

# AR-501

CODE	SUBJECT	CREDITS
AR-501	DESIGN STUDIO-V	10
<b>FOCUS</b>		
	Public / Institutional space	
<b>OBJECTIVE</b>		
	<ul style="list-style-type: none"> <li>- Image &amp; its induction in buildings – Study of the architectural expressions that imbue a building with a certain image (posh, extravagant, luxurious, up market, down town, hi-tech, ethnic, contemporary etc).The relationship between a particular image and the materials &amp; lighting should be established. Students have to understand the circulation patterns &amp; services required in commercial buildings. Ex Shopping mall / Art gallery / marriage hall / memorial complex etc.</li> <li>- Technological expressions – This project intends to explore the possibility of image induction using expressions of technology for industrial buildings. Hence the functional aspects and the external form assume significance. Students are encouraged to explore architectural styles in vogue such as deconstructivism, Bauhaus, post modern, hi -tech etc. Ex. Garment factory / watch factory / Electronic goods (computers, cell phones etc.) / Bicycle manufacturing unit etc.</li> <li>- Emerging building types – Certain building types that are already in vogue in developed countries are slowly emerging here also. Ex. Motel / club houses / gaming parlors / Beauty &amp; healthcare parlors etc.</li> </ul>	
<b>CONTENT</b>		
	<ul style="list-style-type: none"> <li>- Understanding the nature of building and its significance in the immediate context</li> <li>- Determination of scale of the building with respect to its importance ('IMAGE') in the society</li> <li>- Classification of end-users into distinct groups with respect to their role and relationship with building</li> <li>- Behavioral patterns as well as comfort levels of end-users</li> <li>- Interaction patterns of individuals/small groups/community at large and anthropometric criteria of the same, reflection of the above in spaces/form</li> <li>- Standardization of group requirements to a logically acceptable level (quantifying &amp; estimating group requirements to a standard)</li> <li>- Site development: common and shared spaces, amenities and infrastructure for appropriate functioning and value addition to the institution</li> <li>- Design of movement pattern in the site and within the buildings</li> <li>- Appropriate construction technology to support image creation and efficient services to proper functioning of multi-user large scale building</li> </ul>	
<b>METHODOLOGY</b>		
<b>REFERENCES:</b>		
	<p>Babur Mumtaz and Patweikly, Urban Housing Strategies, Pitman Publishing, London, 1976.            Geoffrey K.Payne, Low Income Housing in the Development World, John Wiley and Sons, Chichester, 1984.            John F.C.Turner, Housing by people, Marison Boyars, London, 1976.            Martin Evans, Housing, Climate and Comfort, Architectural Press, London, 1980.            Forbes Davidson and Geoff Payne, Urban Projects Manual, Liverpool University Press, Liverpool, 1983.            House Form and Culture Amos Rapoport            Urbanization Primer Horatio Caminos            Residential Open Spaces Vastu-Shilp Foundation            Urban Pattern Gallion            The New Landscape Charles Correa</p>	

## AR-502

<b>CODE</b>	<b>SUBJECT</b>	<b>CREDITS</b>
AR-502	BUILDING CONSTRUCTION -V	04
<b>FOCUS</b>		
	Understanding different components and its detail.	
<b>OBJECTIVE</b>		
	Interior Construction Kitchen Platform Moisture & Thermal Protection	
<b>CONTENT</b>		
	-INTERIOR CONSTRUCTION Partitions /Paneling, False Ceilings, , Cabinets and Furniture,  -KITCHENS AND WASH AREAS Kitchen design and storage, Materials used, Sinks and other fixtures  -Water proofing -Thermal Insulations -Protection of Structures -Constructional/Expansion joints -Anti termite treatments -Different preservative measures and procedures	
<b>METHODOLOGY</b>		
	In class theory, presentations, audio video presentations, Assignments with sketches, Scaled drafting of basic joinery and details, in class interactions and Case studi es.	
<b>REFERENCES:</b>		
	Building Construction by S. C. Rangawala Building Construction by Neville Building Construction – W. B. Mackay Building Construction Illustrated- Fransis D.K.Ching.	

