	M				M		H		
	C06				M				L				
3	Category	Professional Core(PC)											
4	Approval	32nd Meeting of Academic Council											

GMA302 RESEARCH METHODOLOGIES IN ARCHITECTURE L T P/S C
3 0 03

OBJECTIVES:

- To make the students to distinguish various theoretical ideologies influencing the philosophy and values ofarchitecture.
- To establish the sense of systematic inquiry in students mind to analyze and infer the issues and aspects relating toArchitecture.

UNITI INTRODUCTION 9

Basic research issues and concepts- orientation to research process- types of research: historical,qualitative, co-relational, experimental, simulation and modeling, logical argumentation, case study and mixed methods- illustration using researchsamples.

UNITII RESEARCH PROCESS 9

Elements of Research process: finding a topic- writing an introduction- stating a purpose of studyidentifying key research questions and hypotheses- reviewing literature- using theory-defining,delimiting and stating the significance of the study, advanced methods and procedures for data collection and analysis- illustration using research samples.

UNITIII RESEARCHING ANDDATA COLLECTION 9

Library and archives- Internet: New information and the role of internet; finding and evaluating sources- misuse- test for reliability- ethics Methods of data collection- From primary sources: observation and recording, interviews structured and unstructured, questionnaire, open ended and close ended questions and the advantages,sampling- Problems encountered in collecting data from secondary sources.

UNITIV REPORT WRITING 6

Research writing in general- Components: referencing- writing the bibliography- developing the outline- presentation; etc.

UNITV CASESTUDIES 12

Case studies illustrating how good research can be used from project inception to completionreview of research publications

TOTAL: 45 PERIODS

OUTCOMES:

- The student will develop the skill to identify, decipher and interpret the issues relating to Architecture, based on research enquirymethods.
- The student will widen the information and will prepare the students for scientific method of researching and researchprocess.

REFERENCES:

1. Linda Groat and David Wang; Architectural ResearchMethods;
2. Wayne C Booth; Joseph M Williams; Gregory G. Colomb; The Craft of Research, 2nd Edition; Chicago guides to writing, editing andpublishing;
3. Iain Borden and Kaaterina Ruedi; The Dissertation: An Architecture Student's Handbook; Architectural Press;2000
4. Ranjith Kumar; Research Mehodology- A step by step guide for beginners; Sage Publications;
2005
5. John W Creswell; Research design: Qualitative, Quantitative and Mixed Methods Approaches;
Sage Publications; 2002

COURSE OUTCOMES (COs)	
The student will be able	
CO1	To introduce methods and process of research, in order to understand the significance of the same with reference to landscape architecture and to develop skills of conducting and communicating research.
CO2	Introduction to research: Types of research and the process of formulating a research Project and their applications
CO3	Research Methods: Various methods of research, their relative advantages and disadvantages
CO4	Research Writing: Introduction to technical writing and presenting a research paper
CO5	Research Publication: Introduction to various form of publication of research
C06	Cyber security and laws related to the same. Plagiarism in research: Introduction to the concept, Problem of plagiarism & software to check the same

Mapping of Course Outcomes with Program Outcomes (POs) (H/M/L indicates strength of correlation) H-High, M-Medium, L-Low													
	CO1	H	H	M		M			M	H	H		H
	CO2		L			L			M				H
	CO3		L			L			M				H
	CO4									M		M	H
	CO5		M	M	M				M		H		
	C06				M				L				
3	Category	Professional Core(PC)											
4	Approval	32nd Meeting of Academic Council											

GMA311 DISSERTATION **L T P/S C**
0 0 63

OBJECTIVES:

- To expose the students to the various thrust areas inarchitecture.
- To inculcate the spirit of research in architecture by providing opportunities to read on variousissues.
- To expose the students to the finer details of technicalwriting.
- To provide a platform for a prelude to the 'DesignThesis'.

Dissertation is best expressed as 'Design in text'. It offers an opportunity to look at the research component in architecture 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 extensivearguments.

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 to a jury at the end of thesemester.

TOTAL: 90 PERIODS

OUTCOMES:

- A Dissertation book which is based on accepted norms of technicalwriting.
- An understanding leading to formation of thesisideas.

REFERENCES:

1. Iain Borden and Kaaterina Ruedi; The Dissertation: An Architecture Student's Handbook; Architectural Press;2000.
2. Linda Grant and David Wang, Architectural Research Methods, John Wiley Sons2001.
3. Wayne C Booth; Joseph M Williams; Gregory G. Colomb; The Craft of Research, 2nd Edition; Chicago guides to writing, editing andpublishing.
4. Ranjith Kumar; Research Mehodology- A step by step guide for beginners; Sage Publications;
2005
5. John W Creswell; Research design: Qualitative, Quantitative and Mixed Methods Approaches; Sage Publications;2002.

COURSE OUTCOMES (COs)	
The student will be able	
CO1	Develop the skill to identify, decipher and interpretissues relating to architecture based on researchenquiry methods**.**
CO2	UnderstandCO2 Analyse different methods of conducting research and research writing.
CO3	Redefine a social Problem into a Research Problem,generate a methodology to prove it and convert it intotechnical /Popular Reports.
CO4	Apply,Analyseand CreateCourse Level Assessment Questions
CO5	Enumerate the types of Research and Illustrate with examples. & Discuss the Research Process in detail.
C06	Analyse different methods of conducting Research and suggest a suitable method for a particularResearch & Discuss in detail the criteria for selecting a sampling procedure.

Mapping of Course Outcomes with Program Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	a	b	c	d	e	f	g	h	i	j	k	l
2	CO1	H	H	M		M			M	H	H		H
	CO2	L		M	M						L	H	L
	CO3		L			L			M				H
	CO4									M		M	H
	CO5		M	M	M				M		H		
	C06				M				L				
3	Category	Professional Core(PC)											
4	Approval	32nd Meeting of Academic Council											

GMA312 ADVANCED ARCHITECTURAL DESIGN STUDIO II L T P/S C
0 0 126

OBJECTIVES:

- To understand contemporary processes and tools in architecturaldesign.
- To integrate the processes and tools in the design of projects, including thosewith

increased complexity of parameters.The design studio will focus on the role of emerging tools and processes for understanding and of complex and macro forces in the realm of the built environment as well as designing within this context. It would explore relationships between user group activity, movement, landform and urban form using diagramming and mapping tools to come up with creative prescriptions of certain projected scenarios. The studio will also emphasize on collaborative learning processes. The projects would be of macro scale involving large campus/ township oriented architectural projects as well as urbandesign.

TOTAL: 180 PERIODS

OUTCOMES:

- Students would be aware of contemporary processes and tools ofdesign.
- Students would use these processes and tools in the design projects to identify and address

specific aspects of the project, as well as integrate complexity of connections andissues.

COURSE OUTCOMES (COs)	
The student will be able	
CO1	To understand site context and to resolve complex landscape issues in urban and rural fabric, dealing with residential / commercial / institutional / recreational land use in relation to landform, vegetation & water
CO2	Documentation & Mapping, Analysis, Synthesis, Suitability, Zoning and planning with landscape land uses (for medium to large scale projects
CO3	Evolving landscape structure for sites & suggesting an appropriate landscape design with respect to ecological, functional, cultural & visual context.
CO4	Process of landscape project formulation and landscape design development/planning in response to contextual analysis, synthesis & theoretical bearings
CO5	Students will work on above mentioned in detail and will submit the work in the form of drawings and/ models
C06	To resolve complex landscape issues in urban and rural fabric with landscape design and Planning & To be able to derive an open space

Mapping of Course Outcomes with Program Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	a	b	c	d	e	f	g	h	i	j	k	l
2	CO1	H	H	M		M			M	H	H		H
	CO2	L		M	M						L	H	L
	CO3		L			L			M				H
	CO4									M		M	H
	CO5		M	M	M				M		H		
	C06				M				L				
3	Category	Professional Core(PC)											
4	Approval	32nd Meeting of Academic Council											

GMA401 BUILDING INFORMATION MODELING L T P/S C
0 0 63

OBJECTIVE:

- To equip students with skills and information to build comprehensive Building Information Models (BIM) using appropriate Digital software andMedia.

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UNITI INTRODUCTION TOTHEFUNDAMENTALS 10

Key concepts of BIM - reading and manipulating the software Interface - navigating withinviews -selection methods - the importance of levels and grids- creating walls, doors, windows, and components - working with essential modification commands and load family. Creating floors, ceilings, and stairs - working with type and instance parameters - importing CAD drawings - understanding the project browser and type properties palettes - adding sheets - inserting views onto sheets - adding dimensions and text to the mode and plotting.

UNITII ADVANCED MODELING –FAMILY TYPES AND TOPOSURFACE MODELLING 20

Creating curtain walls, schedules, details, a custom family, and family types - “flex” a family with family types and work with reference planes - creating rooms and an area plan - tag components -customize existing wall styles. Create and edit a toposurface, add site and parking components -draw label contours - work with phasing - understand groups and links - work with stacked walls -and learn the basics of rendering and create a projecttemplate.

UNITIII RENDERING ANDMATERIALAPPLICATION 20

Creating custom walls, floors, and roofs - keynoting - working with mass elements - enhancing rendering with lighting - producing customized materials - Using sun and shadow settings - Walkthrough technique - adding decals - working with design options and worksets - and calculating energy analysis - managing revisions

UNITIV BIM FOR COST ESTIMATING, PROJECT PHASING AND ADMINISTRATION 15

Model based Cost Estimating - Challenges in cost estimating with BIM- Cad geometrics vs BIM element description- Visual data models - Material substitutions and value engineering- detailed estimates and take-off sheets- XML and automated cost estimate- project phasing and management- 4D modeling -BIM for project lifecycles.

UNITV BIM FOR BUILDINGENERGYSIMULATION 25

Energy simulation for conceptual BIM models using massing- Detailed modeling using design elements- Rapid energy modeling and simulation with Autodesk® Revit® Conceptual Energy Analysis features to simulate performance from within Revit Architecture -Use Autodesk® Green Building Studio® to produce energy consumption, carbon neutrality and renewable potential reports.

TOTAL : 90 PERIODS

OUTCOMES:

- This is a project-based course where students gain knowledge on the implementation of BIM concepts throughout the lifecycle of a building, from planning and design, to construction and operations.
- The students will learn about how to use BIMs for building energy performance simulation, constructionadministration

REFERENCES:

1. Eastman, C.; Teicholz, P.; Sacks, R.; Liston, K. (2008) BIM Handbook: A Guide to Building Information Modeling for Owners, Managers, Designers, Engineers and Contractors. NewYork: Wiley.
2. Ray Crotty;(2011) The Impact of Building Information Modelling: Transforming Construction. Spons Architecture PriceBook.

COURSE OUTCOMES (COs)	
The student will be able	
CO1	Develop building and infrastructure vocabulary to be able to describe a building, its components, and its systems, including the architectural, MEP (mechanical, electrical, plumbing), and structural components.
CO2	To understand and evolution and development of BIM from it origination to today.
CO3	To understand and able to compare, including advantages and disadvantages of BIM vs. 2D and 3D CAD
CO4	To understand and challenges and roadblocks still facing the use of BIM.
CO5	To understand and demonstrate proficiency of commonly used BIM software (Autodesk Revit), including project document development and professional presentation of a BIM model.
C06	To understand and understand applications of BIM, such as cost estimation, architectural renderings, interference checking, and modelling of energy consumption

Mapping of Course Outcomes with Program Outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	a	b	c	d	e	f	g	h	i	j	k	l
2	CO1	H	H	M		M			M	H	H		H
	CO2	L		M	M						L	H	L
	CO3		L			L			M				H
	CO4									M		M	H
	CO5		M	M	M				M		H		
	C06				M				L				
3	Category	Professional Core(PC)											
4	Approval	32nd Meeting of Academic Council											

GMA411 THESIS **L T P/S C**
0 0 22 11

OBJECTIVES:

- To integrate the knowledge gained in the previous semesters with respect to issues/ tools of architectural design at a more advancedlevel.
- To understand and identify issues appropriate to a particular project or area of architecture , through independent thinking as well as to design in a manner appropriate to the project context.