## AR-503

CODE	SUBJECT	CREDITS
AR-503	STRUCTURE-V	02
<b>FOCUS</b>		
	<ul style="list-style-type: none"> <li>In the first part of the course the main emphasis is on study of steel as structural material and the role of properties of material and behavior of elements in evolution of structural system is carried out.</li> <li>In the second part of the course emphasis on understanding of section design in R.C.C. and its implication on design of structures.</li> </ul> <p>The course is divided in two parts one which deals with analysis and design of steel structures, the other deals with design of reinforced concrete members.</p> <p>The course is divided in two parts one which deals with analysis and design of steel structures, the other deals with design of reinforced concrete members.</p>	
<b>CONTENT</b>		
	<ul style="list-style-type: none"> <li>Steel as structural material, structural systems in steel with case studies.</li> <li>Analysis and design of steel girders &amp; columns using IS:800 &amp; Handbook of steel sections.</li> <li>Designing and detailing the bolted connections. Design of simple welded connections.</li> <li>Theory of composite sections applied to R.C.C. structures. Review of properties of concrete and steel as applicable to R.C.C. Fundamental assumptions of R.C.C. structure.</li> <li>Analysis and design of singly reinforced sections, under reinforced, over reinforced and balanced sections.</li> <li>Analysis and design of one way and two way slab using coefficients and standard tables. Effects of continuity, detailing of reinforcement, provisions of IS:456. Derivation of thumb rules.</li> <li>Doubly reinforced section, effect of compression steel on deflection.</li> <li>Design of Tee beams and Ell beams, practical examples of both.</li> <li>Diagonal tension, its effect and methods of resisting it. Design of shear reinforcement.</li> <li>Axially and eccentrically loaded columns, types of column, permissible stresses in concrete and steel, slenderness and its effect on the load carrying capacity. Design of axially loaded columns &amp; reinforcement detailing, code provisions, derivation of thumb rule.</li> <li>Types of foundations and their use, punching shear, analysis and design of spread footings, structural behavior of other types of foundations.</li> <li>Principles and practices of Earthquake resistant structures.</li> </ul>	
<b>METHODOLOGY</b>		
	Through class lectures, Presentations, site visits, case studies and making models & testing them.	
<b>REFERENCES:</b>		
	<ol style="list-style-type: none"> <li>Design Of R.C.C. Structures- H.J.Shah</li> <li>Design Of R.C.C. Structures- Ramamrutham</li> <li>Fundamentals of Reinforced concrete design - M.L.Gambhir</li> <li>Limit State Design of Reinforced concrete - P.C.Verghese</li> <li>S.P.-16 Design Aids to IS 456- BIS, New Delhi</li> <li>Design Of Steel Structures- Arya &amp; Ajmani</li> <li>Design Of Steel Structures- A.K.Jain</li> <li>Design Of Steel Structures- L.S.Negi</li> <li>IS Code 800 – Code Of Practice For Structural Steel Design- BIS, New Delhi</li> <li>IS Handbook – 1, Structural Sections &amp; Properties - BIS, New Delhi</li> <li>IS Code – 456 -2000, Code Of Practice For Plain &amp; Reinforce Concrete - BIS, New Delhi</li> <li>IS Code - 875 – 1987 , Code Of Practice For Design Loads.- BIS, New Delhi</li> </ol>	