The students will synthesize the areas of knowledge, skills and techniques acquired in the various courses of the previous semesters through a thesis project of their choice. This thesis project would be a design project with a strong research component. The project would desirably extend the critical position developed within the theory and studio projects as well as dissertation. The scale of the project could extend from individual site to settlement levels. The initial process shall be rigorous, incorporating background research on the topic, case studies, documentation of project issues, context, site and building information, programming. The process would culminate in design interventions at scales appropriate to the topic. The project shall desirably have the potential to serve as a starting point for practice and/ or further research.

Students will submit a detailed proposal on their topic of interest(s). 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.

TOTAL: 330 PERIODS

OUTCOMES:

- Students would be able to integrate various contemporary/ advanced issues and techniques into the architectural designprocess.
- Students would be able to identify and go in depth into specific and appropriateaspects relating to the discipline of architecture and reflect this in the realm ofdesign.

COURSE OUTCOMES (COs)	
The student will be able	
CO1	To use all the skills acquired in the duration of preceding academic courses.
CO2	Methodically self-direct effort by choosing the project of choice, builds capacity to work independently and methodically in a variety of intellectually and professionally demanding contexts.
CO3	Learn to make an original and individual, creative contribution to the academic discipline and/or the professional field in some cases.
CO4	Be able to interpret the urban forms of the past and present.
CO5	Articulate their stance and position as a designer within discourses of urbanism.
C06	Research and analyse information relevant to developing the proposal

Mapping of Course Outcomes with Program Outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	a	b	c	d	e	f	g	h	i	j	k	l
2	CO1	H	H	M		M			M	H	H		H
	CO2	L		M	M						L	H	L
	CO3		L			L			M				H
	CO4									M		M	H
	CO5		M	M	M				M		H	W	
	C06				M				L				
3	Category	Professional Core(PC)											
4	Approval	32nd Meeting of Academic Council											

GMA001 BUILDING MANAGEMENT AND CONTROL SYSTEMS L T P/S C
3 0 03

OBJECTIVES:

- This course provides a detailed exposure to students regarding the design & application in the field of life safety, electronic security & services automationrequirements.
- To expose the students to the mandatory and inevitable integration of buildingmanagement systems in buildingconstruction.

UNITI SAFETY SYSTEMS – FIRE ALARM & PUBLICADDRESSSYSTEM 9

Objective of a Fire Alarm System, essential components of a Fire Alarm System, Type of detection technology currently in use and Statutory Standards to be followed in design. Explanation of the essential Clauses of the the codes, and various types of Technologies employed in the Fire Alarm System, basic knowledge on how a Fire Alarm system works, designed and installed.

Objective of a Public Address System, essential components of a Public AddressSystem, various types of technologies currently in use and designguidelines to be followed andbasic knowledge on how a Public Address System works, is designed and installed.

UNITII SAFETY SYSTEMS – FIRESUPPRESSION SYSTEM 9

Objective of a Fire Suppression System, Explanation on Fire triangle, Essential Components of a Fire Suppression System, different type of Fire Suppression Systems, detailed design criteria for Hand held extinguishers Wet Riser, Sprinkler Systems and various gas Based Fire Suppression System, and Type of Statutory Standards followed in Suppression, Explanation on the essential Clauses and Basic Knowledge on how a Fire Suppression System works, is designed andinstalled.

UNITIII SECURITY SYSTEMS – ACCESS CONTROL SYSTEMAND INTRUDER ALARM SYSTEM 9

Introduction to Access Control, Intruder Alarm, Essential Components of each System, and Various types of Technologies employed in the system, Basic knowledge as how they work, are designed and installed.

UNITIV SECURITY SYSTEMS – CCTV ANDPERIMETER PROTECTION 6

Introduction to CCTV, Perimeter protection system, Essential Components of each System, and Various types of Technologies employed in the system, Basic knowledge as how they work, are designed and installed.

UNITV INTEGRATED BUILDINGMANAGEMENT SYSTEM 12

The objective of the Integrated Building Management System (IBMS), the list of utility, safety & security systems that are generally monitored & controlled through IBMS, the various components of IBMS, types of integration with the utility, Safety & security systems, explanation in detail on how each utility, safety & security system is integrated to IBMS, details of various parameters that can be monitored & controlled on each utility, safety & security system and the basic knowledge on how they work, are designed and installed.

TOTAL: 45 PERIODS

OUTCOME:

・ To ensure that every architect understands & designs the buildings that facilitates safe, code compliant, secure & comfortable buildings for theoccupants.

REFERENCES:

1. Building Automation Systems – A Practical Guide to Selection and Implementation, Maurice Eyke
2. The Principles and Practice of Closed Circuit Television, Mike Constant & PeterTurnbull
3. Rules for Automatic sprinkler Installation – second edition – Pub: Tariff AdvisoryCommittee.
4. CCTV Surveillance, HermanKruegle.
5. National Building Code of India 2005 (PartIV)
6. Bureau of Indian Standards IS2189, IS2190, IS15105,IS13039.
7. Fire Suppression Detection System, John L.Bryan.
8. Security Systems and Intruder Alarm System, VivianCapel.

COURSE OUTCOMES (COs)	
The student will be able	
CO1	To ensure that every architect understands & designs the buildings that facilitates safe, code compliant, secure & comfortable buildings for the occupants.
CO2	This course provides a detailed exposure to students regarding the design & applicationinthefieldoflifesafety,electronicsecurity&servicesautomati on requirements
CO3	To expose the students to the mandatory and inevitable integration of building management systems in buildingconstruction.
CO4	Understand the History and Definition of Building Management Systems
CO5	Understand Control Basics Understand Direct Digital Control (DDC) systems for use in BMS
CO6	Implement Direct Digital Control Networking Basics Perform DDC Programming

Mapping of Course Outcomes with Program Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	a	b	c	d	e	f	g	h	i	j	k	l
2	CO1	H					M					M	
	CO2		M			M			L				
	CO3	M			M						H		
	CO4		H				H					L	
	CO5	L		L				M					
3	Category	PE(PROFESSIONAL ELECTIVE)											
4	Approval	14TH Meeting of Academic Council											

GMA002 APPROPRIATE TECHNOLOGIES AND SUSTAINABLE CONSTRUCTION **L T P/S C 3 0 03**

OBJECTIVES:

- The course will provide necessary knowledge and skills to enable the facilitation and transformation of places and spaces where culture and technology are in a state of rapid change and resources arescarce.
- It will examine self help techniques of construction, adaptation, repair and management to understand what is involved in sustainable construction of domestic and community architecture.

UNITI INTRODUCTION **6**

Architecture and the survival of the planet- Assessing patterns of consumption and their alternatives- Profit and politics- Natural building movement – new context for codes and regulations.

UNITII DESIGN PRINCIPLES **12**

Principle 1: Conserving energy; Principle 2: Working with Climate; Principle 3: minimizing new resources; Principle 4: respect for users; Principle 5: respect for site; Principle 6: holism- Illustrated with examples.

UNITIII SUSTAINABLE CONSTRUCTION **6**

Design issues relating to sustainable development including site and ecology, community and culture, health, materials, energy, and water- Domestic and Community buildings using self help techniques of construction; adaptation, repair and management.-.portable architecture.

UNITIV SYSTEMS, MATERIALSANDAPPLICATIONS **12**

Adobe- Cob- Rammed Earth- Modular contained earth- light clay- Straw bale- bamboo- earthen finishes, etc.- their sustainability; adaptability to climate; engineering considerations, and construction methods; Waste as a resource Portable architecture to Applications through specific casestudies.

UNITV CASE STUDIES FROM THE CONTEMPORARY SCENARIO **9**

Ranging from small dwellings to large commercial buildings, drawn from a range of countries to demonstrate best current practice

TOTAL: 45 PERIODS

OUTCOMES:

- An understanding on the needs of alternative technologies inbuildings.
- An exposure to sustainable materials andconstruction.

REFERENCES:

1. Brenda and Robert Vale; Green Architecture: Design for a sustainable future; Thamesand Hudsson;1996
2. Lynne Elizabeth and Cassandra Adams; Alternative Construction: ContemporaryNatural BuildingMethods
3. Victor Papanek; The Green Imperative; Thames and Hudson;1995
4. Steven Harris and Deborah Berke; Architecture of the Everyday; Princeton Architectural Press;
1997
5. Pilar Echavarria; Portable Architecture- and unpredictable surroundings; Page One Publishing
Pvt. Ltd.; 2005

COURSE OUTCOMES (COs)	
The student will be able	
CO1	Understand necessary knowledge and skills to enable the facilitation and transformation of places and spaces where culture and technology are in a state of rapid change and resources arescarce.
CO2	It will examine self help techniques of construction, adaptation, repair and management to understand what is involved in sustainable construction of domestic and communityarchitecture.
CO3	An understanding on the needs of alternative technologies inbuildings.
CO4	An exposure to sustainable materials andconstruction.
CO5	Design issues relating to sustainable development including site and ecology
CO6	Portable architecture to Applications through specific casestudies.

Mapping of Course Outcomes with Program Outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	a	b	c	d	e	f	g	h	i	j	k	l
2	CO1	L					M					M	
	CO2		H			H					M		
	CO3	M			M				H				
	CO4		L				L					M	
	CO5	H		H				M					
3	Category	PE(PROFESSIONAL ELECTIVE)											
4	Approval	10TH Meeting of Academic Council											

GMA003 ARCHITECTURE AND CRITICAL THEORY L T P/S C
30 0 3

OBJECTIVES:

- To introduce the idea of architecture as enmeshed in the society and a product of larger socio-cultural issues and practices, and not as an autonomous object determined by a hermetically sealeddiscipline.
- To introduce the various interdisciplinary critical theories and explain their interpretationof architecture.

UNITI INTRODUCTION 6

Definition of theory - Architectural theory and its nature, purpose and its relation to practice - overview of some traditional architectural theories- context for the rise of more critical theories in architecture – Introduction to Critical Theory- Architecture and Critical Theory.

UNITII POWER AND BUILT ENVIRONMENT 10

Definition of power- Forms of power- Power in the built environment at various scales - ideas of power and society, power-knowledge- Colonialism in India as a form of dominance- introduction to architecture and urbanism of colonialism in India- Production of Indo-Saracenic architecture- New Delhi as a part of imperial vision- Case studies of the architecture and urbanism of power in the modernworld.

UNITIII PLACEAND ARCHITECTURE 10

Critical reactions to modernity/ modernism with reference to the concept of context/ place- Critical Regionalism and architectures of resistance- Place and phenomenology in architecture

UNITIV SEMIOTICSAND ARCHITECTURE 10

Architecture as communication and representation- introduction to linguistic concepts of semiotics,structuralism, post structuralism and deconstruction- brief over view of postmodern and deconstructivist architecture with reference to these concepts.

UNITV CONTEMPORARY ISSUESIN ARCHITECTURE 9

Conditions of late capitalism and postmodern society- Society of spectacle- Architecture as spectacle and seduction- Theme parks and shopping malls- privatisation of public spacesaesthetisation of architectural issues- influence of globalisation and digital revolution on architectural processes- debates of heritage- gender andspace.

TOTAL: 45 PERIODS

OUTCOMES:

- The students would gain an understanding of architecture as an integral production of society as well as engage in critical thinking to interpretarchitecture.
- The students' awareness through this course would inform their practice/research.