# AR-504

CODE	SUBJECT	CREDITS																		
AR-504	HIST. OF ARCH-III	02																		
<b>FOCUS</b>																				
	Architectural developments over the world during industrial revolution.																			
<b>OBJECTIVE</b>																				
	<p>This course provides an in depth study of the history of modern architecture. It is to explore the relationships between historical developments in architecture and wider changes in the social, technological and aesthetic realms.</p> <p>The different strands of the modern are all interwoven, but this course will seek to unravel them somewhat, in order to investigate what “modern architecture” might, in fact, have meant under different historical conditions – and what it might still mean today.</p>																			
<b>CONTENT</b>																				
	<ul style="list-style-type: none"> <li>• Leading to a new architecture</li> <li>• Industrial revolution</li> <li>• Reviewing industrialization</li> <li>• Issues of ornamentation and aesthetics</li> <li>• Institutions</li> <li>• International style</li> </ul>																			
<b>METHODOLOGY</b>																				
	<p>Gain knowledge of form exploration with respect to scale &amp; proportion by creating 3 -D models of buildings or building elements</p> <p>Understanding the contribution of building elements in creating architecture language through sketching and drawing</p> <p>Field visits to places of historical importance to understand the impact of scale, proportion and building materials &amp; elements in creation of built environment</p> <p>Analysis of building system and elements to understand organizational and assembly criteria in modern architecture</p> <p>Redesign/reassemble/reorganize the architectural concepts of history considering today’s users, functions and building material &amp; technology to understand the architectural developments respecting time</p> <p>Analyze and write clear, critical and informative notes, essays using appropriate architectural terminology to express understanding of various criteria on architecture.</p>																			
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	<table border="0"> <tr> <td>History of Architecture</td> <td>-Spiro Kostof</td> </tr> <tr> <td>Architecture and its interpretation</td> <td>-Juan Bonta</td> </tr> <tr> <td>History of Modern Art</td> <td>-H. H. Arnason</td> </tr> <tr> <td>Architecture: Nineteenth and Twentieth Centuries</td> <td>-William J.R. Curtis</td> </tr> <tr> <td>Modern Architecture since 1900</td> <td>-Phaidon: 1996</td> </tr> <tr> <td>A History of Architecture</td> <td>-Sir Bannister Fletcher</td> </tr> <tr> <td>Global history of Architecture</td> <td>-Francis D. K. Ching</td> </tr> <tr> <td>Towards a new architecture</td> <td>-Le Corbusier</td> </tr> <tr> <td>Complexity and Contradiction in Architecture</td> <td>-Robert Venturi</td> </tr> </table>		History of Architecture	-Spiro Kostof	Architecture and its interpretation	-Juan Bonta	History of Modern Art	-H. H. Arnason	Architecture: Nineteenth and Twentieth Centuries	-William J.R. Curtis	Modern Architecture since 1900	-Phaidon: 1996	A History of Architecture	-Sir Bannister Fletcher	Global history of Architecture	-Francis D. K. Ching	Towards a new architecture	-Le Corbusier	Complexity and Contradiction in Architecture	-Robert Venturi
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## AR-505

CODE	SUBJECT	CREDITS
AR-505	ENERGY CONSCIOUS ARCHITECTURE	02
<b>FOCUS</b>		
	Energy efficiency techniques for buildings in various climates.	
<b>OBJECTIVE</b>		
	To introduce students to various aspects of energy efficiency in building.	
<b>CONTENT</b>		
	-introduction to various rating system for energy efficiency. -introduction to ECBC. -introduction to various energy simulation software. -site planning aspects. -application of building materials for energy efficiency. -small design exercise for energy efficient building.	
<b>METHODOLOGY</b>		
	Through class lectures, Presentations, site visits and case studies. Small scale Design Exercise for building material.	
<b>REFERENCES:</b>		
	Design with climate : Victor Olgyay Man, Climate & Architecture : B. Givoni Climatic building design : Donald Watson An introduction to Building Physics : Dr. Narsimhan Climate Responsive Architecture : Krishan A. Wind Towers/ Details in Building : Wiley John Green Architecture : J. Michael & J. Crosbie The new Eco architecture : Porteous Colin Under the sun- desert style in architecture: Moore & Moore The technology of ecological building : Deniels K. Energy performance of building : Biard G. Publications by BEE, New Delhi. Publications for ECBC.	

## AR-506

CODE	SUBJECT	CREDITS
AR-506	BUILD.SERVICES-II	02
<b>FOCUS</b>		
	Electrical and mechanical services in building.	
<b>CONTENT</b>		
	<p><b>Electrical:</b> Distribution system in building – mains and sub distribution, switches and control, layout system for lighting fans, telephones, etc. implication in building construction.</p> <p><b>Fire protection:</b> Study of fire regulation, fire extinguishing system, warning system, fire resistance of different building materials, fire resistant doors, planning of building for fire escapes, case studies of building from fire protection requirements.</p> <p><b>Air conditioning system:</b> Different systems in current use from chilled water cooling system to air handling package units etc., their installation requirements and demands in building layouts. Supply air, return air ducting system their layout and requirements within building system, co-ordination to building system.</p> <p><b>Vertical transportation:</b> Lifts, grouping of lifts, return travel time, design of lift banks carrying capacity and travel time, installation requirements, escalators.</p>	
<b>METHODOLOGY</b>		
	Through class lectures, Presentations, site visits and case studies.	
<b>REFERENCES:</b>		
	<ol style="list-style-type: none"><li>1.Electrical Wiring, Estimating &amp; costing -S.L.Uppal</li><li>2.Building Technology &amp; Valuation-Tata Mc Graw Publication</li><li>3. Operation &amp; Maintenance of Electrical Equipment-B.V.S.Rao.</li></ol>	

# AR-507

CODE	SUBJECT	CREDITS
AR-507	ELECTIVE-I	02
	Please find attached list for elective subjects	