REFERENCES:

1. Neil Leach (ed) Rethinking Architecture, Routledge2000
2. Michael Hays (ed) Architectural Theory since 1960,MIT Press,2000
3. Kate Nesbitt, Theorizing a New Agenda for Architecture, Princeton Architectural Press,1996
4. Anthony D. King, Colonial Urban Development, Routledge & Paul, London,1976
5. Thomas Metcalf Imperial vision, Oxford,2002
6. Jane Rendell, Barbara Penner, Iain Borden, Gender Space Architecture, Routledge,2000
7. Kim Dovey, Framing Places: Mediating Power in Built Form, Routledge1999.
8. Neil Leach, Anaesthetics of Architecture, MIT Press1999,
9. Guy Debord. Society of Spectacle,Ian Borden & Jane Rendell,(ed), Intersections,Routledge 2000
10. Paul Allan Johnson,Theory of Architecture, Routledge2000
11. Christian Norberg Schulz- Towards a Phenomenology of Architecture, Rizzoli New York, 1980

COURSE OUTCOMES (COs)	
The student will be able	
CO1	Understanding of the effect of contemporary theories of media on contemporary architectural design.
CO2	Understand the Increased Automatism and its influence on Architectural Form and Space
CO3	Understand the methods of computation Design and diagrammatic representations
CO4	Application of various concepts of process of digital architecture design
CO5	Understanding of various contemporary design process and their relation to computation
C06	To understand the architectural issues and architectural processes.

Mapping of Course Outcomes with Program Outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	a	b	c	d	e	f	g	h	i	j	k	l
2	CO1	H	H	M		M			M	H	H		H
	CO2	L		M	M						L	H	L
	CO3		L			L			M				H
	CO4									M		M	H
	CO5		M	M	M				M		H		
	C06				M				L				
3	Category	PE(PROFESSIONAL ELECTIVE)											
4	Approval	04TH Meeting of Academic Council											

GMA004 GIS MODELLING IN URBAN PLANNING L T P/S C
3 00 3

OBJECTIVE:

- To examine the role and application of Geographic Information Systems in environmental design, community charities and other urban designprojects.

UNITI INTRODUCTION 6

GIS – Spatial data, non Spatial data, Plan, Map, Scale, Map Projection, GPS, GCP collection, Spectral signature curve, Image processing – Geo coding / Geo referencing, GIS software, Two tier architecture, Three tier architecture, Thin client, Thick client.

UNITII DATABASECONCEPTS 9

Data structures, Databases, Files, Types of Tables, Table operations, Creating a Table, Accessing Records in a Table, Manipulating records in a Table, Modifying Table structure, Reports,Advantages of database, Primary key and data access, Composite primary key, Defining a primary key, Sorting, Indexing, Master Detail relationships, Types of relationships, Foreign key, Deleting,updating and adding records to linked tables, ER Diagram, Data Model – Physical, logical and conceptual.

UNITIII SPATIALDATA 9

Comparative methods for obtaining images, Aerial Photograph, Satellite Imagery – High resolution imagery – LISS, PAN, MSS – Ortho rectification, Digitization – Layers, Digital Elevation model,Digital Terrain Modelling, Existing maps – Problems and Issues, Rubber sheeting, Digitization,overlay, union, intersection.

UNITIV INTRODUCTION TOGIS SOFTWARE 9

Arc Info – Coverage – Arc, Node, Tics, Add, get, put, Map extent, edit, Topology creation – Clean,Build, Tables – Creating tables, updating tables, join, drop item, Export, Import, overlay, union,intersection, buffer.

UNITV MODELLING GIS PROJECTS FOR URBAN AREAS 12

Preparation of Land use map, Land use suitability analysis, Screen design, Visual Basic application using Map objects.

TOTAL: 45 PERIODS

OUTCOMES:

- The student will increase the knowledge on GIS and the various characteristics ofData.
- The student will accept the potential of GIS and develop integrated practice of using the GIS application witharchitecture.

REFERENCES:

1. Information systems for Urban Planning – RobertLaurini
2. Modelling our world – ESRIPress
3. An Introduction to Data base Systems –C.J.Date
4. Fundamentals of Data base Management System by Elmasri &Navethi
5. ESRI (1992) Understanding GIS, The Arc Info Methods, ESRI,USA.

COURSE OUTCOMES (COs)	
The student will be able	
CO1	To introduce the principles of aerial and satellite based remote sensing for studying earth resources.
CO2	To introduce geophysical well logging techniques for interpretation of subsurface geology
CO3	well logging, classification of well logging methods, formation evaluation and its importance.
CO4	Basic principles, SP log, normal and lateral logs, focused logs, micro resistivity toolsand their role in formation evaluation; Applications.
CO5	Basic principles of different types of radiation logs including gamma ray, gamma-gamma,neutron thermal and chlorine logs; Porosity determination and cross plots; Applications
CO6	Permeability, bound and free-water estimation using NMR logging techniques; ApplicationsCaliper, dip meter, cement bond logging, casing collar locators, temperature logging.

Mapping of Course Outcomes with Program Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	a	b	c	d	e	f	g	h	i	j	k	l
2	CO1	H	H	M		M			M	H	H		H
	CO2	L		M	M						L	H	L
	CO3		L			L			M				H
	CO4									M		M	H
	CO5		M	M	M				M		H		
	C06				M				L				
3	Category	PE(PROFESSIONAL ELECTIVE)											
4	Approval	10TH Meeting of Academic Council											

GMA005 ANTHROPOLOGY AND ARCHITECTURE L T P/S C
3 00 3

OBJECTIVES:

- To understand the relationship between society and the making of the builtenvironment.
- To understand phenomenology and the role of meaning in builtform.
- To look at place making from the architectural as well as urban design point ofview.

UNITI RELATIONSHIP BETWEEN CULTURE, SOCIETY, ANTHROPOLOGYANDARCHITECTURE 6

Concepts of culture, society, politics and anthropology – relation between society and built environment – introduction to cultural anthropology view of architecture.

UNITII ANTHROPOLOGY OFTRADITIONAL ARCHITECTURE 10

Architecture as a Process – kinship and house societies – perceptions of built form – conceptions of space – symbolism and technology – study of the above through case study of traditional architecture in India, Asia and Africa.

UNITIII ANTHROPOLOGY AND PLACE MAKING 15

Conditions of modernity –Fragmentation of society – Heidegger and notions of dwelling – C Noeberg Schultz and notions of Genius Loci Rapoport and studies on the meaning of built environment – Joseph Rykwert and the idea of house – Bollnow and idea of space – Jan Pieper and the notions of sacred space.

UNITIV AN OVER VIEW OF URBAN ANTHROPOLOGY 6

Meaning of urban studies and urban anthropology – role of cities – urban ethnography, primary units, major components and units of integration – anthropology and contemporary urban issues.

UNITV SEMINAR 8

Students would make presentations exploring the relevance and impact of anthropological studies on contemporary architecture and design through readings/case studies. The proposal must be discussed with course faculty prior to presentation.

TOTAL: 45 PERIODS

OUTCOME:

- A comprehensive understanding of architecture and urbanism as expressions of particular societies in time andplace.

REFERENCES:

1. Roxanna Wasterson; The living House Anthropology of Architecture in S E Asia; Oxford Press.
2. Claire Melhuish (ed); Architecture and Anthropology – AD Vol 66 No 11/12 Nov -1996
3. Joseph Rykwert; On Adams house in Paradise; MIT Press1987
4. O F Bollnow; Mann, Bensch and Raum, Stuttgart;1963.
5. Joseph Rykwert – Idea of a Town: The Anthropology of Urban Form in Rome;1976.
6. Nold Egenter; The review of the Primitive in Architecture – Architectural Anthropology – Research Series Vol. I and II; Structura Mundi; 1992 and1996.
7. Edwin James; Anthropology of the City; Prentice Hall;1977.
8. J Carstern and S H Jones; About the house: Levi Strauss and Beyond; Cambrige University Press;1955.

COURSE OUTCOMES (COs)	
The student will be able	
CO1	A comprehensive understanding of architecture and urbanism as expressions of particular societies in time andplace.
CO2	To understand the relationship between society and the making of the built environment.
CO3	To understand phenomenology and the role of meaning in builtform.
CO4	Tolookatplacemakingfromthearchitecturalaswellasurbandesignpointof view
CO5	perceptions of built form – conceptions of space
CO6	role of cities – urban ethnography, primary units, major components

Mapping of Course Outcomes with Program Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	a	b	c	d	e	f	g	h	i	j	k	l
2	CO1	M			M							L	
	CO2		L				L				M		
	CO3	M		M					L				
	CO4		H			H							L
	CO5	M			L			M					
	C06												
3	Category	PE(PROFESSIONAL ELECTIVE)											
4	Approval	10TH Meeting of Academic Council											

GMA006 MATERIAL CONSERVATION **L T P/S C**
3 0 03

OBJECTIVES:

- To study materials, structural systems, buildings and elements produced byhistorical technologies in order to develop understanding of their evolutionary, chronological and stylisticcontext.
- To use this understanding to outline causes of deterioration and repair as well as look at the remedial and preventive measures that need to be taken to preserve the buildingfabric.

UNITI CONSERVATION TECHNIQUES **9**

Decay of monuments – reasons to decay – restoration techniques – soil and structure conservation – cleaning of monuments – reconstruction of monuments- Decay Mapping – Quantifying techniques- Introduction to structural analysis.

UNITII COMPOSITION, CHARACTERESTICS AND DETERIORATION OF MASONRYMATERIALS **9**

Brick- Stone- Composite masonry- causes for decay and deterioration- remedial measures- Introduction to the significance and use of the lime – working with lime – repairing and replacing plaster - Issues concerning terracotta and mud- use of consolidants.

UNITIII COMPOSITION, CHARACTERESTICS AND DETERIORATION OF OTHERSTRUCTURAL MATERIALS **9**

Use and repair of iron and steel members – Understanding wood and timber structures / methods to conserving timber structures-

UNITIV CASESTUDIES **9**

Case studies at the national, international and state level conservation projects done by ASI, INTACH & Conservation Architects- assessment and evaluation.

UNITV MATERIAL CONSERVATION AND ADAPTIVE REUSE **9**

Studio on Adaptive reuse/ restoration project / building in Existing fabric.

TOTAL: 45 PERIODS

OUTCOMES:

- A holistic understanding of the physical processes of building, including gainingknowledge about historical, material and culturalaspects.
- Gaining sensitivity and knowledge with respect to process of physical interventions in historicbuildings.

REFERENCES:

1. Bernard Feilden, Conservation of Historic Buildings, 2nd Edition, Butterworth,1994.
2. Martin E Weaver; Conserving buildings: Guide to Techniques and materials, Revised Edition; Wiley;1997
3. J. Stanley Rabun; Structural Analysis of Historic buildings: Restoration, Preservationand Adaptive Reuse; Applications for Architects and Engineers; Wiley2000
4. Kirk Urwin J.; Historic Preservation Handbook; Mc Graw hill2003
5. Ernest Burden; Illustrated Dictionary of Architectural Preservation; McGraw hill2003

COURSE OUTCOMES (COs)	
The student will be able	
CO1	To study materials, structural systems, buildings and elements produced by historicaltechnologiesinordertodevelopunderstandingoftheirevolutionary, chronological and stylisticcontext.
CO2	To use this understanding to outline causes of deterioration and repair as well as look at the remedial and preventive measures that need to be taken to preserve the buildingfabric.
CO3	A holistic understanding of the physical processes of building, including gaining knowledge about historical, material and culturalaspects.
CO4	Gaining sensitivity and knowledge with respect to process of physical interventions in historicbuildings.
CO5	Decay Mapping – Quantifying techniques- Introduction to structural analysis.
CO6	Use and repair of iron and steel members – Understanding wood and timber structures / methods to conserving timber structures-

Mapping of Course Outcomes with Program Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	a	b	c	d	e	f	g	h	i	j	k	l
2	CO1	H				H					M		
	CO2		M				L					M	
	CO3	M			L					L			
	CO4		M				M						L
	CO5	M				M					L		
3	Category	PE(PROFESSIONAL ELECTIVE)											
4	Approval	13TH Meeting of Academic Council											

GMA007 LANDSCAPE ECOLOGY AND PLANNING L T P/S C
3 0 03

OBJECTIVES:

- To understand any developmental activity involves intervention in the natural processes and to minimize the impact due to thisintervention.
- To outline the evolution of landscape planning, its premises and theprocess.

UNITI ECOLOGY 9

Understanding the ecosystem and their functioning — components of ecosystem - natural process- 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.

UNITII LANDSCAPE ECOLOGY 9

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.

UNITIII LANDSCAPE PLANNING 9

Relationship between man and nature – analytical aspect of landscape - the natural and cultural setting - evolution of landscape planning –concepts and projects of McHarg, Carl Steinite, Warren Manning, Augus Hills, Phil Lewis – Izank Zonneveld, Ervin Zube - landscape planning models – METLAND concept

UNITIV PROCESS INLANDSCAPE PLANNING 9

The purpose of landscape planning – domain and context for landscape planning – principles of planning – procedure in landscape planning - problem defining, goal setting, inventory and analysis - basic of collecting and analyzing, projecting and presenting data in landscape planning, visual assessment and aesthetic dimension.– Suitability analysis – techniques for identifying preferences - Planning options – proposing landscape plan.

UNITV CASE STUDIES:LANDSCAPE PLANNING 9

Reclamation and restoration of derelict landscapes - conservation and preservation of ecological fragile areas such as wetlands, creeks etc. - conservation ordinances. Case studies on landscape regional planning - policies andlandscape.

TOTAL: 45 PERIODS

OUTCOMES:

- Basics of Ecology and LandscapeEcology.
- Landscape planning history, evolution, process and casestudies.

REFERENCES:

1. Richard T.T.Forman & Michel Godron , Landscape Ecology, John Wiley & Sons;1986
2. Tom Turner, Landscape Planning and Environmental Impact Design, UCL Press, London, 1998.
3. Ervin H. Zube, Robert O Brush, Julios G.Y.Fabos, Landscape assessment – values, perceptions,1975.
4. G. Tyler Miller Jr., Living in the Environment: Principles, Connections, and Solutions, Brooks / Cole publishers co.,2004.
5. William M. Marsh, Landscape planning – Environmental Application, John Wiley and sons Inc.,1997.

COURSE OUTCOMES (COs)	
The student will be able	
CO1	Understand theBasics of Ecology
CO2	Analyse the Basics of Landscape Ecology
CO3	Apply Landscape planning in historical perspective
CO4	Evaluate the evolution of landscape planning concepts and projects
CO5	AnalysePurpose of landscape planning, its domain and context for planning landscapes
CO6	Understanding the policies, conservation and preservation of landscapes

Mapping of Course Outcomes with Program Outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	a	b	c	d	e	f	g	h	i	j	k	l
2	CO1	H					M						L
	CO2		H			M				L			
	CO3	H			H						M		
	CO4		L				L						M
	CO5	H				M		L					
3	Category	PE(PROFESSIONAL ELECTIVE)											
4	Approval	09THMeeting of Academic Council											

GMA008 SUSTAINABILITY AND ENERGY CONSERVATION INLANDSCAPEARCHITECTURE. **L T P/S C 3 0 03**

OBJECTIVES:

- To expose the students on the issues of sustainability at the globallevel.
- To Focus on the energy conservation landscape and sustainability at the microlevel.
- Sustainable landscape design for various climates ofIndia

UNITI INTRODUCTION TOSUSTAINABILITY 10

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.

UNITII SUSTAINABLE SITE 7

Sustainable site – LEEDS, BREAM, rating erosion and sedimentation control, site selection, urban development, landscape and exterior design etc., Green Building in the context of sustainability. Ecology and sustainability. Eco-City.

UNITIII INTRODUCTION TO ENERGY CONSERVATIONIN LANDSCAPE 9

Energy conservation and sustainability, principles of energy systems, energy and global environment, scope for energy conservation in landscape.

UNITIV ENERGY CONSERVATION METHODS IN LANDSCAPE ARCHITECTURE-CASESTUDIES 10

Various methods of energy conservation in landscape architecture, energy conservation techniques in various climates- hot and humid, hot dry, etc. Energy efficient site planning and landscape development. Energy efficient planting design. .

UNITV SUSTAINABLE LANDSCAPEPRACTICES 9

Sustainable landscape maintenance and management, Sustainable planning and city form. Sustainable urban landscape, landscape sustainability at the national and regional level.

TOTAL: 45 PERIODS

OUTCOMES:

- Understanding of sustainability from macro to microlevel.
- Knowledge on Energy conscious Landscapedesign

REFERENCES:

1. John.F.Benson and Maggie.H.Roe, Landscape and sustainability, John Wiley Publication, New
York, 2000.
2. O.R.Gray, Landscape Planning for EnergyConservation,
3. Anne Simon Moffat and Marc Schiller, Landscape design that saves energy, William Monow and co.,Inc., New York,1981.
4. Publications of Centre for science and environments, TERI, NewDelhi
5. Grady Clay, Water and the landscape McGraw-Hill Inc.,US; First Edition edition1979)

COURSE OUTCOMES (COs)	
The student will be able	
CO1	Knowledge to make aware of the Sustainable design aspects for landscape and Green buildings designconcepts.
CO2	Analyze the sustainable development in relation to natural resourceconservation energy conservation, environmental pollution and conservation ofbio-diversity
CO3	Apply the Global issues such as global warming, ozone layer depletion, greenhouse gases and depletion of natural resources in relation to energy generation
CO4	Understand the Sustainable development from the perspective of regional and urban planning; Issues at regional and micro level.
CO5	Apply the Climate considerations in design of buildings in various climates;
C06	Analyze the Eco-friendly architecture.

Mapping of Course Outcomes with Program Outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	a	b	c	d	e	f	g	h	i	j	k	l
2	CO1	H	H	M		M			M	H	H		H
	CO2	L		M	M						L	H	L
	CO3		L			L			M				H
	CO4									M		M	H
	CO5		M	M	M				M		H		
	C06				M				L				
3	Category	Professional Elective (PE)											
4	Approval	04TH Meeting of Academic Council											

GMA009 URBANLANDSCAPE DESIGN **L TP/S C 3 0 03**

OBJECTIVE:

- To expand the students knowledge on landscape within urban areas and open spaces in Urbancontext.

UNITI INTRODUCTION **6**

City and pattern – hierarchy of streets and squares – spatial organization and land use – road net works and basic services. Open spaces with in urban environment.

UNITII URBAN SPACES **9**

Cultural, social and aesthetic value of urban spaces and its perception, Imageability, Townscape elements. Urban spaceenhancement.

UNITIII OPEN SPACE SYSTEM **9**

Open space development in urban design context. Evolution of public park as a major component of urban landscape. Open space development in new towns. Park systems, water fronts. Green infrastructure. Urban ecology, urban water sheds.

UNITIV ELEMENTS INURBANLANDSCAPE **12**

Design of public parks, roads, green ways, parkways, promenade and plaza. Public art. Plant selection criteria, furnishings and lighting of public space, maintenance and management of public spaces and parks,

UNITV CASESTUDIES **9**

Contemporary urban landscape issues. Case studies-Study, understanding and analysis of known examples at the national and international levels.

TOTAL: 45 PERIODS

OUTCOMES:

- Types, characteristics and elements of urban openspaces.
- Case studies of urbanlandscapes.

REFERENCES:

1. Garden Cullen, The concise Townscape, Architectural press,London.
2. Kevin Lynch, Image of City, Cambridge, MA,1961.
3. Henry F. Arnold, Trees in Urban Design, Van Nostrand ReinholdCompany.
4. Matthew Carmona, Tim Heath, Public places – Urban spaces, Architectural press,2003.
5. Michael Hough, Cities and natural process, Routledge,1995.
6. Donald Watson, Alan plattns, Roberta shibley, Time savers standards for urban design, McGraw hill,2003.
7. Elements and total concept of urban landscape design, Graphic –sha publishing Co,2001.
8. Tom turner, city as landscape, Eand FN spon,1996.
9. Cliff Tandy, Handbook of urban Landscape, Architectural Press,1970.

COURSE OUTCOMES (COs)	
The student will be able	
CO1	Understand the Types, characteristics and elements of urban openspaces.
CO2	Analyse the Case studies of urbanlandscapes.
CO3	Knowledge on landscape within urban areas and open spaces in urban context.
CO4	Apply spatial organization and land use
CO5	Design the perception, Imageability, Townscape elements.
CO6	AnalyseUrban space enhancement.

Mapping of Course Outcomes with Program Outcomes (POs)
(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	a	b	c	d	e	f	g	h	i	j	k	l
2	CO1	H				M					H		
	CO2		L				L					H	
	CO3	M			M			H					
	CO4		L				L				M		
	CO5			H					H				M
3	Category	PE(PROFESSIONAL ELECTIVE)											
4	Approval	2ND Meeting of Academic Council											

GMA010 WEB DESIGN ANDPORTFOLIO PRODUCTION L TP C0 0 63

UNITI INTRODUCTION TO WEB DESIGN 15

Basics of web design – Introduction to software used for web design – ADOBE IMAGE READY, DREAMWEAVER, FLASH etc.

UNITII STATIC PAGES 15

Slice – URL in ADOBE IMAGEREADY. Creation and Editing of site map – layer, tables, frameset, -CSS style – Forms – tools like insert, roll over etc., in DREAMWEAVER.

UNIT III ANIMATIONINFLASH 15

Introduction to MACROMEDIA FLASH, importing other file formats to Flash- saving and exporting Flash files, Frame by frame animation – Motion Tweening – Shape Tweening.

UNIT IV INTRODUCTIONTO SCRIPTING 15

Using Timeline – Frames –Key frames- Creating and using Symbols- Simple scripting in flash – Publishing SWF files.

UNIT V DEVELOPING A WEB SITE 30

Using the skills and concepts learnt with the ADOBE IMAGEREADY,DREAMWEAVER, FLASH softwares . students will develop their portfolio in the form of web pages. These pages have to be uploaded in free public domains.

TOTAL: 90 PERIODS

REQUIRED READING

1. Photoshop 7 Bible Professional Edition, Wiley John & Son INC, New York, DekeMcClelland, 2000.
2. Flash Web Design, The Art of Motion Graph, Curtis Hillman, New Riders Publishing, Indianapolis, IN. U.S.A, 2000
3. M.E. Morris, and R.J. Hinrichs, Web Page Design, Prentice Hall,1996.
4. Mark Von Wodtke, Mind over Media : Creative Thinking Skills for Electronic Media, McGrawhill,
New York, 1993
5. Adobe Flash CS3 professional on demand by Steve Johnson, Andy Anderson, Perspection inc,
2012.

REFERENCES

1. Adobe Photoshop CS3 studio techniques, Ben Wilmore,2012.
2. Adobe Dreamweaver CS6 classroom in a book, Adobe creative team,2012.

COURSE OUTCOMES (COs)	
The student will be able	
CO1	To understand Basics of web design,Introduction to software used for web design
CO2	To understand the Creation and Editing of site map layer, tables, frameset, CSS style tools like insert, roll over etc
CO3	Introduction to macromedia flash, importing other file formats to Flash- saving and exporting Flash files, Frame by frame animation
CO4	Using Timeline ,Frames ,Key frames, Creating and using Symbols Simple scripting in flash
CO5	Using the skills and concepts learnt with the adobe image ready, dream weaver, flash software's. Students will develop their portfolio in the form of web pages. These pages have to be uploaded in free public domains.
C06	To implement with the web design and to prepare a model in software

Mapping of Course Outcomes with Program Outcomes (POs)

(H/M/L indicates strength of correlation) H-High, M-Medium, L-Low

1	COs/POs	a	b	c	d	e	f	g	h	i	j	k	l
2	CO1	H	H	M		M			M	H	H		H
	CO2	L		M	M						L	H	L
	CO3		L			L			M				H
	CO4									M		M	H
	CO5		M	M	M				M		H		
	C06				M				L				
3	Category	Professional Elective(PE)											
4	Approval	6th Meeting of Academic Council											